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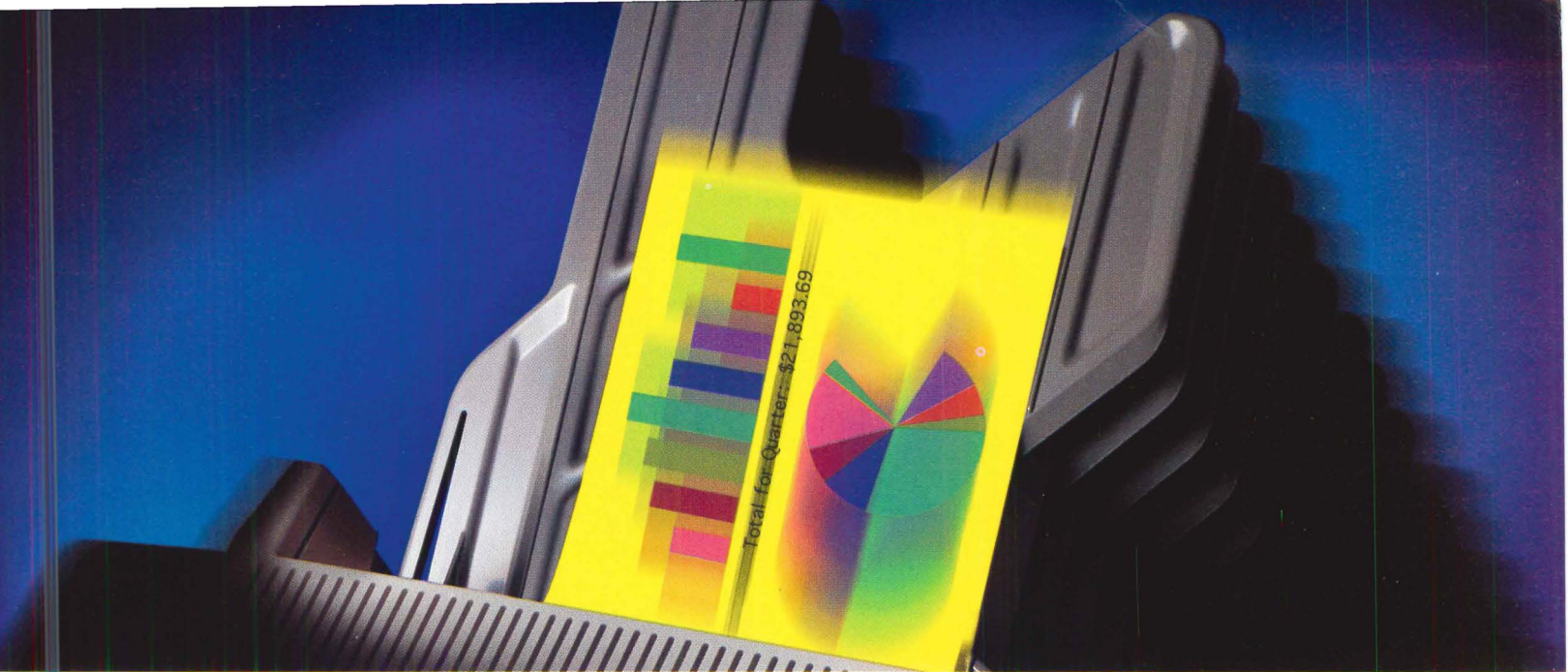
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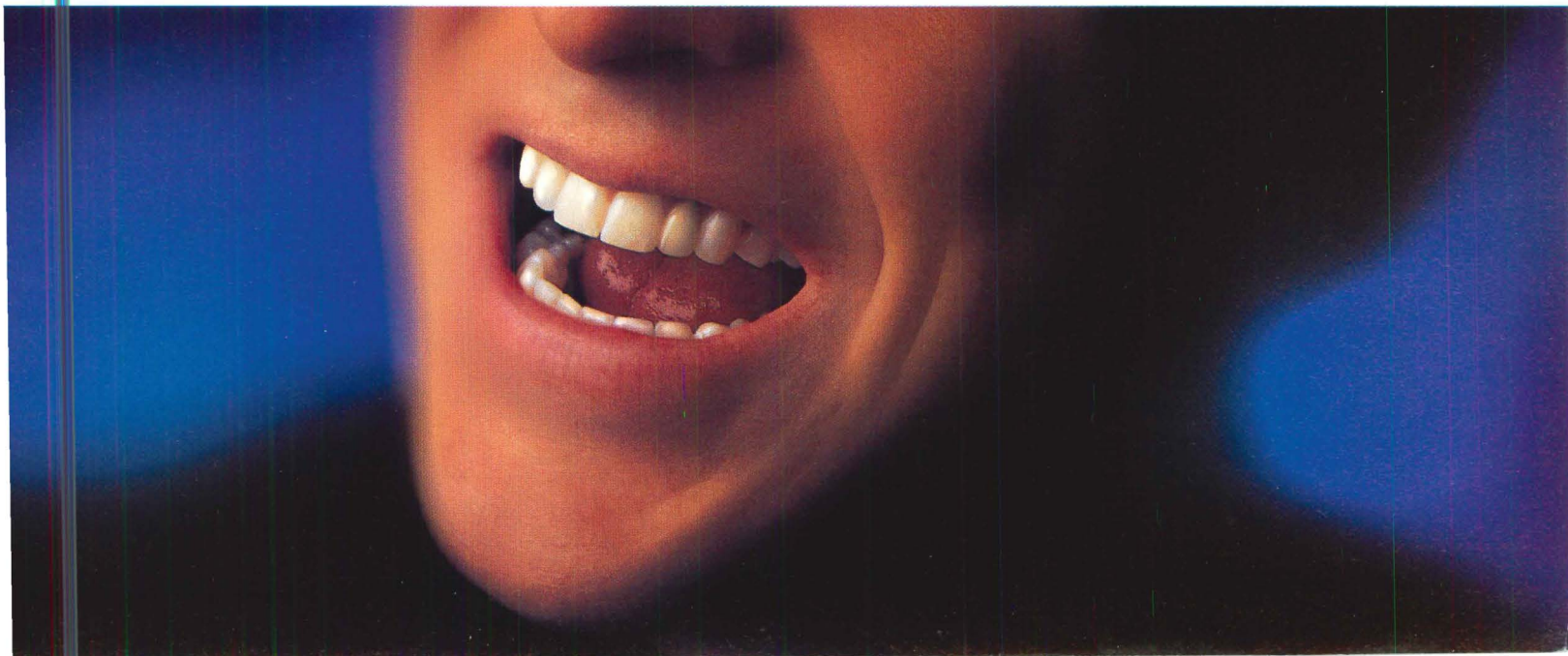


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Photograph by Timothy Hursley.

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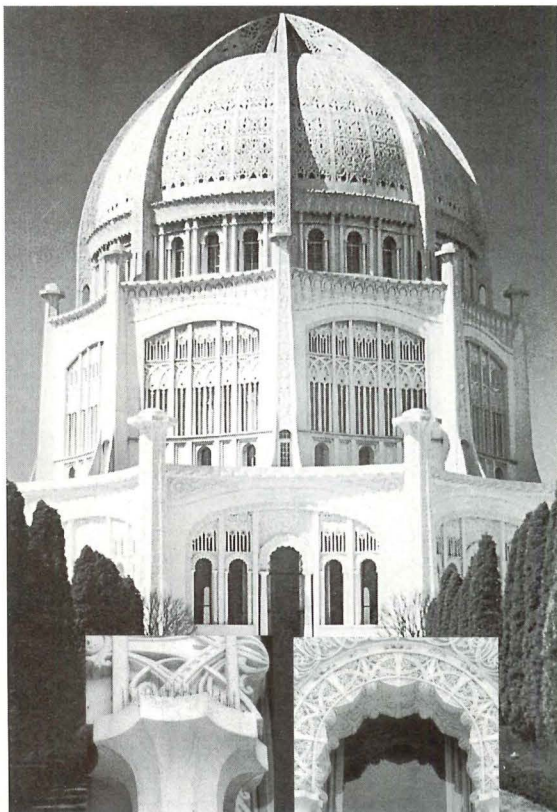


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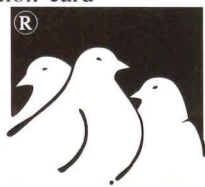
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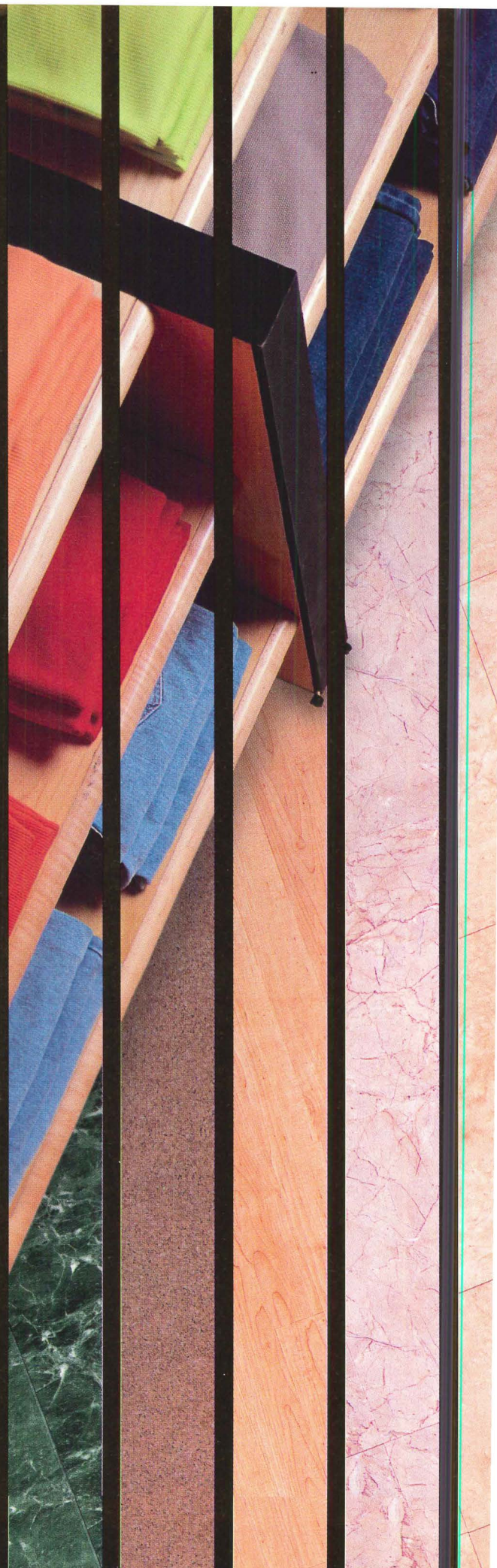


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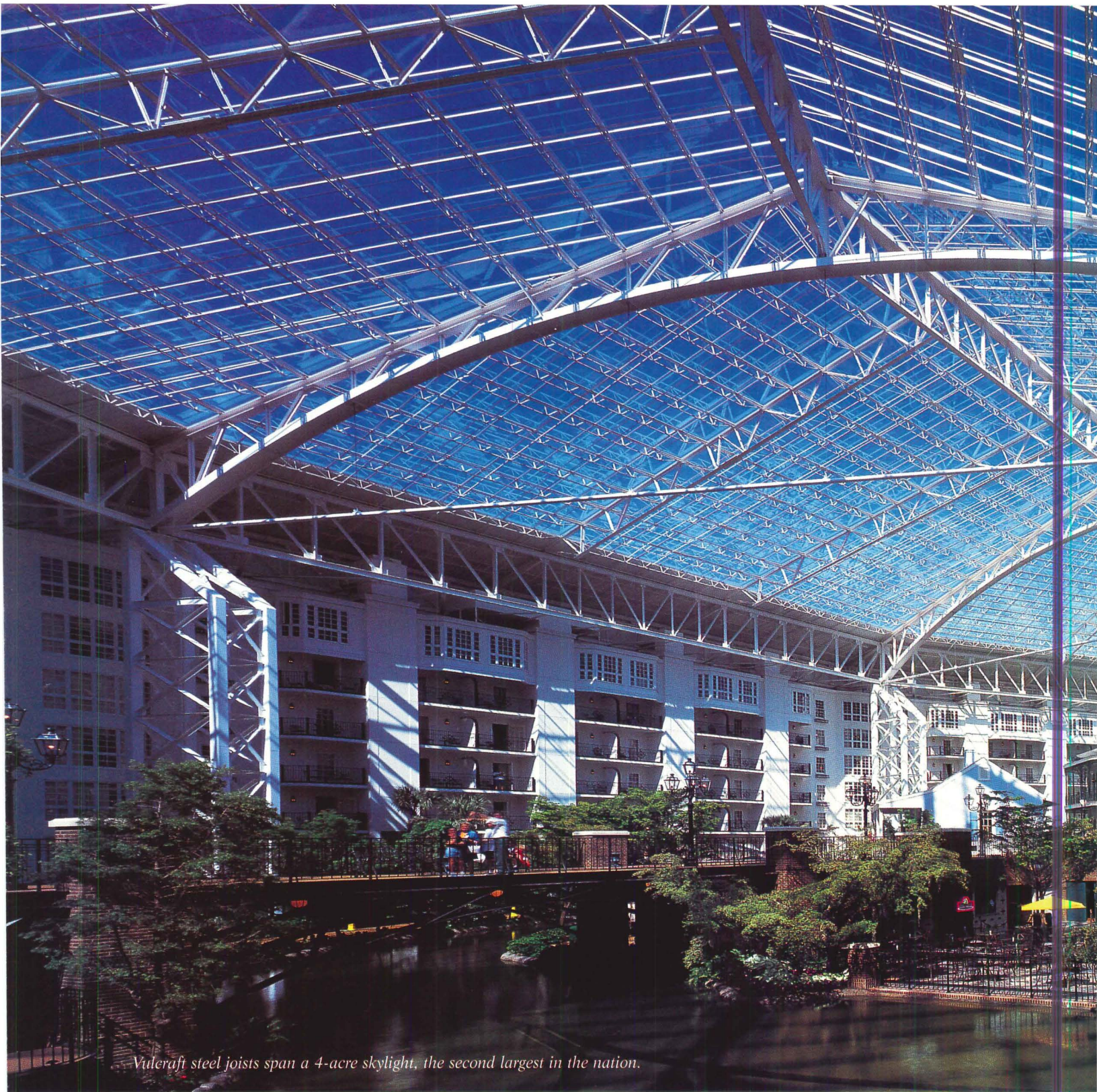
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Just a few months ago, Joseph A. Gonzalez was a golden boy at Skidmore, Owings & Merrill (SOM). Young, thoughtful, and a gifted designer, Gonzalez had been anointed partner in 1986, after 12 years with the firm, marking his ascendance to architecture's corporate summit. His partners hoped he would help the firm reclaim its title as heavyweight champion of the architectural world (*Architecture*, May 1996, pages 231-237).

Most people assume that partners in architectural offices are registered architects—particularly the kind of people who secure the services of top-drawer firms like SOM. Gonzalez, however, was not an architect, at least not in the technical

statements, revealing as little as possible. Lost in the soap opera proceedings, unfortunately, is Gonzalez's record of achievement: His colleagues and clients clearly regarded him as a talented individual who contributed to the profession.

What remains unclear is whether Gonzalez's personal and professional ethics matched his achievements as a designer—an important question. If he did misrepresent himself, or failed to correct a widely held misperception of his status, he should bear the full weight of proper professional and legal remedies.

However, if he didn't lie (and perhaps even if he did), the situation still merits consideration because of the specters it

# Taking License

**Joseph Gonzalez failed a test. So did his firm and the profession.**

sense: He was not licensed to practice architecture in the state of Illinois, or in any other state (page 28, this issue). In professional parlance, Gonzalez was just a designer.

The semantic difference might not have mattered, except that in 1996, Skidmore chose to restructure itself from an Illinois general partnership to a New York limited liability partnership (LLP). A New York LLP requires all of its partners to be professionally registered, whereas an Illinois general partnership can qualify with only two-thirds of its top brass registered.

For Gonzalez, the corporate shuffle spelled the end of his partner status, and the beginning of the end of his 23-year career with SOM; he abruptly left the firm in October after he failed to pass his licensing exam. Conflicting accounts over whether Gonzalez actually represented himself as an architect, and whether he completed his education in a timely fashion further muddied the water.

The full story has yet to emerge. Both Gonzalez and his red-faced former employer are issuing terse, but polite

raises: Joseph Gonzalez beat the system. That alone should send shivers through the Byzantine licensing bureaucracy that regulates this profession.

Skidmore has egg on its face as well. Chicago's newspapers are having a field day with a major architecture firm—the city's most famous—that doesn't know whether one of its partners ever finished school, let alone had a license. What does this do for the reputation of architects in an age when the quality of information separates the foxes from the hounds?

Finally, disregarding for the moment his alleged ethical improprieties, why should Joseph Gonzalez be out of a job? The architectural acumen that earned him a partnership did not suddenly disappear: Gonzalez is still the same designer responsible for some of SOM's better recent buildings. Talented interns fail the licensing exam every year while their design-impaired counterparts sail through. The profession's struggling neophytes are usually given a chance to improve their performance. Its struggling partners, apparently, are not.

*The Editors*

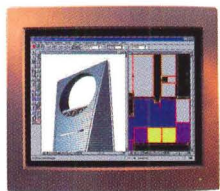
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## Girl power

I read your November editorial, "Where are the Women?" (*Architecture*, November 1997, page 11), with interest. Here at Gensler, women are fully and actively involved. They make up: 49 percent of our total staff; one-third of our board members; 40 percent of our management committee; 40 percent of our office heads; 29 percent of our vice presidents; 38 percent of our senior associates; and 49 percent of our associates.

We are proud of the team we have assembled and of the value they contribute to our firm and the profession. I hope this is true throughout the profession and not as reflected by the comments made in your article.

*M. Arthur Gensler, Jr.*  
Chairman and CEO  
Gensler  
San Francisco, California

Many of architecture's best women, tired of fighting the glass ceiling, sexual harassment, and discrimination, have left the profession. After 25 years, I, too, left and discovered the rewards of peace, happiness, and civility in the workplace.

In my last job, I was physically assaulted and sexually harassed while working at the AIA national headquarters in 1992. After being forced from my job there, I lost all hope for any significant change in the profession in my lifetime.

If you survey other women architects, I suspect you'll find that my case is not isolated. You say architecture will become an irrelevant discipline; I say it already has.

*Sheri Daniel*  
McLean, Virginia

My guess is that lots of women did what I did—they either left their employer to establish their own firms or left the profession entirely for a related field. While I realize that generalizations can be dangerous, I think that company loyalty is a common feminine characteristic. Until I went out on my own, it was easy to make excuses for the firm where I spent 16 years (the last 10 as an associate). Now, I find it hard to explain why three men with similar experience were advanced to principal in those 10 years while I was left behind.

*Sue Lani W. Madsen*  
The Madsen Group  
Edwall, Washington

## No to quotas

Here we go again—another editorial calling for the advancement of women within the profession. I don't know anything about the hierarchies of KPF, Ellerbe Becket, or SOM, but I would venture to guess that advancement within these firms has more to do with performance, seniority, and resourcefulness than gender.

It's time that advancement and success be based on ability and effort alone. Recent legislation in California reflects this clearly; I hope the rest of the nation follows. Stop the trivial whining about women's status within the profession and show us those success stories that are out there.

*Chad B. Sutter*  
Miles City, Montana

Your declaration that "gender equality should top the profession's agenda" is moronic and immature. This perception totally negates the immense responsibilities the profession has to ensure the life and safety of the public in the design of structures for human occupancy. Good architecture, good practice, and good management skills should top the agenda.

The best way to overcome real prejudice is by performance and not by decree. Cease the endless whining and reliance on others to provide success and go out into the world and prove that no matter who you are, if you have the skills, you can be at the top of your own ladder.

Architecture will only become "an irrelevant discipline" if practitioners fail to address the needs of their clients, the public, and the profession. The lack of women in top ranks will have absolutely no effect on the future of architecture. This isn't to say that a woman could not succeed and lead with equal skill and talent of a man. But first and foremost, that person needs to be a good architect.

*Eric D. Kuritzky, Architect*  
Orlando, Florida

Your November editorial is totally unrealistic and seems underresearched. No backup was given for the statement that "female architects are still not making it to the top." The glass ceiling is a fiction created by some whining women who can't cut it in the real world. If your firm doesn't promote you or appreciate you, go elsewhere

or start your own firm. The handful of firms you cited in your article does not represent a realistic cross-section of the profession.

Women who feel that the only way to the top is by affirmative action are a disgrace to the profession and to womanhood. Only those architects who are damn good at what they do should "make it to the top." Affirmative action, in any form, serves only to promote the incompetent and drag down the profession's reputation.

*Michele Dauns*  
HKM Architects + Planners  
Arlington Heights, Illinois

## Jailhouse blues

Your October editorial is correct—the boom in prison construction raises many ethical questions, the most serious of which you did not mention: How can our profession lavish our marketing and design attentions on designing these facilities that our government desires when thousands of innocent citizens lack decent housing, food, education, and healthcare?

Our most impoverished inner cities and rural regions feature the worst examples of the increasingly inhuman state of detention facilities in our country. As a profession, we can serve our society well by pointing out this insanity.

*John L. Wilson*  
Principal, Payette Associates  
Boston, Massachusetts

Perhaps architects have been too involved in correction facilities in the past. We should know by now that inmates cannot function in society. Rehabilitation has proved to be an expensive and ineffective joke on taxpayers. Prisons, with the amenities that many of them have today, are almost attractive. If we went back to the winning formula of the 1950s and 1960s, perhaps we wouldn't need as many prisons.

*James T. Bugbee, Jr.*  
Bellingham, Washington

## CORRECTION

HOK has been commissioned by the Economic Development Corporation of New York to be the master plan architect of the redesign of the St. George Ferry Terminal. Eisenman Architects has been commissioned to perform concept design work on a museum component of the project (*Architecture*, October 1997, page 28).





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3. Move end table a bit to the left.
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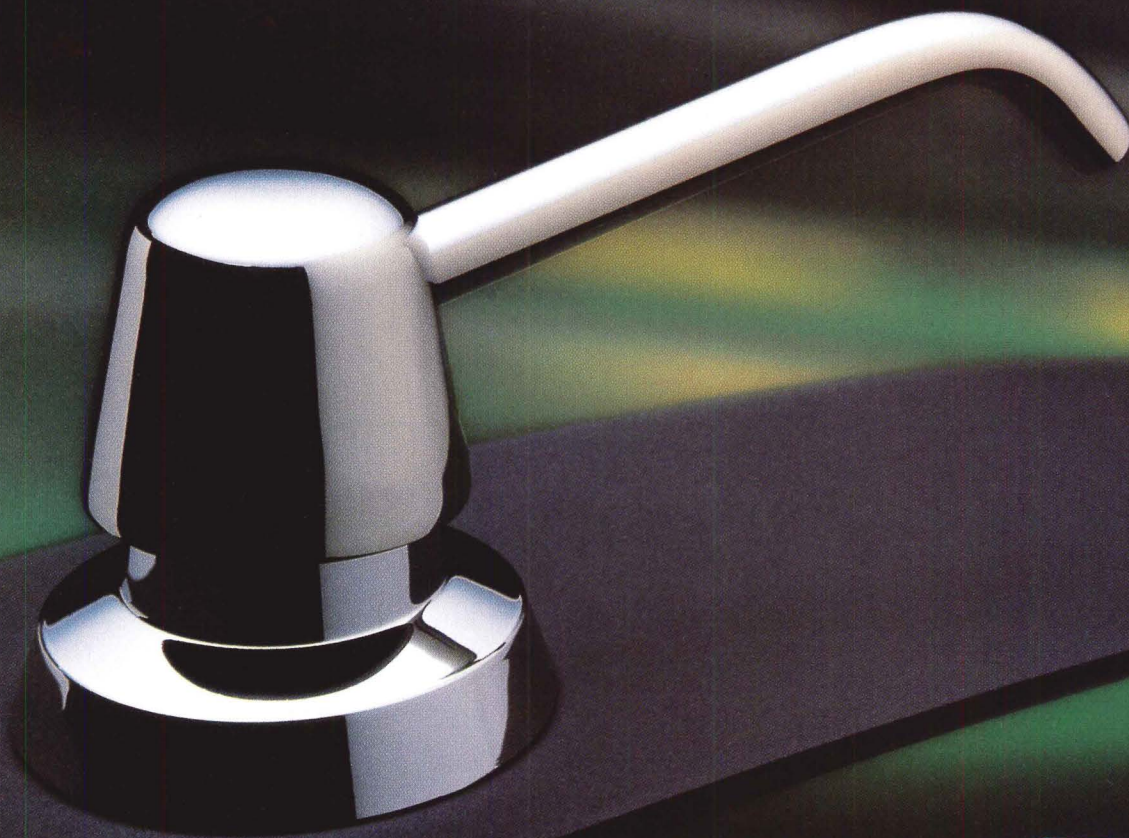
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## exhibitions

city	dates	exhibition	contact
Boston	through June 14	<b>Piranesi in Perspective: Designing the Icons of an Age</b> at the MIT Museum	(617) 253-4444
Columbus	January 31- April 12	<b>Fabrications</b> at the Wexner Center for the Arts, Ohio State University	(614) 292-0330
New York	January 29- April 28	<b>Fabrications</b> at the Museum of Modern Art	(212) 708-9400
	February 19- May 19	<b>Alvar Aalto: Between Humanism and Materialism</b> at the Museum of Modern Art	(212) 708-9400
	February 26- June 28	<b>Finnish Modernism in Design, 1930 to the Present</b> at the Bard Graduate Center for Studies in the Decorative Arts	(212) 501-3000
San Francisco	February 6- April 28	<b>Fabrications</b> at the San Francisco Museum of Modern Art	(415) 357-4000

Patkau Architects' installation at the Wexner Center for the Arts appears as part of Fabrications, which runs concurrently at SFMOMA and MoMA.



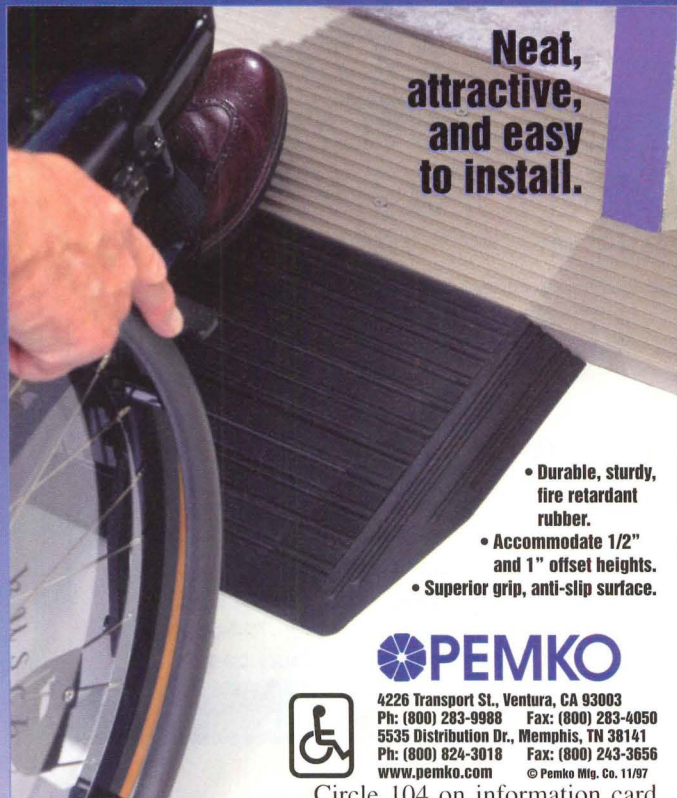
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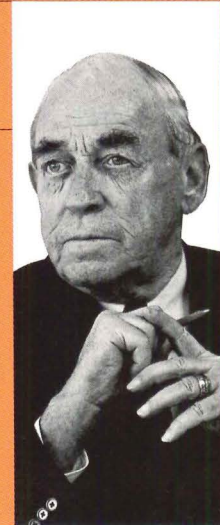


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## conferences

city	dates	conference	contact
Boston	March 5-6	<b>Architecture of Segregation symposium</b> , sponsored by the Harvard University Graduate School of Design	(617) 496-0291
	March 12-14	<b>Restoration</b>	(508) 664-6455
Dallas	February 1-2	<b>Enlightening America conference and trade show</b> , sponsored by the Energy Efficient Lighting Association	(609) 799-4900
Los Angeles	March 19-20	<b>NeoCon West</b>	(312) 527-7598
	March 18-20	<b>West Week</b>	(310) 657-0800
New York	February 3	<b>Alvar Aalto Centennial Day Celebration</b> , sponsored by Consulate General of Finland at the Institute of International Education	(212) 750-4400

To celebrate February 3 centennial of Alvar Aalto's birth, MoMA and Bard Center are staging exhibitions and Finnish Consulate of New York is holding conference.



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**John Stuart, Chair**

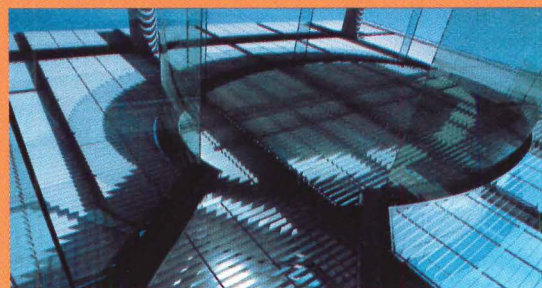
Faculty Search and Screen Committee  
School of Architecture  
Florida International University, UP VH 212  
Miami, FL 33199

Applications must be received by February 19, 1998. Florida International University is a member of the State University System of Florida and an Equal Opportunity / Equal Access / Affirmative Action Employer.

# competitions

competition	deadline	contact
<b>Architecture in Perspective,</b> sponsored by the American Society of Architectural Perspectivists	January 16	(617) 951-1433 ext. 225
<b>Kenneth F. Brown Asia Pacific Culture &amp; Architecture Design Award</b> sponsored by the School of Architecture, University of Hawaii, Manoa, and the Architects Regional Council Asia	January 23 (registration)	(808) 956-3515
<b>Chicago infill housing competition,</b> sponsored by Women in Planning and Development and Habitat for Humanity	January 30 (registration)	(773) 725-8681
<b>Young Architects Competition,</b> sponsored by the Architectural League of New York	January 27	(212) 753-1722
<b>DuPont Benedictus Awards for Innovation in Architectural Laminated Glass</b>	March 9	(202) 393-5247

1977 Benedictus Award-winning house by  
Japanese architect Kengo Kuma and Associates



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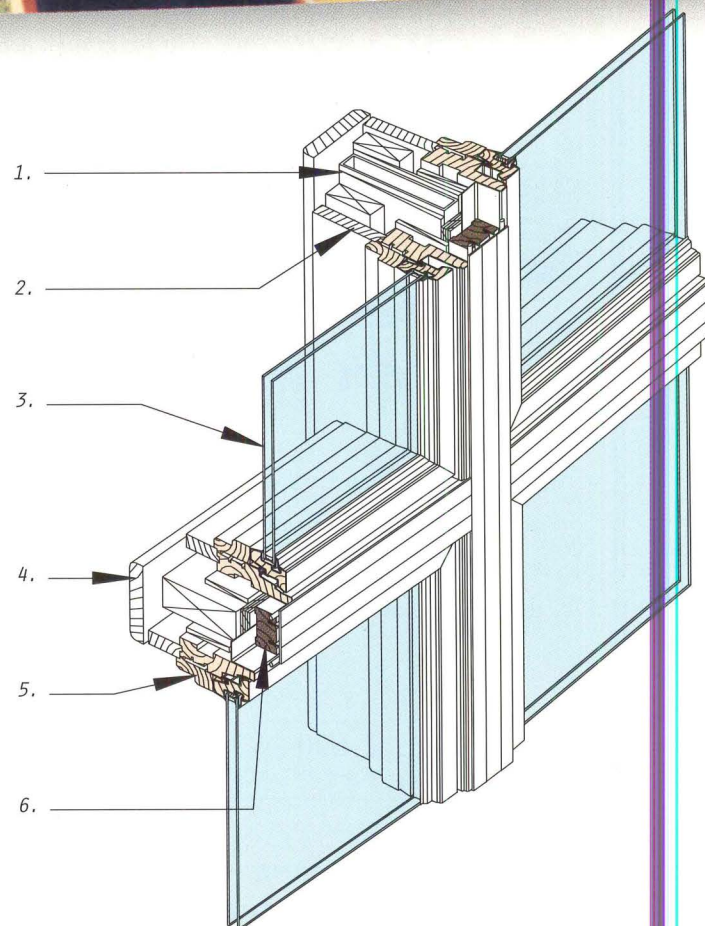
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Endoscopy Center of Delaware  
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PROJECT ARCHITECT: MARK REYNOLDS  
PROJECT TEAM: PAUL GUGGENBURGER  
PRINCIPAL IN CHARGE: KERRY HABER, AIA  
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### ITS Showcase '98

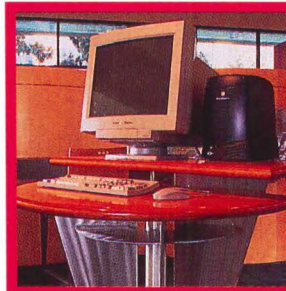
International Tile & Stone Showcase

March 19-20, 1998

Los Angeles Convention Center  
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#### The West Coast's premier conference and exposition for commercial interior design and facilities management

On March 19-20, NeoCon West and ITS Showcase will bring over 250 exhibitors to the L.A. Convention Center with: • the latest commercial interior design and facilities management products and services • 70 CEU-accredited seminars • unlimited networking opportunities. With NeoCon West, ITS Showcase, WestWeek 98, Market 98, Avenues of Art & Design and the L.A. Mart all a part of L.A. Design Week, it's an event guaranteed to impact the entire West Coast design community.



"NeoCon West, as partners with WestWeek, will provide the design community the platform to gain knowledge to further our profession."  
**Nila R. Leiserowitz**,  
Assoc. AIA, ASID,  
vice president, Gensler

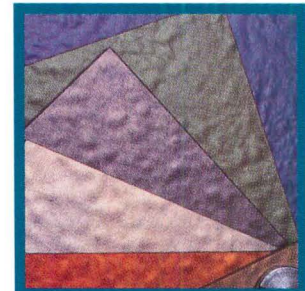
"To bring NeoCon's education and product offerings to the West Coast is a tremendous benefit."  
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#### ITS Showcase

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**Mary Yocum**,  
vice president,  
Eurowest Tiles,  
past president, CTDA



#### WestWeek 98

March 18-20  
Pacific Design Center  
High-end residential and contract furnishings conference and design market

#### Market 98

March 17  
Laguna Design Center  
High-end residential furnishings and accessories show

#### Avenues of Art & Design

March 17-21  
West Hollywood  
An intriguing mix of interiors resources in over 400 street-level shops and showrooms

#### L.A. Mart

March 17-20  
Downtown Los Angeles  
Five floors of product resources for home and office furnishings

For more information on NeoCon West, call 888/477-5742 or visit our Web site at [www.neoconwest.com](http://www.neoconwest.com).  
For more information on ITS Showcase, call 888/747-8400.

Which CAD software  
outgunned all others  
in  
head-to-head competition?

You may be surprised...



# MiniCAD 7: Winner of the 2nd as “BEST OVERALL ARCHITECTURAL CADD SOFTWARE”

## The CADD Shootout Challenge:

The annual 3D Designers CADD Shootout competition called together design teams representing 12 of the world's top CAD softwares for a head-to-head competition judged in 22 categories. The winner, as judged by a panel of 12 real-life architects, CAD professionals and industry experts along with more than 400 architects and professionals in attendance, walked away with the title of “Best Overall Architectural CADD Software” and the prestigious CAD Cup Trophy.

Each 3-member design team was challenged to flex their CAD software muscle by producing a full design project complete with elevations, perspectives and QuickTime animations, in only three hours.

## The Case:

The goal – to produce a New England-style church, built on a slope facing the sea – was not revealed until the start of the shootout. And, to add realism to the event, aspects of the design criteria were changed every 30 minutes for the first 1.5 hours of the competition!

## The Champion:

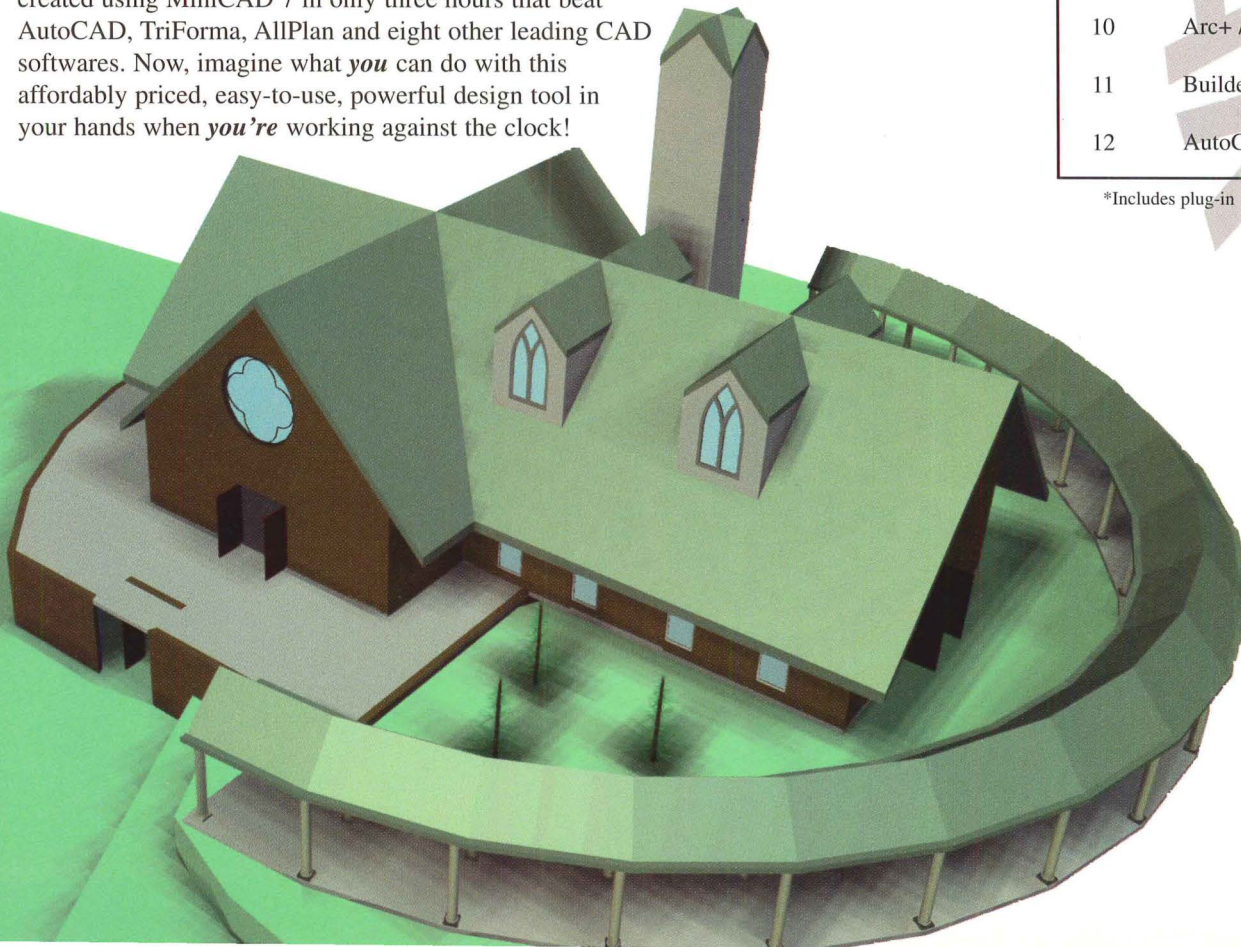
MiniCAD 7 outperformed them all—winning the event as “the Best Overall Architectural CADD Software”, and placing in 18 of the 22 categories, including first place in six categories!

At right, review the minute-by-minute development of the winning design created using MiniCAD 7 in only three hours that beat AutoCAD, TriForma, AllPlan and eight other leading CAD softwares. Now, imagine what *you* can do with this affordably priced, easy-to-use, powerful design tool in your hands when *you're* working against the clock!

## Overall Competitor Standings

Ranking	Program	Retail Price
1	MiniCAD 7	\$ 795
2	AllPlan	\$4,995
3	Triforma	\$5,325
4	ArchiCAD	\$4,995
5	Arris	\$4,250*
6	DataCAD	\$ 249
7	DenebaCAD	\$ 799
8	Architriion	\$4,000
9	Architech.PC	\$3,500
10	Arc+ / Virtus	\$1,595
11	BuildersCAD	\$1,995
12	AutoCAD 14	\$7,250*

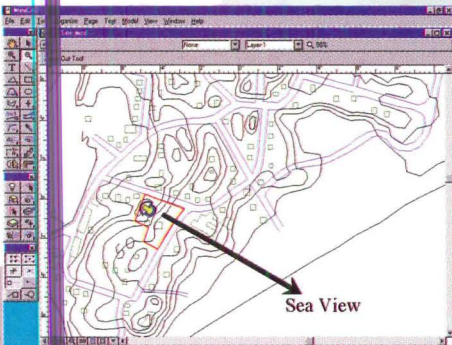
\*Includes plug-in



# Annual Architectural CAD Cup "BEST OVERALL ARCHITECTURAL CADD SOFTWARE"

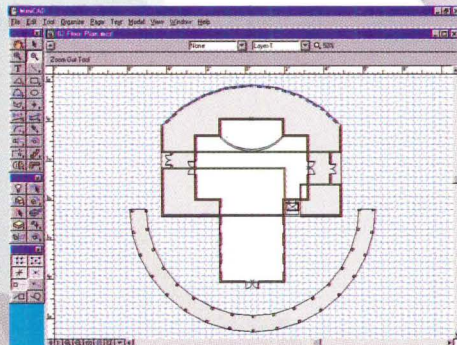
Designers 3D CADD shootout, Build Boston, Nov. 97

What can be accomplished in 3 hours using MiniCAD 7  
...even when the client makes changes every half hour?



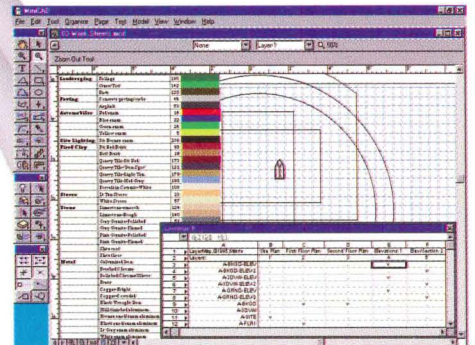
0:02:01

MiniCAD 7 quickly and easily imports the existing site plan as defined by contest sponsors, using it as an accurate basis for site delineation. This illustrates MiniCAD 7's ability to use and augment data files from other CAD softwares - on Windows or Macintosh.



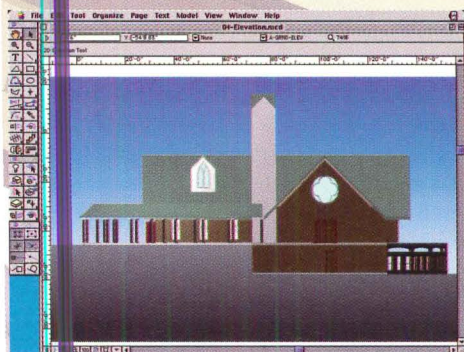
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MiniCAD's powerful hybrid design environment allowed the MiniCAD team to develop in 2D and 3D simultaneously. Here you see the exterior walls of the project developed in just under an hour.



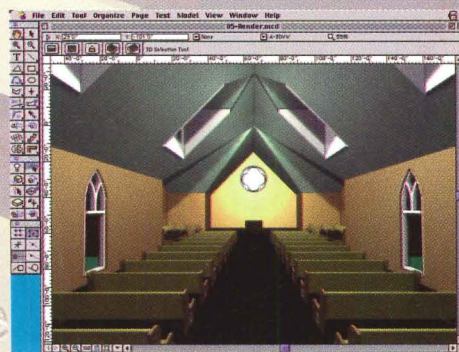
1:10:22

As the real nuts and bolts of the design are worked out, MiniCAD 7 keeps highly detailed worksheets and material takeoff lists.



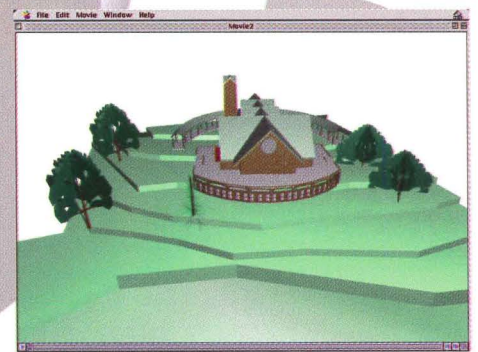
2:02:30

The MiniCAD team used MiniCAD's unique 'Layer Linking' capability to easily create this elevation and to instantly view in 3D any changes made to the plan.



2:03:00

Fully-rendered interior design generated in MiniCAD 7 with the Lightworks 3D plug-in. This feature greatly enhanced the design presentation by allowing for a variety of real-life visual effects such as multiple light sources, lighting effects and shadows.



2:55:30

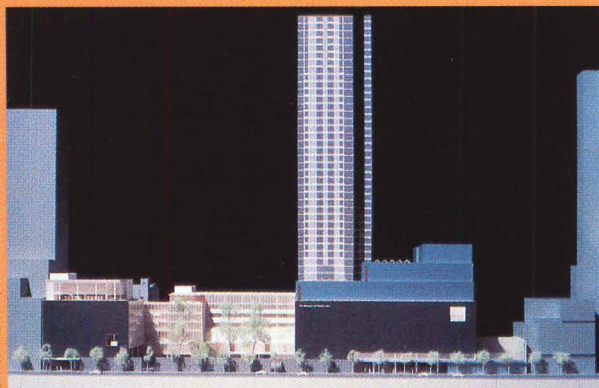
Final output, a QuickTime movie created with MiniCAD 7's built-in QuickTime animation feature depicts the beauty and architectural majesty of the MiniCAD 7 design. The judges panel was impressed too, voting MiniCAD 7 "Best Overall Architectural CADD Software", ahead of competing softwares costing thousands more.

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DAVID ALLISON / THE MUSEUM OF MODERN ART



Taniguchi's additions to West 54th Street (far left) embrace Philip Johnson's iconic sculpture garden. Addition to West 53rd Street (left) flanks Pelli's museum tower.

# MoMA PICKS TANIGUCHI

In one of the most hotly contested competitions of the decade, New York City's Museum of Modern Art (MoMA) named Japanese Modernist Yoshio Taniguchi as the designer of a major addition and renovation last month. The plan retains Philip Goodwin and Edward Durell Stone's original museum building (1939), Philip Johnson's sculpture garden (1964), and Cesar Pelli's tower (1985).

Taniguchi proposes two new wings clad in aluminum, glass, and black slate flanking the sculpture garden along West 54th Street. The eastern wing houses an education center and art storage; the western wing, which extends

a full city block, incorporates galleries and a new main entrance to the museum. Goodwin and Stone's building will be reconfigured to house exhibition space dedicated to the museum's individual curatorial departments.

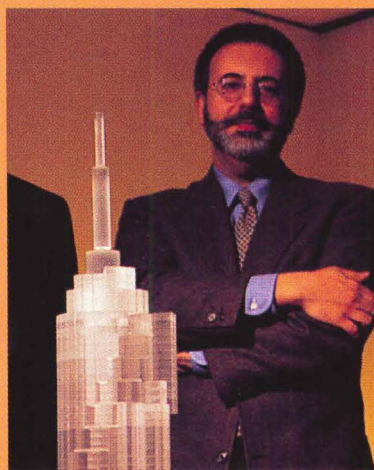
Taniguchi is little known outside Japan, but has completed several significant projects there, including the Tokyo Sea Life Park and the Toyota Municipal Museum of Art (*Architecture*, October 1996, pages 96-103). The museum's board of directors selected his design over proposals by the Swiss firm Herzog and De Meuron and New York City architect Bernard Tschumi. An exhibition of

the three shortlisted schemes opens at MoMA in March. Seven other teams were eliminated from the competition in May: Dominique Perrault, Toyo Ito, Rem Koolhaas, Wiel Arets, Steven Holl, Rafael Viñoly, and Tod Williams and Billie Tsien. MoMA has been criticized about the conservatism of the architects under consideration. Terence Riley, MoMA's chief curator of architecture and design, claims that with Taniguchi's selection, "for the first time, MoMA is using architecture as a vehicle to transform the institution. This is a unique and timely reiteration of a long tradition of Modernism." *Ned Cramer*

A cautionary tale is emerging from the Chicago office of Skidmore, Owings & Merrill (SOM). The firm learned last April that celebrated Partner Joseph Gonzalez, a 23-year SOM veteran who resigned in October, is not a registered architect. Further, Gonzalez did not graduate from architecture school until 1989, not in the early 1970s as the firm thought. "We believed that he was a licensed architect and that he had certain credentials," explains SOM Partner Jeffrey McCarthy.

The facts came to light following the firm's recent conversion to a New York state limited liability partnership (LLP), an arrangement that stipulates that all partners be registered and licensed in New York. Research into partner credentials conducted prior to the transition revealed that Gonzalez held no registration and that he hadn't graduated from Oklahoma State University until 1989. Curriculum vitae and other documents maintained by the firm throughout Gonzalez's career, and which Gonzalez periodically approved, stated that he was registered in Wisconsin and had graduated from Oklahoma State University.

Gonzalez, who was never a managing partner and thus never signed any drawings, stepped down as a partner in April 1996, when the LLP transition began, claiming it was because he wasn't regis-



RALF FINN HESTOFT / SABA

## SOM Partner Resigns in CREDENTIALS SCANDAL

tered in New York. Had Gonzalez been licensed elsewhere, he would only have had to pass the oral component of the New York exam to become licensed there. When the firm realized this April that he had no registration at all, Gonzalez took a leave of absence to prepare for the entire exam. He resigned six months later, as the firm began to grasp the extent of the confusion (Gonzalez failed the structural section in October, but plans to retake it in February.)

To hear Gonzalez tell it, he's done nothing wrong. "I never said I was an architect and no one ever asked me," Gonzalez says. "I never misrepresented myself." Others feel his misrepresentation was passive. Even if he never referred to himself as an architect, people inside and outside SOM did, and failure to correct this widely held perception suggests an ethical infraction along the lines of lying by omission. To that charge, Gonzalez refuses to comment, saying simply that he resigned in order "to move on and look into new career endeavors."

McCarthy won't say whether Gonzalez was forced out, but indicates that Gonzalez's status as a partner made no difference in how the firm perceived the situation: "We hold all of our staff to the highest professional standards." *Eric Adams*



In November, the city of Boston announced a major master plan for the neglected waterfront district just south of downtown. Although the plan promises to be a boon to the blighted area, it is already facing significant opposition from environmental groups.

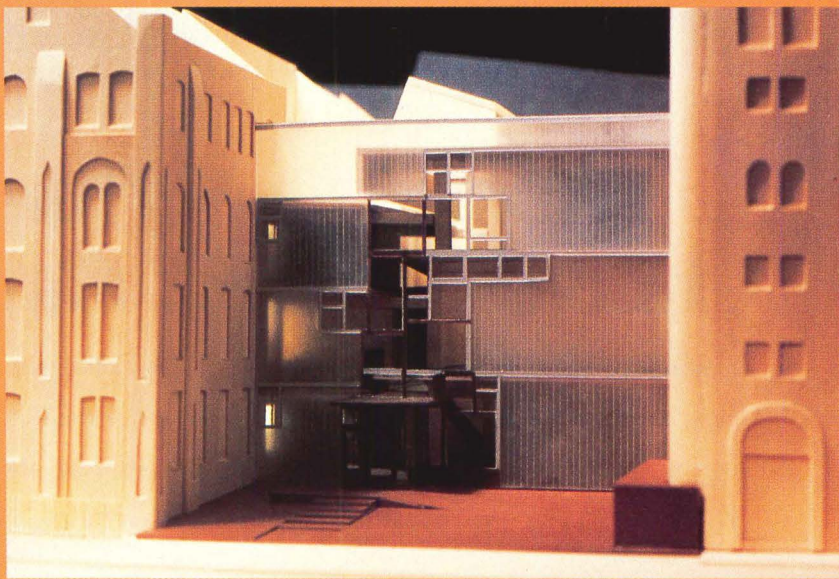
The 1,000-acre mixed-use plan, generated by the Boston Redevelopment Authority (BRA), includes retail, office, hotel, residential, and cultural development in the district. It also capitalizes on its proximity to downtown and the harbor, and calls for incorporating existing industrial and port facilities, recently-completed bridge and tunnel connections, a convention center recently approved for construction by the Massachusetts State Legislature, and the new federal courthouse designed by Pei Cobb Freed & Partners, to be completed in September.

But there are potential drawbacks. The plan's provision for a 225-foot-tall hotel on the harbor contradicts a Massachusetts state law limiting water-side construction to 55 feet. Watchdog groups are demanding a new environmental impact report for a portion of the project that the BRA and developers claim was given an okay in an earlier study. And the number of parking spaces proposed for the district may exceed the allowances provided by the federal Clean Air Act. According to the *Boston Globe*, BRA Director Thomas N. O'Brien remains confident that the plan will move forward, adding, "We're committed to a full public process." N.C.

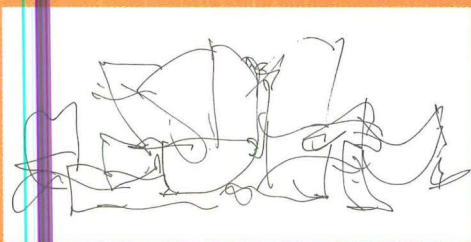
## HOLL RESUSCITATES PRATT

Last June, a fire all but destroyed the Pratt Institute School of Architecture's 19th-century building in Brooklyn. Now, architects Steven Holl and Rogers Marvel are renovating historic Higgins Hall with preservation consultants Ehrenkrantz Eckstut & Kuhn. The fire damaged the H-shaped building's north and south wings, and completely destroyed the block between them.

Holl will replace this central portion with a new glass-and-concrete structure that sits atop a plinth made of brick salvaged from the burned building. Scheduled to open in the spring of 1999, Holl's addition will house a much-needed lobby, lecture hall, gallery, workshop, and computer studio. Rogers Marvel is renovating the north wing, which will be completed in time for the start of classes this fall. More extensive work on the seriously damaged south wing will be complete by the fall of 2000. "The fire has given us the opportunity to develop a sense of place the school never had," maintains Thomas Hanrahan, who began his tenure as dean of Pratt's School of Architecture shortly after the fire. N.C.



Holl's Pratt addition replaces block linking two 19th-century wings.



## DISNEY ANTES UP

Last month, The Walt Disney Company finally coughed up a long-overdue \$25 million contribution towards the construction of the Frank Gehry-designed Walt Disney Concert Hall in downtown Los Angeles. The gift, which requires the Disney Hall Oversight Committee to raise equal matching funds and provide performance space in the hall for the California Institute of the Arts, was supplemented by an additional \$5 million from Disney Vice Chairman Roy E. Disney.

The Disney family has already poured almost \$100 million into the construction of the hall since Walt's widow, Lillian, first envisioned the memorial a decade ago. The two new gifts bring the total amount raised to \$160 million—still only 80 percent of the building's estimated \$205 million budget. Meanwhile, Disney CEO Michael Eisner, who reportedly earned more than \$205 million in salary and stock options in 1996, has yet to make a personal donation to the cause. N.C.



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## THE BUZZ

Once again, the **AIA Board of Directors** was unable to reach the three-fourths majority vote needed to award its 1998 Gold Medal. The board has refrained from naming a Gold Medalist 40 times since the award was established in 1907. The institute did announce the winners of its 1998 International Architecture Book Awards: **James Corner** and **Alex MacLean's** *Taking Measures Across the American Landscape* was named Book of the Year and **The Getty Research Institute for the History of Art and the Humanities**, Publisher of the Year. In other publishing news, **Routledge** recently bought the architectural imprint **E. & F. Spon** from London-based **Thomson Corporation**.

Need a lift? Disability-rights activists claim that **Tadao Ando's** two-story Pulitzer Foundation for the Arts building in St. Louis does. Currently under construction, it incorporates no elevator, only an exterior ramp. A spokesperson for **Emily Rauh Pulitzer**, wife of late publishing mogul Joseph Pulitzer, asserts, "Mrs. Pulitzer is working very hard with the architect to address the problem."

In December, the State Preservation Board of Texas selected architects **E. Verner Johnson** and **HKS** to design the Texas State History Museum in Austin. Another new history museum, the 53,000-square-foot Five Civilized Tribes Museum in Muskogee, Oklahoma, is being designed by **Hammel Green and Abrahamson** to recount the story of the Choctaw, Chickasaw, Cherokee, Creek, and Seminole nations.

Oklahoma City's 6,500-seat Art Moderne Civic Center Music Hall is being converted by **Polshek and Partners** and local architect **Richard R. Brown Associates** into a 2,500-seat symphony hall. Polshek is also designing a new Park Avenue headquarters for the American Scandinavian Foundation in New York. A few blocks north, **Voorsanger and Associates** is renovating the Asia Society building. In Times Square, **Platt Byard Dovell Architects** is designing a 10-story performing arts center for a non-profit group, incorporating the facade of the historic Selwyn Building (1918). Construction is scheduled to begin later this year.

A major preservation effort is under way to revitalize the historic buildings along the

Schuylkill River in Philadelphia's Fairmount Park. Several major grants totalling \$6.7 million were recently awarded for the restoration and maintenance of **Frederick Graft's** Neoclassical Water Works (1815), bolstering previous city and state donations of \$4.5 million. The local firm **Armstrong Kaulbach Architects** has designed a new, 12,500-square-foot sports center to the south of the waterworks and an 11,000-square-foot recreation and visitors center upstream. The firm is also renovating and expanding the historic Vesper Boat Club (1865). Several other boathouses along Philadelphia's iconic Boathouse Row are being renovated, including **The Hillier Group's** restoration of the **Frank Furness**-designed Undine Barge Club (1882).

Perkins & Will founder **Lawrence B. Perkins**, 90, died December 3, 1997.

**Platt Byard Dovell's** Times Square performing arts center



IT'S DISCOVERING WHAT THIS COUNTRY WAS LIKE  
BEFORE IT WAS CALLED AMERICA.

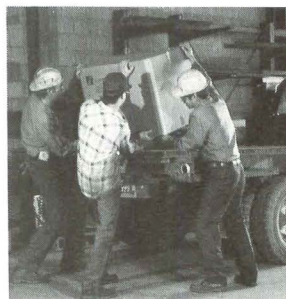


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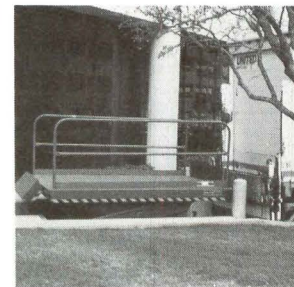
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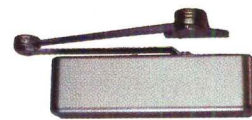
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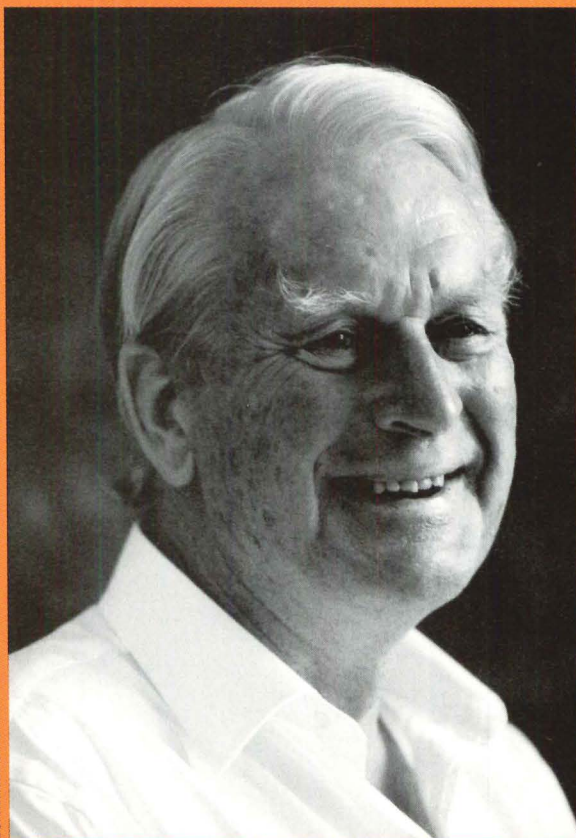
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"Sverre who?" a puzzled America exclaimed last May, when the Pritzker Architecture Prize named Norwegian Sverre Fehn its 1997 laureate. Now, a welcome new monograph, *Sverre Fehn: Works, Projects, Writings, 1949-1996* (The Monacelli Press), introduces the 73-year-old architect to a new generation. First released in an Italian language edition last year by the Milan-based publishing house Electa, Monacelli's English translation retains the original clean layouts and informative text. Despite coauthor Christian Norberg-Schulz's yearnings for the past, Fehn is no period piece; his architecture has progressed beyond its Modernist roots.

In the monograph's central critique, Norberg-Schulz ascribes Fehn's long obscurity to the architect's dedication to Modernism during an era when the movement was in critical disfavor. (Never mind that Fehn says he "never thought of [himself] as Modern.") Fehn has certainly benefitted from the recent resurgence of

# Defining Fehn

**A new monograph reintroduces the work of long-forgotten Norwegian architect Sverre Fehn.**



CORNELIUS POPPE

Modern esthetics—with the Pritzker; this monograph; a major retrospective held last year in Vicenza, Italy; and a spate of important new commissions. But there's a radical difference between the facile Modernism of Fehn's crisp, luminous Brussels (1958) and Venice (1962) pavilions and the richer vocabulary of his recent works that incorporate Nordic vernacular, sensuous tectonics, and far-flung influences such as shipbuilding and traditional Japanese architecture.

Norberg-Schulz's plainspoken essay clearly relates this formal progression, as well as the historical events that preceded the advent of Fehn's career. But Norberg-Schulz is wrong to describe Fehn as a Modernist. The movement certainly liberated the architect from the confines of Scandinavian Classicism at the outset of his career, but his mature work is more sculptural and humanistic than his early projects. In his compelling introduction about the figural and poetic underpinnings of Fehn's craft, Francesco Dal Co contradicts Norberg-Schulz's assertions of Fehn's Modernity. Dal Co likens the architect's buildings to "defeated remains on deserted beaches" and "skeletons stripped of flesh." These analogies artfully underscore the increasingly nondoc-trinaire qualities of such recent buildings as the Glacier Museum in Fjaerland, Norway (1991) and the Aukrust Museum in Alvdal, Norway (1996). Gennaro Postiglione's essay broadly and prosaically addresses the existential relationship between architecture and landscape in Fehn's work.

Contemporary nostalgia for Modernism may have put Fehn back in the spotlight, but the architect himself hasn't succumbed to such wistfulness. Pritzker Juror Ada Louise Huxtable maintains, "Unlike the work of some schooled in the International Style, [Fehn's] never became static." The progression from Fehn's early work to the present demonstrates the freedom offered by Modernism as a starting point of departure for a more inclusive architecture. *Ned Cramer*



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## Lower Manhattan's

# Bull Market

**High-tech enterprises and a newly established nightlife quicken the pulse of New York's resurgent Financial District.**

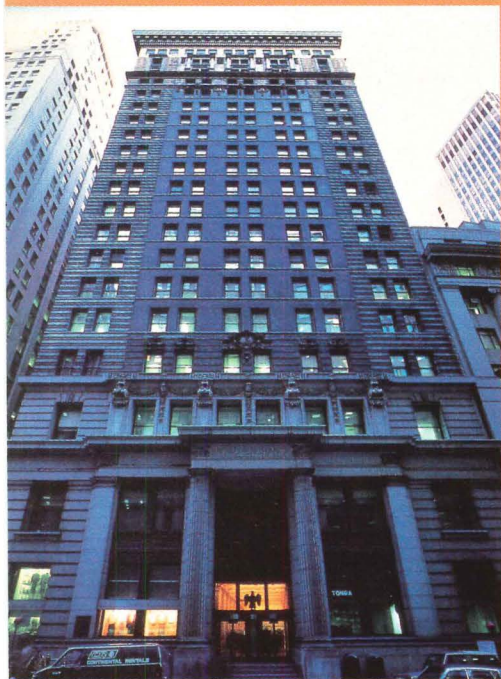
On the day the Dow Jones Industrial Average slid 187 points last October, the Wall Street Kitchen and Bar, two blocks from the New York Stock Exchange, was crammed with young stockbrokers standing in tight clusters, shouting in each others' ears much as they do on the trading floor. One would assume that the same scene had been replayed every night for years. In fact, before December 1996, when proprietor Tony Goldman, a pioneer developer of restaurants and nightclubs in New York's SoHo and Miami's South Beach, opened the Wall Street Kitchen and Bar in what was once the stately home of the American Bank Note Company, the Financial District was largely lifeless after five o'clock. The restaurant is the first trendy gathering place to appear in the neighborhood since seedy Irish bars with names like McStone's or Cassidy's Liquid Assets were in fashion.

In truth, until recently, the neighborhood was pretty close to moribund even before five o'clock. Two years ago, office vacancy rates in Lower Manhattan were as high as 25 percent. Entire buildings stood empty, or very nearly so. "For Sale" signs hung forlornly from monumental facades. The Financial District lost tens of thousands of jobs after the 1987 stock market crash, and also emptied out as back-office functions were shifted to Jersey City, the suburbs, or further afield. It was a neighborhood zoned dreary to suit the conservative tastes of bankers and financiers, but even they were relocating to livelier Midtown or the World Financial Center in nearby Battery Park City.

Then, in October 1995, New York made a decision to keep Lower Manhattan—birthplace of the city itself and its signature building form, the skyscraper—from sliding into oblivion. With the urging of the Alliance for Downtown New York (a business improvement district), the city created tax incentives to turn downtown office towers into residences. Tax breaks were also offered to businesses moving to the district. Stringent neighborhood zoning laws were relaxed to allow residential units as small as 900 square feet (1,800 was the old minimum) and entertainment venues.

The story of the Financial District is, happily, one about the emergence of adaptive reuse as a large-scale redevelopment tool. While industrial districts have been reinvented across the country, and some cities, notably Toronto, have turned empty office space into apartments, nowhere has a neighborhood with as rich an architectural heritage been so methodically made anew. Nowhere has as much been accomplished without the use of a bulldozer.

Even before the city took action, developer William Rudin began renovating the 1967 Emery Roth & Sons tower at 55 Broad Street, emptied by the demise of Drexel Burnham Lambert (Ivan Boesky's



Tax breaks turned 25 Broad into apartments.



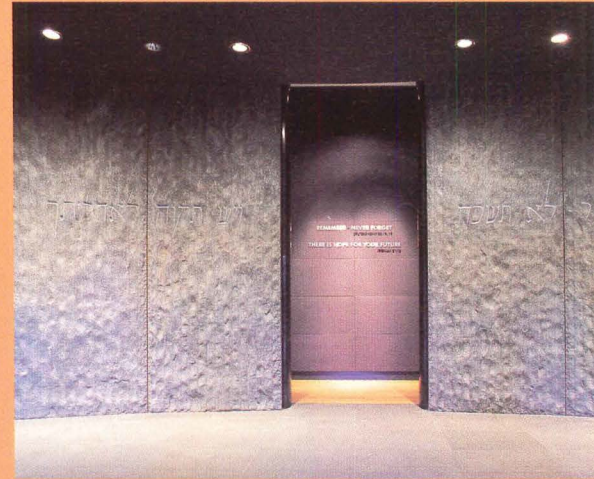
old firm) in 1990. Rudin stuffed the building with T-1 transmission lines, fiber-optic cables, and satellite hookups and renamed it the New York Information Technology Center. The center, with its lobby dominated by a wall of video monitors, has successfully attracted dozens of young electronic media firms as well as larger concerns such as Cyber Lab East, a new technology research center funded by Ericsson, a Swedish telecommunications company, and financier Henry R. Kravis. Since reopening in October 1995, the 55 Broad building has spawned imitators, six additional structures collectively marketed by the Alliance and the city's Economic Development Corporation with the slogan "Plug 'n' Go." The so-called Information Technology District, commonly known as Silicon Alley, is now home to about 250 high-tech firms.

The most dramatic change in the Financial District, however, is that people are beginning to call it home. In early 1996, at 25 Broad, Bruce Menin of Crescent Heights Investments became the first developer to reap tax breaks for residential conversion, carving 345 rental units from a 525,000-square-foot, turn-of-the-century Greek Revival tower. Now, 25 Broad's windows, covered with micro-blinds, glow at night with homey, incandescent light. According to the Alliance, 2,000 residential units are either completed or under construction and another 2,700 await conversion in both vintage skyscrapers and postwar curtain-wall buildings.

The only obstacle to establishing a neighborhood that can support supermarkets and dry cleaners is Wall Street's bullishness. Brokerages that withered away a decade ago are again expanding. Last September, two days after construction began on the residential conversion of 10 Hanover Square, an undistinguished 1970s office tower, construction stopped: The entire building had been leased by Goldman Sachs & Company.

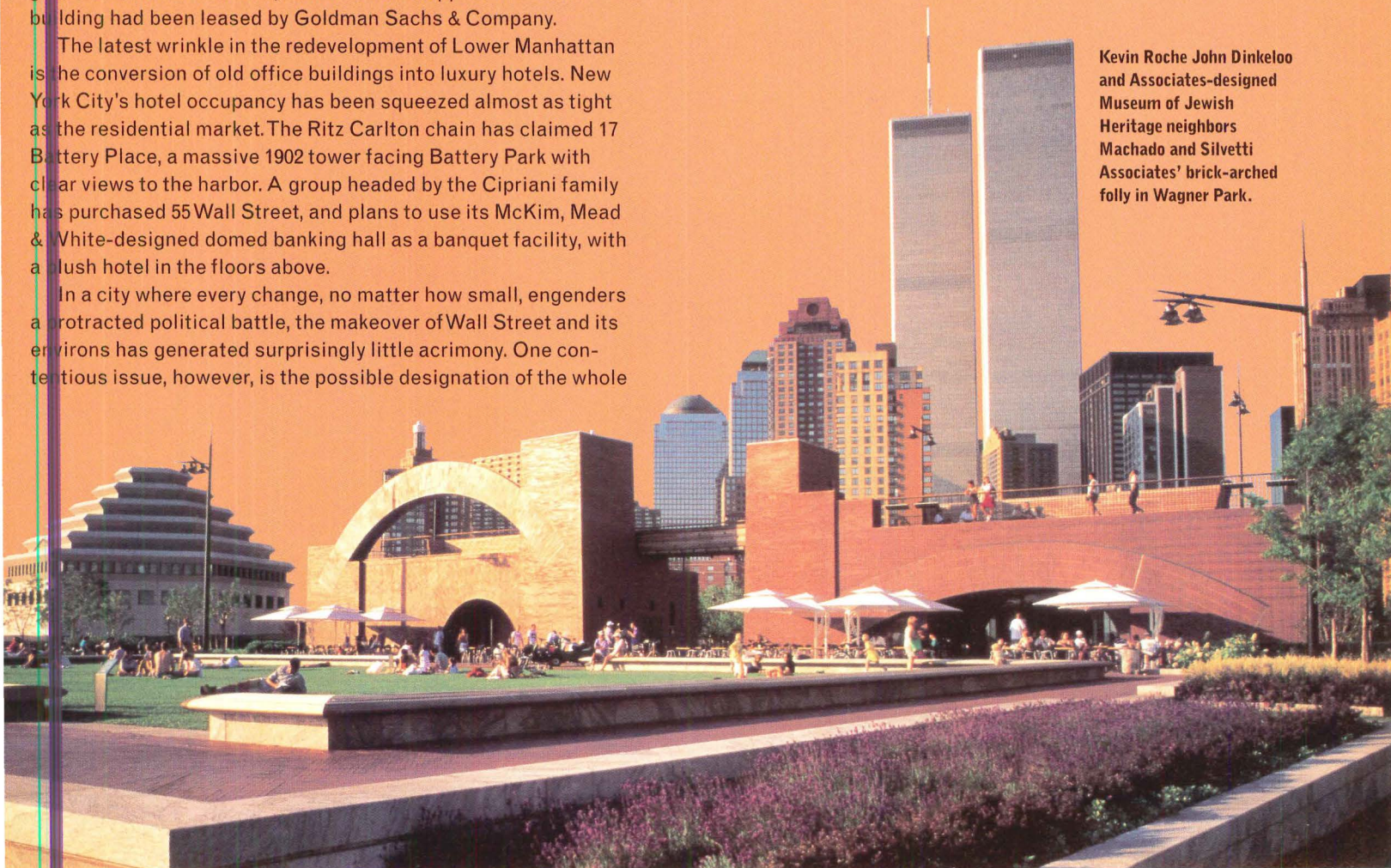
The latest wrinkle in the redevelopment of Lower Manhattan is the conversion of old office buildings into luxury hotels. New York City's hotel occupancy has been squeezed almost as tight as the residential market. The Ritz Carlton chain has claimed 17 Battery Place, a massive 1902 tower facing Battery Park with clear views to the harbor. A group headed by the Cipriani family has purchased 55 Wall Street, and plans to use its McKim, Mead & White-designed domed banking hall as a banquet facility, with a plush hotel in the floors above.

In a city where every change, no matter how small, engenders a protracted political battle, the makeover of Wall Street and its environs has generated surprisingly little acrimony. One contentious issue, however, is the possible designation of the whole



Jewish Museum interior broods in remembrance.

Kevin Roche John Dinkeloo and Associates-designed Museum of Jewish Heritage neighbors Machado and Silveti Associates' brick-arched folly in Wagner Park.



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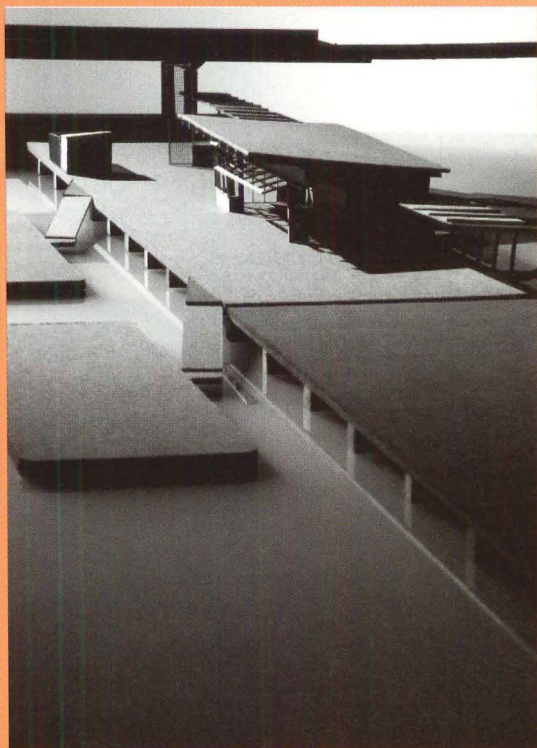
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Smith-Miller + Hawkinson's Pier 11 Terminal on East River, marked by supergraphics, converts to open-air pavilion.

district as a landmark, something that was seriously proposed in a book-length study conducted by Columbia University graduate students in 1996. The downtown alliance and real estate interests argue that landmarking the area will impede its commercial renaissance, while preservationists fear that market pressure will force less-enlightened development—like a return to the 1970s when Ernest Flagg's ornate Singer Tower was demolished and replaced by 1 Liberty Plaza, a black monolith designed by Skidmore, Owings & Merrill.

The one project in Lower Manhattan that has generated the customary amount of controversy is the Whitehall Ferry Terminal, from which the big commuter boats to Staten Island depart.

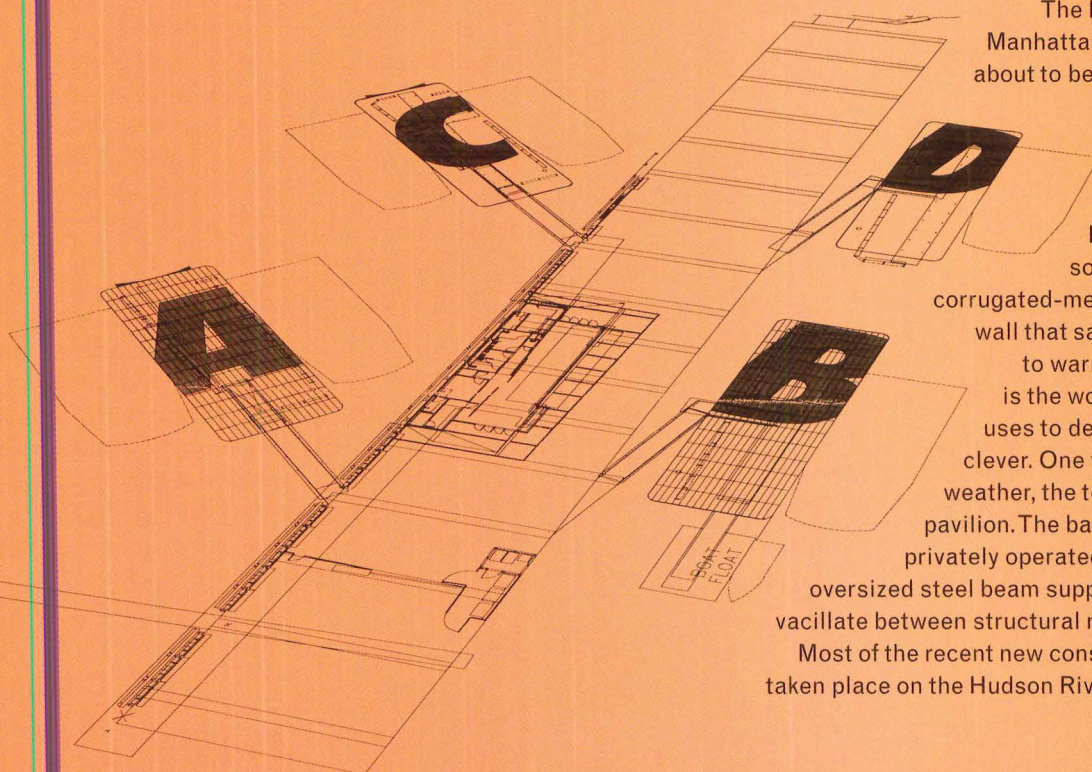
The present facility, built in 1954 and damaged by fire a couple of years ago, has nothing to recommend it. A design by Venturi Scott Brown Associates (VSBA) with Anderson/Schwartz Architects, featuring a barrel-vaulted interior and an outsized, 120-foot-diameter clock, was chosen in a 1992 competition, while David Dinkins was still mayor. It was scheduled for completion this year. The first design drew fire from Staten Island Borough President Guy Molinari, who simply detested the clock. After Molinari's fellow Republican Rudolph Giuliani was elected mayor in 1993, a victory attributable to the solid support of Staten Island, \$30 million dropped out of the terminal's budget and the architects were forced to redesign.

The new version is a low-slung, Modern building unremarkable but for the flashing electronic display facing the water, a detail Molinari deemed "outrageous." But the project—now scheduled for completion in 2001—is going ahead, though minus the signage and VSBA, who dropped out, leaving Frederick Schwartz of Anderson/Schwartz in charge. Molinari, meanwhile, has unexpectedly developed an enthusiasm for visionary architecture: He is now backing Peter Eisenman's plans for a combined ferry terminal and museum on the Staten Island side of the water, a glowing, amorphous building that promises to be New York's answer to Frank Gehry's Guggenheim.

The happiest surprise in Lower Manhattan is yet another ferry terminal, one about to be built on the East River at the foot of Wall Street. Designed by Smith-Miller + Hawkinson Architects in cooperation with Hayden-Wegman Structural Engineers, the plans show a simple, south-facing shed with a slanted corrugated-metal roof, glass walls, and a north wall that says "PIER 11" in letters tall enough to warm Robert Venturi's heart. "Gritty" is the word architect Henry Smith-Miller uses to describe the style. But it is also clever. One wall swings away so that, in fair weather, the terminal becomes an open-air pavilion. The bare-bones building, to be used by privately operated ferries, is full of details—an

oversized steel beam supporting the roof, for example—that vacillate between structural necessity and rhetorical flourish.

Most of the recent new construction in Lower Manhattan has taken place on the Hudson River waterfront, where the landscape



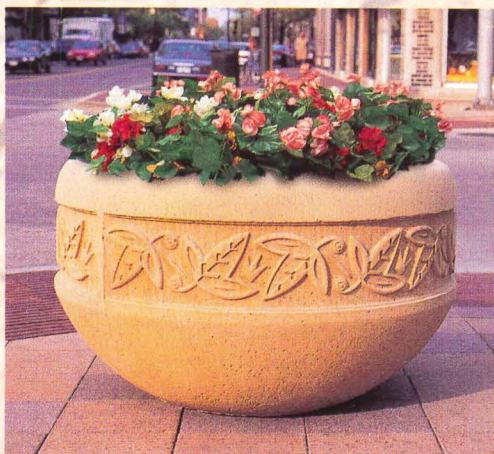
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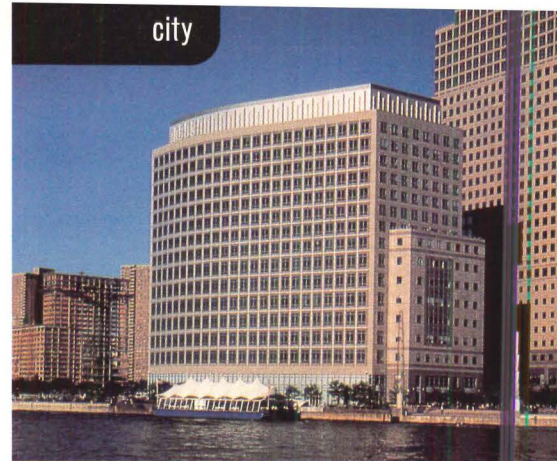


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Skidmore, Owings & Merrill designed Mercantile Exchange building along Hudson River's curve.

is filling with curiosities. At the southernmost tip of Battery Park City, tired Rollerbladers laze beside a macabre Louise Bourgeois sculpture of disembodied hands and arms, cast in bronze, strewn about a series of terraces as casually as misplaced gloves. Nearby, a folly designed by Machado and Silvetti Associates, a series of brick arches reputedly intended to resemble ruins, houses a small café, rest rooms, and a pleasant second-story terrace.

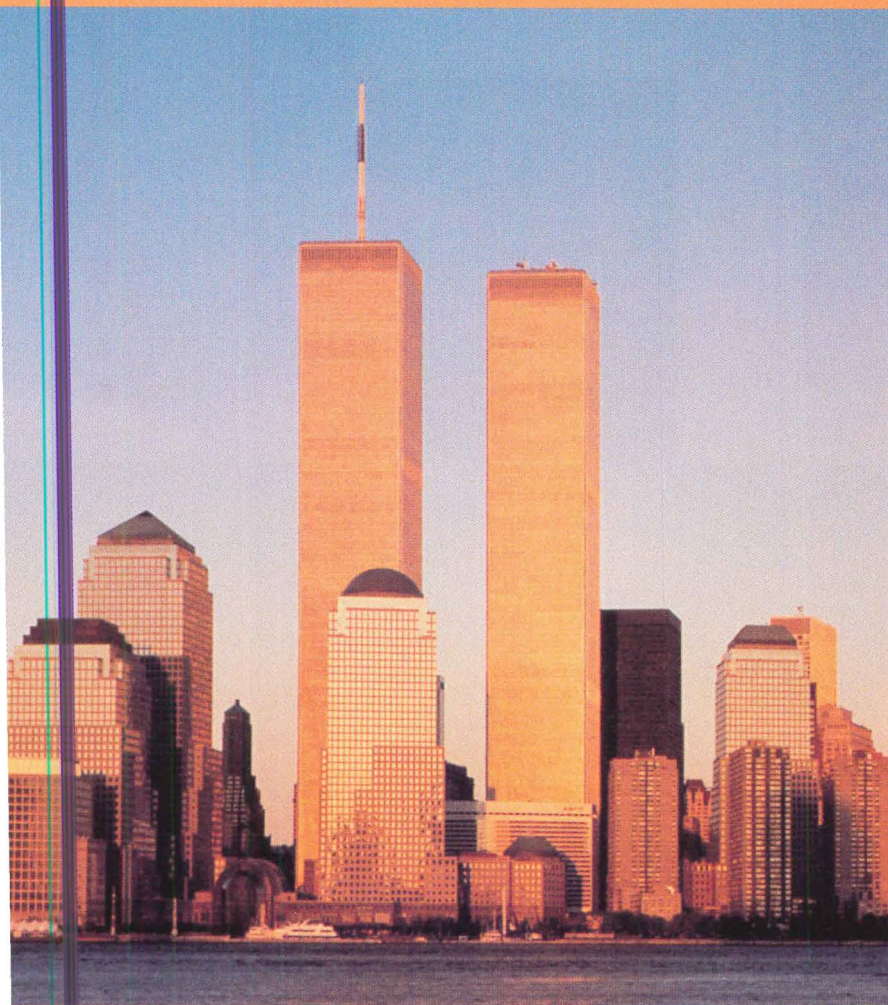
Immediately to the north is the new Museum of Jewish Heritage—A Living Memorial to the Holocaust, which opened its doors last September. The form of the building—a somber, gray-granite hexagon with six windows on each face, topped by six wedding-cake tiers—alludes to the six-pointed Star of David and commemorates the 6 million Jews who died in the Holocaust. Designed by Kevin Roche of Kevin Roche John Dinkeloo and Associates, this smallish institution of just 30,000 square feet has the outward appearance of a mausoleum. Roche's commission was a classic double-bind: While one of the museum's three exhibition floors is devoted to the story of the genocide committed by the Nazis, the other two floors are brimming with artifacts representing the richness of Jewish culture in the 20th century before and after the Third Reich. Although it's unreasonable to expect a memorial to the Holocaust to be lighthearted, it seems equally wrong to erect a museum celebrating Jewish life that speaks so insistently of death.

In some respects, the most successful new building in Battery Park City is also the most conservative. In July, the Mercantile Exchange moved from the World Trade Center to a new building

western edge of the World  
 ial Center. Designed by Skid-  
 Dwings & Merrill, the 15-story,  
 e-clad building looks, at first  
 like a deferential bookend  
 neighborhood, Cesar Pelli's decade-  
 te of towers. The Mercantile  
 age, however, possesses a  
 some how facade that follows  
 contours of the river and gains  
 ter from silvery aluminum  
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 spite his construction boom,  
 l story of Lower Manhattan  
 s to do with new buildings,  
 ith the reestablished access  
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 is not just tax incentives (and  
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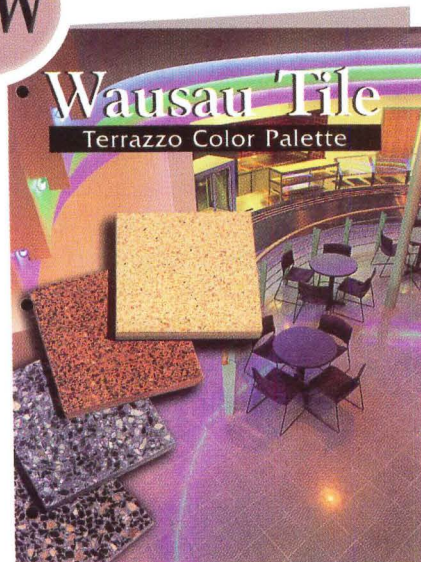
The Alliance for Downtown New  
 York, in a stroke of genius, devised a  
 method to lure ordinary New Yorkers  
 into an area formerly shunned as a gray-  
 flannel ghetto. Two Sundays a year, the  
 alliance sponsors self-guided walking  
 tours of the Financial District. A booklet  
 and map direct visitors to notable build-  
 ings, kept unlocked for the occasion, and  
 the tour permits access to places gener-  
 ally off-limits to the public, such as the  
 mosaic-encrusted reception hall of the  
 1931 Bank of New York Tower and the  
 executive dining rooms on the 60th floor  
 of the 1960 Chase Manhattan Plaza. New  
 Yorkers and tourists alike can be found  
 wandering the once-dreary concrete  
 canyons, gawking merrily as if they were  
 in Paris or Rome. *Karrie Jacobs*

*Karrie Jacobs is a contributing editor of  
 New York Magazine, where she writes the  
 Cityscape column.*



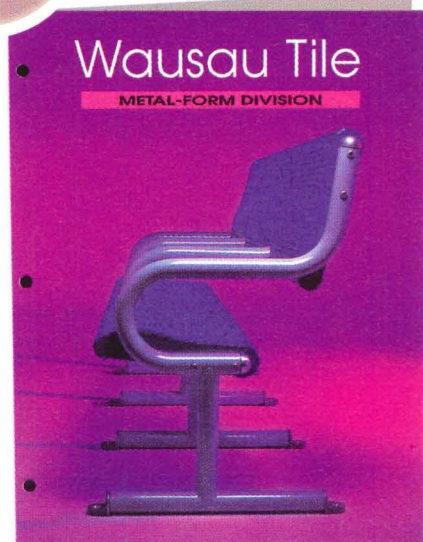
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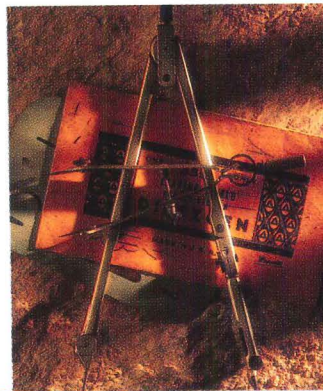
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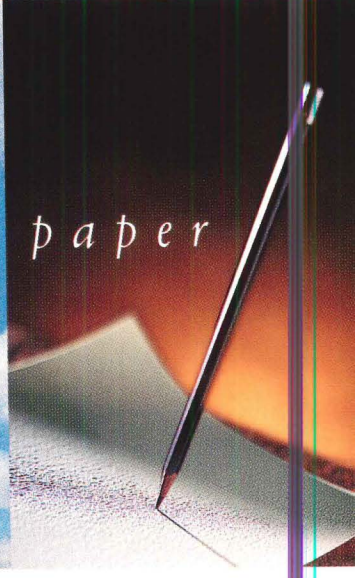
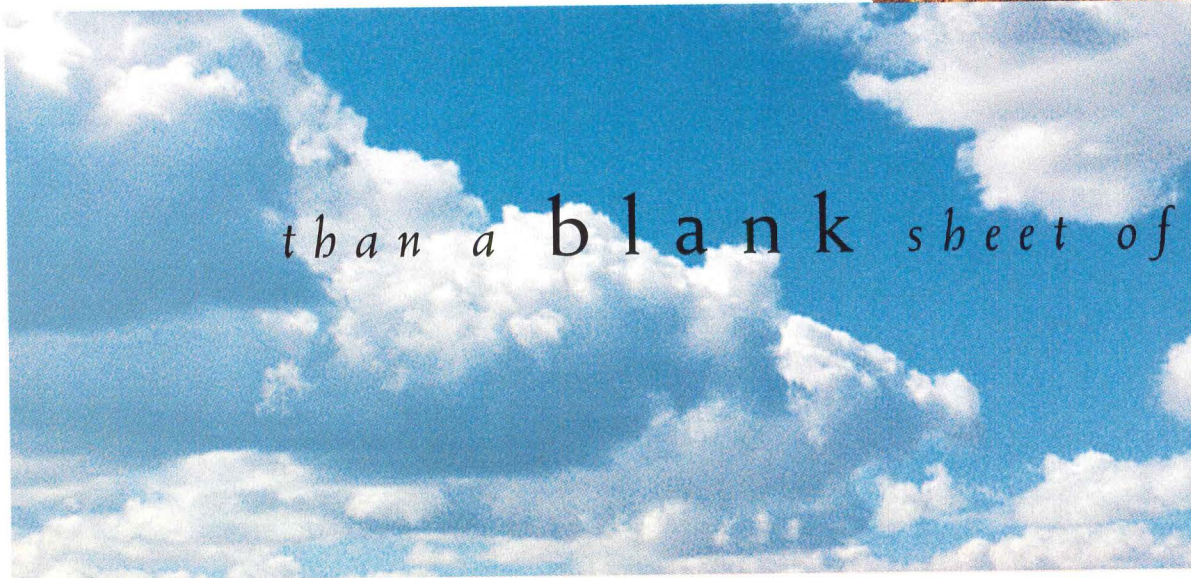


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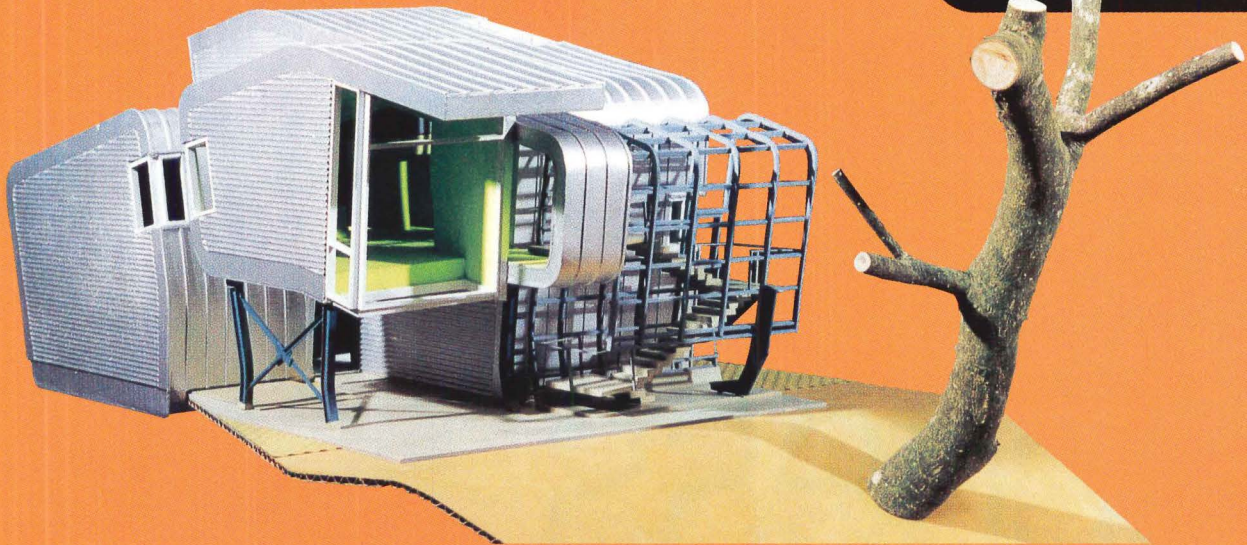
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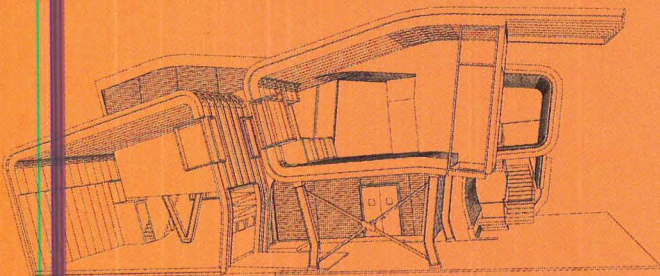
## Woodplane Workshop Houston, Texas Interloop Architects

The lack of zoning in Houston has resulted in strange juxtapositions of building types: Office towers loom over ranch homes; art museums nestle among strip malls. Many local clients and architects have developed a siegelike design mentality in response, commissioning buildings that ignore their incongruous neighbors. Principal Mark Wamble of Interloop Architects, by contrast, levels in the city's unorthodox urbanism. His new office and workshop for a specialty construction firm is a typological and formal hybrid that attempts to reconcile the differences between nearby houses and light industrial buildings.

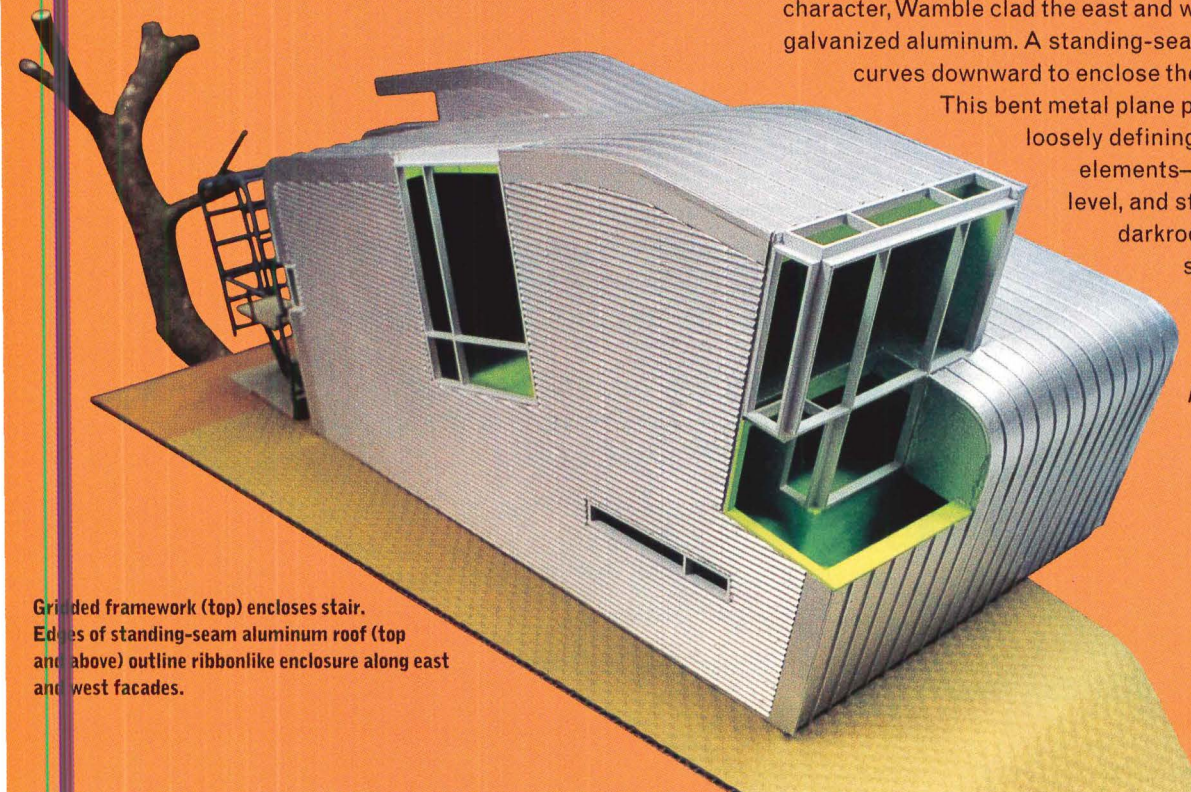
To advertise the 3,800-square-foot building's factorylike character, Wamble clad the east and west facades in corrugated galvanized aluminum. A standing-seam roof of the same material curves downward to enclose the north and south facades.

This bent metal plane periodically parts and shears, loosely defining the different programmatic elements—a wood shop on the first level, and studios, a computer lab, and darkroom on the second. The workshop's broken-up massing and small square footage maintain the domestic scale of neighboring houses.

*Ned Cramer*



North-south section



Gridded framework (top) encloses stair. Edges of standing-seam aluminum roof (top and above) outline ribbonlike enclosure along east and west facades.



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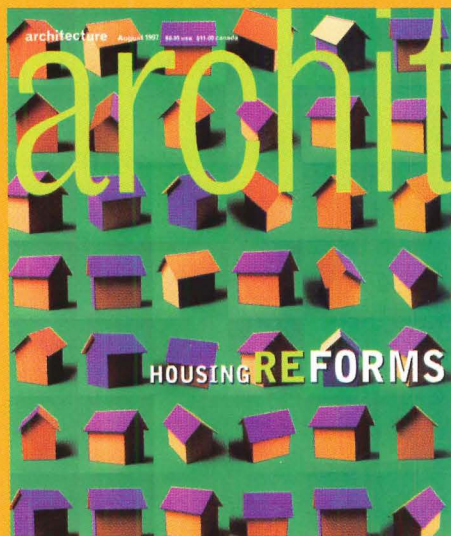
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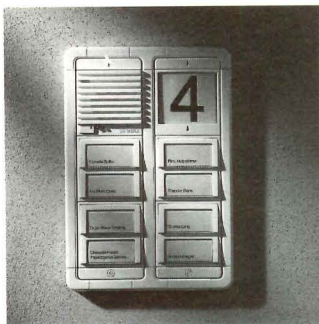
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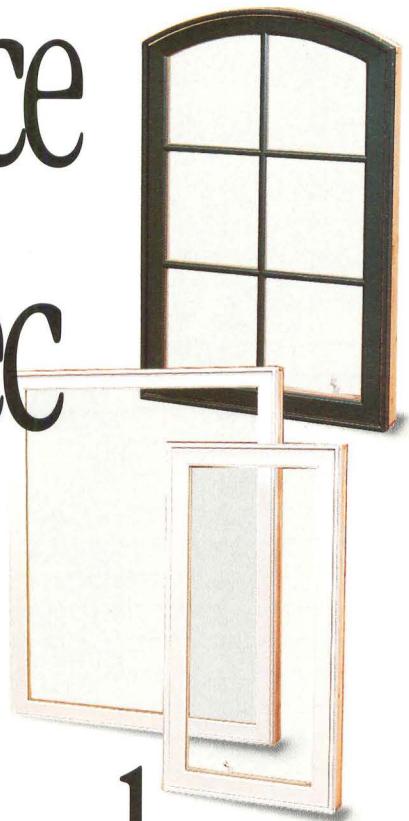
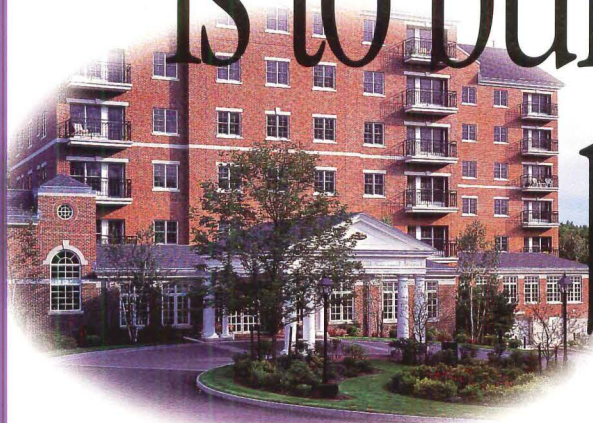
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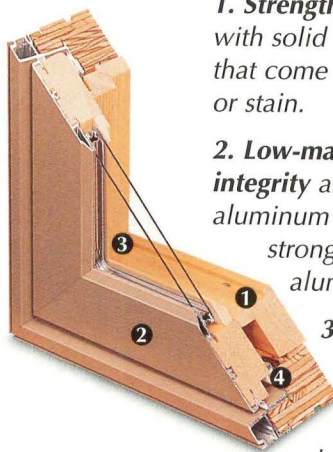
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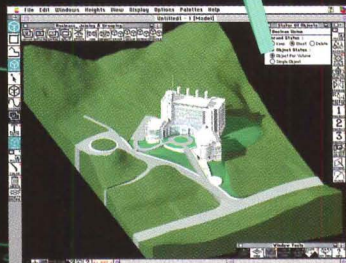
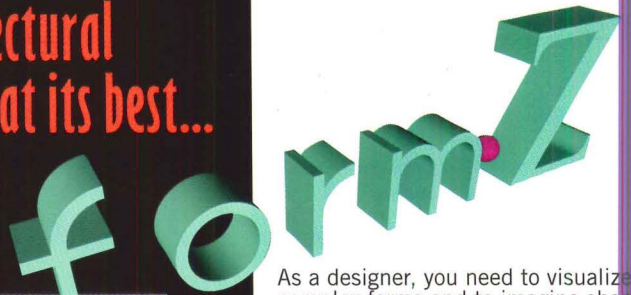


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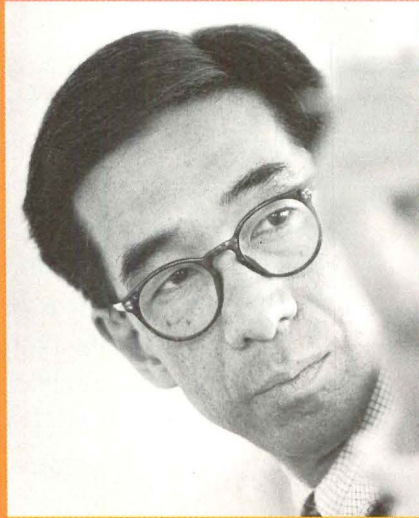
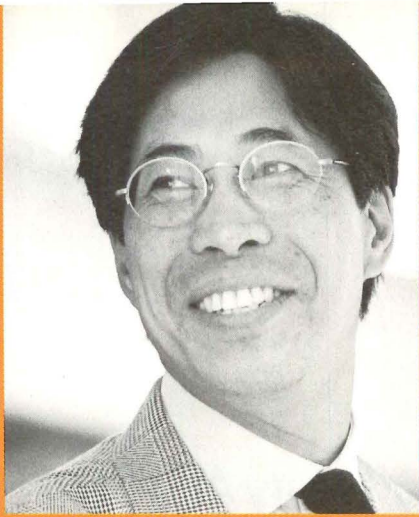


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*Li Chung "Sandi" Pei (left) and Chien Chung "Didi" Pei (below left) come to architecture with an imperial name. Their father, I.M. Pei, is possibly the world's most famous living architect, and certainly one of its most widely respected. For years, the Harvard-trained Pei siblings labored quietly in their father's namesake firm, until deciding to strike out on their own in 1992. With I.M.'s assistance, they quickly secured a major banking commission in Jakarta, Indonesia, a project that is now under construction. Since then, other commissions have followed, many of them in Asia, and their office, the Pei Partnership, has mushroomed to nearly 40 people. Yet, as with all children following in the professional footsteps of famous parents, the younger Peis find themselves struggling to establish their own architectural identity, while attempting to build an international practice.*

**ARCHITECTURE: Why did you leave your father's office?**

**DIDI PEI:** I was there for almost 22 years. By 1992, I was an associate partner and had just completed running the Louvre. I was working on a museum in Luxembourg that was put on hold, and a project in Bilbao that also stopped. At that time, the economy was in the dumps. When a firm is retrenching, they're not going to name new partners. My father, who had just retired from the firm, offered help in going out on my own. He suggested I take Sandi with me.

**SANDI PEI:** I had thought about leaving two or three years before Didi [after 18 years with the firm], but it took time for me to do it—partly because I was working on some exciting projects, partly because of trepidation. Working in my father's office, there was only so much that could be perceived as my own contribution. I wanted a chance to do something for myself. My father's offer to help became irresistible.

**How is your office structured?**

**SP:** It's a partnership. We start off with a core group of designers until the basic concept and language of the building are established. Then the team grows. Keeping team members throughout the project is advantageous for consistency, quality of detailing, and knowledge of the intricacies and history of the project.

**DP:** The practice is modeled on our father's, which is understandable since we had our formative years there. We build a team that runs all the way through to the end of the project, as opposed to offices that give the working drawings to somebody else.

**Did you always want to be architects?**

**DP:** No, I majored in physics and math in college.

**SP:** It came a bit earlier for me. I was into art at a younger age. I took more architecture classes in college than Didi.

# The Pei Dynasty

**Two of I.M. Pei's sons struggle to make a name for themselves in a world where their name already has a life of its own.**



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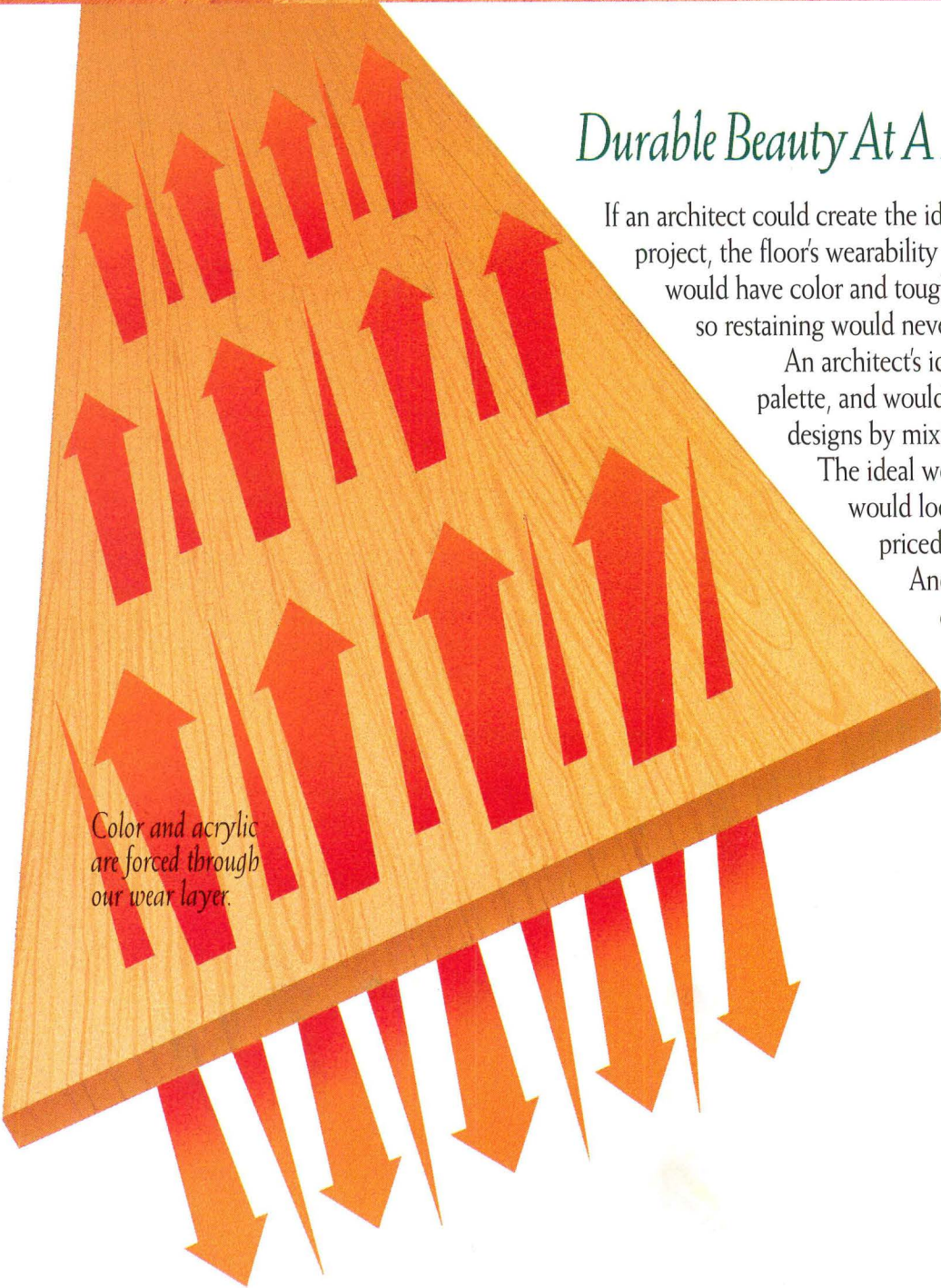
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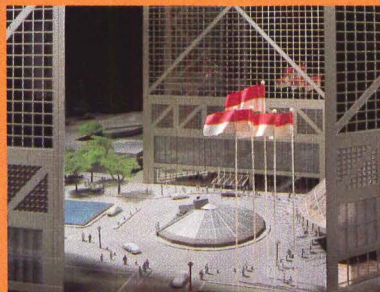
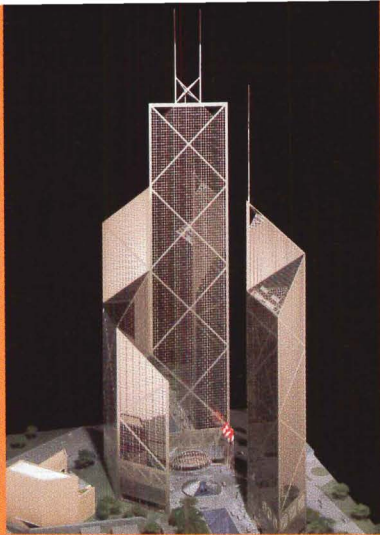
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# The Strongest Survive





Recent Pei Partnership projects include BDN Center in Jakarta (top and center), UCLA Medical Center (above), and Bank of China headquarters in Beijing (below).

**What is the philosophical stance of your firm?**

**SP:** We are very proud of the Modern movement. We look at it as a well from which we still want to draw.

**Is there a type of work that you'd like this firm to pursue?**

**DP:** The key is the client. You want to get clients that have aspirations for great architecture.

**SP:** We've been working on projects of all different scales, and I think that's the kind of practice that we'd like to continue.

**How are you involved individually on each of the firm's projects?**

**DP:** One of us is the principal designer on each project. The other is a resource, the person you bounce ideas off, the person who is free to comment when he goes through the drafting room. That's what gives a certain stylistic coherence to the whole office.

**Isn't there an inertia that works against a strong stylistic identity in corporate offices?**

**DP:** It depends on the client. If you are fortunate enough to pick your clients, and perceptive enough to pick those that really want something special, then you can do it. My father was adept at finding good clients that allowed him to make great architecture. If there's one thing we hope to inherit from him, it's that ability.

**SP:** My father was always able to bring along earlier clients because they trusted that the work would have order and serenity. That development is a slow process: You don't jump from one thing to another. We're trying to develop an architectural language grounded in platonic principles of proportion, light, and space—ideas we owe to our father. I always enjoy going into his buildings because of their composure, serenity, and resolution.

**Does your name work to your advantage?**

**DP:** We certainly have name recognition, but we have to be very careful about it. If it can get you in the door, that's good. But after that, people look at you and they realize you're not I.M. Pei.

**Are you laboring in your father's shadow?**

**DP:** I try to reap the maximum advantage of it, and minimize the disadvantage. Part of the way I minimize the disadvantage is by putting my head in the sand and pretending that it isn't there.

**SP:** We're under more scrutiny because of our name. We're not unhappy about it. The advantages outweigh the disadvantages.

Certainly, my father is a model of ethical propriety and a great architectural talent. Because of that, people are willing, at least initially, to admit us into their room to discuss a project. He has a reputation that people are willing to extend to us, but it will go in a split second if we don't perform.

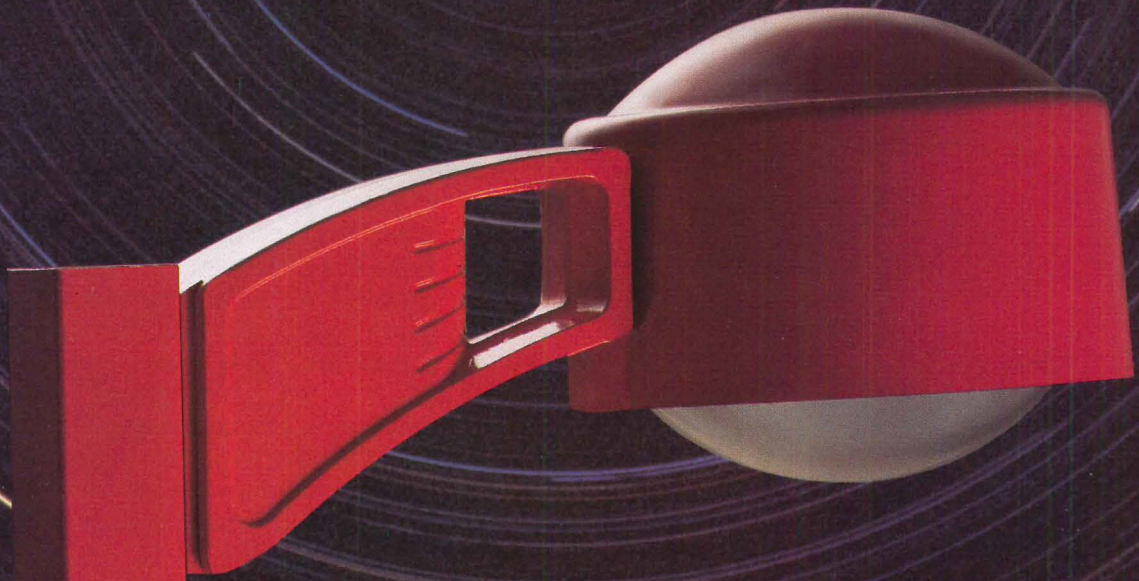
**How do you get out of the shadow?**

**SP:** We have to take our time and find the right clients and a good staff if we're going to do good work. If we can get through the first years, we will demonstrate that we have the right stuff.

**DP:** A certain amount of what you do obviously, like anything, is based upon luck. Sometimes it's based upon talent and you just try to make sure that your talent helps your luck at the end of the day.



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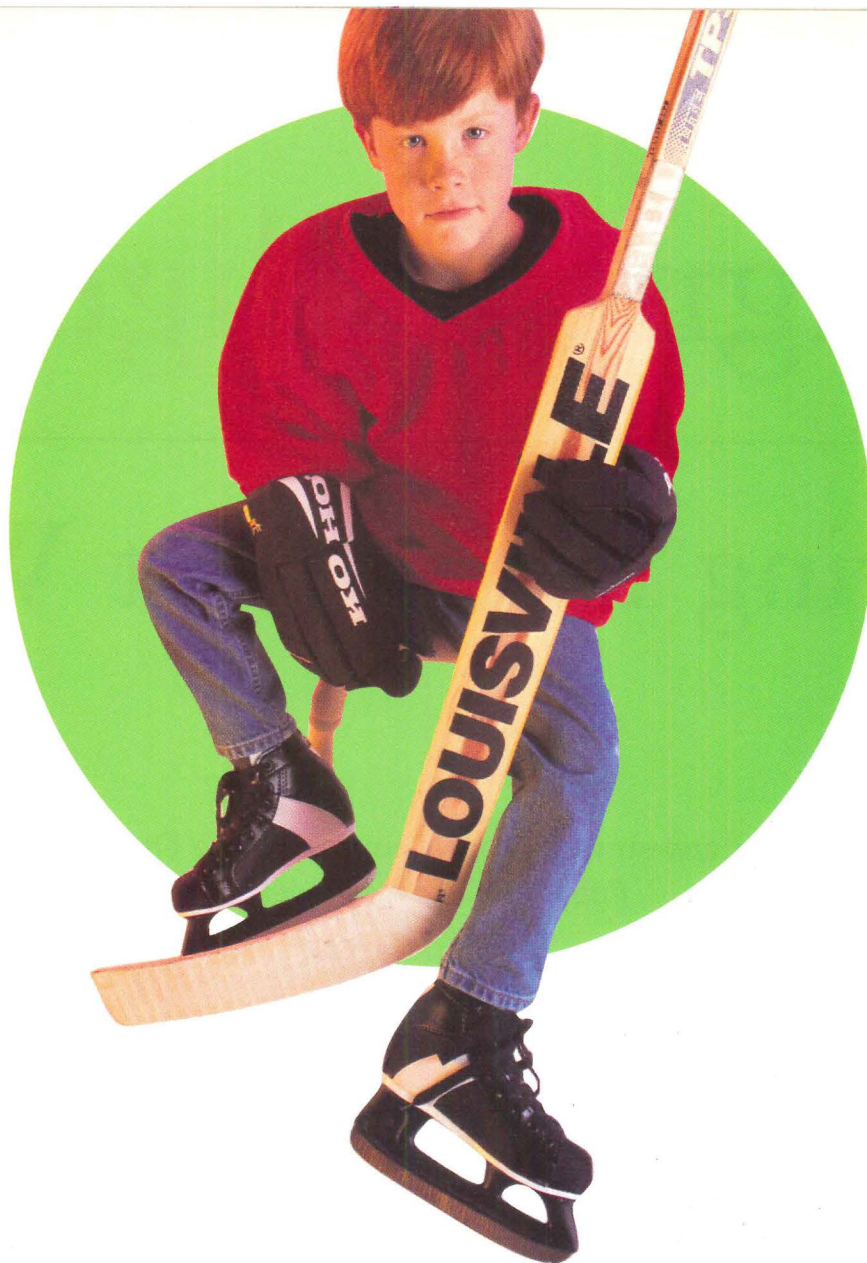
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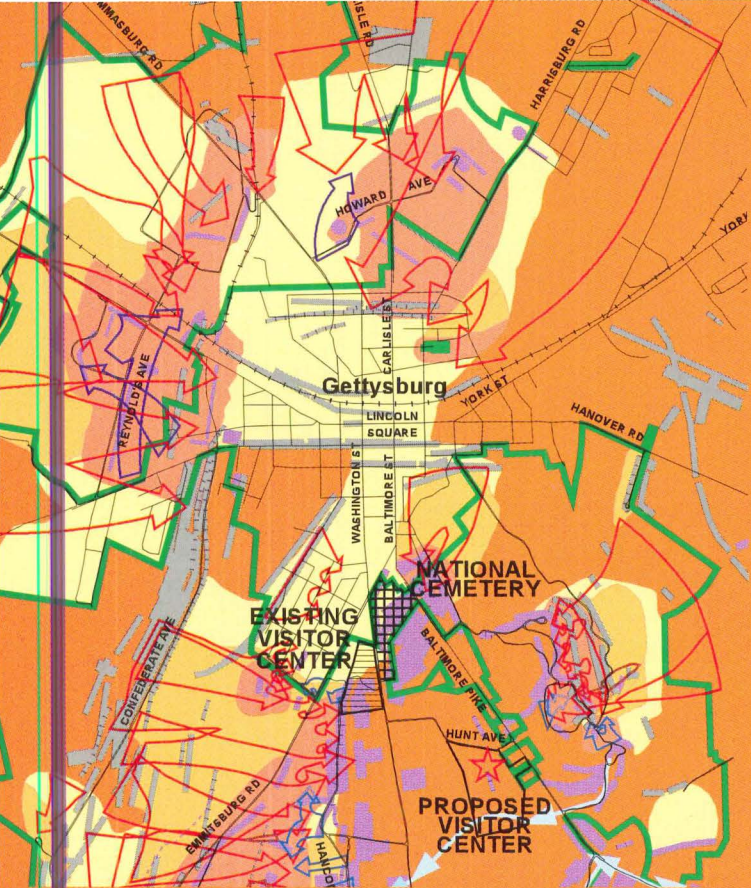
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In 1994, outraged preservationists blocked the construction of Disney's historical theme park near Manassas National Battlefield Park in northern Virginia. Now, a similar controversy is raging over the proposed construction of a \$43 million visitors center and museum on 47 acres of private land within the Gettysburg National Military Park in Pennsylvania. Shockingly, the perpetrator of this potential desecration is the National Park Service.

The agency plans to demolish the current Gettysburg visitors center, including a sadly deteriorated Richard Neutra pavilion (1962). The Park Service claims the pavilion is "not an exceptional example of Neutra's design" and is located along an important battle line that the agency plans to restore to its 1863 condition. University of California, Los Angeles, Professor of History and Architecture Thomas Hines, who wrote a 1982 Neutra biography, argues, "If there's a strong consensus that the building is incorrectly sited on sacred ground, that's a substantive argument. But I would regret losing a very good building by a Modernist master."

In 1996, the Park Service solicited proposals from private developers for a new center. In November, the agency chose the proposal of a consortium led by contractor Robert Kinsley that includes National Geographic Television, Destination Cinema, and Baltimore architect Zeidler Roberts Partnership for a massive, 92,890-square-foot complex on a new site near the existing visitors center, but removed slightly from the battlefield.

The new site, which is clearly visible from the heart of the battlefield, is hardly an improvement on the present site. And the Park Service's assurances that the center's as-yet-undeveloped design will be "hidden" from the most sensitive areas of the park

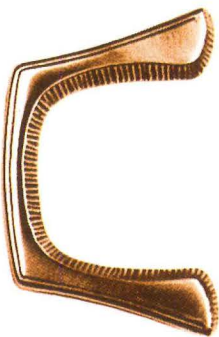
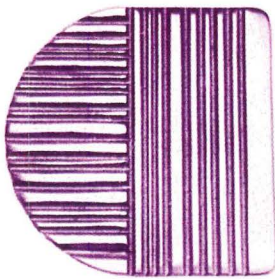
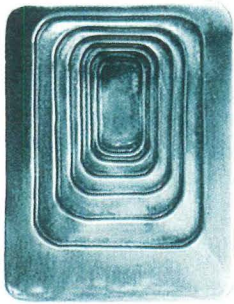
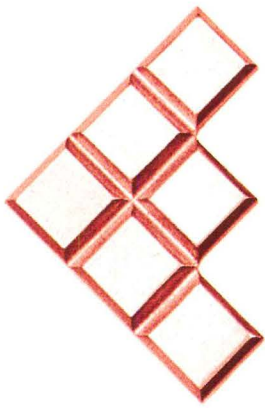
# Battle of Gettysburg

**A proposed new visitors center will raze a Richard Neutra pavilion and pump slick commercialism into a sacred battlefield.**

are belied by its honky-tonk program: an IMAX Theater, interactive exhibits, shops, restaurants, and parking. The proposed visitors center will bring a commercial ambience perilously close to the site of the bloodiest battle ever waged on American soil.

Assuming the Neutra building is beyond repair, as the Park Service asserts, at least it's not too late to change the location of the new visitors center. The proposal faces a lengthy approval process. The agency can and should consider other locations that would less directly affect the battlefield's character, while bringing visitors close to the site of historic Civil War events. The request for proposals notes that the historic core of downtown Gettysburg is "of special concern to the National Park Service." With careful planning, a new visitors center and museum might provide a welcome boost to this small town's economy, instead of introducing unwelcome sprawl onto a historic site. *Ned Cramer*

Site plan (top) shows proposed visitors center's proximity to Gettysburg battlefield. Arrows and shading track battle's progression and intensity.



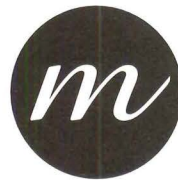
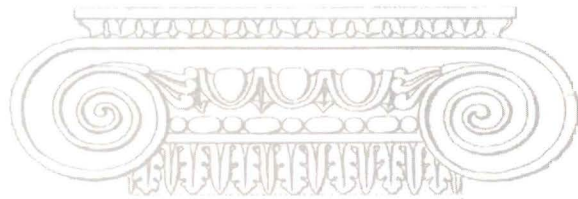
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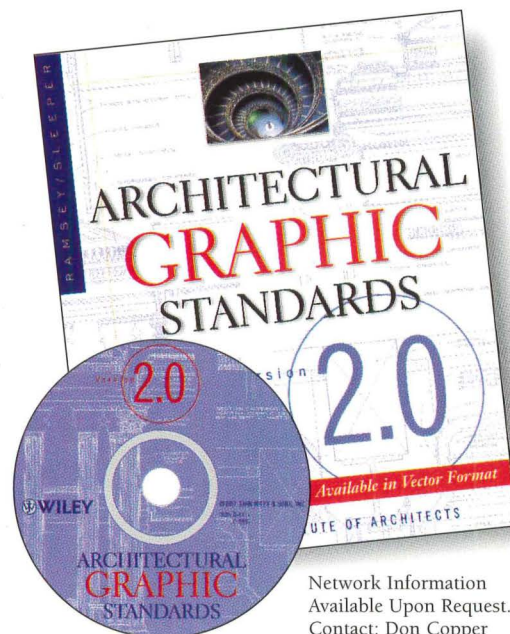
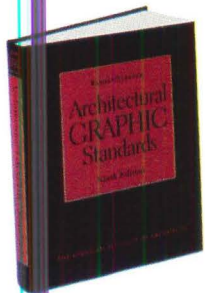
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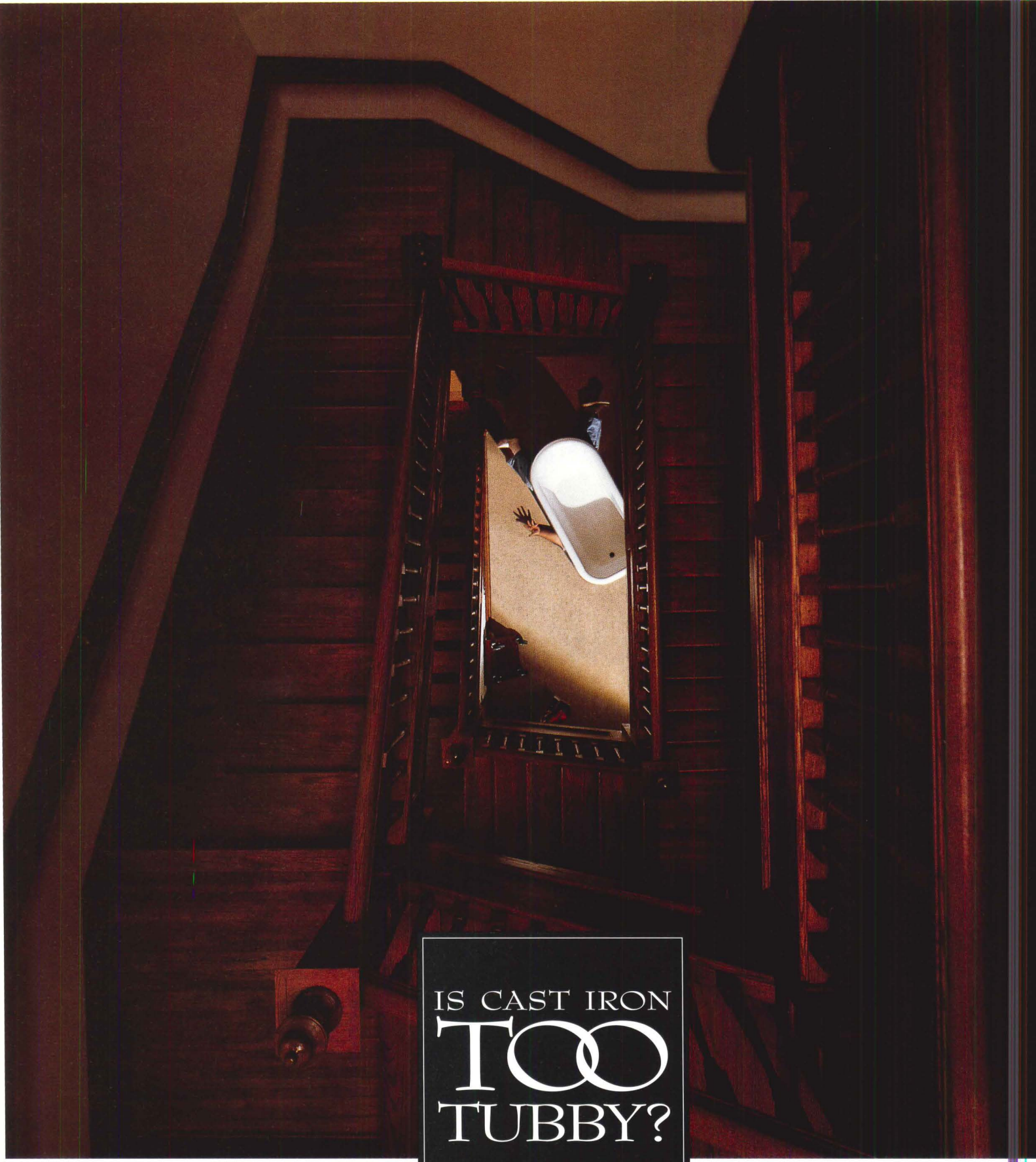
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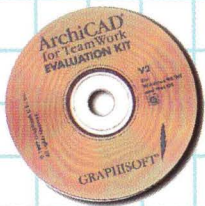
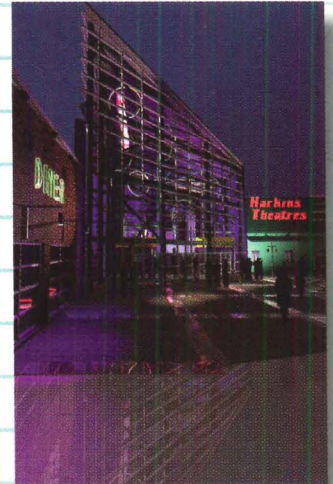
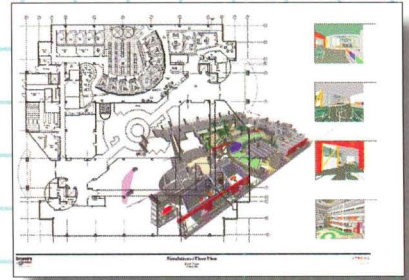
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# AMERICAN EXPORTS

Riding a wave of economic prosperity, American architecture is reasserting itself abroad as an important cultural commodity. Though foreign practitioners have trouble seeing through the long shadows cast by Wright and Kahn, an inventive cadre of top U.S. designers is introducing a fresh—yet distinctly American—brand of Modernism to foreign shores. I.M. Pei's superlative Miho Museum transports his mastery of sublime geometries onto a Japanese mountaintop. Morphosis brings slinky sex appeal to a tower in downtown Seoul and organic form to a visitors center in suburban Taipei. And Steven Holl's emerging Kiasma museum in the historic heart of Helsinki consummates an exuberant romance between shadow and light. When practicing abroad, American architects today remain as provocative as their famous forebears.



# Is Asia's BOOM over?

Since Asia's currencies collapsed and its stock markets nose-dived this past fall, American architects have been biting their nails hard. In firms nationwide, phones that rang daily like cash registers with calls from new Asian clients fell ominously silent. For NBBJ in Seattle, Managing Partner James O. Jonassen observes gravely, "the work in Southeast Asia came to a grinding halt."

As 1997 drew to a close, many firm principals found themselves scurrying to Asia to meet with clients, take measure of the turmoil, and salvage outstanding fees. Most architects returned home predicting that the region's crisis would get worse—and stay bad for a while—before it improves. "I don't think we've seen the peak of developers stopping work," ventures Patrick MacLeamy, executive vice president for Asia/Pacific practice at Hellmuth, Obata & Kassabaum (HOK) in San Francisco. "If these currency problems [in Asia] continue for a long time, that could seriously affect our business in the area." The financial chills could last up to five years, predicts Eugene Kohn of KPF. "At a minimum," he says, "two years."

Real-estate woes across much of Asia were not unlucky ripples from the region's financial disaster—they were one of its chief causes. Developers in Asia were borrowing and building too much, and American architects were feasting on the excess. Apart from huge public investments in infrastructure, most private construction hasn't been for growth-generating factories and plants, but for speculative office buildings, hotels, mixed-use centers, high-rise condominiums, and new towns, recklessly financed with debt.

Some of Asia's biggest banks, abetted by lazy or corrupt regulators, had anywhere from 10 percent to 35 percent of their loans out on heedless property deals. After years of "miraculous" growth rates of 6 percent to 12 percent in Asia's national economies, signs of regional troubles ahead were clear by last spring: Inflation kicked in and growth of exports and gross domestic product roundly fell in countries throughout the Pacific Rim.

## Thailand started it

The first country to fall was Thailand, which had marked annual growth upward of 6 percent in recent years. Bangkok's wave of building consumed an estimated one-third of the country's \$89 billion in debt, which has doubled over the past five years, helped along by graft, forgery, and loose rules about disclosing the nature of lending transactions. When the Thai currency, the *baht*, imploded in July, the government closed 58 of the country's 91 specialty finance companies, whose officers were soaking up to their neckties in soured property deals.

In Thailand, "we started seeing hotels and condos going up in a glut, without rational support from demand," observes William Karst, CEO of Callison Architecture in Seattle. Callison worked a lot in Thailand starting in 1989 but seeing danger signs, pulled

architects' practice across the Pacific. And the pain is likely to get worse before it gets better.

By Bradford McKee



out in 1994. "It was a business instinct that served us well," Karst adds. Today, Bangkok is rife with "see-through" empty buildings. The cost of bad debt to the Thai people, economists report, totals about \$19 billion, or one-sixth of the country's gross domestic product.

Thailand quickly had to borrow \$7 billion from the International Monetary Fund (IMF) in August to bail itself out of debt.

Thailand's won't be the only IMF bailout following Asia's currency and stock-market crashes: In October, Indonesia got \$30 billion in emergency loans, of which \$10 billion is IMF money; and in December, South Korea, after much denial about the epic scope of its debt, accepted a record \$57 billion IMF rescue plan. These bailouts inevitably will force stricter monetary policy by debtor countries, meaning that interest rates will rise to rein in the free flow of money. Bank loans will be even harder to obtain for future construction. As a result, a round of overdue belt-tightening will eliminate all but the strongest Asian developers—

those with plenty of hard cash targeting real demand for property. Most highly leveraged, novice developers will dissolve, as will banks that had more bad loans on their books than good ones.

"The market has made a bit of a correction, weeding out the young, upstart developers," remarks T.J. Gottesdiener, the partner overseeing a dozen Philippines projects at Skidmore, Owings & Merrill. "It's fair to say we're all being a little cautious about running over for the next project."

#### Caution in Manila

Most architects are running over now trying to control damage to their firms. The situation varies by country. The Philippines, says Gottesdiener, is not a basket case like Thailand because its economy and government have stabilized since the early 1990s. Virtually no office or residential development occurred while Ferdinand Marcos was president from 1965 to 1986. Pent-up demand has driven the rapid growth of Manila's Makati financial district, where American-designed towers have sprouted like sunflowers. It has also fueled conversion of Fort Bonifacio, an old military post next to downtown Manila, into a new city center, master-planned by HOK with buildings by KPF and Pei Cobb Freed & Partners.

NBBJ and HOK each have had projects stop in the Philippines, however. SOM watched one project in the country stop in the planning stages, while two projects under construction



slowed down—a typical pattern. Most projects that have broken ground, architects report, are likely to push ahead, but those for which dirt hasn't yet moved will likely lie dormant indefinitely. "Anything close to construction is continuing for us," contends Louis Hedgecock, partner of Brennan Beer Gorman Architects (BBGA) in New York.

BBGA works heavily in Indonesia designing hotels and offices, including the new Jakarta Stock Exchange. But Jakarta is now overbuilt—and hung over with debt. Construction in Indonesia faces a lull for the foreseeable future, depending on the progress of the country's bailout. After its rescue package was announced October 31, the Indonesian government closed 16 of 420 private banks ruined by lousy property loans. In recent weeks, property values have dropped some 40 percent in Indonesia, real-estate analysts report.

#### Malaysian malaise

Indonesia, economic experts observe, is suffering not so much for its own mistakes as it is for the lunacy of speculators from abroad—especially from Thailand and Malaysia. Debtwise, Malaysia is not as embarrassed as Thailand, but



investors in the country have run for their money fearing tougher monetary controls by the government. As a result, the Malaysian currency, the *ringgit*, dropped 4 percent in one day last autumn, devaluing by 25 percent against the dollar; Kuala Lumpur's stock market fell 40 percent. In terms of property, the city has become a buyer's market, though overbuilding is not as extensive in Malaysia as in neighboring countries. Indeed, Malaysia's foreign debt is less than half that of Thailand's, and the country still expects to grow by 6 percent this year, having posted 8 percent to 12 percent growth in recent years.


Big construction projects in Kuala Lumpur, however, are either slowing down or on ice. The twin Petronas Towers completed this year by Cesar Pelli & Associates are about half full. Plans in the city for a mile-long shopping mall, KL Linear City, are reportedly on hold at least until Malaysia catches its breath. But market experts remain pessimistic about the country's economy until it raises its interest rates enough to strengthen the currency.

#### South Korea: sick tiger

For now, the greatest fears reside with South Korea. One of the world's biggest economies, South Korea has seen growth

average an annual 8.6 percent for the past 30 years, owing to leading industries such as semiconductors and shipbuilding. Today, South Korea's \$57 billion IMF bailout may not cover its debts, which are estimated as high as \$100 billion. There's no telling yet how President Kim Young Sam's successor, who was to be elected at press time on December 18, will manage the crisis. Many of South Korea's ills stem from the mistakes of its *chaebol*, closely held conglomerate companies such as Hyundai, Daewoo, LG, and Samsung, that control most of the nation's industries through overleveraged diversification. Gresham's Law of bad money driving away good money rings especially true in South Korea, which lacks the latent growth of new entrepreneurial companies beneath the long shadow of its *chaebol*.

Cleaning up the *chaebol* debt load is the first step to putting South Korea back together. And for some American architects, this could mean more trouble. Many larger U.S. architectural firms—KPF, SOM, and Callison among them—make large parts of their livings off *chaebol* clients. Like other large-firm principals, SOM Partner Jeffrey McCarthy, who directs the firm's work in Korea, expresses confidence that SOM is safe in Seoul because it works for the "titans"—LG, Sendai, Daewoo, and Samsung—rather than the lesser *chaebol* orders. But the problems of certain South Korean conglomerates inevitably affect the others because they are so closely linked. Six of South Korea's 30 largest such companies had collapsed as of early December following the IMF bailout announcement. The bankruptcy of the sixth conglomerate to fail,



Asia's falling currencies instantly made American architects' services more expensive if they're getting paid in dollars.

Halla Group, will also sting Hyundai, which lent Halla Group lots of its \$5.3 billion debt. Halla also makes a large share of South Korea's auto parts, which could hurt the country's major car producers.

As South Korea's currency, the *won*, headed for a dive in December, McCarthy reports that he actually had an easier time collecting fees from Korean clients: Anxiety over future exchange rates compels some clients to pay sooner to cut their losses. "The *won* was cresting and every day they delayed cost them more money," McCarthy asserts.

#### Fees at risk

But in general collecting fees from clients in Asia will be a bigger challenge for American architects. However, Americans carry less financial risk on projects in Asia than they would in the U.S. because local laws allow them to work only through the end of design development. Construction documents and administration—and attendant fees—are left to local firms. But if architects' total exposure to losses is lower than normal, the

problem of getting paid for services rendered remains a headache. Few principals admit to serious losses so far stemming from the Asian crash. Nonetheless, falling currencies across the Asian continent instantly made American architects' services more expensive: If the Americans are smart, they're getting paid in dollars, and Asian clients have a harder time obtaining dollars after their own currencies have devalued sharply.

HOK saw the rough waves ahead last summer and began pushing collections harder in potential trouble spots, MacLeamy explains. It's unfortunate that the crash occurred at the end of the year, he says, because many firms' fiscal years were ending, leaving huge gaps between fees counted as earned and those that they actually collected. "A substantial amount of profits are tied up at year's end," he laments. "You can't give bonuses without having the cash to pay."

Not that American architects are making all that much money in Asia anyway. For many, it becomes a labor of love and hate—glorious, but no gold mine. "We're having a difficult time being very profitable in Asia," concedes Herb Nadel, of Nadel Architects in Los Angeles, which has some 47 major projects across Asia. "We get reasonable fees, but overall, we're not making that much money." Travel and marketing expenses eat up earnings, as does bureaucratic haggling with local government officials. "The risk is really big," Nadel says. "If you don't get paid, you eat it. And you can't sue somebody in Asia."

### Good relationships help

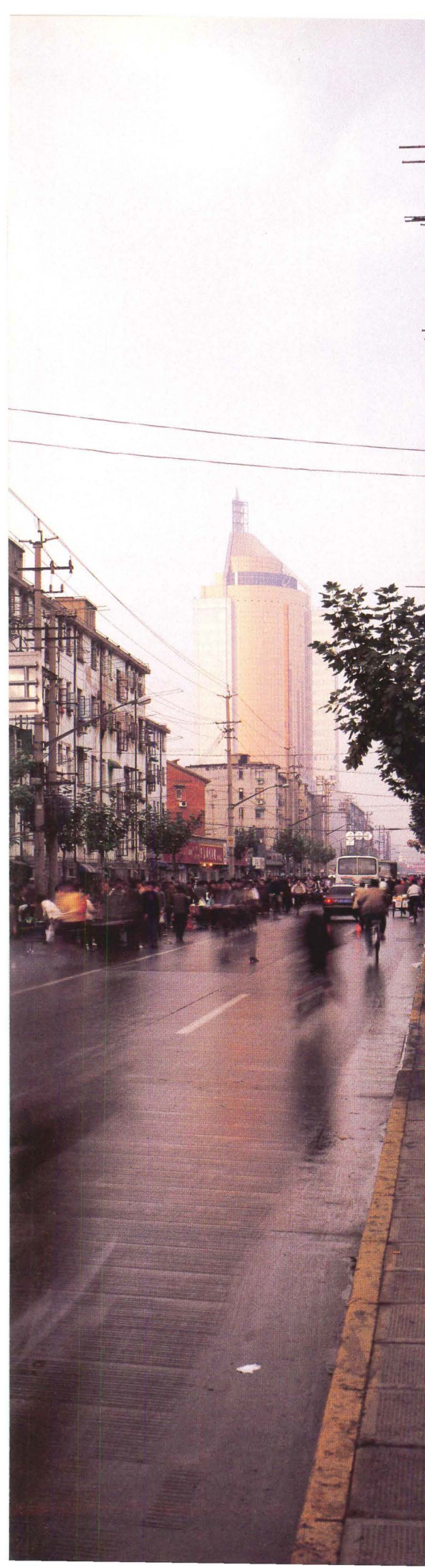
That's the danger of architectural work in Asia based on tenuous liaisons. A lot of smaller American architectural firms grabbed what work they could in unfamiliar markets, wrote it up, and hoped for the best. Many got burned. The architects who seem most secure about the current crisis are those who have long-term relationships with strong, A-list multinational clients. At Perkins & Will in Chicago, gunslinger clients need not apply: "We've positioned ourselves to be more relationship-based," contends President James M. Stevenson, echoing the wisdom of many large-firm principals. "We learned the hard way. We never found opportunities that come and go to work very well in Asia."

Firms also fare better if they have diverse portfolios spread across multiple countries—it's best not to have all a firm's proverbial eggs in one basket. For now, architects in the U.S. are looking hopefully at their work in Taiwan, Hong Kong, and also Singapore, whose health seems intact by current Asian standards. The impact of market crashes on China is tough to tell. Donald J. Hackl, of Loeb Schlossman & Hackl/Hague Richards in Chicago, is confident that his and other firms' work in China will push ahead because the giant country is "insulated" from the vicissitudes of regulated capitalism in the rest of Asia.

Yet, while China's *yuan* is alone among Asian currencies to rise in value this year, China, too, shows signs of recession. Less-valuable currencies in surrounding countries make their exports easier to buy than those from China, which have provided much of the country's recent growth. And baseless

lending to moribund, state-owned industries has pushed China's bad-debt load up over 20 percent of its gross domestic product, which, economic reports show, is twice as bad as anywhere in Southeast Asia. The flow of money in China is likely to turn sluggish. Already, a two-tower SOM project in Shanghai has at least temporarily become a one-tower project. Callison's Grand Gateway mixed-use center in Shanghai is now being phased over five years rather than the projected three, notes Karst.

Looking way ahead, however, not everybody is glum about Asia's prospects. Architects familiar with the region cite its strengths in technology and its increasingly well-educated populations as groundwork for future growth. Many compare the continent's current straits to the economic pain in Latin America a decade ago, and that of Mexico in 1994 and 1995, when bad loans ran to a quarter of all debt. "Mexico recovered very quickly" after its IMF bailout, recalls KPF Principal Paul Katz. "Real money was made there two or three years after the crash." Asia, for some architects, still looks too rich to ignore, says HOK's Patrick MacLeamy: "We can't afford not to be there."



Progress isn't always pretty.  
New American-style towers are overtaking  
China's largest city without regard for  
urban consequences.  
Photographs by Robert Reck

# SHANGHAI RIS



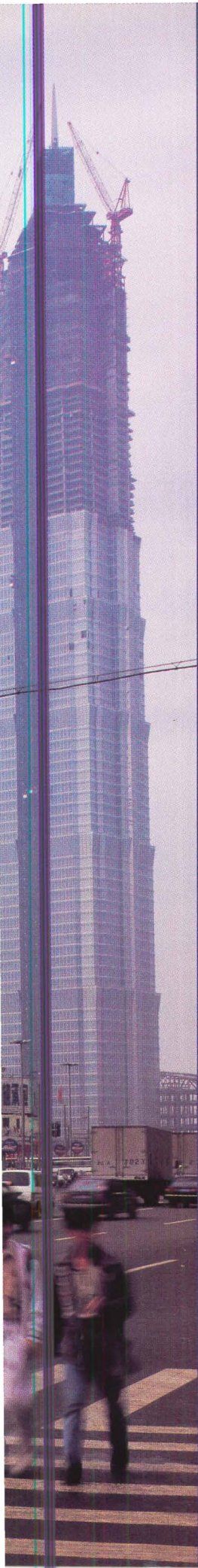


Thanks to reforms launched by Deng Xiaoping in the late 1980s, Shanghai is booming. Its skyline now includes some of the world's tallest buildings: A spate of 1980s-style towers designed by American architects—and Chinese, Taiwanese, and Hong Kong imitators—are transforming this city of 13 million into one of the most brazenly consumeristic cities in all of China. "There's a big effort to hurry-up China's emergence into the modern world, and the most immediate, visual way to do that is by building towers," maintains Albuquerque photographer Robert Reck. His photographs convey the disturbing results of China's rush toward modernity: egregiously sited and overblown high-rises such as the Jin Rui Real Estate Building (facing page), the World Plaza (left), designed by California-based Langdon Wilson Architecture; and Skidmore, Owings & Merrill's Jin Mao Building (right), set to open in August.

# ING







Most of Shanghai's new totems are being constructed in the Pudong district, a fragile delta of clay and sand located to the east of the historic city center, between the Huangpu River and the ocean. "Local residents now call the Pudong the 'forest of concrete,'" reports Reck. Leviathan buildings such as (facing page, left to right) the Shanghai Information Building—home of the local stock exchange—designed by Canadian architect Webb Zerafa Minkes Houston (WZMH); the Jian She Building; and SOM's Jin Mao tower overwhelm what remains of their small-scale neighbors. For the Chinese, it's all part of "developing for modernization," as banners announce above the streets of the Pudong (right). Flanking one such sign is the Majesty Building, designed by the Taiwanese firm H.C. Chang & Associates.





Imitation may be the most sincere form of flattery. But unfortunately, China's design institutes are further ruining Shanghai's skyline with unflattering knock-offs of American high-rises. These copycat towers are hard to distinguish visually from their American counterparts, and wreak the same havoc on the fabric of the Pudong. Such behemoths as the Hua Neng Connection Building (far left) and the Jin Ying Tower (left), both knock-offs of American high-rises designed by the East China Architecture Institute, are taking a toll on Shanghai's existing building stock. Although the Pudong district was relatively undeveloped, wrecking balls in other parts of Shanghai are razing the significant turn-of-the-century colonial architecture that once earned the city the title of the Paris of the East. "A lot of the old three- and four-story structures are being torn down with no concern for historic preservation," Reck attests. In their place will stand soulless new urban precincts, crowded with structures such as WZMH's headquarters for the Shanghai Pudong Development Bank (foreground, right).



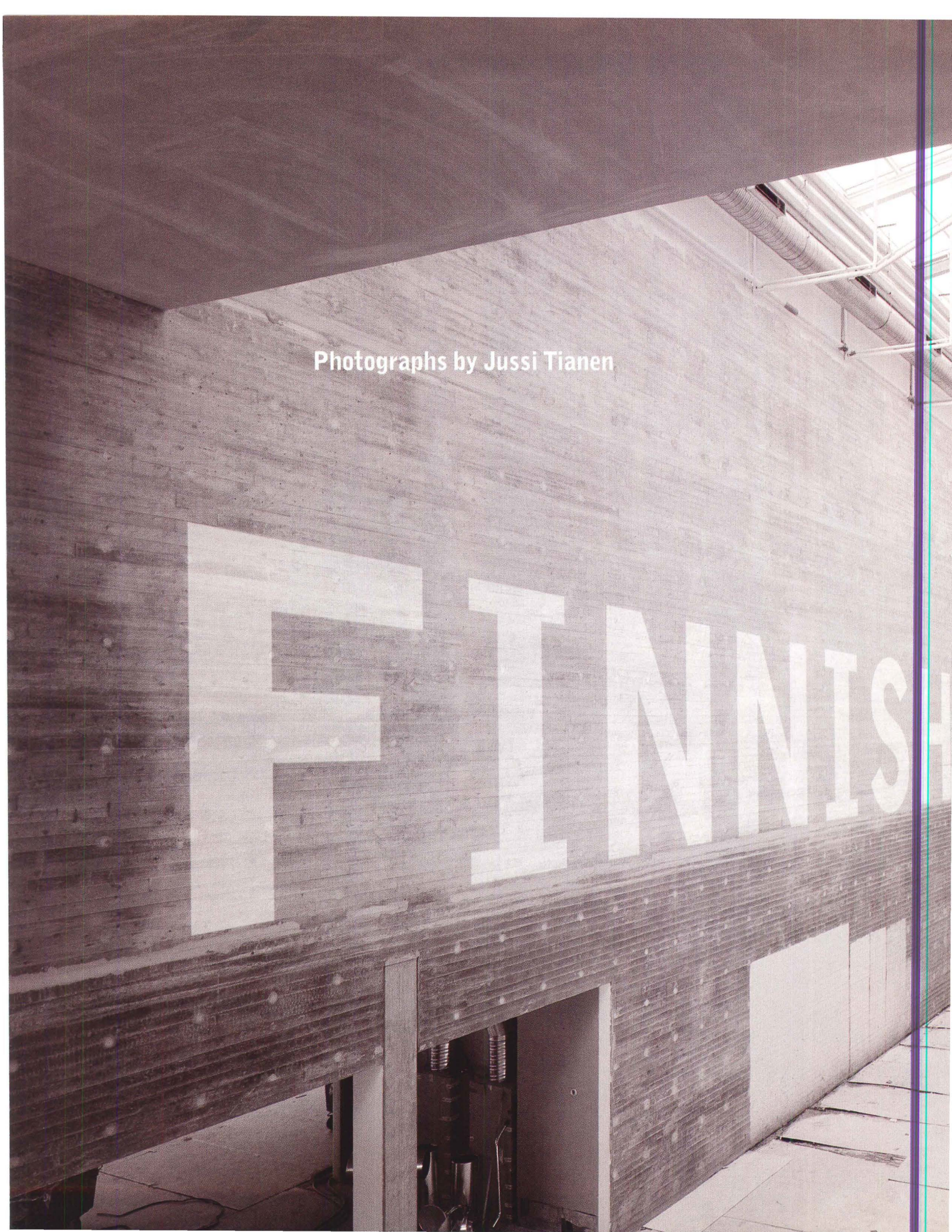


Shanghai's housing stock is also vanishing: Dwellings are being demolished and families displaced to make way for high-rises. What few low-rise structures remain standing are suddenly overshadowed by garish towers. In the Pudong, X.Y. He & Associates' Business Bureau Building and Lee An & Associates' World Finance Tower (right) dwarf a ramshackle, four-story hospital—further evidence of Shanghai's growing urban plague.



Photographs by Jussi Tienen

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# LINES

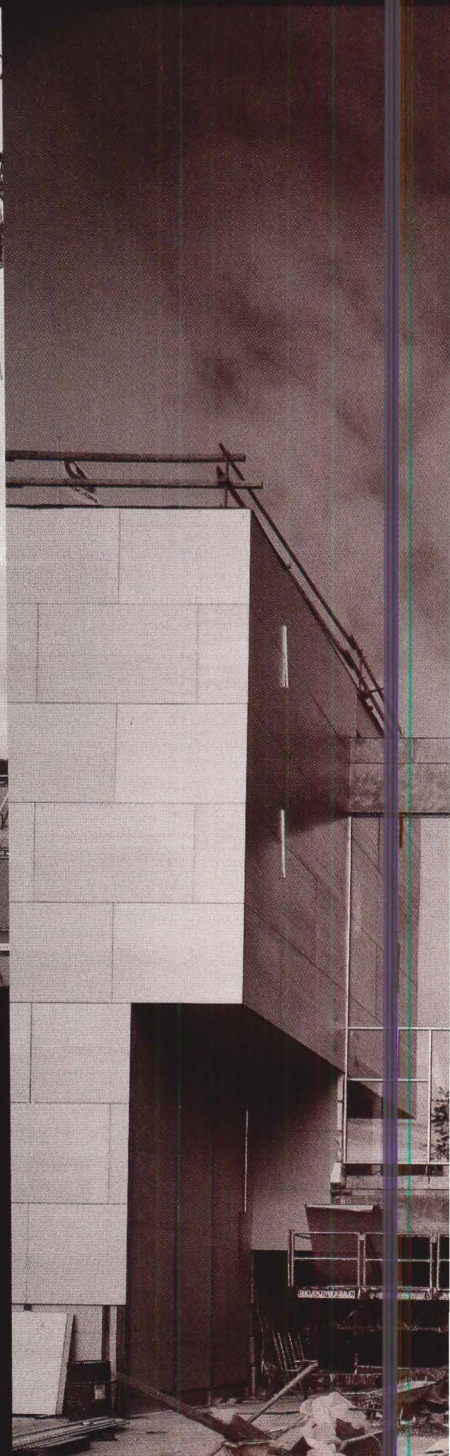
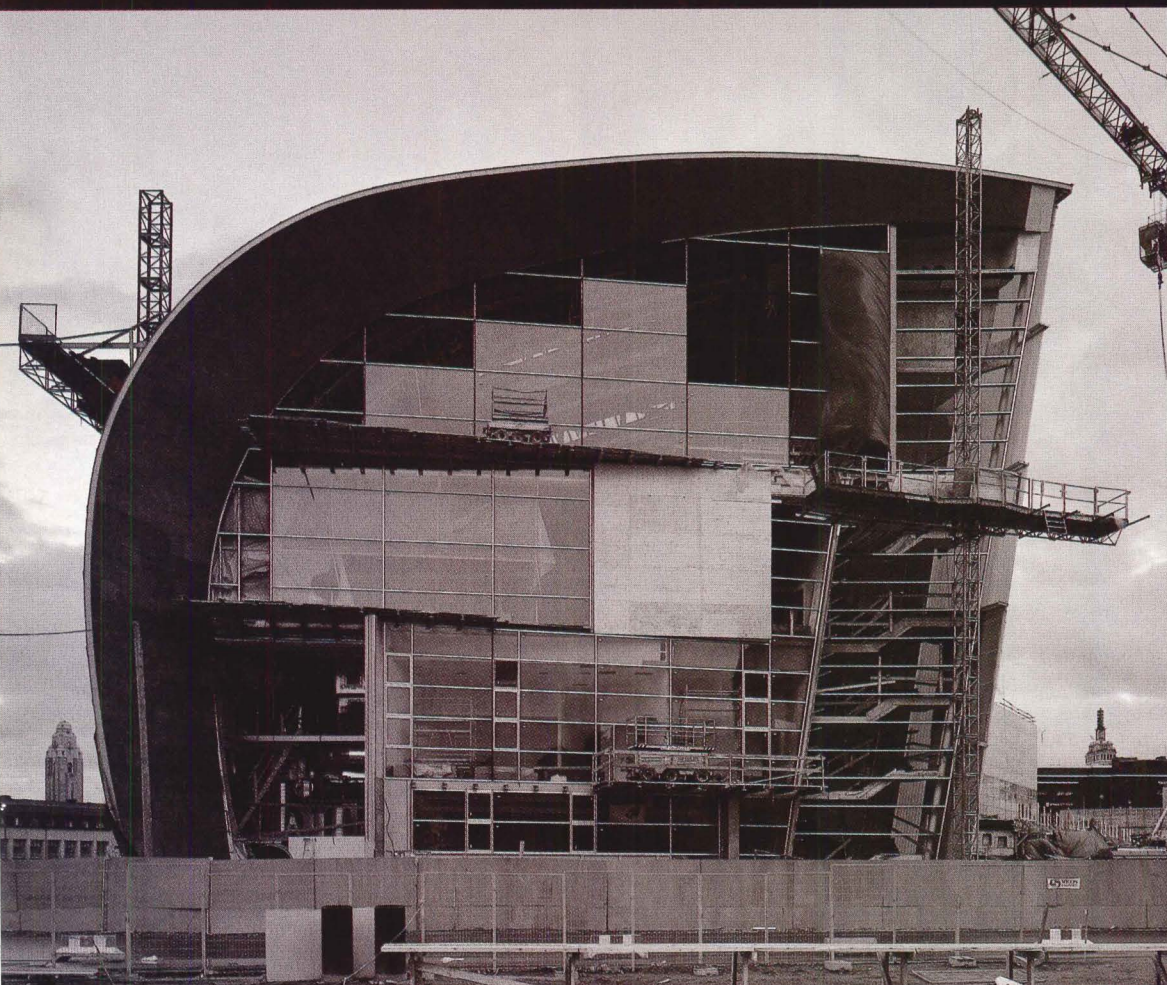
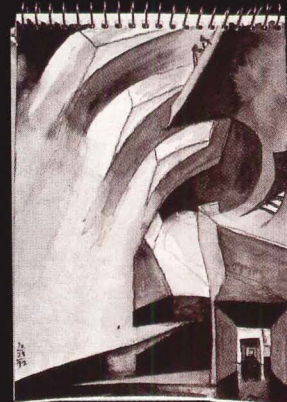
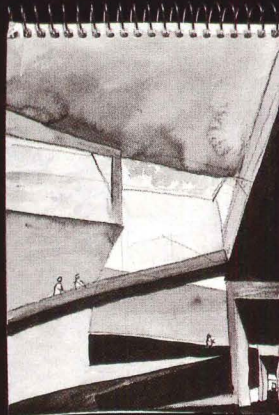
**A CONTEMPORARY ART MUSEUM UNDER CONSTRUCTION IN HELSINKI TRANSLATES STEVEN HOLL'S LUMINOUS FORMS INTO A GUTSY URBAN LANDMARK.**

**BY RICHARD INGERSOLL**

The new Kiasma Museum for Contemporary Art in Helsinki, designed by New York's Steven Holl Architects and set to open in May, may be the most controversial building ever built in Finland. It fills an awkward, historically important site in the center of Helsinki, and is the first significant public project designed by a non-Finnish architect since the nation's independence in 1917. For an art world that thrives on controversy, however, this is a blessing: It has ensured the continued interest of skeptical museumgoers.

Holl's conceit of *kiasma*—a Greek word that means "crossing over"—has been enthusiastically adopted as the official name of the museum, suggesting an arts policy of cultural miscegenation inherent in the building's cross-bred design, a metamorphosis of a box into a bulbous carapace. The boxy part aligns to the city's grid and the rounded shell addresses the indeterminate areas of an adjoining park and railyard.

The Kiasma Museum, part of the city's waterfront master plan, comprises 12,000 square meters of space on five levels, 9,100 square meters of which are devoted to galleries. The program also includes studio space for an artist-in-residence and a media center.

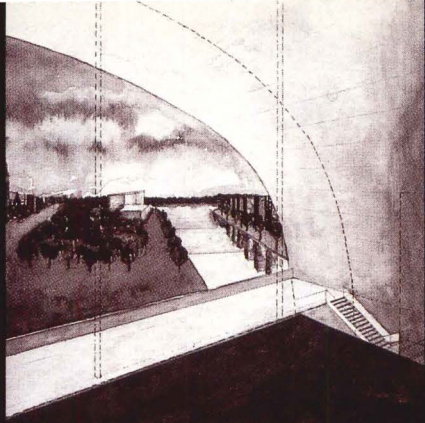


Construction and documentation difficulties were noteworthy because of the complex geometry of the building's double-curved surfaces. Initially, Holl wanted the great shell to be like the sides of a ship, sheathed in aluminum plates.

Since this would have required each sheet to be a different size, standard strips of curved zinc were installed to cut costs. The north-facing, hooded facade (above) looks out to the informal landscape of Alvar Aalto's neighboring Finlandia Hall.

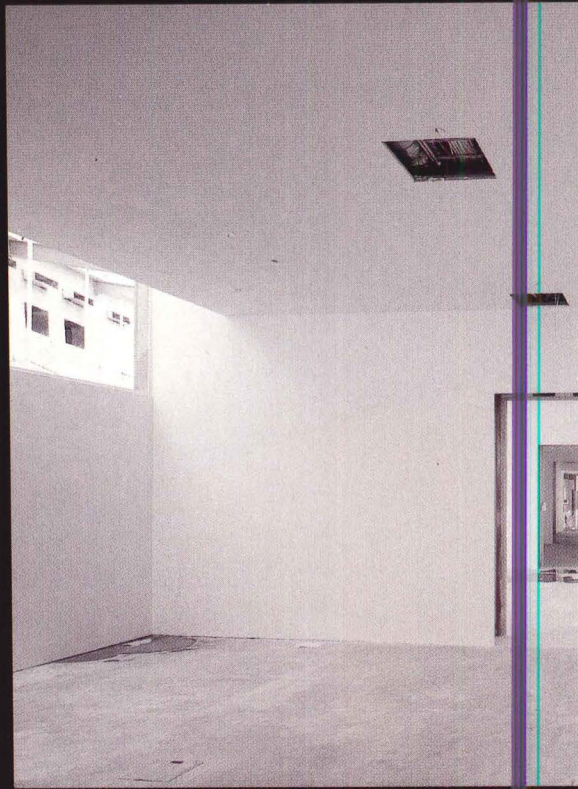
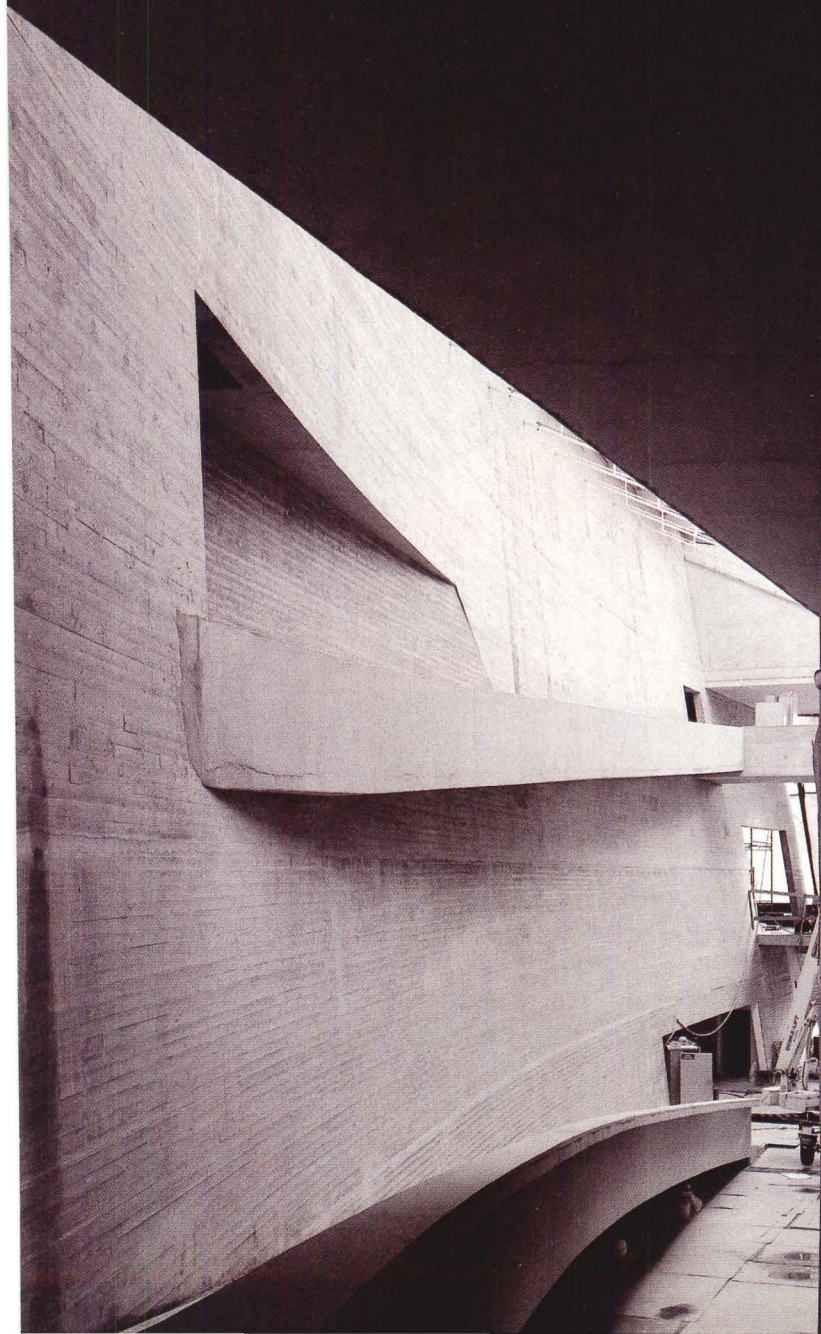
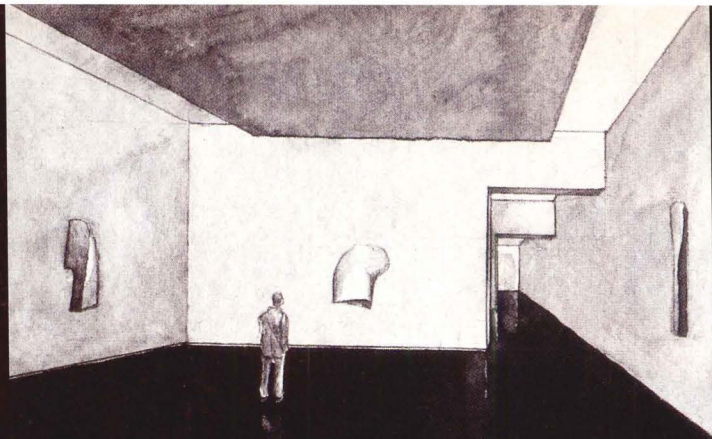
Holl's rich materials are alien to the granite and sandstone used on public buildings in Helsinki, but his choice of palette is in no way offensive to local colors. In fact, the materials help pick up the pinkness and subtlety of the local light.





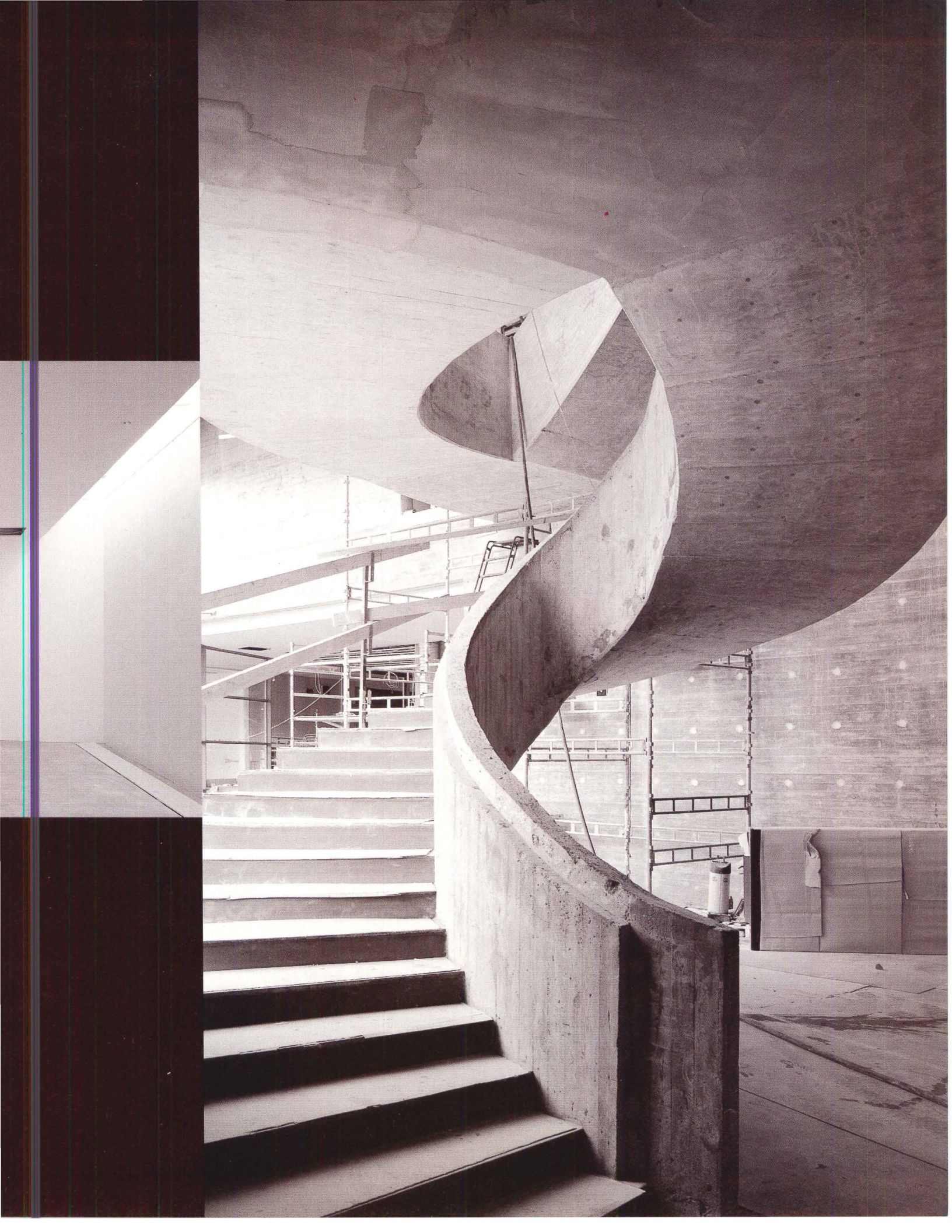
The museum's entrance on the south facade (left) is clad in acid-reddened brass, hand-sanded aluminum, and glass. The top-floor vault (above), which at its fullest reaches a "C" shape, is supported by arched steel trusses, through which service

conduits have been threaded. The glazed panels canting downward from the top of the vault in five tiers are made of glass blocks that have been sandblasted to a milky color. Skylights supply northern light to the galleries beneath the vault.



The museum's interior circulation is organized around a wedge-shaped atrium (left), resulting from the gap between the straight side of the box and the concave wall of the bulging shell. Daylight streams down the curved

plane from the glazed roof, creating dynamic shadows along its expanse. Galleries (above) with polished concrete floors flank both sides of the atrium. The concrete spiral stair (facing page) descends into the heart of the museum.



# *hidden*



*By Deborah K. Dietsch*

# paradise



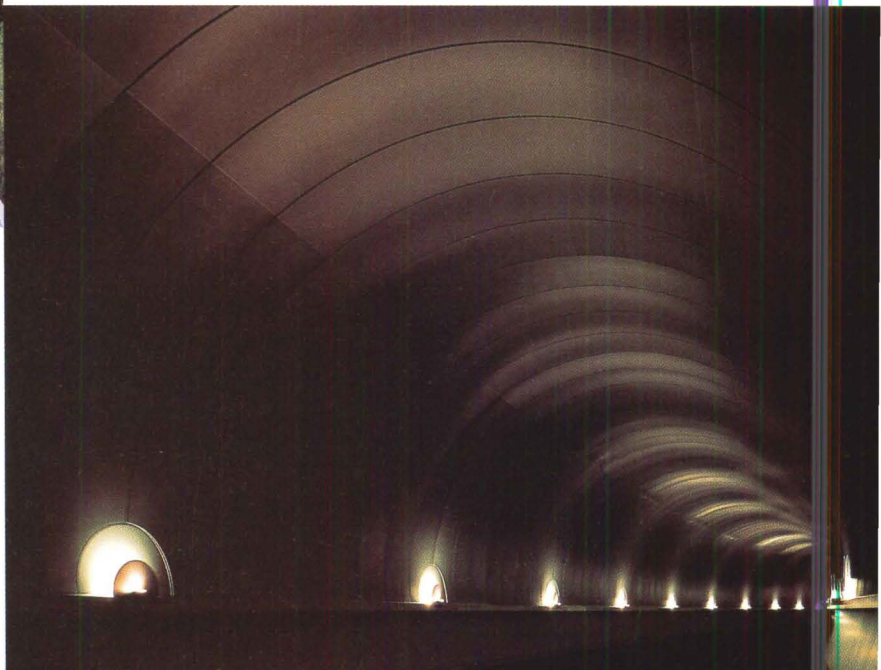
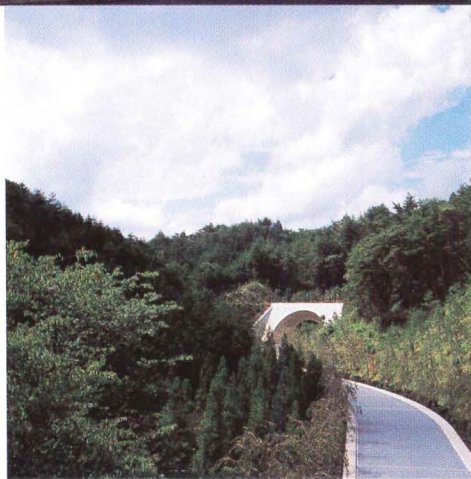
*On a mountain outside Kyoto, Japan,  
I.M. Pei discovers the beauty of the earth.*

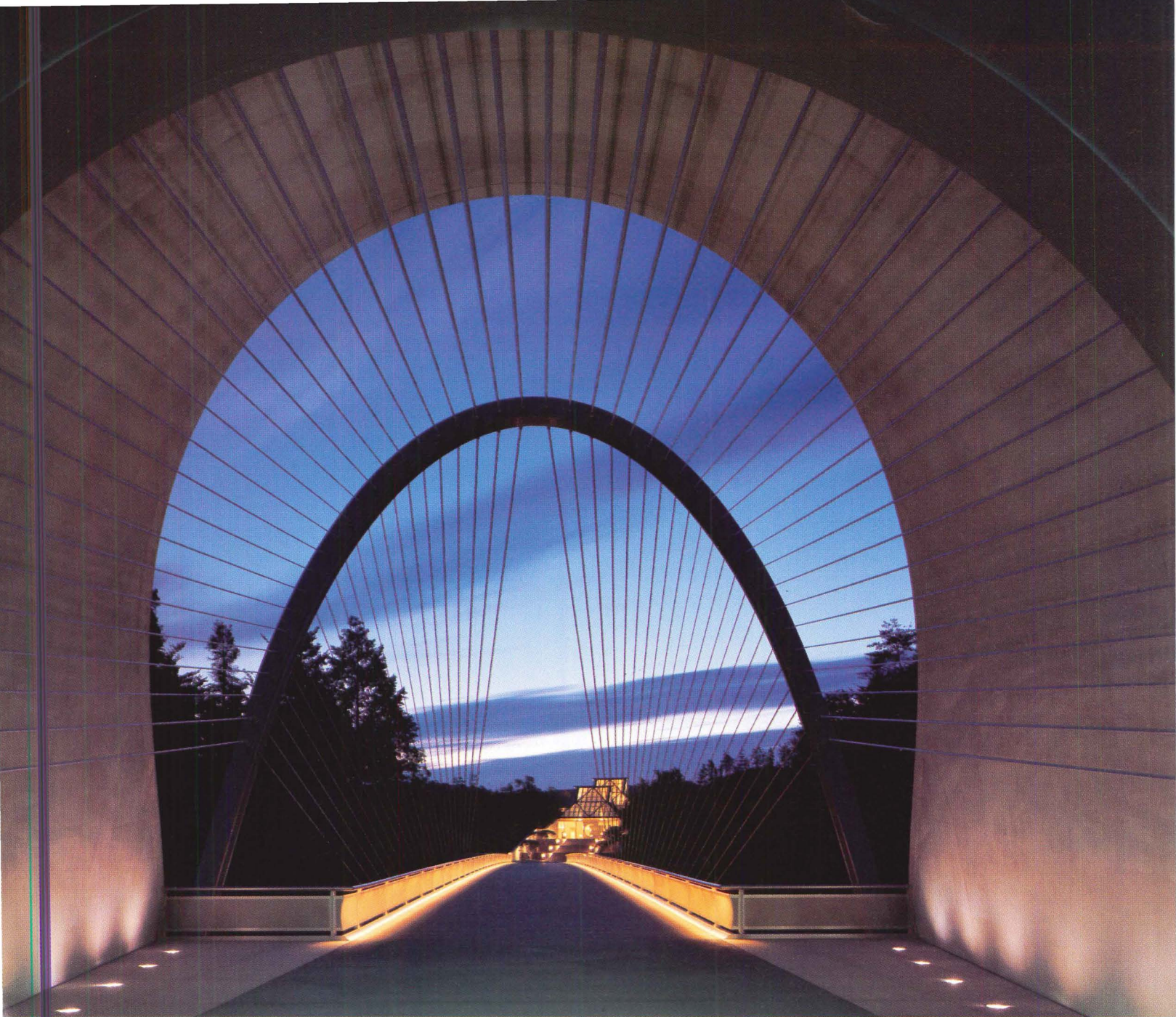
*During the reign-period T'ai yuan of the Chin dynasty there lived in Wu-ling a certain fisherman. One day, as he followed the course of a stream, he became unconscious of the distance he had travelled. All at once he came upon a grove of blossoming peach trees which lined either bank for hundreds of paces. No tree of any other kind stood amongst them, but there were fragrant flowers, delicate and lovely to the eye, and the air was filled with drifting peachbloom. The fisherman, marvelling, passed on to discover where the grove would end. It ended at a spring; and then there came a hill. In the side of the hill was a small opening which seemed to promise a gleam of light.*

(From Tao Yuan Ming, *Peach Blossom Spring*, 4th Century)

Like the Chinese fisherman of Tao Yuan Ming's fable, I.M. Pei has found heaven on earth—rather, in the earth. Pei's Shangri-La, the Miho Museum, lies on and within a remote hillside in the Shigaraki Mountains, 20 kilometers outside Kyoto, Japan. The Miho contains a vast, buried trove of Asian and Near Eastern art amassed by Shinji Shumeikai, a religious order with 300,000 members who observe a simple set of spiritual principles—beauty, kindness, and truth. Pei embraces these principles in his design, creating an ethereal work of architecture that vies with the East Wing of the National Gallery of Art (1978) in Washington, D.C., and the additions to the Louvre (1989 and 1993) in Paris as his cultural magnum opus.

As he proved with both the National Gallery and the Louvre expansions, Pei possesses an innate sense of what is right for a site. Those two earlier museums succeed largely because they mark precise positions within an urban framework, and extend that framework through geometric counterpoint rather than imitation. The Miho, Pei's first project in Japan, iterates his equal mastery of skillful placemaking outside the city, in a secluded rural setting. Like the architect's Fragrant Hill Hotel in Beijing, completed in 1982, Pei exalts the landscape with a dramatic procession through the site, immersing visitors in its natural beauty.





Approach to Miho Museum encourages discovery and detachment from outside world. Circular entrance plaza (facing page, top) leads to footpath (facing page, far left), which winds toward metal-paneled tunnel (facing page, left), and finally opens onto 120-meter-long cable-stayed bridge (above) that leads to museum.

The entry sequence to the isolated museum unfolds slowly and magically, as though visitors were all fishermen in Tao Yuan Ming's fable, an important inspiration to Pei. "Detachment from the world is the most important element in this design," explains the 80-year-old architect. The largely underground, 187,500-square-foot museum is carved into a remote Shigaraki ridge. It lies across a valley from Misono, the Shinji Shumeikai's headquarters and religious retreat. One leaves the world behind at a roadside visitors center: A winding path taken on foot (or in a golf cart) leads through a curved, stainless steel-paneled tunnel bored through an adjacent mountain. Upon emerging from the tunnel, visitors cross a spectacular cable-stayed bridge spanning 120 meters over a deep ravine, and find a serene, circular plaza, across which rises a staircase to the museum's moon-gated entrance.

Pei's theatrical procession is similar to Richard Meier's approach to The Getty Center in Los Angeles (*Architecture*, December 1997, pages 78-93). The Miho, however, is far smaller than the Getty. Its siting is more intimate and subtle, recalling the indirect approaches to Japanese temples and palaces, and also the *shakkei* technique of framing close and distant views. A more fundamental difference is that Pei, unlike Meier at the Getty, did not level the mountain to build the Miho, but sculpted its recessive spaces according to the contours of the land. The scope of the building is never entirely apparent to the eye.

The architect's sure-handed moves along the ground owe as much to mandate as to inspiration. Authorities in the Shiga Prefecture wield strict governance over design parameters and site conservation: Environmental regulations required Pei to bury nearly 80 percent of the building to minimize the Miho's visual impact on the site. All trees uprooted during the four years of construction had to be replaced. And Pei could expose the limestone-and-glass elevation no more than 13 meters above ground.

These site constraints are lyrically interpreted by Pei's signature angular geometries—triangulated, the







Deftly sited gardens reinforce Miho's link to nature. Hipped skylights (facing page, center and bottom) recall traditional thatched roofs. Wind Garden (left) slopes up to limestone boundary wall. Circular entry plaza (below) fronts moon-gated main entrance.





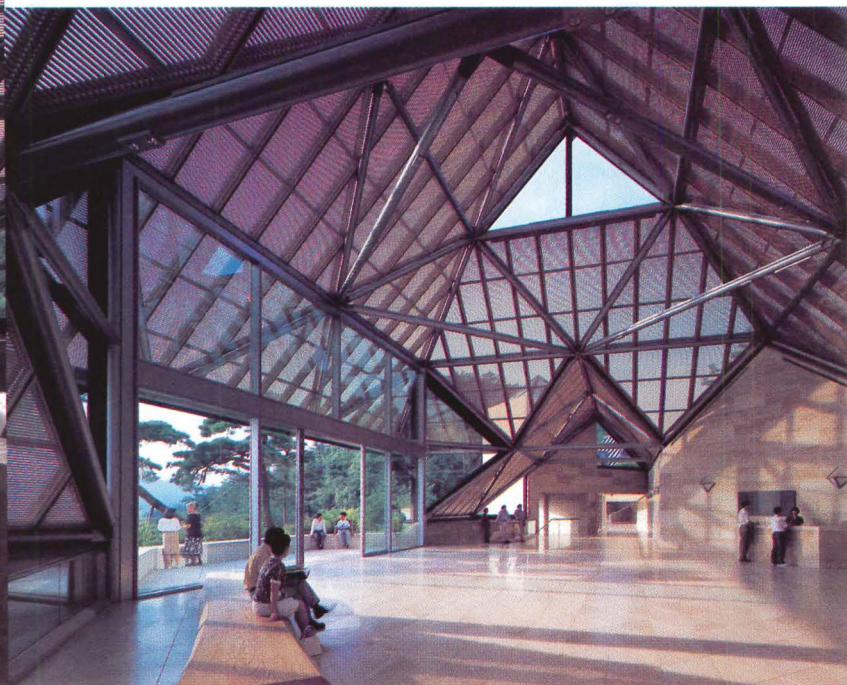
Transparency and reflectivity help frame near and distant views (above). Limestone-floored entry lobby overlooks client's nature preserve (right). Triangular geometries of space frame create complex patterning. Simulated wood louvers above lobby temper direct sunlight (far right).

architect remarks, to embody Shinji Shumeikai's trinity of principles. The Miho's intersecting triangular forms embrace the landscape as they reach toward the heavens, while their transparent facets pull celestial light down to earth. The dark-edged profiles of its skylights are abstractions from thatched roofs of the Japanese *irimoya* tradition—evocative but not campy. Their silhouettes become the Miho's main facade. The skylights comprise a custom-designed space frame of tubular steel and glass, which is fitted with imitation wood louvers (pages 116-120, this issue). Daylight, tempered by the louvers, pours into the Miho's underground spaces. The roof's crystalline tectonics are always visible, striking a deft balance between the picturesque and the rational.

The space frame also serves as a unifying element to a pair of flanking wings and the long corridors that link each wing to the elegant, marble-floored central lobby. The lobby is austere furnished with a single, 6-meter-long bench wrought from an ancient *keyaki* tree. From the lobby, one gazes through a large bank of windows on axis with the entrance, which open onto a sweeping panorama of nature, including century-old *akamatsu* pines, and views of Shinji Shumeikai's sanctuary, designed by Minoru Yamasaki (1982), and the bell tower designed by Pei in 1989. It was the bell tower, as well as a visit to the National Gallery, that convinced Mihoko Koyama, Shinji Shumeikai's spiritual leader, to commission Pei to design the Miho for the order's growing art collection, which now holds approximately 1,000 works.

The north wing of the museum is dedicated to Japanese art, a collection Koyama began with tea-ceremony objects, many of which are on display in a small tea house tucked into a gallery corner. In this part of the building, galleries are designed as matter-of-fact spaces with wall-mounted vitrines, reflecting the chronological ordering typical of Japanese museums.

The building's south wing is richer, devoted to antiquities tracing the Silk Route from China to the Roman Empire. Its galleries are arranged discontinuously on two

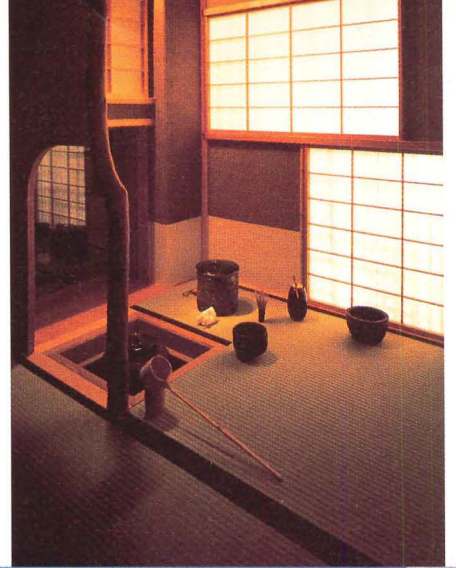


levels, reflecting last-minute design changes prompted by new acquisitions. But the sophisticated exhibition design by Pei and a team from the National Gallery make up for the choppy sequence. Each gallery focuses on a single object displayed to amplify its essence.

"The object determines how the display should be done," Pei contends. For example, a second-century Gandhara Buddha stands more than 2 meters high within a red niche that evokes the feel of the cave in northern India where it was found. The stone figure of Egyptian Queen Arsinoe II emerges just-larger-than-life from a dark granite recess. And the spacious Islamic gallery was designed to showcase the 16th-century Iranian *Animal and Medallion Carpet*, which weaves together fantastical images of literary and allegorical themes.

Throughout the museum, courtyards and gardens unite the interiors and the idyllic outdoors. Pei practically declares nature's triumph over architecture: The north wing's tea-room galleries find their counterpart in rock gardens outside, where a palette of moss, granite pebbles, and dark *saji* rocks draw one's attention contemplatively inward. The south wing projects into the Wind Garden, where a carpet of white pebbles, rich moss, and weathered red pines slopes up to a high limestone wall. This peaceful precinct blurs the formal boundary between the refuge of the Miho and the deep, layered landscape of the earthly paradise beyond it. With such dreamlike disconnections from reality, Pei has turned a physical journey into a profoundly spiritual awakening.





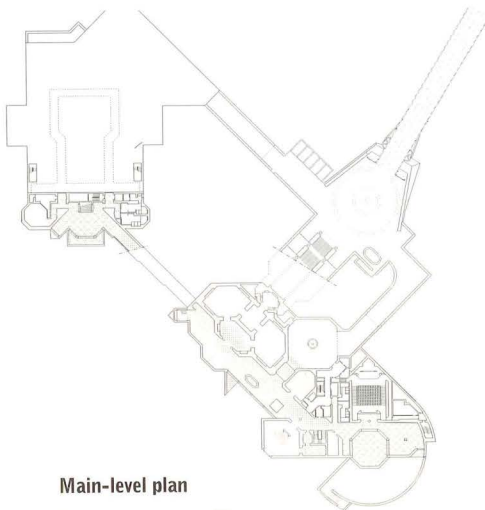
North wing houses Japanese art, including Buddhist scrolls and statuary, in wall-mounted vitrines (facing page, left). Stair (facing page, right) ascends from north wing's lobby to galleries. Traditional tea house in north wing (top) displays ceremonial objects. Contemplative garden of pebbles, moss, and saji rocks (above) creates serene outdoor oasis.

South wing contains Asian and Silk Route antiquities. Near East gallery (below) highlights relief depicting King of Assyria. Focus of Islamic gallery (right) is 16th-century Iranian carpet. Second-century Gandhara Buddha (facing page, left) stands over 6 feet tall in cave-like crypt. South wing (facing page, right) overlooks Shinji Shumeikai's Minoru Yamasaki-designed compound across valley.

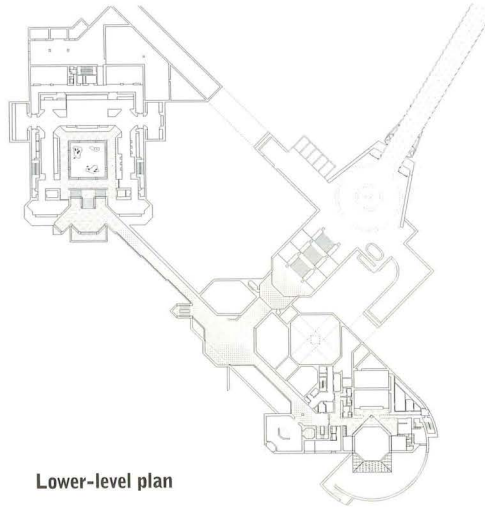
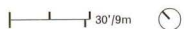


**MIHO MUSEUM  
SHIGA PREFECTURE, JAPAN**

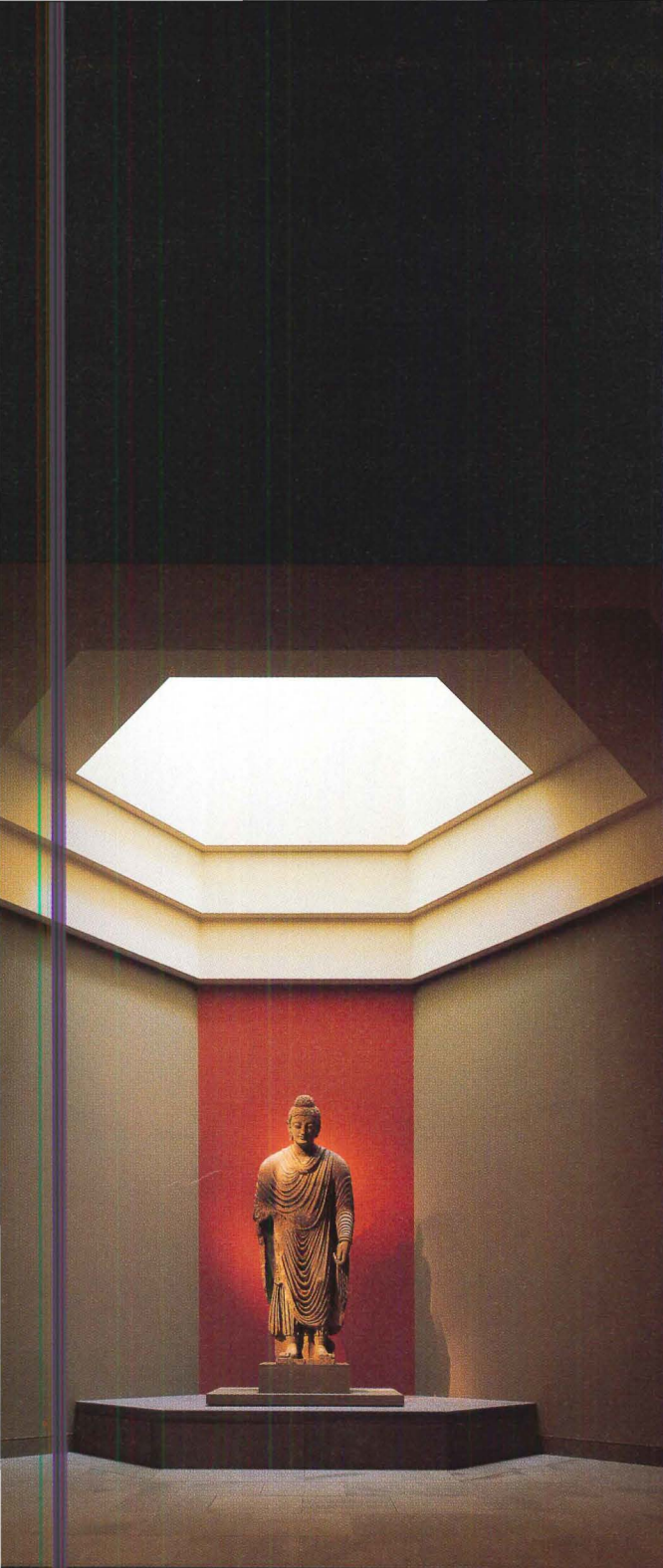
**CLIENT:** Shinji Shumeikai, Shumei Cultural Foundation **ARCHITECT:** I.M. Pei Architect, New York City—I.M. Pei (principal), Tim Culbert (project architect), Perry Chin (building envelope), Chris Rand (initial design), Carol Averill, Price Harrison, Celia Imrey, Hubert Poole (project team) **ASSOCIATE ARCHITECT:** Kibowkan International, Tokyo—Osamu Sato (principal-in-charge), Hiroyasu Toyokawa (principal, administration), Hitoshi Maehara, Fumio Ozaki, Masa Sato, Yasuhiro Sonoki, Miho Toyoda (project team) **LANDSCAPE ARCHITECTS:** Kohseki and Akenuki Zoen; Noda Kensetsu **ENGINEERS:** Leslie E. Robertson Associates; Aoki Structural Engineers; Nakata & Associates; Whole Force Studio (structural); P.T. Morimura (mechanical, electrical) **CONSULTANT:** Fisher Marantz Renfro Stone (lighting) **GENERAL CONTRACTOR:** Shimizu Corporation—Mikio Noguchi, Mutsuo Takagi (project managers) **COST:** \$255 million **PHOTOGRAPHER:** Timothy Hursley



Main-level plan



Lower-level plan



# FASHION STATEMENT

MORPHOSIS DRESSES UP A TOWER

IN DOWNTOWN SEOUL WITH

SLINKY METAL VEILS.

BY AARON BETSKY







Sun Tower's folded planes rise above street-level confusion of busy commercial block.



The Sun Tower, a 10-story retail and office building in Seoul, South Korea, is a skin job. Architect Thom Mayne of Santa Monica, California-based Morphosis makes no bones about it. The slender, ziggurat-like tower, Mayne claims, is nothing more than "the translation of the maximum volume allowed by zoning restrictions," clad in a glass curtain wall rising to a translucent, truncated crown of perforated metal planes.

Morphosis was not the first architect selected for the job: Jae Kim, the owner of a clothing store in the neighborhood, had hired a local firm to design the building. Unhappy with the results, he asked a relative in the U.S. to locate an architect who would give the new store a more recognizable image. Kim wanted to put his own clothing store on the first four floors of the building, and then lease out the top level for restaurants and offices. When Mayne got to the small site, there was already a hole in the ground and a contractor pouring the 10-story tower's concrete columns. The architect had to compose his design on this thin edge between urban restrictions and commercial demands—and make something out of it. He has.

Sun Tower rises up in a district just west of downtown Seoul, on a shopping street that leads from a local train station to the Ewha Womans University. The neighborhood sprouts a lively street life. The area is dense with stores and restaurants, creating a visual cacophony that drowns out most of the buildings behind signs, advertisements, and busy tile patterns vying for strollers' attentions.

Mayne tried to "reach and grab hold of the street" by using prowlike forms, folded planes, and layered compositions of exposed orthogonal structural grids to create an active set of shapes that angle out over the street. They wrap the exterior and rise to a peak that acts as a translucent crown. Aluminum mesh panels hang on a tubular metal frame clipped to the building's poured-in-place concrete structure to unify the tower's mixed bag of

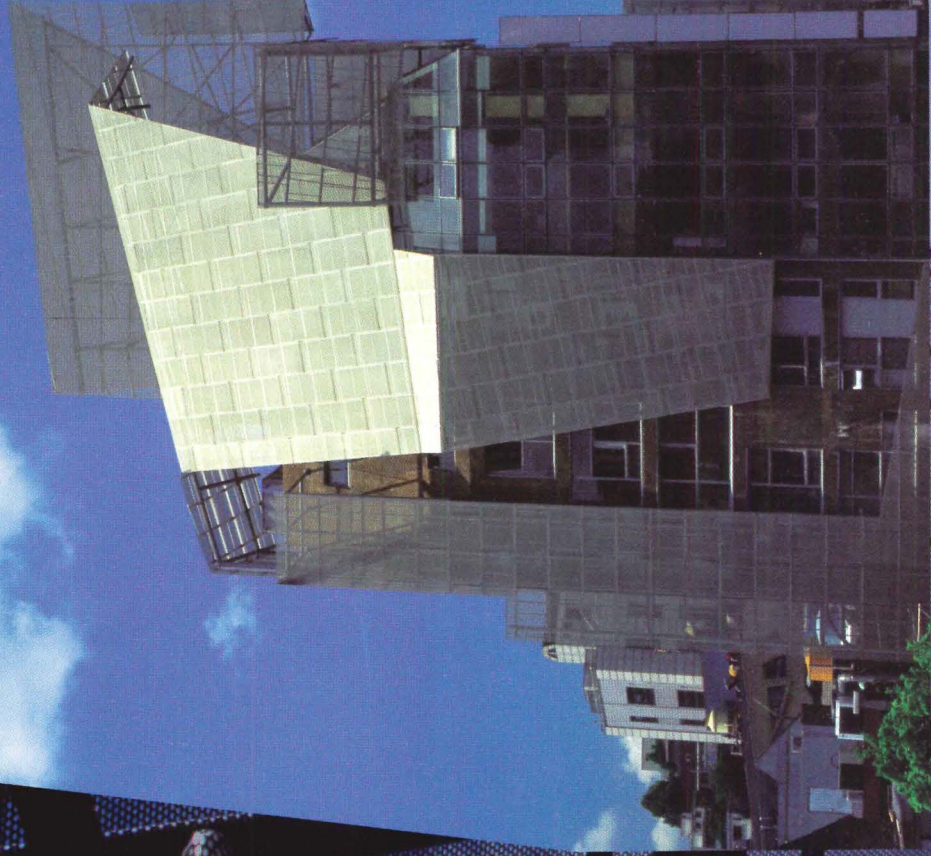
functions, which include stores, a restaurant, and offices. These screens become a scaffolding for advertising, and make the relatively modest, 40,000-square-foot structure seem larger than it really is. They also act to counter the ponderous, massive quality of Seoul's buildings. Behind the screens, glass and stucco form the actual building enclosure and appear as a slick, conventional skin.

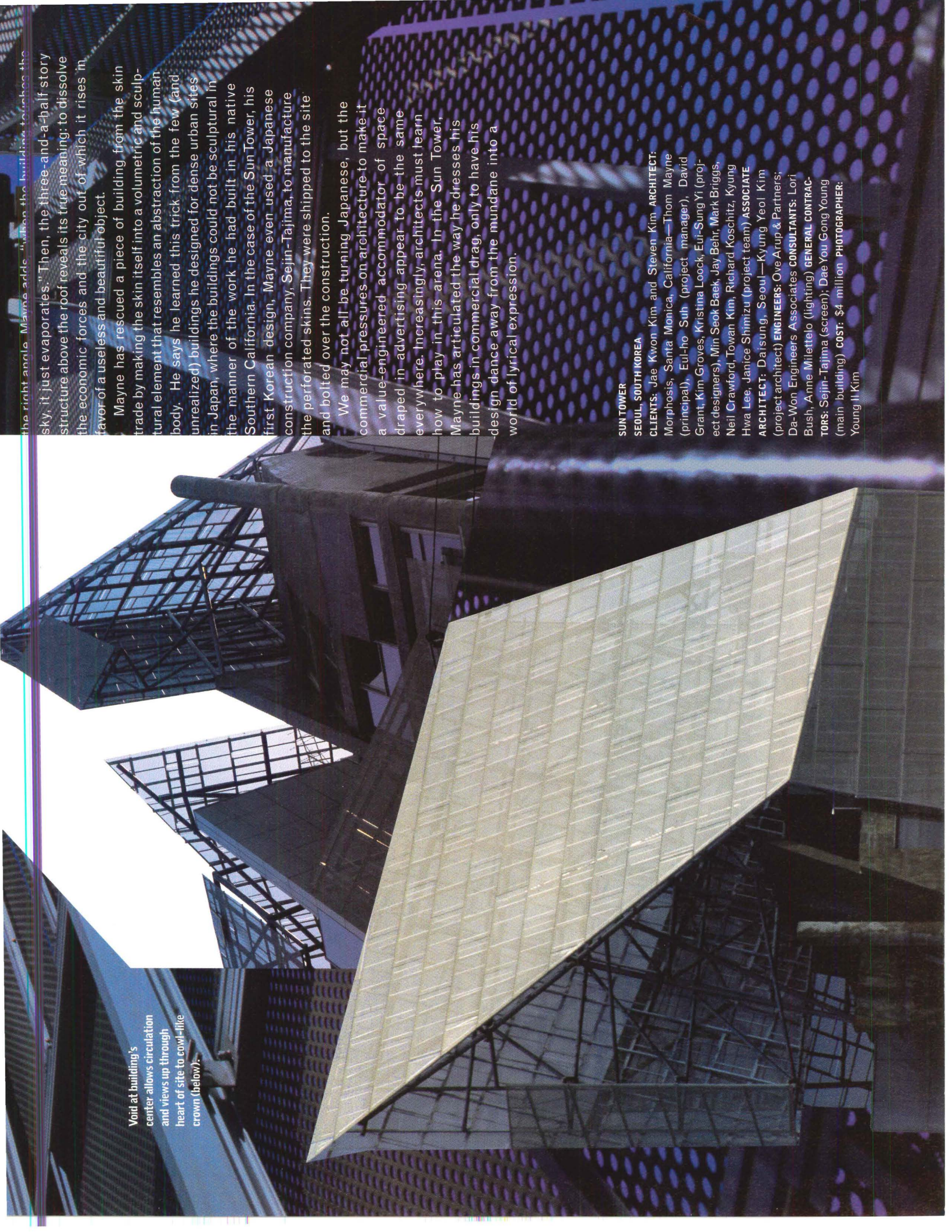
A peculiarity of the site made Mayne's task easier: Client Jae Kim's grandmother owned the front corner, and Kim, the L-shaped remainder. According to Korean custom, this different ownership had to translate into separate buildings, each with its own elevator and exit stairs, that the two owners could pass on to their heirs. Thus, Mayne had to split the building down the middle, resulting in a tall, thin vertical space that rises from the basement level two floors below grade to the top of the structure. This slot draws shoppers down from the street and moves their eyes up to the sky while the building undresses itself in a kind of structural striptease.

Unfortunately, Kim had difficulty in raising the money to expand his store, so the program changed once the building was already under construction. The client now occupies only a suite of offices at the top of the tower, while the rest of the building is subdivided by a collection of different store and office tenants. This mixture of uses undercuts the clarity of the original conception, though it does serve to make the building more porous to the life of the street. The very density of its occupation makes the Sun Tower more alive as it shimmies from floor to floor, folding its skin up and away to allow entrance or a vicarious view of its parts.

The tower's real beauty does not reveal itself until it reaches its top, where space and gravity seem to fall away in favor of a diaphanous and abstract emblem. Mayne points out that here the building "has different readings from different locations at different times of the day." This ambiguity gives the building a dynamic quality, as it changes from opaque to translucent to transparent, both over the course of a day and from various viewpoints within the city. In the right light and from

Perforated aluminum panels clip onto tubular metal frame, screening south facade (left).





Void at building's  
center allows circulation  
and views up through  
heart of site to cowl-like  
crown (below).

the right angle. Mayne adds, "When the building touches the sky, it just evaporates." Then, the three-and-a-half-story structure above the roof reveals its true meaning: to dissolve the economic forces and the city out of which it rises in favor of a useless and beautiful object.

Mayne has rescued a piece of building from the skin trade by making the skin itself into a volumetric and sculptural element that resembles an abstraction of the human body. He says he learned this trick from the few (and unrealized) buildings he designed for dense urban sites in Japan, where the buildings could not be sculptural in the manner of the work he had built in his native Southern California. In the case of the Sun Tower, his first Korean design, Mayne even used a Japanese construction company, Sejin-Tajima, to manufacture the perforated skins. They were shipped to the site and bolted over the construction.

We may not all be turning Japanese, but the commercial pressures on architecture to make it a value-engineered accommodator of space draped in advertising appear to be the same everywhere. Increasingly, architects must learn how to play in this arena. In the Sun Tower, Mayne has articulated the way he dresses his buildings in commercial drag, only to have his design dance away from the mundane into a world of lyrical expression.

#### SUN TOWER

##### SEOUL, SOUTH KOREA

**CLIENTS:** Jae Kwon Kim and Steven Kim **ARCHITECT:** Morphosis, Santa Monica, California—Thom Mayne (principal), Eul-ho Suh (project manager), David Grant, Kim Groves, Kristina Looock, Eui-Sung Yi (project designers), Min Seok Baek, Jay Behr, Mark Briggs, Neil Crawford, Towan Kim, Richard Koschitz, Kyung Hwa Lee, Janice Shimizu (project team) **ASSOCIATE ARCHITECT:** Daisung, Seoul—Kyung Yeol Kim (project architect) **ENGINEERS:** Ove Arup & Partners; Da-Won Engineers Associates **CONSULTANTS:** Lori Bush, Anne Miletello (lighting) **GENERAL CONTRACTORS:** Sejin-Tajima (screen); Dae You Gong Young (main building) **COST:** \$4 million **PHOTOGRAPHER:** Young Il Kim

Morphosis transforms a Taipei visitors center into an architectural allegory of creation.

# ORGANIC MATTERS

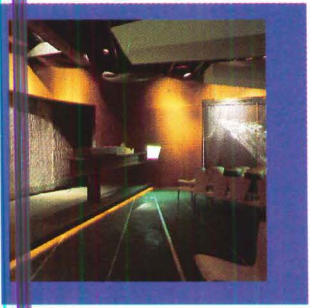
Thom Mayne never met a program he couldn't complicate. From the firm's earliest additions in Venice, California, to its current far-flung portfolio in Asia and Europe, Morphosis has always delighted in turning a clean slate into a dense exegesis of all the known—and unknown—variables of a project. Completed last September, the \$1.8 million ASE Design Center Visitor Center near Taipei, Taiwan, is no exception.

The visitors center is part of an enormous mixed-use development in Hsichih, a fast-growing suburb of Taipei, comprising six high-rise residential towers straddling a multilevel wholesale and retail furnishings center. Morphosis got the job on the recommendation of a Taiwanese architect Mayne met while serving on a design jury in Taipei in 1994. The firm was charged with creating a place where visitors to the center could rest, meet with professionals outside the showrooms, and gather for public functions and lectures. To that end, the lower level of the two-story, 1,650-square-meter visitors center houses an informal, 100-seat café, a 200-seat lecture hall, and exhibition spaces. A more formal, 100-seat restaurant is stacked above the café, anchoring the second level. Suspended between the two restaurants is a private dining room. Additional exhibition and meeting spaces round out the upper floor.

The raw space of the visitors center was not promising. Its irregular volume offered few opportunities to introduce daylight or manipulate the ceiling plane: Only the areas that would eventually house the restaurants had windows. The space also came riddled with irregular grids of 1-meter-square, concrete columns that support the high-rises above. "It was labyrinthine," recalls Morphosis Project Architect Patrick Tighe.

"We faced pragmatic concerns with the columns and the program," Mayne confirms. "But there was

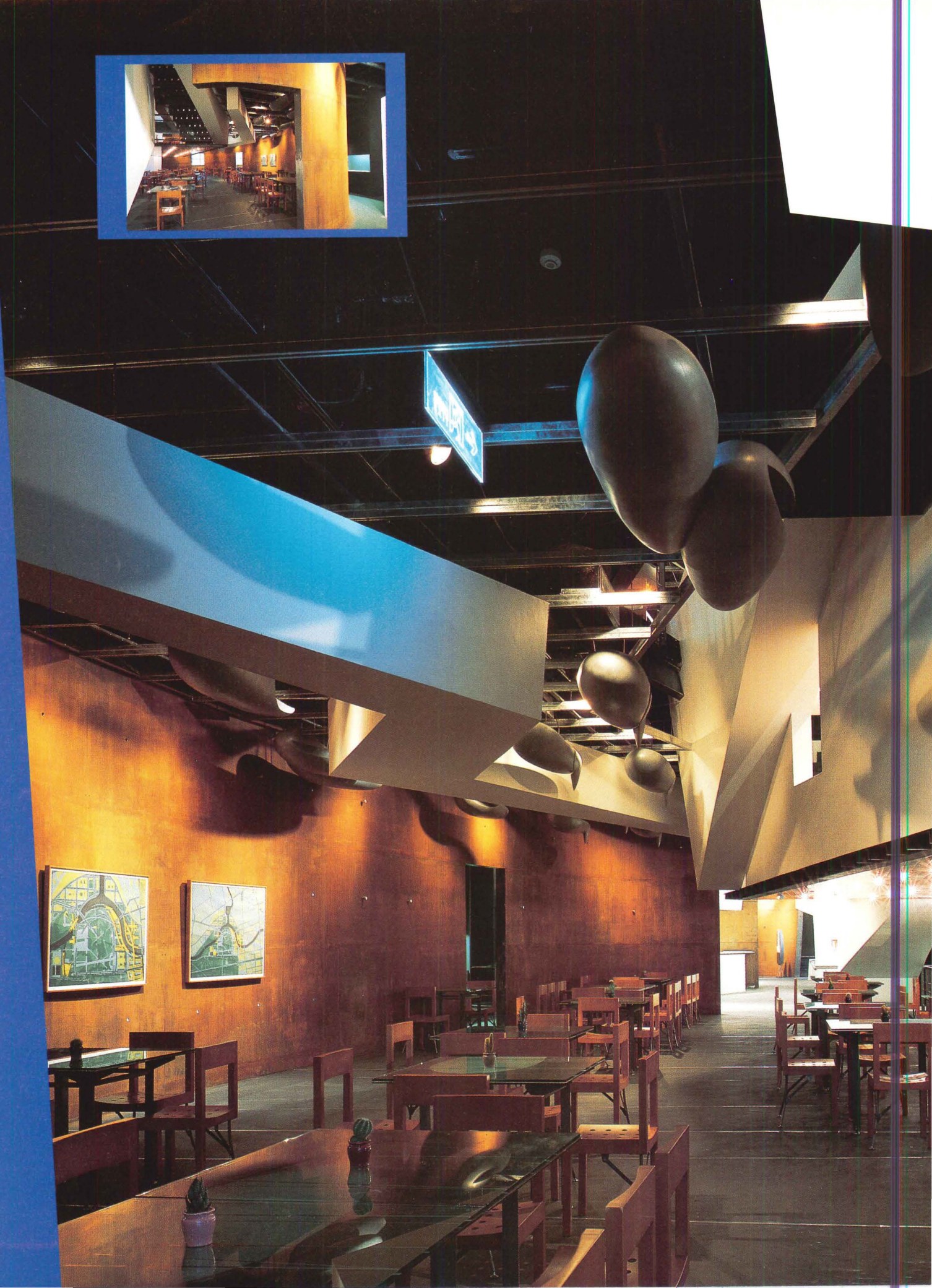
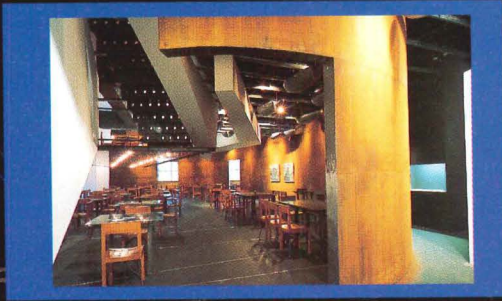


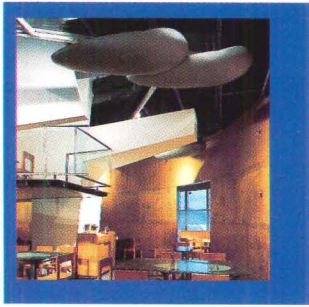


Fragmented walls hover above lecture hall (these pages) that features many architect-designed details, including fiberglass sculptural "tadpole" lighting fixtures, suspended exhibition panel of woven stainless steel rods and wires (far left), and steel-beam lectern (left). Stainless steel strips in floor represent pattern of "phantom" wall shards.

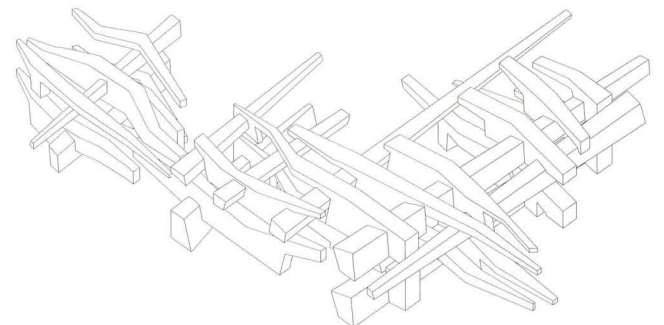
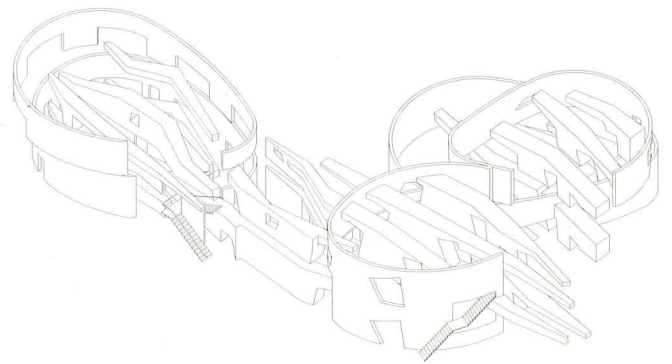


By Reed Kroloff

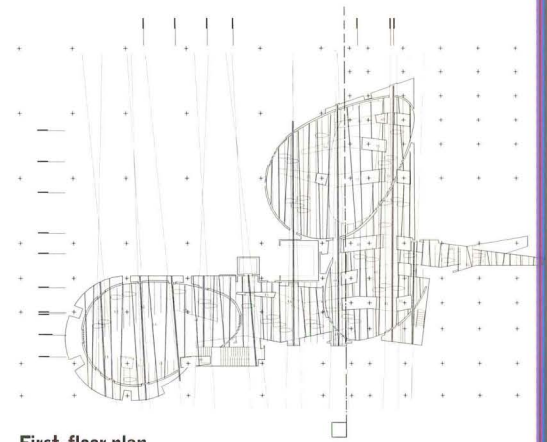




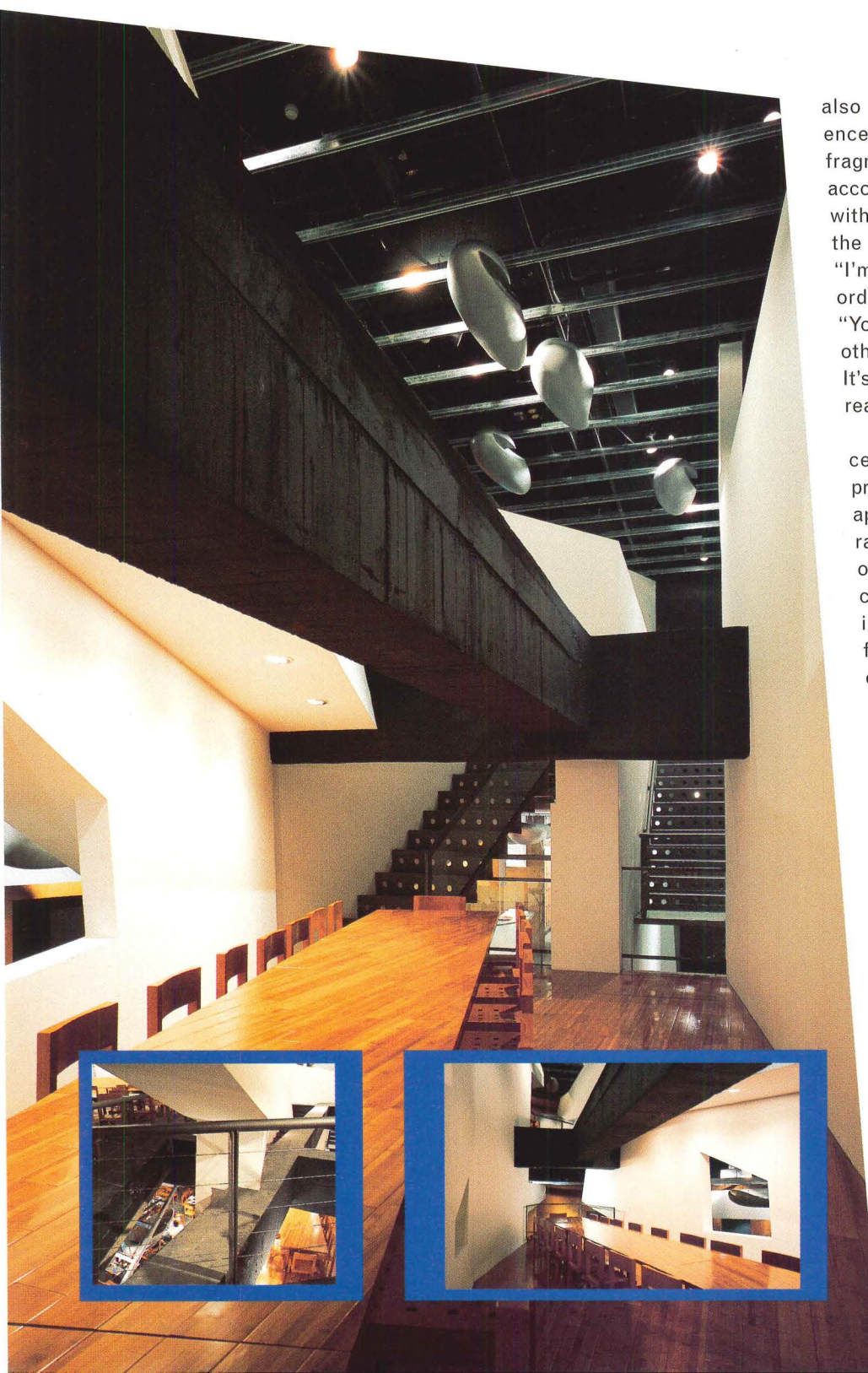
Private dining room overlooks café (these pages). Oxidized steel walls frame restaurant (facing page, top). Openings in curved steel wall give glimpse of city views beyond (far left). Fiberoptic light hangs near opening that represents imagined wall penetration (left). Axonometrics (below) show irregular plaster-coated wall shards that weave together ovoid, steel-encased rooms; conceptual transverse shards are represented by wall openings throughout building.



Mayne designed table and chairs in private dining room (below and bottom right). Steel and tensile cable railing overlooks café (bottom left). Plans superimpose floor pattern, ceiling system, wall shards, and column grid. Layered view through gallery (facing page, bottom) forces visitor's perspective toward outside view. Iconic diagrams (facing page, far right) distinguish interlocking organic forms of programmatic elements.



First-floor plan

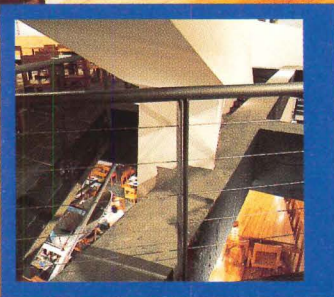


also a greater territory, somewhere between coherence and incoherence, that balanced order with the fragmented nature of the found space." In other words, accommodating the visitors center's coherent program within its incoherent space was a means by which the architect could explore larger conceptual issues. "I'm interested in the space between order and disorder because it's where we all live," Mayne muses. "You can't be completely on one side of the line or the other; one is entirely too rigid, and the other, insane. It's in the middle where humanity, and therefore the realm of architecture, resides."

Mayne's innovative design solution for the visitors center is no less complicated than his view of the problem—and no less compelling. Initially, the space appears to be a striated riot of dissected wall planes racing through rusty, steel-plated, ovoid rooms, with odd, tadpole-shaped objects suspended from the ceiling. Circulation is unstructured, destination indeterminate. Amid the rushing, tilting jumble of forms, spatial hierarchy is difficult to discern. No easy coordinate system is in evidence. Cacophony rules; order is vanquished.

Yet, there is a method to Mayne's madness, though discerning it takes effort. The rusty steel eggs derive their shape from an existing appendix-like protrusion of space that the visitor center's restaurants occupy at the western edge of the Design Center. Mayne modifies and repeats that curved shape in three stacked pairs that define the major spaces of the program: The restaurants, lecture hall, exhibit spaces, and work rooms all nestle in the steel curves. The forms are more than room dividers, however. They are an occupying force, replacing the visitors center's actual spatial geometry with their own. Mayne punctures, splits, and carves them enough to offer glimpses beyond the massive steel edges (especially in the dining rooms, which view the town beyond), but keeps the mass and form of the ovals intact and enveloping. The eggs become protective, womb-like encasements.

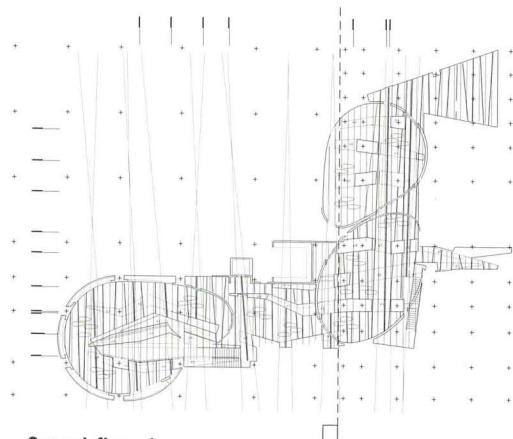
These redoubts are linked—and pierced—by the wall planes, or "blades" in Mayne's



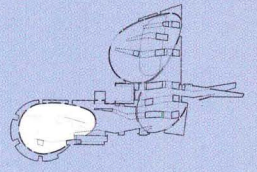




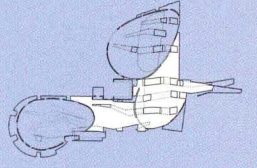
Intermediate-floor plan



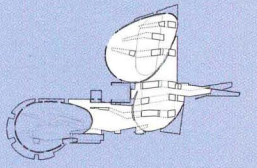
Second-floor plan



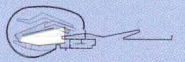
CAFÉ



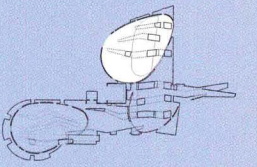
EXHIBITION SPACE



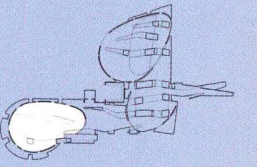
EXHIBITION SPACE



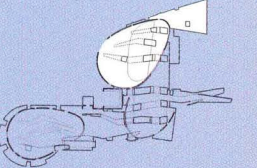
PRIVATE DINING ROOM



LECTURE HALL

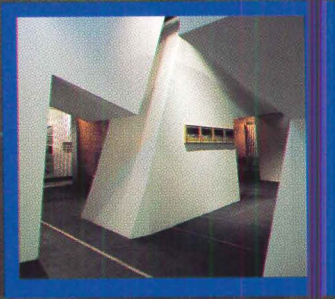
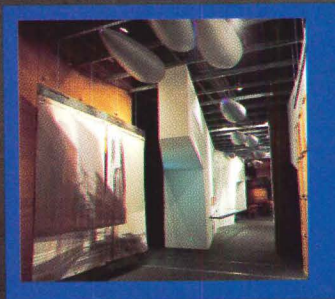
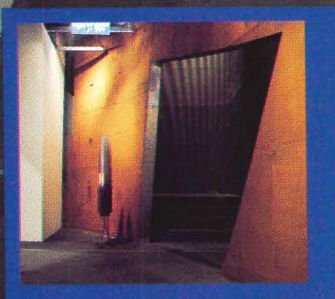


RESTAURANT



WORK ROOMS

Second-floor reception space (these pages) leads past bar to restaurant and exhibit areas at rear. Exhibit installed for building's opening includes drawings (bottom center) and furniture, including "Dancing Angel" lamp (bottom left) by Morphosis. Irregular openings and canted wall planes (bottom right) recall German Expressionist film *Cabinet of Dr. Caligari*.



VISITORS CENTER, ASE DESIGN CENTER  
HSICHIH, TAIWAN, REPUBLIC OF CHINA

**CLIENT:** Eric Hsiang **ARCHITECT:** Morphosis, Santa Monica, California—Thom Mayne (principal), Patrick J. Tighe (project architect), Towan Kim, Richard Koschitz, Scott Lee, Michael O'Bryan, Robyn Sambo, Steven Slaughter, Alan Tsaur, Bart Tucker, Oliver Winkler (project assistants) **CONSULTANTS:** Patrick Quigley (lighting); Sydney Lin, Chung Shu Metalwork (metal fabrication); Tom Farrage & Company (ceilingscape) **GENERAL CONTRACTORS:** C.Y. Lee, Taiwan Fubic Corporation **COST:** \$1.8 million **PHOTOGRAPHER:** Yu-hsien Chou



vocabulary, that slice through the visitors center. The blades were developed as a device to wrap, and thus visually block, the forest of existing columns. The walls are massive, measuring 1 meter wide—large enough to conceal a column—and extend to the full height of each level of the center; in double-height spaces, they soar to 7 meters. They are painted white, and finished in a smooth-coat plaster that is a striking contrast to the black concrete floors and the rusty red of the metal enclosures. They are also strongly directional, moving only on an east-west axis through the space.

This movement is augmented visually by piscine cast-fiberglass sculptures suspended from the ceiling, swimming parallel to the walls. "The ceiling becomes a landscape," Mayne suggests. The blades and fiberglass tadpoles are also an ordering system that supplements the steel eggs. In gobbling up the columns, Mayne weaves the white walls through the space in a crudely parallel pattern, substituting irregularity for at least the suggestion of regularity at best: The walls don't follow coordinate geometry. But the suggestion of regularity nonetheless arises amidst the apparent chaos. With it, Mayne limns the space between rational and irrational.

Not all his devices are as successful. For instance, the walls are punctured by openings and hallways that allow perpendicular circulation through the display areas. Mayne attributes this pattern of openings to a phantom set of perpendicular blades. Unfortunately, in a system where the built blades are already a conceptual stretch, their invisible cousins fail to register.

Mayne's architecture can also be overwhelming. There is only so much design, so many objects, that one small space can reasonably handle, and the architect has pushed that limit here. Claustrophobia hovers just around every corner; the project would have benefitted from some visual editing.

Nevertheless, the visitors center is remarkable for what it introduces in such a small space. With only a few gestures, Mayne manages to alter our spatial perception, call into question simple definitions of containment and occupation, and spin out a three-dimensional architectural allegory of the chaos and control that govern human reproduction: Blades puncture eggs, and spermlike blobs swim in. "It's my most organic work," Mayne wryly suggests. It is also some of his most challenging.

# American Architecture: The View From Abroad

*How do foreign architects  
rate our design?*

## WHAT IMAGES FIRST COME TO MIND WHEN YOU THINK OF AMERICAN ARCHITECTURE?

**Richard Rogers, London**  
I think of the buildings  
of Frank Lloyd Wright.

**Zaha Hadid, London** America, especially New York, is about towers and a gutsiness of ideas. It is very liberating to be there, although lately, Americans are getting more constipated. I still love New York because it's such a complex city.

**Enrique Norten, Mexico City**  
Many images of American architecture come to mind, ranging from the pueblos of northern Arizona and New Mexico to Frank Lloyd Wright. But I also think of the awful high-rises of the 1960s and 1970s that rose in the downtown of every Nowhere, America. It's a very eclectic picture.

**Dominique Perrault, Paris** I always think of skyscrapers, as well as houses in the woods. American houses always seem to be in the woods. The incredible size of the U.S., the vastness of its spaces, and the youth of its people and buildings make it very different from Europe, where the cities are all very dense. In America, cities can be large and open.

**Massimiliano Fuksas, Rome and Paris** I think of skylines, vast horizons, and the sky.

**Henri Ciriani, Paris** It's a pity, but when I think of American architecture now, I only see the theatrics of Postmodernism.

**Gunter Behnisch, Stuttgart** The Seagram Building, the Salk Institute, the Glass House, the Sears Tower, and the Pacific Design Center.

**Perrault** There has been a stylistic evolution in the United States, one which has forgotten the Modern movement. America has created a fantasy architecture designed by people like Frank Gehry, Steven Holl, and Peter Eisenman. It's an extraordinary and very beautiful architecture, but it's very solitary; it doesn't respond so much to the city. It's more about the expression of individuals and artistic genius.

**Peter Cardew, Vancouver**  
Los Angeles, once the "place to be," is no longer a Mecca for young architects. I think that excellence has been decentralized.

**Hadid** There are many great architects who have been forgotten, such as Gordon Bunshaft, Bertrand Goldberg, and John Lautner. They built fantastic buildings. They had an American spirit that relied on the light in America—something many Europeans don't understand—as well as on a largesse that's particularly American. Today, Frank Gehry is interesting, and architects like Eric Owen Moss, Morphosis, and Steven Holl are all good in their own ways. Individually, their work is important to the world. But their collective influence is more important. It's a pity they've not had more of a chance to directly influence the American landscape.

**Norten** Steven Holl, Eric Moss, and Thom Mayne are intelligent, talented, and committed architects. They have not compromised their work, and have kept their energy over the years. James Cutler, with his fabulous wood detailing, and Carlos Jimenez, with his extraordinary use of light and color, are more subtle. Will Bruder is a character—out in the middle of the desert, doing work that ranges from ugly to brilliant. Tod Williams and Billie Tsien are quite mature, with incredible detailing and a wonderful sense of materiality.

## WHO ARE THE MOST INTERESTING AND INVENTIVE AMERICAN ARCHITECTS PRACTICING TODAY?

**Behnisch** Frank Gehry continually stands out. His architectural language is formally and intellectually difficult to classify. His work seems to capture the constantly changing world around us. I think Philip Johnson, Richard Meier, Morphosis, and Cesar Pelli are successfully propelling the language of contemporary architecture into the 21st century.

**Rogers** Among established architects, Frank Gehry is leading the way.

**Ciriani** The great "old" stars are still the most interesting. Maybe the new talents have a difficult time becoming well-known outside their local environments, with the possible exception of Steven Holl, who has joined Richard Meier and Frank Gehry on top.

**Enric Miralles, Barcelona** I most like those architects that resist the pressures of big corporate offices, firms such as Tod Williams Billie Tsien Associates and Scogin Elam and Bray. They are strong individuals, able to combine professional work and academic debate. They design interesting buildings while avoiding the traps of corporate-style firms.

**Dan Hanganu, Montreal** Harry Wolf, Steven Holl, and Williams and Tsien explore new frontiers, are concerned with today's contemporary global aspects, and, above all, have talent.

**Hadid** America could have a moment of greatness again [like it did in the middle of the century] if corporate and institutional clients had some vision.

**Ciriani** American architecture is suffering from a decline in cultural activity. I have witnessed the disappearance of all the new faces that were beginning to be known five to 10 years ago. Schools of architecture simply follow fashion and become ephemeral for students. Americans no longer lead the world. Because of American economic supremacy, individual offices may still get important commissions abroad, but no more than Europeans like Renzo Piano, Norman Foster, Rem Koolhaas, or Alvaro Siza, who have a wider influence.

**Hanganu** It's getting better and better: It's more refined, attentive to surroundings and scale, and ready to accept minor gestures and transcend the visible.

## WHAT DO YOU THINK OF THE STATE OF AMERICAN ARCHITECTURE TODAY?

**Cardew** The excitement that was apparent in American architecture in the past 15 years seems to have palled. Postmodernism has retreated to suburban shopping malls, but the energy of the victors has lapsed into an unseemly state of self-indulgence. Work that once inspired through invention and spontaneity is now parodied by its own authors.

**Behnisch** America has numerous young, talented architects. However, the American cityscape is shaped mainly by conventional buildings that take little risk for the new or the innovative.

**Norten** I think American architecture is going through a renaissance. A strong new generation is re-evaluating the meaning of Modernism, and exhibiting tremendous energy. We can expect a great deal more from these architects.

**Perrault** I don't think American architects are leaders. There are certainly architects with extraordinary imagination, like Frank Gehry, who is the pope of American architecture. But European and Japanese architects have rediscovered an enthusiasm in their work, and today, I think there is a much higher level of quality in their buildings. The work that American firms export to places like Asia and the Middle East is of a much lower quality than the work they do in the U.S.

**Perrault** The legacy of Mies and Louis Kahn is important. They were geniuses, among the greatest architectural talents in the world. And they were around not that long ago. There are no longer great architects like them.

**Ciriani** The strongest contribution came with the building of America as a dream society: the skyscrapers, university campuses, museums, and private residences.

**Norten** I like to see what people, not places, have brought to architecture. Frank Lloyd Wright is one of the most important architects of this century—not because he was an American, but because he was Frank Lloyd Wright. One important and unique thing that can be said about the U.S. is that it opened its arms to that generation of immigrant architects forced to leave their countries because of World War II: Mies, Gropius, and Breuer all built important international practices on American soil.

**Rogers** At its best, the sky was the limit and technology could build it.

## WHAT IS THE STRONGEST CONTRIBUTION OF AMERICAN ARCHITECTURE?

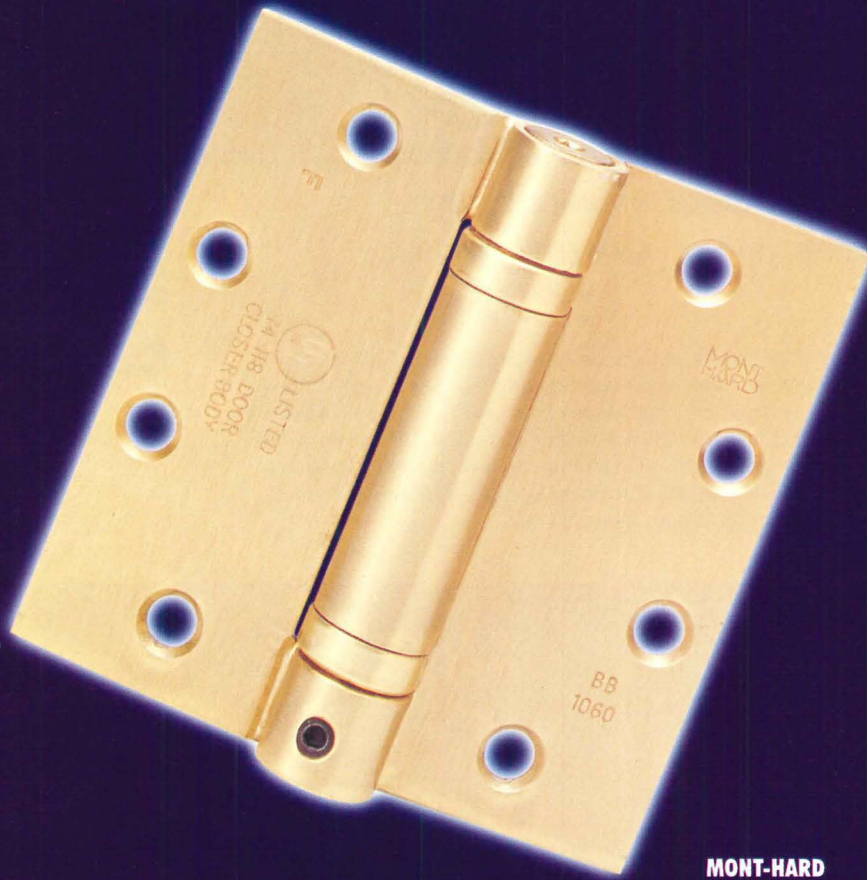
**Fuksas** The strongest contributions of American architecture are Frank Lloyd Wright and his ideas; Louis Kahn's opposition to the International Style; architecture as sculpture and man-made landscape; and the integration of everyday architecture—supermarkets, service stations, suburban districts—into the contemporary urban vision.

**Behnisch** For Europeans, Frank Lloyd Wright is "the" American architect. Along with Sullivan, Kahn, and the European immigrants—Schindler, Neutra, and Mies—Wright deeply influenced architecture in America. Sullivan is also important, since he developed the main formal and structural aspects of Modern architecture. His interpretation of the modern office building contributed to the formal and functional development of the high-rise.

**Hadid** American architects have had tremendous impact on the world of ideas. Many of these ideas were incubated elsewhere, such as Europe, imported to the U.S., and then reimported by Europe—such as the case with Postmodernism. Also, the idea of technology didn't begin in America, but advanced there because of all the equipment available and the interest in technology. In that sense, America really influenced the world.

**Hanganu** American architecture has always had an impressive and honest drive to conquer the site and the sky, to stand up and be counted. It's about optimism, great self-confidence, and an intuitive belonging to an undeniably strong, wealthy, and predictable mold.

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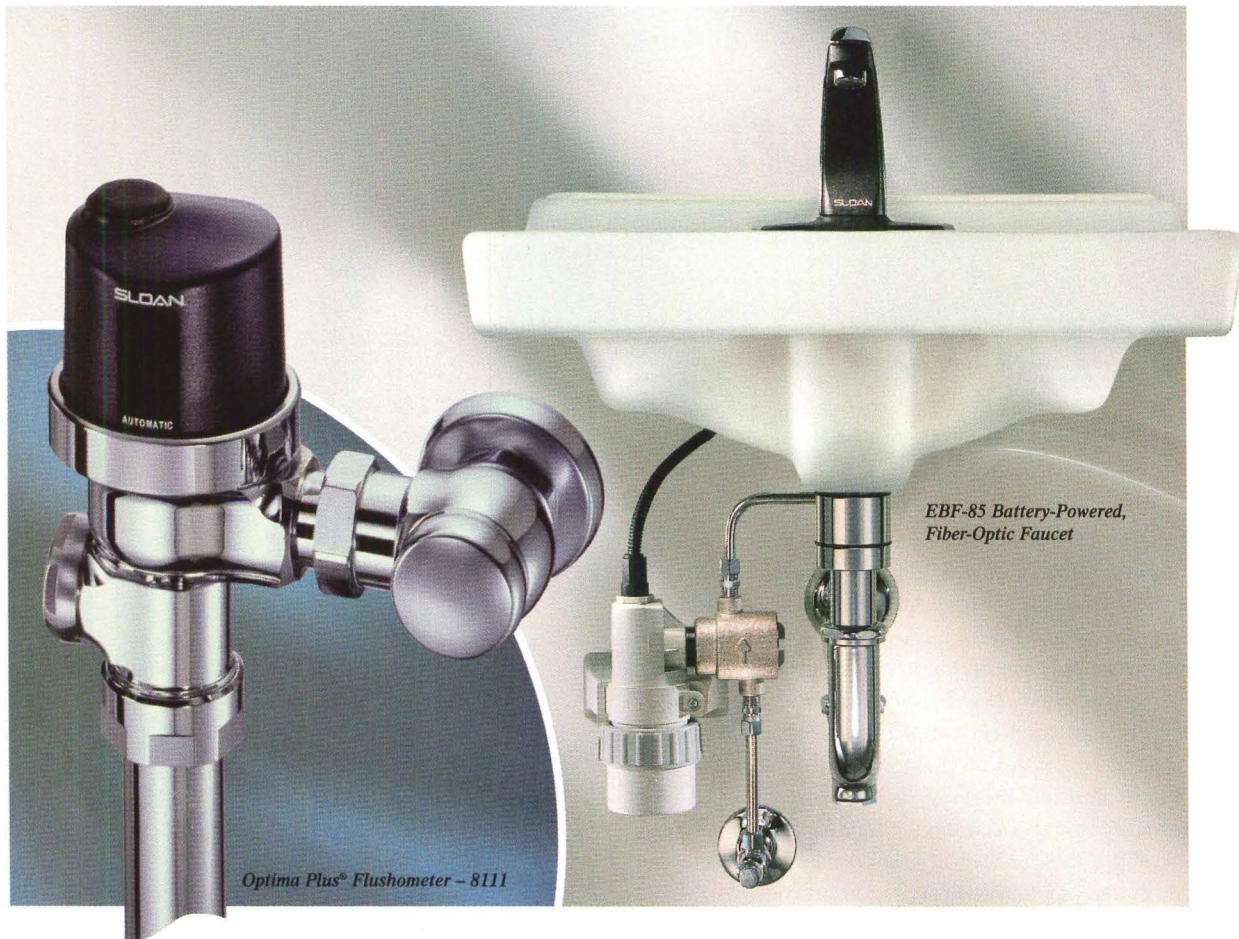
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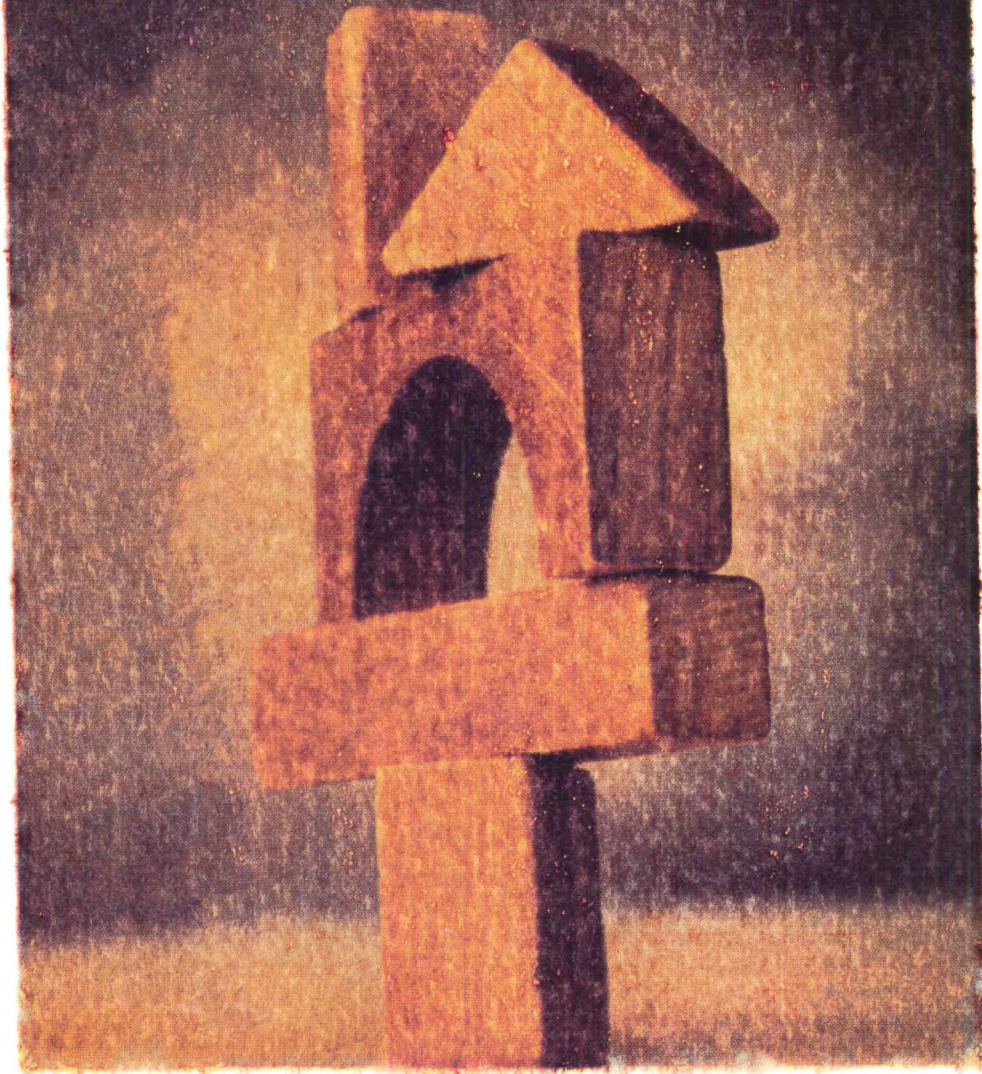
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TECHNOLOGY **Letting in the Light**

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COMPUTERS **Avast, Software Pirate!**



Technology **Letting in the Light**

I.M. Pei's modular space frame for the Miho Museum in Japan makes the most of an earthbound site.

*By Eric Adams*

With 80 percent of the \$216 million Miho Museum built deep into the earth of a nature preserve outside Kyoto, Japan, it's no surprise that light-loving architect I.M. Pei chose glass to dominate the 20 percent of his design that remains visible. The finished product is pure Pei: an artfully designed, glazed space frame that offers views of surrounding forests, withstands the region's high wind loads, and, most importantly, bathes interior lobbies and hallways in natural light.

"When you think of space frames, you usually think of steel and struc-

ture," says New York structural engineer Leslie Robertson, who collaborated with Pei on the Rock and Roll Hall of Fame and Museum in Cleveland, the Bank of China in Hong Kong, and the Meyerson Symphony Center in Dallas. Robertson conceived the Miho's space frame but credits its ultimate success, both technological and esthetic, to Pei's guiding hand. "Here, I think of warmth and people and softness and elegance," he explains of the slatted louver system that provides the space frame's color and texture. "It has little to do with engineering and lots to do with Pei's whole composition

### Following site limits

At 1,830 square feet, the space frame constitutes about 10 percent of the museum's roof. The rest, composed of double-reinforced concrete, supports soil, up to 2 meters deep, to comply with the program's strict site limitations on the amount of visible structure. Local government restrictions on the site stipulated that the museum, which opened in November, could rise no higher than 13 meters above grade. Any visible components over 2,000 square meters in area had to be separated by 5 meters of land.

Though there was flexibility underground, these constraints made the visible roof a challenge. Pei intended the steel and glass structure to resemble the hipped roofs typical of historic Japanese temples but with a lighter and more transparent feel than its historic ancestors. The space frame's angles follow the shape of the building's concrete foundation walls, which in turn follow the contours of the mountain.

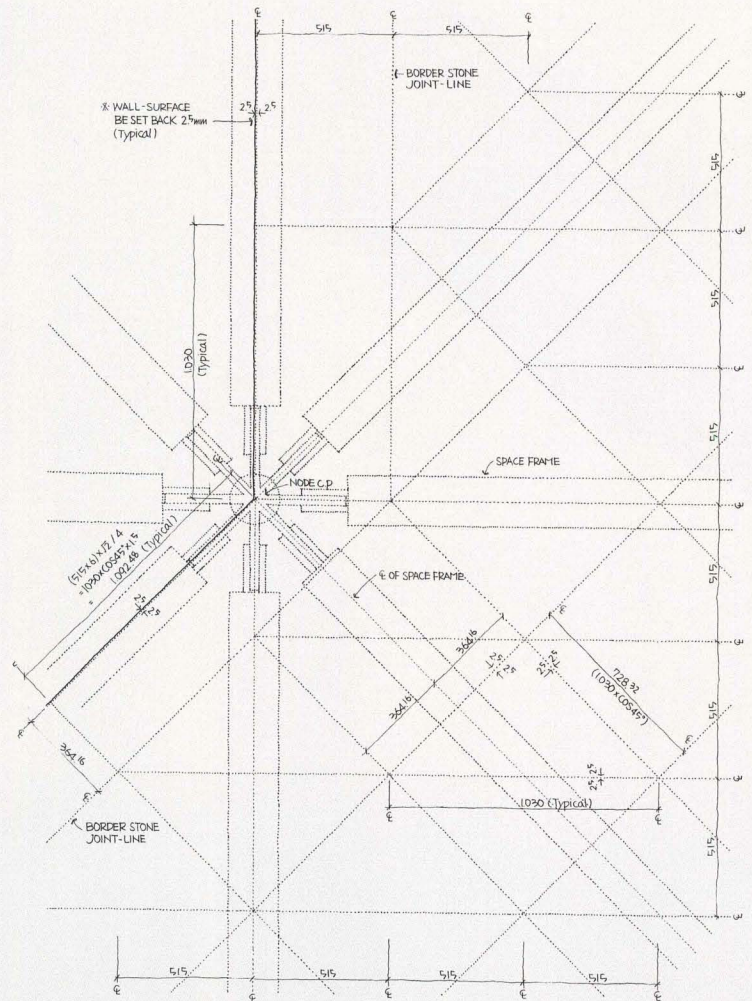
The tetrahedral modules forming the roof's dynamic peaks, gables, and cantilevers are composed of 6-meter-long steel pipes connected by 19 spherical cast-steel nodes. The 19-centimeter-diameter spheres act as universal joints for 35-millimeter-thick steel tabs, which were part of the node castings. The tabs connect to the silver-painted steel pipes via two outer tabs that cap the pipes. These are welded so carefully that no seams are visible and are fastened with six flush bolts.

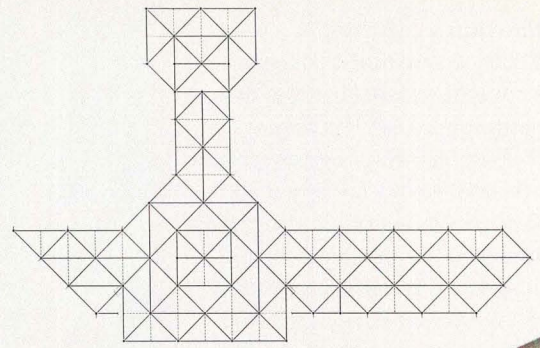
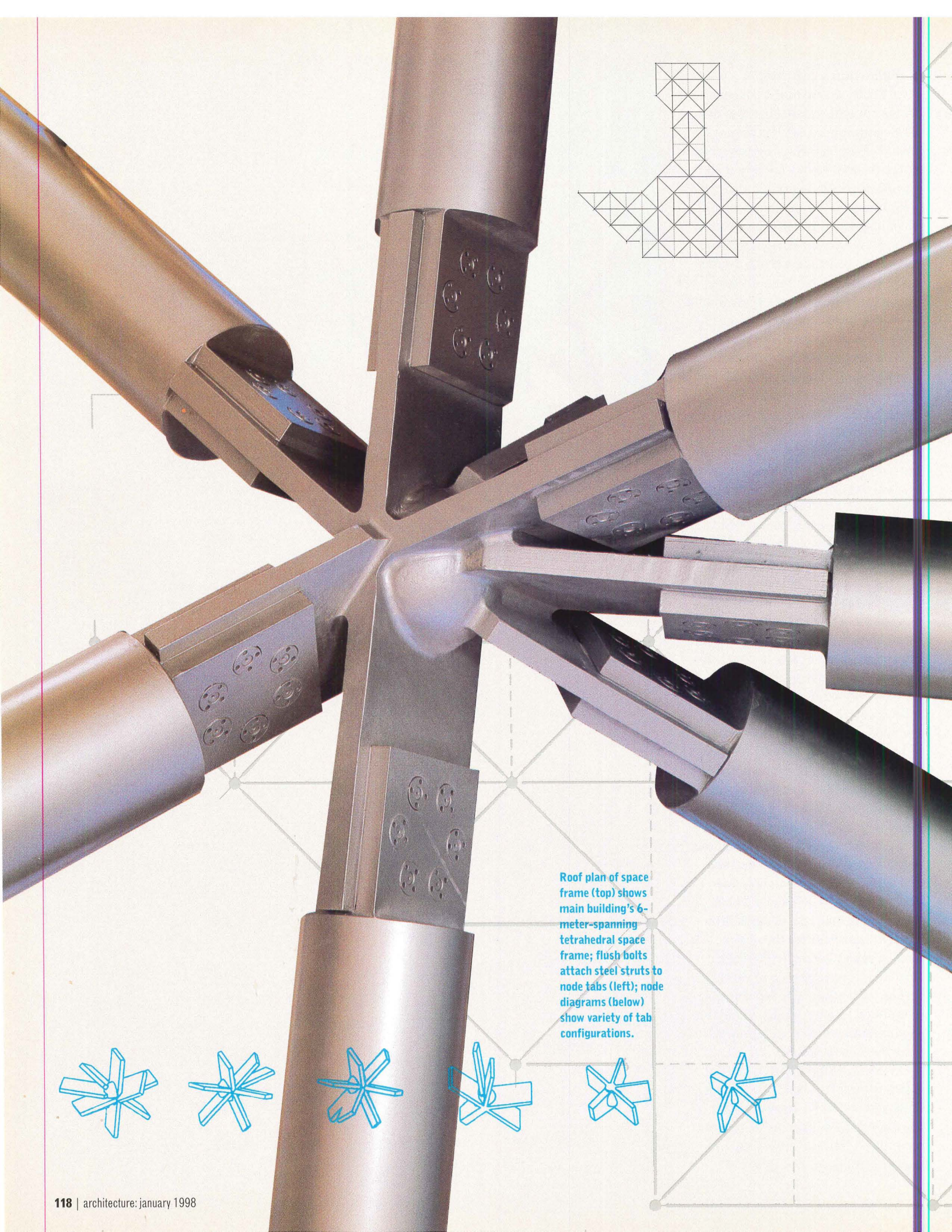
Given the various angles required of the space frame, Pei, Robertson, and Japanese structural engineer Yoshihiro Okabe of Tokyo's Whole Force Studio had to devise 83 different configurations for the nodes. Each receives between three and 10 steel struts extending at varied angles from other nodes and some are welded to steel plates within the 45-centimeter-wide concrete walls to anchor the structure.

Project architect Tim Culbert explains that these node configurations and the roof's geometry have little direct precedent in Pei's previous work. "They're nothing like the glass pyramids at the Louvre, in

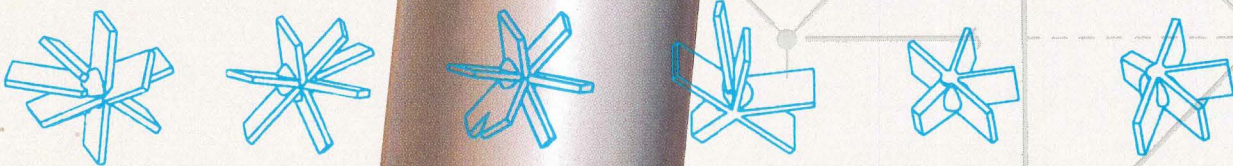


In north corridor (left), horizontal steel members of tetrahedron conceal emergency lighting and uplighting. Typical 19-centimeter-diameter cast-steel node (below) is positioned on center line of module. Wall position is represented by darker line at left.





Roof plan of space frame (top) shows main building's 6-meter-spanning tetrahedral space frame; flush bolts attach steel struts to node tabs (left); node diagrams (below) show variety of tab configurations.





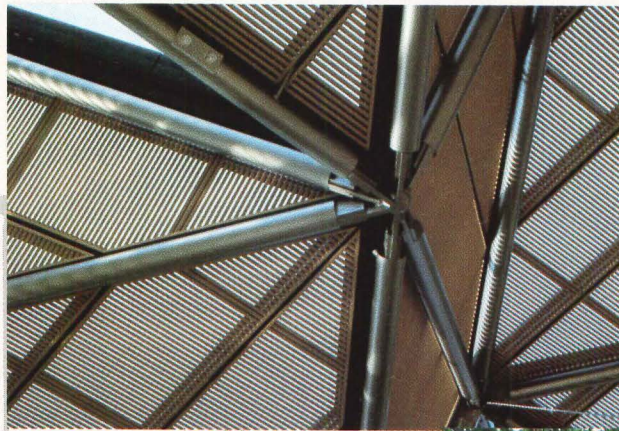
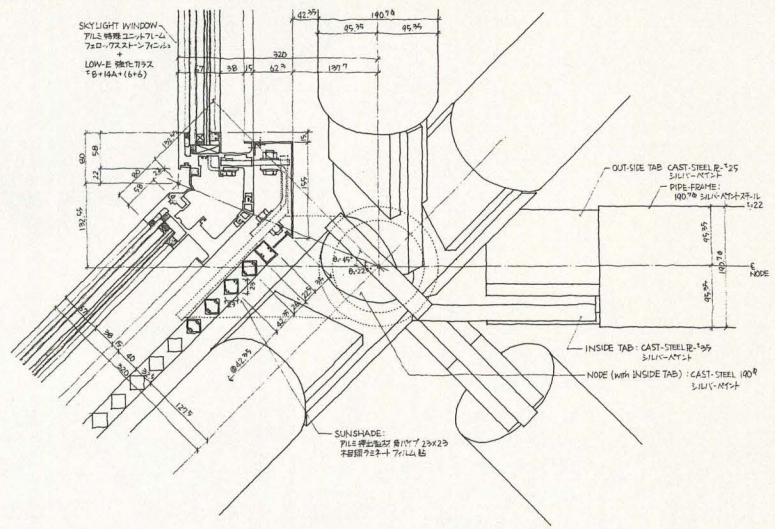
which each glass panel represents a module of structure." At the Miho, Culbert continues, the space frame supports the glass, which is not structural, and derives its strength from its own three-dimensional geometry. "The space frame modules are quite large, but only two points of the tetrahedron have to be supported. That allows for significant cantilevers."

### Multiple variations

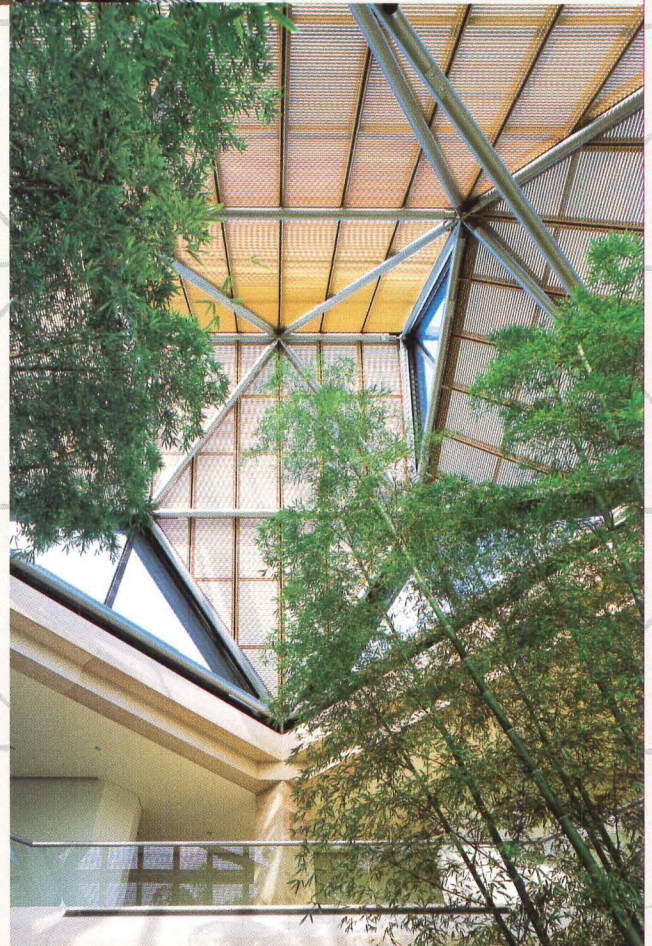
Working in collaboration with Tokyo-based Aoki Structural Engineers and general contractor Shimizu Corporation of Osaka, the design team guided the space frame through numerous iterations, experimenting with different connective tab thicknesses, node and pipe diameters, and frame configurations. Fei led the effort throughout, and even ordered a complete redesign when he sensed from a full-scale mock-up that the pipes and nodes were too large. To produce a more subtle effect, engineer Shigeru Aoki used a higher-grade carbon steel to help reduce the diameters of both elements from 21 centimeters to 13 centimeters. "That's less than an inch, but it was significant to I.M.," Culbert says.

This change in dimensions was ordered after construction had begun, and all relevant agreements concerning Japan's conservative fire and safety codes had to be renegotiated as a result. This renegotiation was typical of the labyrinthine approval process required at each phase of the project. But because construction of the museum was still proceeding around the space frame, the amount of time lost in the effort was minimal.

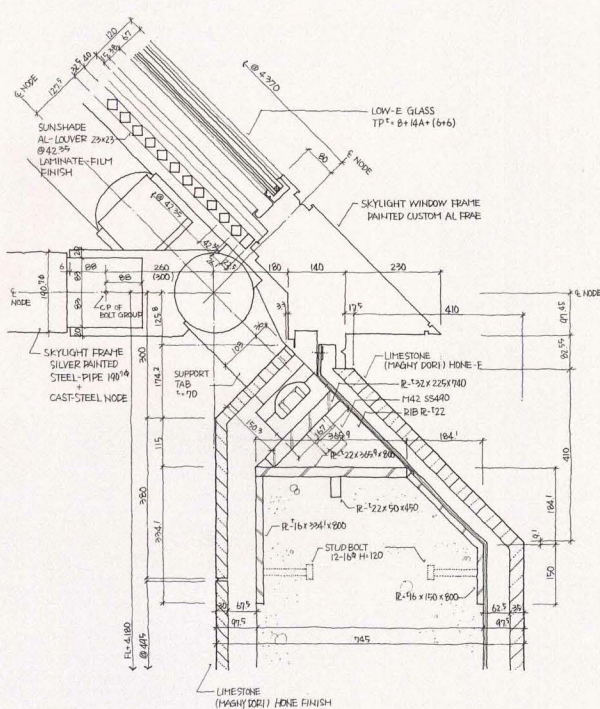
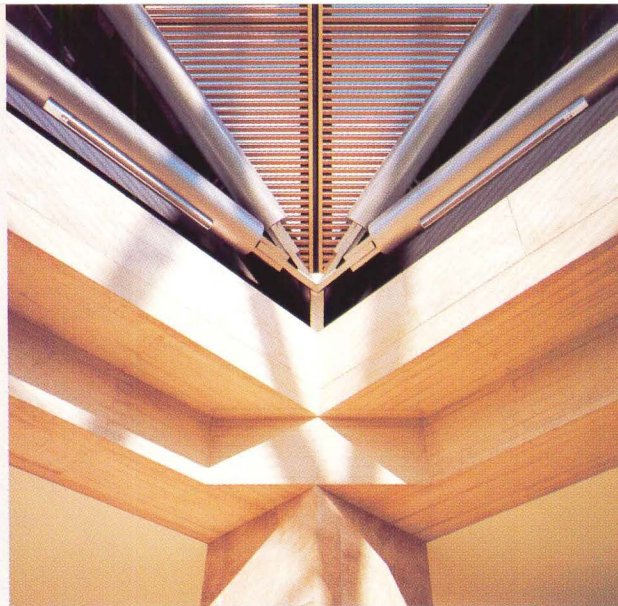
Culbert attributes this ability to absorb major changes during building to the nature of the Japanese construction industry, which relies on prototyping for complicated structures and is more tolerant of mid-construction changes than the U.S. construction industry. Robertson agrees, adding that this tolerance comes from a slower construction pace set by the input of the Japanese construction ministry,



Typical space frame node (above and left) offsets glass and aluminum sunshade layers from structural chords. Peak of space frame (below) rises 14 meters above double-height tea court in south wing.



Space frame attaches to concrete wall through limestone cladding (right and below), face of which is on center line of space frame node.



which oversees all building. “As an engineer in the United States, I could just wave my arms and say ‘do it this way,’” notes Robertson. “But here, everything that is not conventional must be thoroughly tested and approved before it can be built.”

### Strength testing

Pei’s crystalline roof also needed to accommodate Japan’s strict national codes governing seismic forces, high winds, and snow loads. Fortunately, the space frame’s light weight required only minimal seismic reinforcement and its high-compressive-strength members brace the walls in the double-level main hall, contributing to the building’s overall stability. (A retaining wall, separated from the building by a 3 1/2- to 7 1/2-meter-wide air space, handles most of the seismic pressures.)

The prefabricated glass panels above the space frame were designed to resist seismic activity by allowing movement between the modules, focusing it in aluminum gaskets that also maintain weathertightness. To withstand the wind and snow loads, a model was tested in a wind tunnel at the University of Western Ontario to compensate for wind effects on the envelope and space frame structure. Additionally, the roof system was further tested by the manufacturer in its laboratories against wind, water, and structural deformation.

Although it took close to nine months for Osaka-based Sumito Heavy Industries to manufacture the node castings, the space frame was

erected afterwards in only 2 1/2 months in 1994, after the last concrete pour and at about the midpoint of the museum’s construction.

### Glass and louvers

The laminated low-E glass panels that hover 10 centimeters above the space frame are supported by vertical aluminum web plates welded to the steel pipes and carefully concealed. They were manufactured in 1.2-meter-wide modules, each up to 5 meters long, that were dropped onto aluminum rafters. To mimic the tile roof vernacular, the color of the rafters is similar to that of the tile manufactured in local kilns. “The local government only allows tile roofs, so we had to get a variance to use glass as the roofing material,” remembers Perry Chin, who oversaw most of the technical specifications for the museum. “That was something of a breakthrough.”

The gap between the inside face of the glass and the outside of the steel pipes allows enough space for the aluminum louvers, which filter sunlight and are designed to mimic the appearance of honey-colored laminated wood, but not wood’s vulnerabilities. “The problem with wood is that radiant heat and humidity would cause the slats to bend and discolor,” Culbert points out. “We also needed something that would be compatible with conservation and fire-safety issues.”

With the help of Toyama-based manufacturer YKK (known worldwide for making zippers), the design team developed a woodlike louver consisting of a computer-generated grain pattern designed by Pei and photographically printed on polyester film. At 1.2 meters square, the widths of the louver modules match those of the window panes and are triangular in places to conform to the shape of the space frame.

Beyond their esthetic success, the louvers speak to cultural tradition through the dramatic, sharp shadows they cast in the museum’s lobbies and corridors. “Shadow culture is very strong in Japan,” notes Culbert, who marvels at the serendipity. “This effect wasn’t entirely expected.”



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The Secretary of the Interior's guidelines for salvaging historic buildings keep preservation efforts on track, but prove confusing to architects.

**THE SECRETARY OF THE INTERIOR'S  
STANDARDS FOR THE TREATMENT  
OF HISTORIC PROPERTIES**

**PRESERVATION  
REHABILITATION  
RESTORATION  
RECONSTRUCTION**

*By Eric Adams*

When working under the U.S. Department of the Interior's historic preservation standards, the slightest slip can cost a bundle. In New York City recently, the conversion of a vacant ice-storage warehouse to apartments lost \$3 million in tax-credit benefits after a state preservation official deemed newly punched windows out of character. In Trenton, New Jersey, a factory-to-restaurant conversion lost \$700,000 in tax breaks because two additions appeared too large. And in Providence, Rhode Island, repairs to stucco walls in an affordable housing project were nixed because they involved painting a previously uncoated finish—even though the colors matched.

All of these thwarted efforts can be attributed to the influence of the Secretary of the Interior's "Standards for the Treatment of Historic Properties," a vital and effective, but often frustrating, set of guidelines for determining the best approach to preservation, rehabilitation, restoration, and reconstruction.

The standards were developed in the late 1970s. The first, rehabilitation, was created to help architects, developers, and building owners take advantage of historic preservation grant programs and tax-credit opportunities created by the Tax Reform Act of 1976. Six other standards followed: preservation, restoration, reconstruction, protection, stabilization, and acquisition. (The latter three guidelines were eventually folded into the first four.)

As the main criteria for rehabilitation tax credit eligibility, the standards have helped generate more than \$18 billion in private investment and have been used to award more than \$850 million in state and national preservation grants. With more than 1 million properties listed on the National Register of Historic Places, these figures are growing rapidly.

At first glance, the standards seem fairly innocuous. They offer broad and sensible guidance for altering, upgrading, and expanding historic properties. Though they are regulatory in tax credit and grant cases, they are not laws. Instead, they seem to be little more than suggestions for good behavior.

But while there is nearly universal agreement over the need for the standards, fights have erupted in state historic preservation offices nationwide over their interpretation. Millions of dollars in tax credits have been gained or lost because of them and thousands of rehabilitation projects have been dramatically altered—some even completely sunk—in their wake. They clearly confuse architects and their clients. Last November, more than 150 people packed an AIA New York seminar on how to deal with the standards.

Most of the difficulty lies in the guidelines' deliberately broad language, which is intended to apply to a variety of building types, sites, and districts. This breadth is seen by some architects as flexibility, but by others as vagueness. Still more are concerned that the standards do

# PRESERVATION

## PRESERVATION STANDARDS

Preservation is defined as the act or process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction. New exterior additions are not within the scope of this treatment; however, the limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project.

not weigh social and economic factors seriously enough. John Clarke, of Clarke and Caton Architects in Trenton, New Jersey, designed the factory-to-restaurant conversion that lost the tax-credit opportunities because of oversized additions. "We renovated an historic building that is a major part of a waterfront revival," explains Clarke. "In cases like that, I think we should be thinking about the public good in a larger sense. But then, the Park Service will say that that's exactly what they're doing."

Confusion is spreading as quickly as use of the standards themselves. The guidelines not only guide state historic preservation offices when recommending potential tax credit recipients to the National Park Service, which administers the tax credit program for rehabilitation projects, but are also applied by the states to evaluate projects for their own development and grant programs. They are useful tools for local design review committees as well as architects and owners concerned about appropriate treatment of their historically significant buildings.

### Vague or flexible?

The standards are presented in clearly defined categories, but in broad language. The preservation standard emphasizes the retention of all historic fabric through conservation, maintenance, and repair. Rehabilitation is similar but has more latitude for replacement because it assumes the property is more deteriorated. Restoration

focuses on the retention of materials from a property's most significant period. And reconstruction, which is the least-applied standard, establishes limited opportunities to re-create a bygone structure from entirely new building materials.

To assuage concerns over imprecise language, the Interior Department offers a 188-page book of guidelines that accompany the standards and apply specifically to historic buildings. In each of the four categories, the authors offer specific advice in the form of do's and don't's for given situations. The preservation standards, for instance, recommend sealing windows by "recaulking and replacing or installing weatherstripping," but they recommend against "retrofitting or replacing windows rather than maintaining the sash, frame, and glazing." The restoration guidelines suggest "repainting with colors that are documented to the building's restoration period" and warn against "using new paint colors that are inappropriate to the building's restoration period."

Still, the overall ambiguity has many concerned. Virginia architectural conservator W. Brown Morton III, who coauthored the original standards with Gary Hume when he was chief of the Park Service's technical services program, argues that some of the changes in language incorporated in 1995 removed flexibility from the application of the standards. He cites rehabilitation standard Number Three: The 1978 version reads, "All building struc-

- 1 A property will be used as it was historically or be given a new use that maximizes the retention of distinctive materials, features, spaces, and spatial relationships. Where a treatment and use have not been identified, a property will be processed and, if necessary, stabilized until additional work may be undertaken.
- 2 The historic character of a property will be retained and preserved. The replacement of intact or repairable historic materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.
- 3 Each property will be recognized as a physical record of its time, place, and use. Work needed to stabilize, consolidate, and conserve existing historic materials and features will be physically and visually compatible, identifiable upon close inspection, and properly documented for future research.
- 4 Changes to a property that have acquired historic significance in their own right will be retained and preserved.
- 5 Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.
- 6 The existing condition of historic features will be evaluated to determine the appropriate level of intervention needed. Where the severity of deterioration requires repair or limited replacement of a distinctive feature, the new material will match the old in composition, design, color, and texture.
- 7 Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
- 8 Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.

## REHABILITATION STANDARDS

Rehabilitation is defined as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values.

- 1** A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.
- 2** The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.
- 3** Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectured features or elements from other historic properties, will not be undertaken.
- 4** Changes to a property that have acquired historic significance in their own right will be retained and preserved.
- 5** Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.
- 6** Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.
- 7** Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
- 8** Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.
- 9** New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work will be differentiated from the old and will be compatible with the historic materials, features, size, scale, proportion, and massing to protect the integrity of the property and its environment.
- 10** New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

# REHABILITATION

**WHENEVER I HEAR THE WORDS 'GUT REHAB,' MY TOES CURL INVOLUNTARILY, GROANS A STATE PRESERVATION OFFICIAL. IN MANY PROJECTS, THE DEVELOPERS THINK THEY CAN START OVER WITH A BUILDING. IN OTHERS, VIABLE ELEMENTS ARE ELIMINATED.**

tures and sites shall be recognized as products of their own time and period. Alterations that have no historical basis, and that seek to create an earlier appearance, shall be discouraged." The 1995 revision reads, "Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken."

These changes, Morton suggests, limit preservation strategies. "Much of the flexible language in the original version has hardened," he says. "That can have two negative results: Clients and architects reading the standards may see them as commandments rather than flexible standards; and professionals and federal, state, and local preservation organizations may feel the harder language means that they must be less flexible in their interpretations."

Not so, says the Department of the Interior's Kay Weeks, coordinator of standards and outreach within the Heritage Preservation Services department, who coauthored the 1995 guideline revisions with architectural historian Anne Grimmer. Weeks says they strove to simplify the 1978 version, which had seven standards and blurry distinctions between them. "We wanted to expand the language so the standards could apply to all property types and could include spatial relationships," Weeks says. "The 1978 standards were much more complicated."

Bruce Judd, of Architectural Resources Group in San Francisco, consulted with the Interior Department on the revisions and adds that the changes were also intended to prevent glass boxes from being built behind Victorian houses. "The old standard for additions said they should be clearly modern and not a replica," maintains Judd, who uses the standards on almost every project. "But if an architect puts a Miesian box behind an historic house, that's too jarring. There are better ways, so we made slight changes to encourage differentiation but also compatibility."

### Applying the standards

For every horror story surrounding the standards, there are dozens of success stories. Although it was her firm that was prevented from executing the stucco repairs in the affordable housing project in Providence, Martha Werenfels, a project architect with Durkee and Brown Architects, is quite pleased with her current conversion of a seven-story downtown department store into loft apartments. Applying the standards in order to receive tax credits has been a tremendous challenge. Elevator placement within the mostly vacant 1898 building has been an issue, as have several interior storefronts that must be retained as apartment entrances. Durkee and Brown and the Park Service went back and forth frequently before eventually agreeing on the issues.

Werenfels, who formerly worked

# RESTORATION

## RESTORATION STANDARDS

Restoration is defined as the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period. The limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a restoration project.

- 1 A property will be used as it was historically or be given a new use which reflects the property's restoration period.
- 2 Materials and features from the restoration period will be retained and preserved. The removal of materials or alteration of features, spaces, and spatial relationships that characterize the period will not be undertaken.
- 3 Each property will be recognized as a physical record of its time, place, and use. Work needed to stabilize, consolidate, and conserve materials and features from the restoration period will be physically and visually compatible, identifiable upon close inspection, and properly documented for future research.
- 4 Materials, features, spaces, and finishes that characterize other historical periods will be documented prior to their alteration or removal.
- 5 Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize the restoration period will be preserved.
- 6 Deteriorated features from the restoration period will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials.
- 7 Replacement of missing features from the restoration period will be substantiated by documentary and physical evidence. A false sense of history will not be created by adding conjectural features, features from other properties, or by combining features that never existed together historically.
- 8 Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
- 9 Archeological resources affected by a project will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.
- 10 Designs that were never executed historically will not be constructed.

in the Rhode Island State Historic Preservation Office, says that her office follows the standards as closely as possible, even when no government funding is involved and the buildings are not registered landmarks. "We're doing seven historic house rehabilitations now, and we're doing everything to preserve their character that the budget will allow," Werenfels says. "One house lost its porch in a fire so we're recreating it from photographs."

Most projects that come before preservation officers are rehabilitations because that's where the tax credit program is targeted. But it's up to the development team to decide which standard to apply, based on the structure's history, condition, intended purpose, and prospective grants or other funding.

When a project is under consideration for government funding, state preservation officers and federal reviewers look at what is being done to the building and what steps are too damaging. "Beyond general function and floor-plan preservation issues, we also look at reversibility of the work, which is a big part of some projects, and at what kind of treatments are undertaken," explains Julian Adams, the historic site restoration coordinator for the New York State Office of Parks, Recreation, and Historic Preservation. "We look to see if you are sandblasting brick or wire-brushing wood."

Adams, who sees 4,000 projects pass through his office annually, recently guided architect Hardy

Holzman Pfeiffer Associates and the Disney Corporation through their rehabilitation of the New Amsterdam Theater in Times Square. The participants, he remembers, had long discussions about preserving elevator doors, lighting issues, new seating, and ticket booths. "It was a great project and their compliance with the standards got them \$9 million worth of tax credits," says Adams.

Other projects have horrified Adams. "Whenever I hear the words 'gut rehab,' my toes curl involuntarily," he says. He remembers many projects in which the developer thought they could just start over with a building, as well as others in which viable elements, such as staircases and corridors, were eliminated. He explains that preservation officers always push for retention of both historic materials and character.

### Additional dilemmas

By far the most controversial of the standards is rehabilitation standard Number Nine, which covers new additions, exterior alterations, and related construction. Here, the standards indicate that the addition should be different yet compatible in terms of materials, features, size, scale, massing, and proportion. "The problem with saying something should be 'different yet compatible' is that you have no idea what to do or who's going to agree with what you do," points out New York City architect Paul Byard. "They suggest a point at which you might arrive, but they don't say how to get there."

# RECONSTRUCTION

## RECONSTRUCTION STANDARDS

Reconstruction is defined as the act or process of depicting, by means of new construction, the form, features, and detailing of a nonsurviving site, landscape, building, structure, or object for the purpose of replicating its appearance at a specific period of time and in its historic location.

- 1 Reconstruction will be used to depict vanished or nonsurviving portions of a property when documentary and physical evidence is available to permit accurate reconstruction with minimal conjecture, and such reconstruction is essential to the public understanding of the property.
- 2 Reconstruction of a landscape, building, structure, or object in its historic location will be preceded by a thorough archeological investigation to identify and evaluate those features and artifacts which are essential to an accurate reconstruction. If such resources must be disturbed, mitigation measures will be undertaken.
- 3 Reconstruction will include measures to preserve any remaining historic materials, features, and spatial relationships.
- 4 Reconstruction will be based on the accurate duplication of historic features and elements substantiated by documentary or physical evidence rather than on conjectural designs or the availability of different features from other historic properties. A reconstructed property will re-create the appearance of the nonsurviving historic property in materials, design, color, and texture.
- 5 A reconstruction will be clearly identified as a contemporary re-creation.
- 6 Designs that were never executed historically will not be constructed.

### FOR MORE INFORMATION:

U.S. Department of the Interior publishes the "The Secretary of the Interior's Standards for the Treatment of Historic Properties: With Guidelines of Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings," codified in the *Federal Register* as 36 CFR 68, and the slightly different standards for rehabilitation, which apply to the tax-credit program, codified as 36 CFR 67. To obtain a catalog of the department's preservation-related publications, contact: Heritage Preservation Services Information Desk (2255), National Center for Cultural Resource Stewardship and Partnerships, P.O. Box 37127, Washington, D.C. 20013-7127; (202) 343-9583; (202) 343-3803 fax; [hpsinfo@nps.gov](mailto:hpsinfo@nps.gov). The standards will soon be posted at the Heritage Preservation section of the National Park Service's Web site: [www.cr.nps.gov](http://www.cr.nps.gov).

**FORTUNATELY, THERE IS NOW SIGNIFICANT CASE LAW TO HELP APPLY THE STANDARDS. THE PARK SERVICE AND THE STATE HISTORIC PRESERVATION OFFICES HAVE EMPLOYED THEM SUCCESSFULLY ON MORE THAN 27,000 PROPERTIES IN THE 20 YEARS THE STANDARDS HAVE EXISTED.**

"There is always conflict with this type of work because of the range of approaches possible," agrees Terry Pfoutz, of the New Jersey Historic Preservation Office. "People have different ideas about mass, scale, and design."

Pfoutz oversaw the approval process for Clarke and Caton's restaurant. The developer had hired the architect to create a dining and nightclub space in the century-old Cooper Iron Works building, which had been vacant for decades. To preserve the historic character of the interior but still allow for enough kitchen and dining space, the architect designed two shedlike, one-story additions, each built of corrugated metal to replicate the industrial nature of the structure.

Pfoutz approved the design and the additions—stipulating the inclusion of historically accurate windows and the retention of the brick's naturally aged appearance—and recommended the project to the Park Service for tax-credit approval. However, the Park Service rejected the application because it decided the additions were too large. They would have accepted one addition, but not both.

As a result, the developer, who couldn't justify that compromise economically, lost \$700,000 in tax-credit benefits that would have enabled better mortar repointing as well as the construction of a slate roof, rather than the synthetic shingles that were ultimately applied. "Unfortunately, we were not able to

get as high a quality of building as we would have liked," says Clarke.

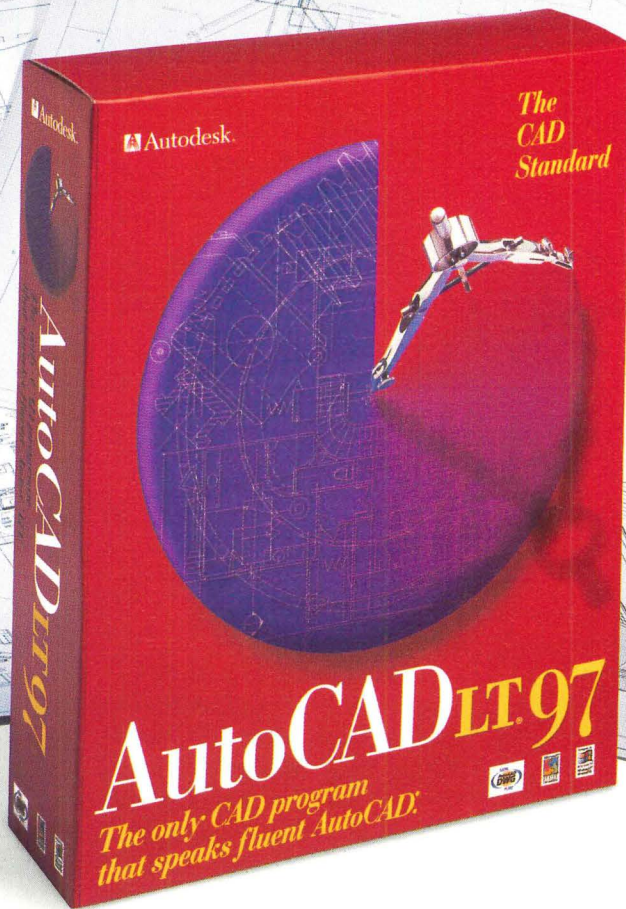
### Economic balance

It's true that architects and developers feel most slighted when enforcement of the standards causes well-intentioned projects to suffer. "I can understand them saying that they cannot take project funding into account," Werenfels explains. "But if a project is in a struggling urban area, its potential impact has to be taken into account."

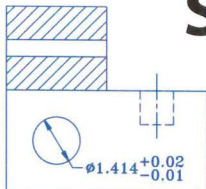
But Adams discourages architects and developers from relying on the economic argument. "I have people saying to me all the time that they need approval for the money, that this will kill the project," Adams observes. "We will consider economic factors in a project, but our decisions always go back to whether or not the project meets the standards."

Fortunately, there is now significant case law to help apply the standards. In the 20 years the standards have existed, the Park Service and the state historic preservation offices have used them successfully on more than 27,000 properties, says Weeks, and architects and developers must rely on the experience and judgment of preservation officers. And, as Adams points out, even though negotiations can be heated, compromises that satisfy all parties and protect the historic value of the building are usually possible. "We will definitely say, 'No, you can't do that,'" Adams asserts, "but the standards are flexible and so are we."

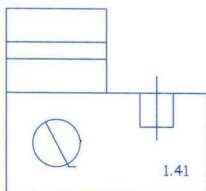




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## Computers **Avast, Software Pirate!**

Copying CAD programs is quick and easy. But it's illegal. Software manufacturers are taking the offensive to thwart a growing problem.



Chinese police steamroll 40,000 pirated compact discs, cassettes, and audio tapes seized during 1997 raids in Beijing (above) as part of antipiracy crackdown.

By Bruce Palmer

On the morning of July 24, 1997, a team of auditors entered the Park Avenue offices of Milo Kleinberg Design Associates (MKDA) in New York City armed with a court order. Accompanied by U.S. marshals and representatives of the Business Software Alliance (BSA), the independent auditors examined every piece of software on every computer in the office. What they found were illegally copied installations of software from Autodesk, Microsoft, Adobe, and Symantec.

The terms of the resulting settlement, the largest to date involving an architectural firm, has MKDA paying \$150,000 in penalties plus the cost of replacing the copied software and rebuilding their software management program. MKDA's experience typifies the magnitude of a growing problem in the architectural profession. Sandy Boulton, director of the antitheft department at Autodesk, manufacturer of AutoCAD, sees a trend: "It's been our experience that there is more piracy in architecture than in almost any other market."

The worst offenders are small- and medium-sized offices, which often have lax management. Large firms usually have strict antipiracy policies with purchasing rules in place. Of course, individual employees can always undermine the efforts of even the most conscientious firm.

"I doubt that any architects I've worked with are entirely legal," remarks a New York-based CAD consultant. Even those who think they are have a couple of pirated copies floating around. It's too easy. If there's a network in place, you don't even need installation disks."

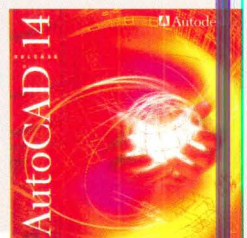
### The problem spreads

The BSA estimates that one in every four programs used for business in the U. S. was illegally produced or distributed. In the home and around the world, the problem is much worse. Pirated software comprises 50 percent of the worldwide software market and almost 100 percent of the markets in some developing countries. For software manufacturers, that adds up to annual losses in excess of \$13 billion.

The perpetrators are our friends, colleagues, and bosses. Bob Kruger, BSA's vice president of enforcement, knows it can be hard to stay within the law. "Ensuring compliance with copyright requirements has always been a challenge, even for companies that want to do the right thing."

The arrival of the personal computer (PC) in the early 1980s established the market for illegal software. When computers were confined to

Authentic AutoCAD compact disc (right) and illegal pirated versions (facing page). Each includes a variety of design and utility programs.



**WE'RE MUCH HAPPIER TO HAVE PEOPLE USING AUTODESK SOFTWARE, STOLEN OR NOT, THAN ONE OF OUR COMPETITORS, ADMITS A COMPANY SPOKESPERSON.**

environmentally controlled rooms and cost hundreds of thousands of dollars, software installation was left to professionals. With the PC came the floppy drive and the birth of what has become a vast underground industry.

The demand for illicit software grew as more households acquired PCs equipped with modems. With the advent of the Internet and the World Wide Web, it has never been easier to obtain software by illegal means. The Internet has provided a vehicle to transport software around the globe instantaneously. There are no cyber-customs agents waiting at the borders to inspect packets of data as they zoom past. A program released in Silicon Valley today can be in duplication in southern China tomorrow. Indeed, most programs are stolen and available on the black market long before their commercial introduction. Prerelease versions of Microsoft's Windows 98 have been available for months in Hong Kong.

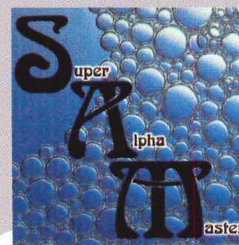
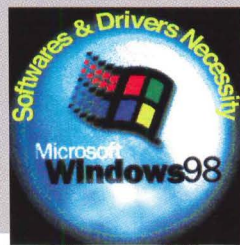
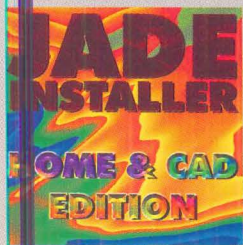
**An industry paradox**

Ironically, illegal distribution has helped to establish some of the software industry's giants. They even acknowledge the benefit of the practice. Steve Ballmer, Microsoft Chairman Bill Gates' right-hand man, affirms that it's important to capture a large share of the pirated software market. "You want them to pirate your stuff, not your competitors' stuff," Ballmer admitted in a speech last summer.

Autodesk software is no exception.

Few people would disagree that AutoCAD's ubiquity is partly due to the ease with which the program can be transported among computers. Autodesk acknowledges the ill-gotten gains of the theft of their flagship product. Echoing Ballmer's position, Autodesk spokesperson Kathy Tom-Engle adds, "We're much happier to have people using Autodesk software, stolen or not, than one of our competitor's. And if we can convince them to buy the product down the road, then that's all the better for us. We would never encourage piracy, but to some extent, it has helped us."

Astonishingly, most of those using illegal software don't feel that they are doing anything wrong. Or at least they aren't bothered enough to come clean. Autodesk CEO Carol Bartz is troubled that "the very same people who would have a fit if their kid stole a Snickers bar think nothing of copying software." Autodesk and the other BSA member companies are doing their best to raise public awareness of the consequences of software piracy and to eliminate the commercial use of pirated software.



**IMITATIONS** →

## ANTIPIRACY POLICE TARGET THE BUSINESS SECTOR, WHILE SOFTWARE MAKERS DEBATE WHETHER BUSINESS CUSTOMERS CAN TAKE THEIR PROGRAMS HOME.

"At the end of the day, the big thing we're trying to do is educate people," notes Bartz. But it's an uphill battle.

### Preventive measures

While the majority of software can be freely, albeit unlawfully, distributed, many software producers have taken steps to reduce or eliminate the potential for unlicensed use. The most restrictive of these methods is hardware locking. A hardware lock, or dongle, is a small device that must be physically attached to the computer in order for the software to run. Form•Z, 3D Studio Max, and Allplan all employ hardware locks. Due to higher piracy rates abroad, Autodesk still utilizes a hardware lock on AutoCAD outside of the United States. According to Boulton, "There are many countries where the enforcement isn't there and if we didn't lock it, we'd sell one copy."

From the consumer standpoint, however, hardware locks are undesirable. They are inherently valuable yet slip easily into a pocket, making them difficult to insure. They have also been blamed for printing malfunctions and have occasionally been known to fail entirely. For these reasons, Bentley Systems, the producer of MicroStation, has abandoned the hardware lock. "We determined the lock was an impediment to users getting their work done," recalls CEO Keith Bentley. Instead, MicroStation is now protected from within the software. Bentley maintains that the

present method is "easier to administer and more reliable" from both a user's and a vendor's perspective.

Software licensing and software locking are similar to hardware locking in that the program will not run properly if the licensing information cannot be found. The encrypted registration information typically resides in a file that is read when the software is launched. Although it isn't difficult to transport the license data to other computers, it identifies the company to whom the software is registered, pointing a digital finger at the source of the purloined program. Software locking permanently associates the software with the computer it has been installed on, usually through the machine's electronic serial number or the processor's identification number. Once it is installed, the software cannot be reinstalled on another computer without first removing the program from the original computer.

### Degrees of piracy

While these antipiracy techniques work to some extent, none of the methods are foolproof. For those unhindered by the ethical ramifications of theft, the best deterrent to software piracy is fear of discovery and, ultimately, prosecution. From the thousands of calls to its antipiracy hotlines each year, the BSA launches hundreds of investigations, many resulting in the type of unannounced raid experienced by MKDA. Software

piracy is a felony and conviction can carry fines up to \$250,000.

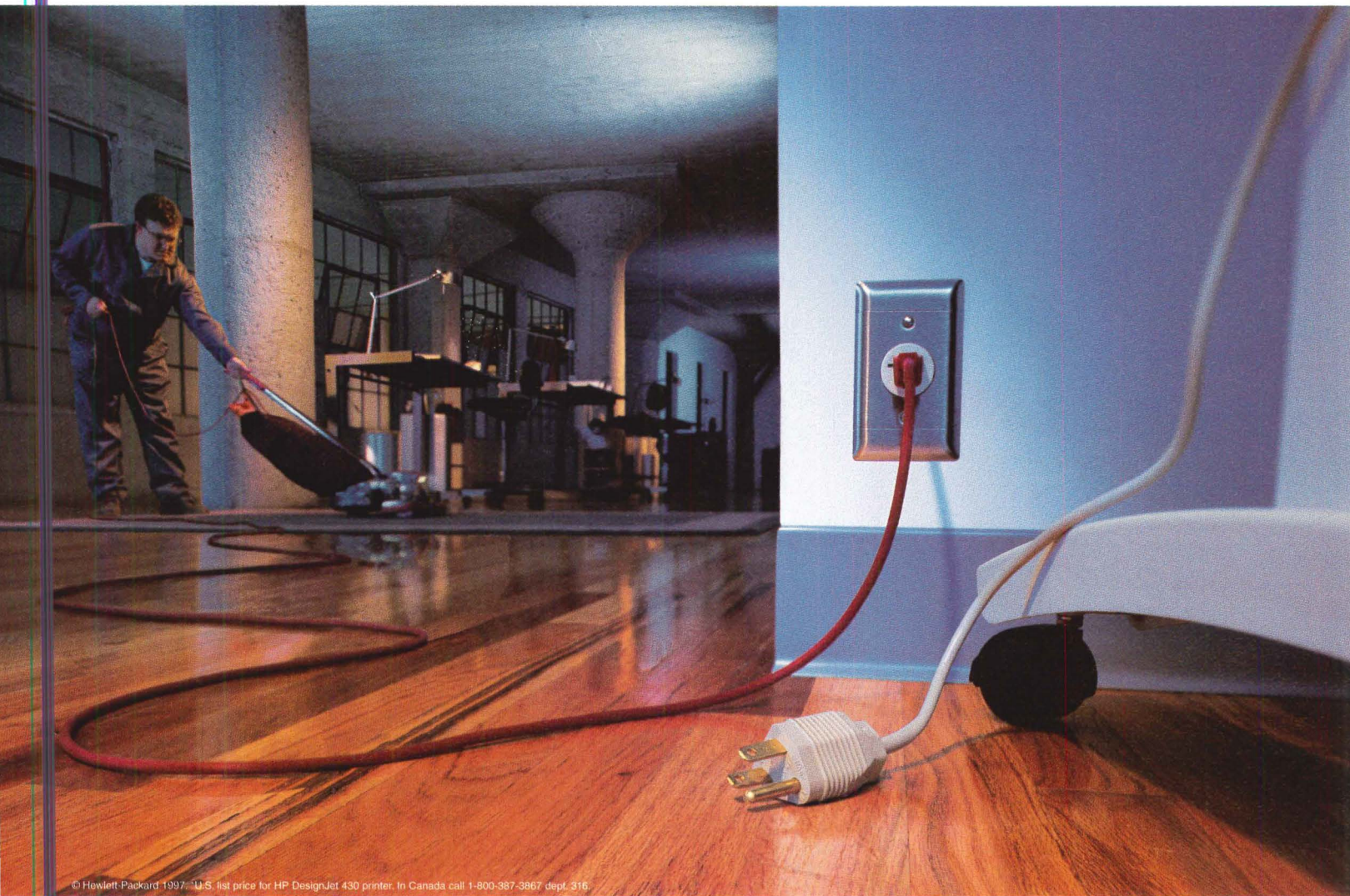
The antipiracy campaign is focused on the business sector. Personal ownership of illegal software is rarely identified. Fortunately for the software producers, piracy at home also represents the smallest piece of the lost revenue pie.

But manufacturers differ on what constitutes piracy. Some vendors encourage copying software from the office to a home PC. For example, Bentley Systems established an official home-use policy to promote the development of MicroStation skills. "We think it's a valid use of MicroStation to take it home and learn it," explains Bentley. "Putting obstacles in the way of people becoming more proficient in your program can't be a good business decision. I don't view it as piracy if someone is taking software home to do their job better."

Autodesk's Bartz sees it a bit differently. A recently implemented Autodesk program allows for home use for registered AutoCAD users, but is primarily aimed at telecommuters and those who take work home. "Where do I draw the fine line?" Bartz asks. How can one be sure "that somebody is really only going to use [the software] to train?"

Architects who use illegal software should remember that more than bits on a disk are being stolen. Like a building design, a computer program is the result of a collaborative effort. The intellectual property of CAD programmers is no less valuable than the work of those who design with it. As Bartz points out, "I respect the intellectual property created with my software, all those great plans and designs. I would just like the same respect right back."

*Bruce Palmer is the director of technology in Gensler's New York office.*



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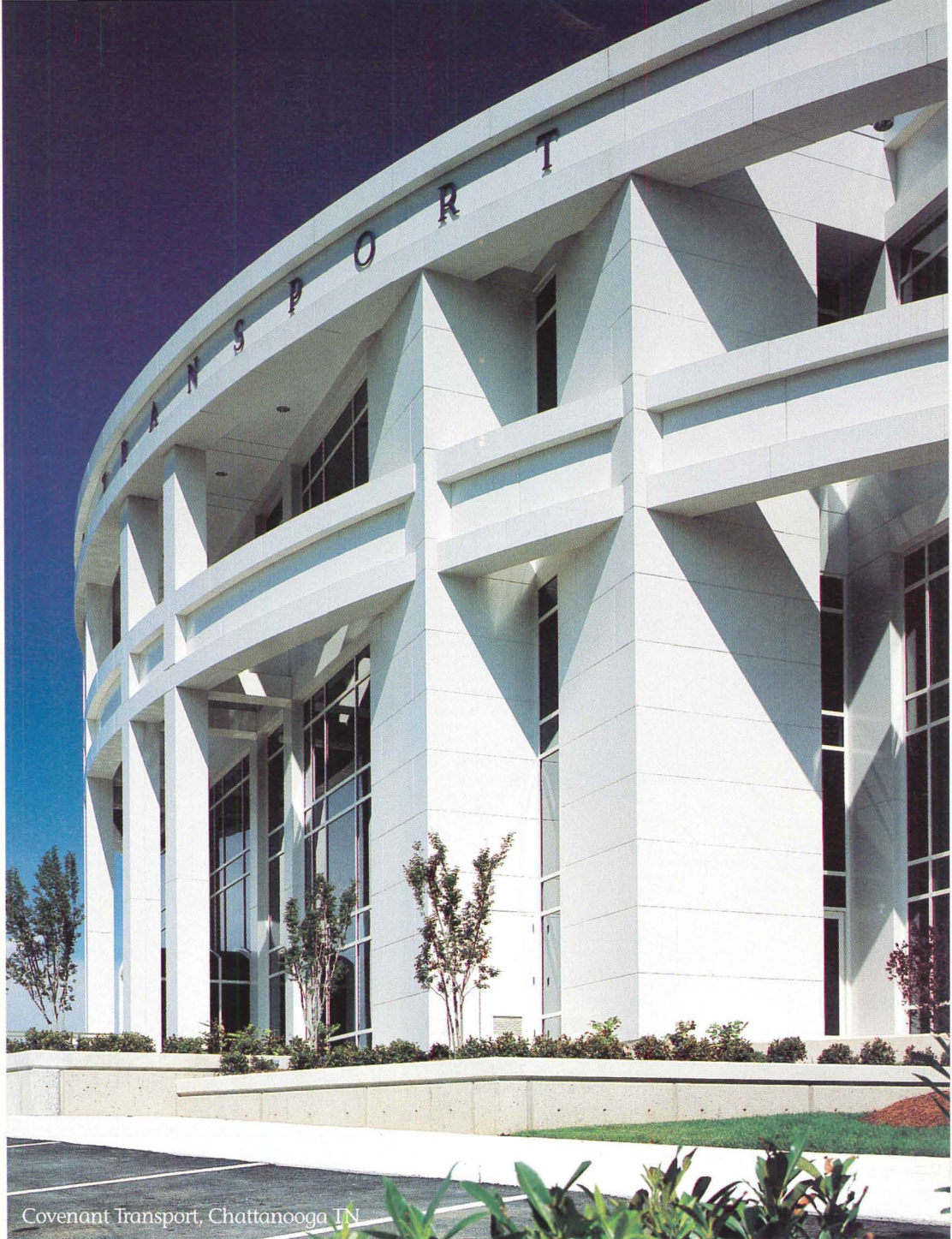
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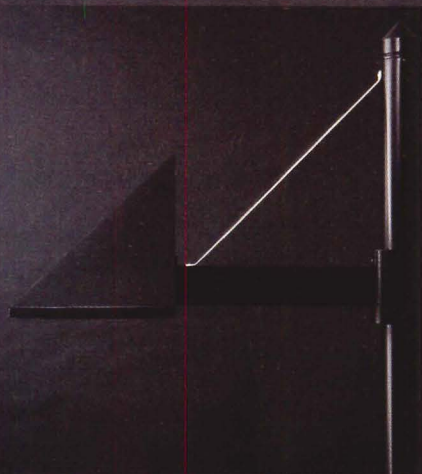
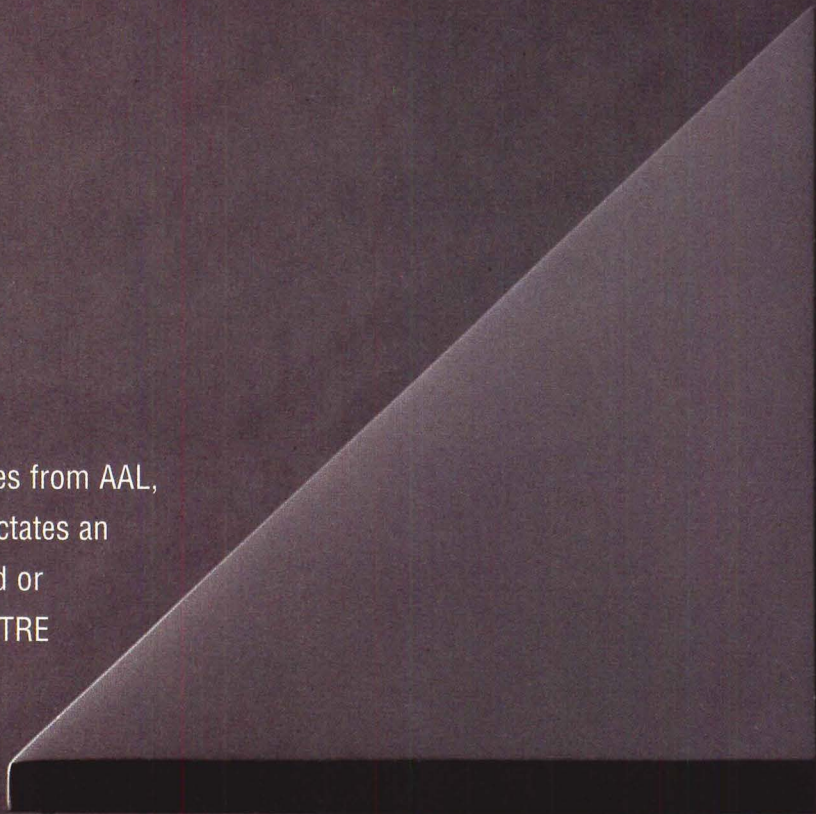
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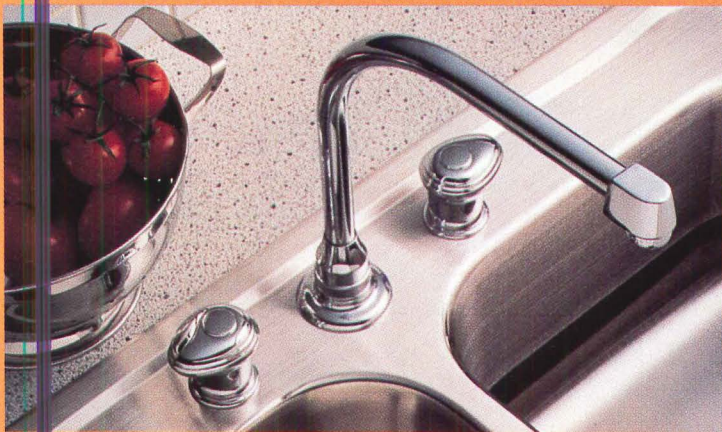


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**2 European Fixture**

MICO Limited's LaTransitional faucet is a stylized chrome bath faucet modeled after traditional European fixtures. Ceramic discs atop the temperature control knobs feature italicized "hot" and "cold" labels. Fixtures are made of solid brass finished in nickel, chrome, or brass. *Circle 293 on information card.*

1



# Faucets

**New corrosion-resistant kitchen and bath fixtures boast clean lines.**

2

**3 Retractable Design**

Hansa's new Hansaronda swivel-arm kitchen faucet is designed with a single lever that adjusts spray volume and temperature. Models with fixed and retractable heads are available. The company recently added matte chrome to its collection of 11 finishes. *Circle 294 on information card.*



3

**4 Ergonomic Kitchen Faucet**

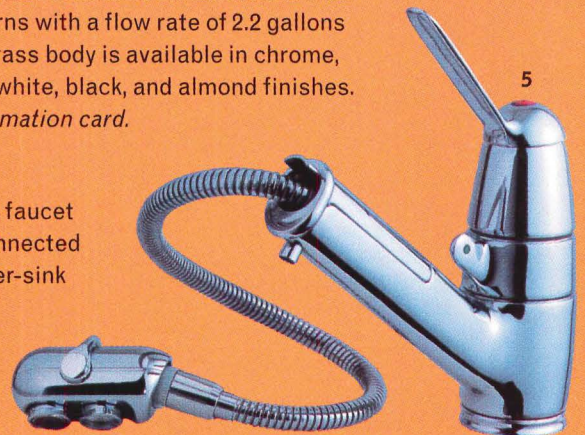
The latest kitchen faucet from Blanco is ergonomically shaped with a single temperature control lever and a pull-out handspray. The faucet delivers both direct and indirect stream patterns with a flow rate of 2.2 gallons per minute. The brass body is available in chrome, brushed chrome, white, black, and almond finishes. *Circle 295 on information card.*



4

**5 Built-In Filter**

The Excel kitchen faucet from Franke is connected to a compact under-sink filtration device that removes chlorine, lead, and parasites found in drinking water. Excel faucets are offered in chrome-finished solid brass. *Circle 296 on information card.*

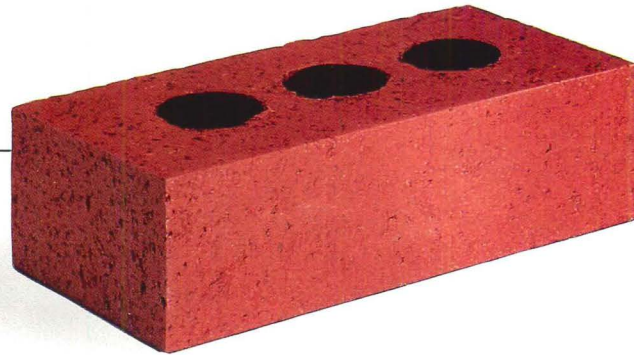


5

# Sixty second guide to Belden Brick:

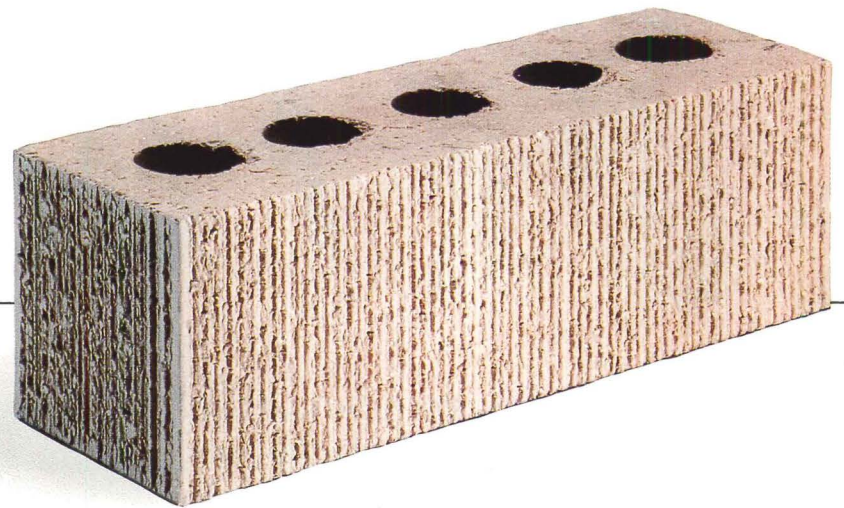
## COLORS

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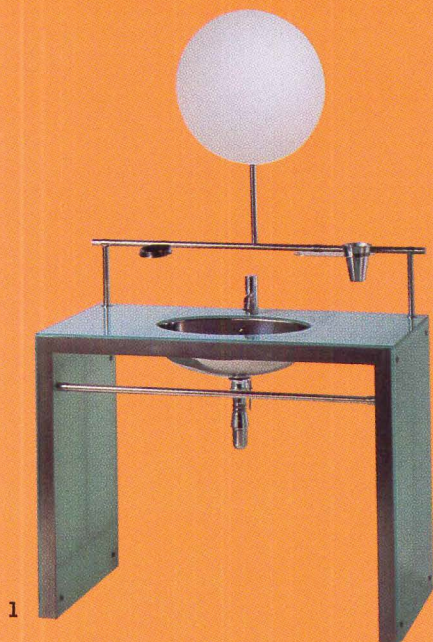
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1

### 1 Putman Bathroom

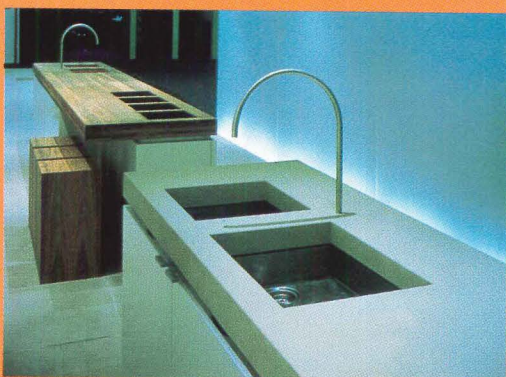
Andrée Putman created the Sirene bathroom console for Hastings' designer bath series. The French designer's freestanding stainless steel and tempered glass frame includes an elliptical, recessed steel basin. A round mirror and glass and soap holders are mounted on a horizontal steel bar above the basin. Putman designed an accompanying shelved cabinet to complement the console. *Circle 297 on information card.*

### 2 Minimalist Kitchen

British architect John Pawson delivers his Minimalist esthetic to the kitchen with an integrated sink and counter system designed for B&B Italia. Pawson conceals hinges, drawer pulls, temperature controls, and appliances to create a seamless look. His system comprises lacquered wood cabinets and shelves, arcshaped water spouts, and recessed, square, stainless steel sinks. Countertops can be specified with stone, walnut, or marble finishes. *Circle 298 on information card.*

# Sink Consoles

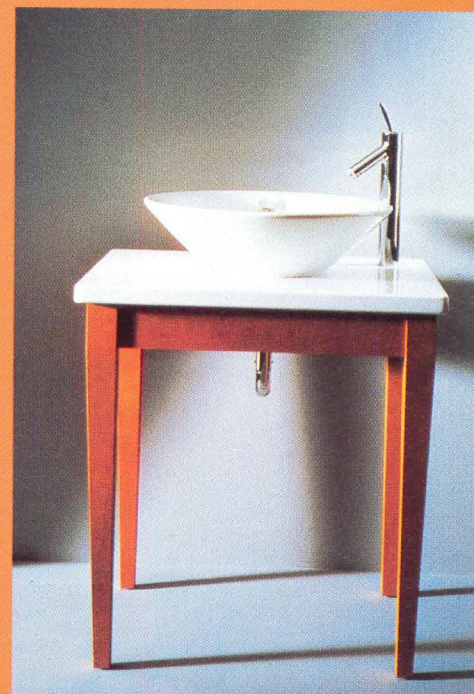
Designer systems enliven  
kitchens and baths.



2

### 3 Starck Design

French architect and designer Philippe Starck recently unveiled a new bathroom faucet and wash basin for Hansgrohe. The chrome Tall Starck faucet is the centerpiece of the collection; two intercepting chrome pipes are topped by a lever, recalling the form of a hand pump. The accompanying basin is a deep vessel that rests on a porcelain-topped pearwood table. Accessories such as a toilet brush, paper holder, and towel bar are also available. *Circle 299 on information card.*



3

### 4 Wooden Console

Milanese interior designers Capilla and Vallejo created the Pamplona sink unit for Hastings. The cherry-veneered, teak-framed console has a stainless steel basin and faucet. The unit measures approximately 35 inches wide, 17 inches deep, and 12 inches high. *Circle 300 on information card.*



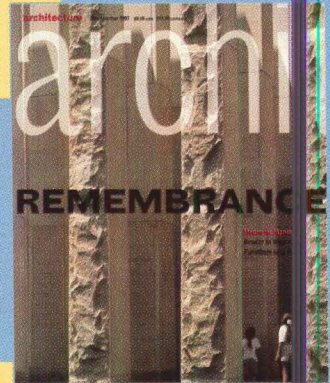
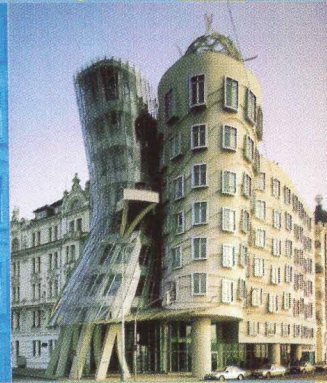
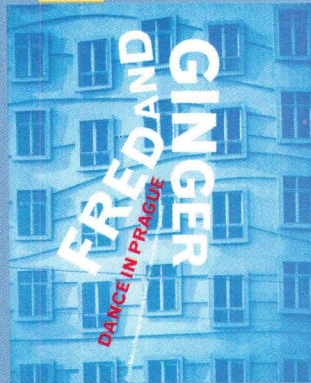
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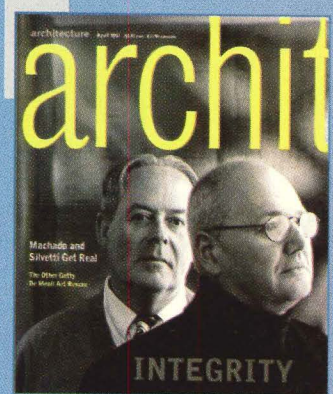
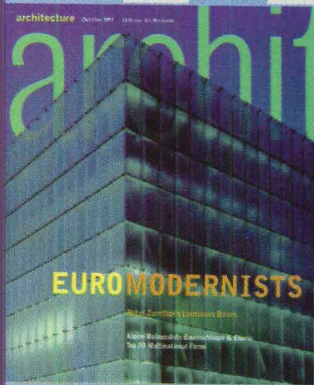
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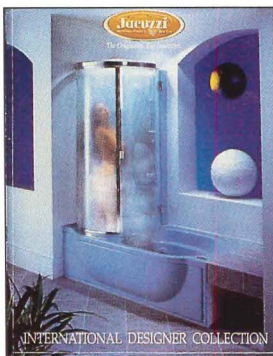
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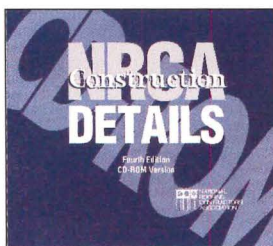
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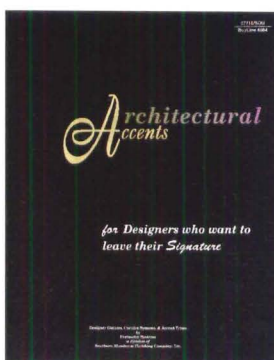
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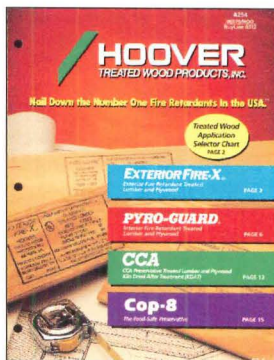
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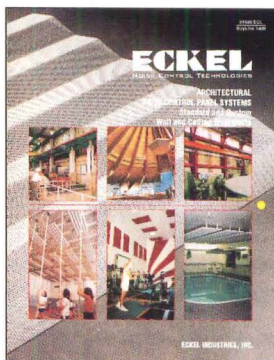
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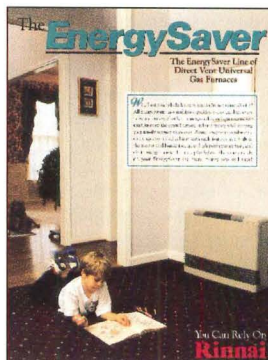
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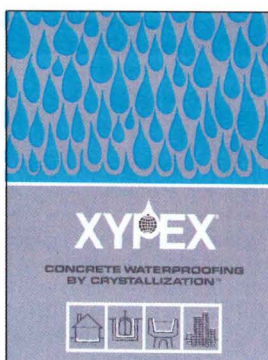
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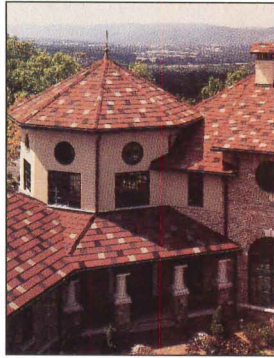
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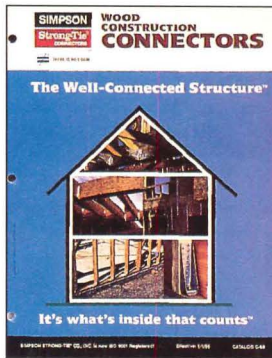
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**Celadon™ Ceramic Slate™**—A kiln-fired, interlocking clay roof tile designed to look like thick slate with a breaking strength greater than 300 pounds; impervious to freeze-thaw degradation with less than 1% moisture absorption; color will not fade, flake, or effloresce—offered in slate gray, slate red, montpelier green, plumstone, and brunswick black. Sixty-year limited, transferable warranty. **Circle 40.**

## Simpson Strong-Tie® Company, Inc.



Ten new products are introduced in Strong-Tie's '98 catalog, *Wood Construction Connectors*. A necessary reference for structural engineers, building officials, and architects, the catalog includes updated specifications, load charts, application drawings, and building code acceptance—plus information on holdown anchorage design, and available custom hanger options. Simpson Strong-Tie Company is an ISO9001 Registered company. For a copy of the 1998 catalog (C-98), write Simpson Strong-Tie Company, P.O. Box 10789, Pleasanton, CA 94588 **Circle 44.**

## Invisible Structures, Inc



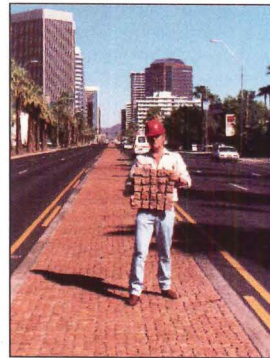
Grasspave® new rolls are sold in nine sizes for fast easy installation to 10 m<sup>2</sup> (108 sf) to 125 m<sup>2</sup> (1346 sf). This 100% recycled plastic ring and grid system is a substitute for asphalt surfacing allowing real grass for parking lots, fire lanes, pedestrian areas. Grass low-traffic pavement is very strong, stable, and porous. CADD disks call 800-233-1510 or <http://www.grasspave.com>. **Circle 48.**

## Heat-N-Glo



**Three-Sided Fireplace for Unlimited Installations**—Heat-N-Glo introduces model PIER-TRC, a three-sided direct vent fireplace that can be terminated vertically or horizontally to accommodate nearly any application. The PIER-TRC is perfect as a room divider, bar, end of counter or a wide variety of creative installation possibilities. As with all Heat-N-Glo fireplaces, the PIER-TRC can be operated by remote control for the ultimate in convenience. Call (888)427-3973(GasFyre) **Circle 52.**

## Eurocobble



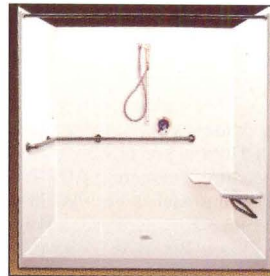
**Granite cobblestone in modules**—An updated 12-page catalog features authentic European cobblestone pre-assembled in modular form. Modules in square, fan, concentric ring, and custom formats arrive at the jobsite ready for quick and easy installation. Pedestrian or vehicular application. Eurocobble® has supplied the design community with traditional and customized paving solutions for over 15 years. NY (212) 627-5803 or CA (213) 877-5012. **Circle 42.**

## Innerface Architectural Signage, Inc.



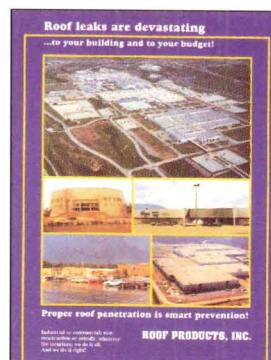
**ADA Signage Compliance**—One of the nation's leading architectural companies for more than 26 years. Innerface offers signage planning and wayfinding consulting, and a complete line of interior, exterior and ADA signage. Also introducing a new Interactive/Touch Screen Directory product. Nationwide coverage and a commitment to quality driven customer service has made Innerface "The Company That Does Things Right". For your local sales representative please call (800) 445-4796. **Circle 46.**

## Florestone



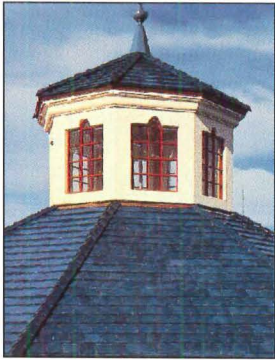
**ADA Compliant Shower**—Florestone Model 32-60H Shower measures 60" wide, 81" high and 31" deep. It comes complete with accessories for institutional use. It is also available as a three-piece model (3PC-32-60H) for remodeling projects. For a catalog, call 1-800-446-8827. Visit Florestone at [www.florestone.com](http://www.florestone.com). **Circle 50.**

## Roof Products, Inc.



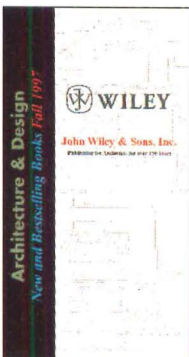
**Roof Penetration for New & Retrofit Construction**—Before you purchase or specify rooftop equipment, contact Roof Products Inc. They have the knowledge, experience and the technical staff to analyze the project and determine the best applications for a leak-free, cost-efficient job. RPI will supply the solution and the curbs, adapters, and other accessories to change equipment without disturbing the roof or substructure. 1-800-262-6669. Website: [www.rpicurbs.com](http://www.rpicurbs.com) or email: [rpicurbs@gte.net](mailto:rpicurbs@gte.net) **Circle 54.**

## CertainTeed Corporation



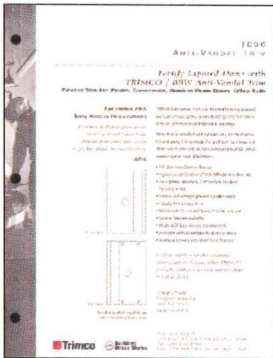
**Ludowici Roof Tile**—After more than 100 years, Ludowici clay roof tiles remain the preferred choice of architects and building professionals. No other clay tile manufacturer offers more colors, styles, fittings, textures, or finishes. And every tile is backed with a 75-year limited warranty (see actual warranty for details). Call for full-color brochure or visit [www.ludowici.com](http://www.ludowici.com).  
**Circle 56.**

## John Wiley & Sons



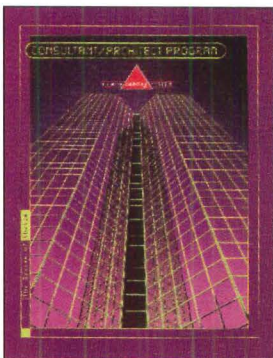
**John Wiley & Sons**—has been publishing important books in the fields of Architecture, Construction and Civil Engineering for over 150 years. Wiley has published numerous landmark books that have advanced the state of the art in building design, construction, and engineering, including Ramsey and Sleeper's *Architectural Graphic Standards* available in both print and CD-ROM editions.  
**Circle 60.**

## Trimco/BBW (Triangle Brass Mfg. Co. Inc.)



**Trimco/BBW Anti-Vandal Product** fills the need to fortify exposed doors at schools, public, commercial, and industrial buildings. Eliminates broken exterior levers. Avoids "jimmied" latch bolts. Flush pulls made especially for high-traffic, exposed rough-service areas. Designed to work in conjunction with all standard panic hardware. Facilitates ADA Easy Access Requirement. FAX 800-637-8746 for free literature.  
**Circle 64.**

## The Siemon Company



The Siemon Company recently introduced its Consultant/Architect Program, designed to encourage formal business partnerships between the Siemon Company and industry leading telecommunications consultants and architectural firms. This program is a service provided by the Siemon Company to help the consultant/architect community with the necessary tools and education to design a standards-based, structured cabling system. For more info, contact the Siemon Company, 76 Westbury Park Rd, Watertown, CT 06795, Phone: (860) 274-2523, Fax: (860) 945-4225. [www.siemon.com](http://www.siemon.com)  
**Circle 68.**

## Garaventa (Canada) Ltd.



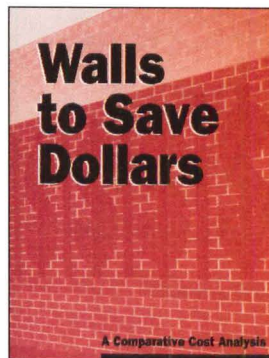
**Unlimited access to innovative designs**—Specifically designed to withstand the rigors of public use. Garaventa Stair-Lift is ideal for a variety of indoor and outdoor applications. With thousands of lifts installed around the world, Garaventa is the number one choice in stairway access. Call for your free information package today. 1-800-663-6556. Garaventa—your accessibility experts.  
**Circle 58.**

## Pemko



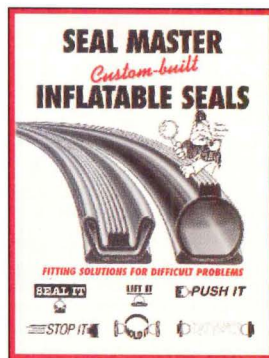
**New Pemko Full-Line Catalog**—Beyond new thresholds, door bottoms, perimeter gasketing, and astragals, Pemko's new catalog includes HSS2000 (an intumescent fire life-safety product), FS3000 (an unbelievable glazing compound which allows for much larger lites in rated doors), security door bottoms, new continuous geared hinges, ADA compliant rubber and aluminum ramps, and an expanded line of nylon brush products.  
**Circle 62.**

## Brick Institute of America



**Wall Cost Analysis**—*Walls to Save Dollars* details the initial and life-cycle cost of six wall materials commonly used in the commercial market sector. This brochure, based upon a study presented at the Third National Concrete and Masonry Engineering Conference, compares costs of brick, precast, EIFS, metal panel and glass wall assemblages. *Walls to Save Dollars* is available for \$2.50 from the Brick Institute of America, 11490 Commerce Park Drive, Reston, Virginia 20191 (703) 620-0010. VISA/MC accepted.  
**Circle 66.**

## Seal Master Corporation



**Seal Master Inflation Seals**—Brochure shows typical inflatable seal construction, configurations, retaining systems and air connections. Custom designed seals offer solutions where gaps exist in sealing weather, liquid, noise, hot/cold, light/dark, pressure, EMI, RFI, radiation, contaminants, dust, pastes, pellets and powders. Inflatable seals are used virtually anywhere a positive seal is needed between two opposing surfaces. Seal Master Corp., 368 Martinel Dr., Kent, OH 44240, (330) 673-8410, Fax (330) 673-8242. E-mail: [info@sealmaster.com](mailto:info@sealmaster.com); [www.sealmaster.com](http://www.sealmaster.com)  
**Circle 70.**

**CONSTRUCTION COST COMPARISONS PER SQUARE FOOT • JANUARY 1998**

	<b>HOSPITAL, 4-8 STORY</b> Face brick with structural facing tile and reinforced steel frame		<b>OFFICE BUILDING, 2-4 STORY</b> Face brick with concrete block back-up and steel joists		<b>SCHOOL, JR. HIGH</b> Face brick with concrete block back-up and a steel frame	
	4th Q 1997	4th Q 1996	4th Q 1997	4th Q 1996	4th Q 1997	4th Q 1996
Atlanta	\$ 97.21	94.89	60.23	58.70	72.38	70.08
Boston	128.71	127.50	79.58	78.88	95.83	94.16
Chicago	121.35	116.11	75.10	71.83	90.35	85.75
Dallas	94.94	92.67	58.73	57.33	70.69	68.44
Kansas City	104.89	101.96	64.78	63.08	78.10	75.30
Los Angeles	122.00	120.22	75.57	74.38	90.84	88.79
New York City	147.11	144.60	91.12	89.46	109.54	106.79
Phoenix	98.83	97.84	61.11	60.53	73.59	72.26
St. Louis	112.47	108.72	69.46	67.26	83.74	80.29
San Francisco	136.61	134.47	84.47	83.19	101.72	99.31
Seattle	115.72	114.10	71.63	70.59	86.16	84.26
Washington, D.C.	105.22	102.70	64.84	63.54	78.34	75.85

Each month Architecture takes a snapshot of U.S. construction – looking at average costs and actual upcoming projects for different building types on a rotating basis. News on projects is provided by Construction Market Data (CMD). Costs are supplied by R.S. Means Co.

NOTE: Cost comparisons shown here are for the basic building without sitework, development, land, specialty finishes or equipment. Actual square foot costs vary significantly from project to project based on quality, complexity and local economy.

©1998, R.S. Means, A Construction Market Data Group Company. For more cost information, contact Means at 800.448.8182.

**UPCOMING PROJECTS**

**Knox County General Hospital**

**Location:** 321 High Street, Barbourville, Knox County, KY  
**Project Value:** \$7.5 million  
**Size:** 1 structure  
**Contract Type:** Open Bidding  
**Current Project Stage:** Planning; Schematics  
**Status:** Schematics in Progress; Bid Schedule Not Set  
**Owner:** Knox County Hospital; 321 High Street, PO Box 160; Barbourville, KY 40906  
**Phone:** 606.546.4175  
**Architect:** Jerry A Taylor & Associates; Jerry Taylor; 400 Old E Vine, Suite 205; Lexington, KY 40607  
**Phone:** 606.254.3211, **Fax:** 606.254.6996

**Garden Park Community Hospital**

**Location:** Gulfport, Harrison County, MS  
**Project Value:** \$26.8 million  
**Size:** 210,000 sq ft, 4 floors above grade, 1 structure  
**Contract Type:** Negotiated  
**Current Project Stage:** Planning; Schematics  
**Status:** Schematics in Progress; Subbid Date to be Set Approx. 4/98  
**Start Date:** 6/1/98  
**Project Scope:** Replacement Facility with Operating Rooms, Patient Rooms, Storage, Administration Area, Food Service. Composition Slab on Grade, Steel Structural Frame, EIFS Exterior Walls, Single Ply Roofing, Air Handlers, Chiller, Boiler.  
**Owner:** Columbia HCA; Design & Construction; 1 Park Plaza, PO Box 550; Nashville, TN 37203  
**Fax:** 615.344.2770  
**Architect:** Gresham Smith & Partners; Jim Major; 511 Union Street, 1400 Nashville Circle; Nashville, TN 37219  
**Phone:** 615.770.8100; **Fax:** 615.770.8199

**Office Building**

**Location:** 31 Stiles Road, Salem, Rockingham County, NH  
**Project Value:** \$3 million  
**Size:** 48,000 sq ft, 3 floors above grade, 1 structure  
**Contract Type:** Negotiated  
**Current Project Stage:** Planning; Schematics  
**Status:** Schematics in Progress; Subbid Schedule Not Set  
**Project Scope:** Steel, Brick Veneer, Glass and Glazing.  
**Architect:** John T Brennan & Associates Inc.; John Brennan; 50 Northwestern Drive, Suite 110B; PO Box 21; Salem, NH 03079  
**Phone:** 603.893.4693  
**General Contractor:** Hutter Construction; PO Box 257; New Ipswich, NH 03071  
**Phone:** 603.878.2300; **Fax:** 603.878.3519

**Keystone Office Park Building 1**

**Location:** Davis Drive/Hopson Road, Durham, Durham County, NC  
**Project Value:** \$11 million  
**Size:** 300,000 sq ft, 2 floors above grade, 1 structures  
**Contract Type:** Invited Bidders  
**Current Project Stage:** Planning; Masterplanning  
**Status:** Masterplanning in Progress; Bid Date to be Set Approx. 3/98  
**Project Scope:** Office Park, Building 1 of 3  
**Developer:** Keystone Corp.; Reid Tyler; 1130 Situs Court, Suite 250; Raleigh, NC 27606  
**Phone:** 919.854.1100; **Fax:** 919.854.1122  
**Architect:** Hager Smith Design; Darren O'Neill; 300 S Dawson Street, PO Box 1308; Raleigh, NC 27602  
**Phone:** 919.821.5547; **Fax:** 919.828.4050

**Pembroke Hill Middle School**

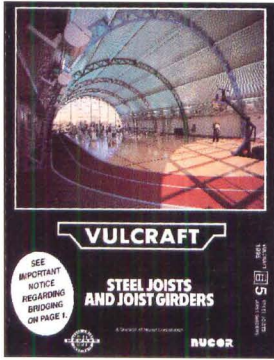
**Location:** State Line Road, Kansas City, Jackson County, MO  
**Project Value:** \$4.5 million  
**Size:** 36,000 sq ft, 1 structure  
**Contract Type:** Negotiated  
**Current Project Stage:** Planning; Schematics  
**Status:** Schematics in Progress; Subbids Due 8/98  
**Project Scope:** Classrooms, Science Rooms, Art Rooms, Commons (No Gym, No Dining Facilities).  
**Owner:** Pembroke Hill School; 5121 State Line Road; Kansas City, MO 64112  
**Phone:** 816.753.1300  
**Architect:** Mackey Mitchell Zahner Architects; Brian Gross; 112 West 9th Street, Suite 610; Kansas City, MO 64105  
**Phone:** 816.474.2995; **Fax:** 816.474.2996

**Middle School**

**Location:** Route 17, Readfield, Kennebec County, ME  
**Project Value:** \$8 - 10 million  
**Size:** 60,000 sq ft, 1 structure  
**Contract Type:** Open Bidding  
**Current Project Stage:** Planning; Architect Selection Underway  
**Status:** Architect Selection Underway  
**Project Scope:** New Grade 6-8 Middle School accomodating 400-450 students  
**Owner:** Community School District #10; Charles G. Harvey; 13 Winthrop Road, PO Box 87; Readfield, ME 04355  
**Phone:** 207.685.3336; **Fax:** 207.685.4703

©1998, CMD, A Construction Market Data Group Company. Additional project details can be obtained from CMD at 800.928.4530, or from the Web at www.cmdg.com.

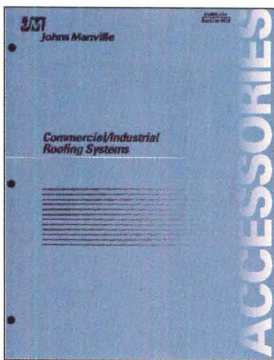
## Vulcraft



**Steel Joists And Joist Girders.** This 128-page design manual provides indepth information for the optimum use of steel joists and joist girders. As the largest producer in the United States, Vulcraft has the most experience and expertise in the application, design and manufacture of these products. The economies of steel joists and joist girders contribute to their increasing utilization.

Circle 72.

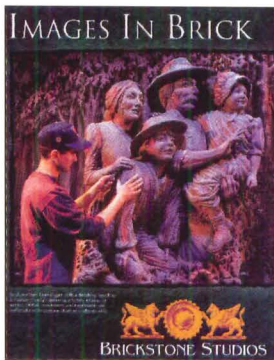
## Johns Manville Commercial/Industrial Roofing Systems Accessories



**Johns Manville** new roofing accessories catalog features product and application information on expansion joint covers, flexible closures for seismic and other applications, roof drains, fascia and coping systems, flashing membranes and roof vents. 32-page, illustrated catalog contains descriptions, technical data with detail drawings and photos and design and installation recommendations. Johns Manville Roofing Systems, Product Information Center, P.O. Box 5108, Denver, CO 80217. 800-654-3103, Fax: 303-978-2318

Circle 76.

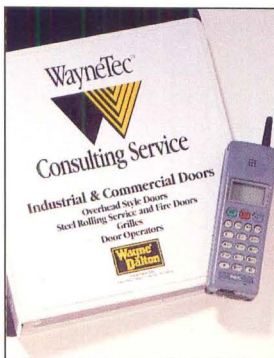
## Brickstone Studios



**Custom Brick Sculpture** has an exciting potential to enliven commercial and residential exterior and interior spaces with its unique appeal. This brochure from Brickstone Studios provides an overview of their sculpture services and illustrates the many uses of this robust medium. Call BRICKSTONE STUDIOS, 2108 South 38 Street, Lincoln, NE 68506 at 800 449-6599.

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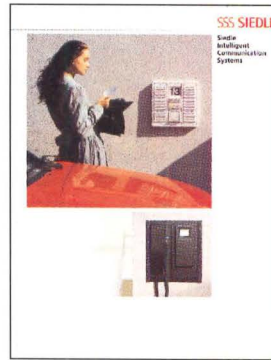
## Wayne Dalton



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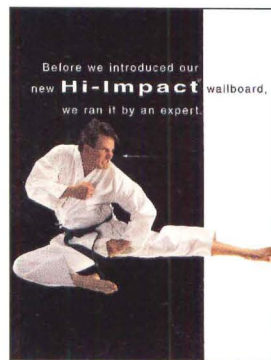
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## National Gypsum



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<http://www.national-gypsum.com>.

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The Le Corbusier Guides  
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Building in Wood  
Philip Johnson (Studio Paperback)  
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Circle 82.

## ARCHITECTURE LITERATURE PORTFOLIO UPCOMING ISSUES

ISSUE DATE	CLOSING DATE
<input type="checkbox"/> March '98	January 23, 1998
<input type="checkbox"/> April '98	February 20, 1998
<input type="checkbox"/> July '98	May 22, 1998
<input type="checkbox"/> October '98	August 21, 1998
<input type="checkbox"/> December '98	October 23, 1998
<input type="checkbox"/> January '99	November 23, 1998

There are frequent fliers and then there is Carolina Woo. The partner of Skidmore, Owings & Merrill spends so much time flying between her San Francisco office and her projects overseas that in 1996, United Airlines named one of its 747 jumbo jets after her: the Carolina Y.C. Woo.

While not every architect can boast of such an honor, many, like Woo, are spending week after week flying around the world to meet clients and manage projects. As the market for American architects continues to expand overseas, more architects are finding the international terminals of airports their homes away from home.

last year as vice president of Hellmuth, Obata & Kassabaum Intercontinental, will generally work on the airplane if he knows that he can get a good night's sleep when he lands. But if the trip takes him east, he will try to rest on board to make up for a lost night of sleep.

With showers, massage chairs, and leather sofas, first-class lounges at airports provide a cushion to a long layover. But even if you're not traveling first class, you can always request a pass to the lounge, advises David Dymecki, a principal with Ellerbe Becket's Washington, D.C., office. Airlines, particularly Lufthansa and

# High Fliers

**Architecture's most frequent travelers reveal their secrets to sanity.**

So how do these frequent-frequent fliers maintain a reasonable lifestyle on the run without becoming rundown? It's not easy, but Woo and other high-flying architects have a few common-sense tips to ease the stress of their journeys.

Gene Kohn, the marketing muscle behind Kohn Pedersen Fox Associates (KPF) recommends all business travelers give themselves a preflight attitude adjustment. "If you regard your trips as difficult and unpleasant, then you build up resentment. That affects you for the whole trip."

Kohn, who annually travels between 200,000 and 300,000 miles, due in large measure to the multitude of KPF projects in Southeast Asia, regards the longer trips as "an escape from reality." Flying across the Pacific or Atlantic means no telephone calls, meetings, or myriad interruptions that mark a typical business day. He takes advantage of the quiet time by resting, reading, or watching the in-flight movie.

Subscribing to the notion that airplane time is a mini vacation, especially when you're heading home, Faye LeDoux, a vice president and project director at Ellerbe Becket, recommends: "Drink the champagne and watch movies through the night because it's a break from the routine." Guy Perry, who travelled at least 500,000 miles

British Airways, will accede to requests if you ask nicely.

But entry into an airline's lounge does not insulate one from lost or late luggage; almost every airline traveler can recount one horror story. Most architects say that they travel with one suitcase—small enough to be carried on the plane.

That means having all of your important documents on board, too. Almost losing a 6-foot-by-6-foot model for a presentation upon arrival in Riyadh led Dymecki to design all his presentation materials to fit in the overhead rack of an airplane.

No architect has a surefire cure for jetlag. Woo minimizes the disorientation of her internal clock by putting her mind (and one of her watch settings) on her intended time zone. Kohn takes melatonin or a sleeping pill for a restful sleep and exercises either at night or in the morning.

Randy Guillot, a senior project designer for Perkins & Will, believes architects enjoy business travel because they are experiencing new ideas and cultures—concepts that may be utilized in future designs. "The more things you see, the better architect you are," he says. With all that traveling, however, finding time to design may be the most difficult challenge of all. *Michael Maynard*

# ARRIS 7

Windows NT/98/95 and UNIX

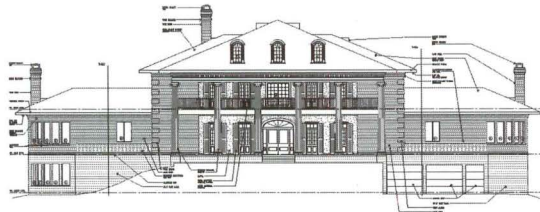
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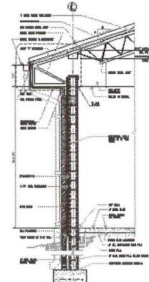
ARRIS 7 understands Architects and the way they work.  
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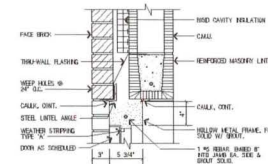
Elevation



Plan



Section



Details



Perspective



ARRIS computer image by Cesar Quiñones  
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