



ARCHITECTURAL RECORD

DESIGN VANGUARD

10 young firms reshaping the globe

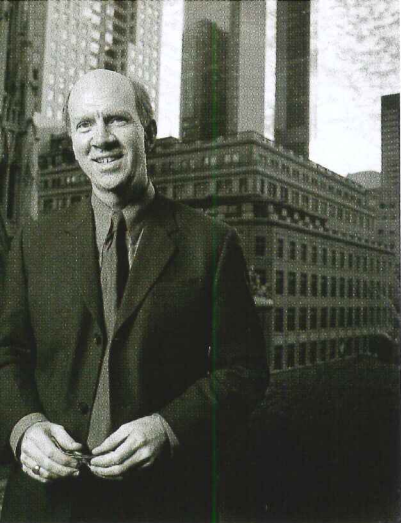
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Editorial

By Robert Ivy, FAIA

Last night, the winds howled. We awoke to find that trees had fallen when velocities reached 66 miles per hour, and that outside Rochester, a woman's death was attributable to the onslaught. On the opposite coast, the evening news showed children shoveling hail, a few short weeks after devastating wildfires had ravaged nearby swaths of Southern California, killing at least 22 people and destroying at least 3,400 homes. We seemed to be bookended by perils.

How ironic. In the post-9/11 era, when man-made dangers have tossed us about, we have hunkered down to the safety of the cyberworld, where no winds blow. Yet perilous natural events seem to be assaulting us on all fronts—earthquake, fire, hurricane, tornado, floods—with the reminder that Mother Earth is not benign, but an active, tempestuous planet, subject to internal pressure and solar storms. Despite our technological prowess and planning, no one can accurately predict where the next calamity might strike.

It may be time to return to building wisdom. For a decade, we have been focused on architectural niceties, building free-form castles and debating the relative merits of the latest theory, allowing our conversations to stretch to the esoteric-thin. Yet architects' work must stand, and withstand outside forces as well, shielding us from natural and human disasters: The public health, safety, and welfare depend on our professional ability to provide shelter. How can we learn how to build more safely? Academic research provides case studies and analysis; legislation and codes outline minimal thresholds. Nothing, however, replaces common sense and experience, which we, the design and construction industry, must provide. We are not, after all, the first generation on the planet to build.

Take siting, for example. When shear winds tore across the southeast during 2001 and 2002, tall pine trees snapped and cracked, sometimes impaling the roofs of adjacent structures and imperiling the lives of the families inside. Earlier generations had avoided planting too close to home for just that reason: Trees can fall in a strong wind. A similar lesson, modified by the nuances of forest management, applies to the California brush fires.

Building wisdom, tempered by science, can come from earlier practitioners and even salty contractors who can show younger architects the ropes. Many of our most powerful lessons have come to us standing, chastened, in a construction trench under the glare of a builder who explained why a system would not work as drawn. Or from a local historian who knows that earlier generations avoided settling on an open patch of land subject to regular flooding. These human lessons round out our education and continue throughout our lives, if we are given the chance and seek them out.

Schools of architecture have already established programs that allow students to wield a hammer on actual projects. On graduation, however, the hammering stops. Because contemporary office practice focuses on the production skills of gifted architecture graduates inside the office, we have a professional obligation to the next generation to shake our offices loose. Although the IDP program already requires it, we must insure that every young architect be freed from the computer screen and sent regularly into the field to observe construction. Only by seeing our work take shape and confronting the multidimensional, often conflicting demands of the real world can we hope to make better, more secure structures.

No code, no database will ever substitute for our professional concern for our clients, particularly for their well-being and safety. However, genius is not required to question whether we should build where the land burns or atop a geological fault. Architectural skill and human experience combined can lead us all to higher ground and away from peril. Human beings have made our contemporary world dangerous enough, but we can make it a safer place. That's building wisdom worth practicing.

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Letters

Life in an Italian town

As usual, Robert Cambell's October Critique column [page 67] is thought-provoking. I visited Pienza as a Rome Prize Fellow in 1968, when it was a cow town, following studying "contextualist" theory with Colin Rowe. I think we, and the Italian government, hoped for a kind of "suspended animation," but with so few living there, perhaps since the 16th century, it could not be maintained. I have taken students there now for many years, watching its transformation with amazement. However miraculously it has all been renovated, and populated by tourists, it was real then and fake now as a community.

Unless we accept tourism as an industry providing real work, it will continue to be fake. A nearby Pienza Nuovo sounds like a perfect New Urbanist project. That could freeze it as an amusement by keeping the tourism and prescribing a no-growth policy. But there is no need to accept this in lieu of the alternative of uncontrolled town sprawl that would ruin the fantasyland. There are many examples of adding a new 19th-, 20th-, and now possibly 21st-century urbanism to the existing town and creating a vital new (whole) one. Bergamo Alta and Basso, by Marcello Piacentini, is a great example, but I have also taken students from quite nice new urban additions, near the train station, to historic cities such as Pisa and Arezzo. There are elegant additions to Milan, Genoa, Florence, and Naples. This is where "contextualism" departs from New Urbanism or Traditional Oriented Development. Bramante and his colleagues theorized ideal cities but applied that theory to transform existing cities into a *rinascimento*, a "rebirth." This approach is a plausible precedent for 21st-century urban theory.

—Jon Michael Schwarting
New York Institute of Technology
New York City

Role playing

James S. Russell's observations about museums [Dia:Beacon, October 2003, page 108] are timely and welcome, but they are hardly new. The idea of architecture as a "frame" can be found in the idea and form of the Italian palazzo. The Uffizi and Pitti palaces were conceived for different purposes but survive today, splendidly, as museums.

I think the question should not be whether museums need architecture, which they do. Rather, the question should be: "What is the proper role of architecture, which has now become increasingly self-referential, within a pragmatic culture of change and innovation?"

—James A. Gresham, FAIA
Gresham & Beach, Architects
Tucson, Ariz.

Moving us along

There is a thoughtful structure to RECORD. Such was the case in the progression of the August issue, where, in the Editorial [page 19], Robert Ivy passionately articulated the hope and enthusiasm that we have for Daniel Libeskind and David Childs. Then, in News [page 27], we learn more of the specifics of the forces at work on the WTC site.

In Exhibitions [page 67], a profoundly challenging and enlightened question is asked: Do we need "New Designs for Public Space"? Or do we just need more of the old "designs"—lawns, trees, rocks, benches? Isn't the problem of urban space mainly political (that is, getting land set aside for public use), rather than architectural? This timely question reverberates across the WTC site.

Perhaps it is not too late, and a thoughtful jury for the Memorial Design Competition will sense the appropriateness of the ground swell that undoubtedly pulses through many of the memorial design submissions, that the bathtub should be

filled not just from 70 feet to 30, but to the top—the street level—and the tub should overflow with an outpouring of accessible classic urban space pulsating with life and beauty.

—John Mullen, FAIA
East Hampton, New York

Arrogance or architecture?

I write the following with a respectful bow to the incredible architectural talents of both Asymptote [Record Houses, September 2003, page 142] and Daniel Libeskind. I have learned much from both over the years and believe the role they play in the profession has a long and important history.

Nevertheless, upon reading what was an almost laughable quote from Asymptote on concerns about designing a fashion boutique—in their view, a "highly dubious" commercial endeavor—I was struck again by a kind of cultural decay that I think is evidenced by the insularity or "ivory tower" quality of this relatively unbuilt firm, and the larger and more disturbing example of Libeskind's Ivory Tower proposed for the WTC.

In the case of Asymptote's story, I was struck by the amount of design time and expense that must have been spent on bending and forming the various materials submerged within the overall skeletonlike shapes. It's not unlike the complexities inherent in constructing one of Frank Gehry's cloud buildings, which remain, like Asymptote's work here, nothing if not neo-Futurist stage sets. In the sense that great architecture is a meeting of inspired client and imaginative architect, I suppose this store is an example. On the other hand, I believe the work is also a prime model of excess capital in the hands of the privileged.

In thinking of August's issue on Libeskind's extravaganza, I remain no less dumbfounded. At this point I am even more

amazed at the lack of real critique evidenced by the architectural media. The initial competition was in effect closed. This particular point was actually reasonably well documented in a recent Sunday *New York Times* special issue on the WTC. The original competition was constructed as an RFQ. This reduced the potential pool of entries to (more or less) an open beauty contest among already "famous" architects who may or may not have been qualified to design high-rise buildings. Certainly, Daniel Libeskind was not qualified in terms of raw experience, resulting in his liaison with SOM.

What we have now, I believe, is a design process that has been more or less completely removed from the public sphere, and from the purview of any number of design professionals that might have had some say in keeping the square footage down, in promoting quality open space, or in maximizing a successful meeting between building and street life.

The WTC site (in an ideal world, I admit) should have been broken down into many sites, and a new city could have emerged arising from the experience and scale of the pedestrian instead of the imagination (and bank accounts) of mammoth egos.

—David Kesler
David Kesler Architect
Berkeley, Calif.

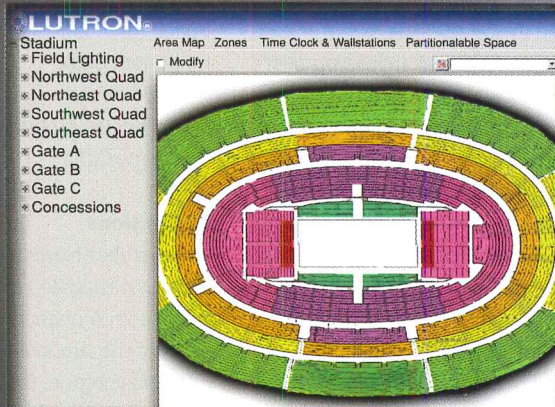
Corrections

In November News [page 42], a caption mislabeled renderings of Bing Thom Architects' redevelopment of the Arena Stage Theater near Washington, D.C., and Bernard Tschumi Architects' Limoge concert hall. The captions should have been reversed.

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Governor moderates as architects tangle over Freedom Tower

Stepping into the role of peacemaker, New York Governor George Pataki has moved to try to solve the deepening dispute between David Childs, FAIA, and Daniel Libeskind concerning the design of the 1,776-foot-tall World Trade Center "Freedom Tower."

Libeskind, who has acknowledged his pairing with Childs to be a "forced marriage," reportedly stormed out of a design meeting with Childs on October 20, and both architects had seemed hesitant to compromise their designs.

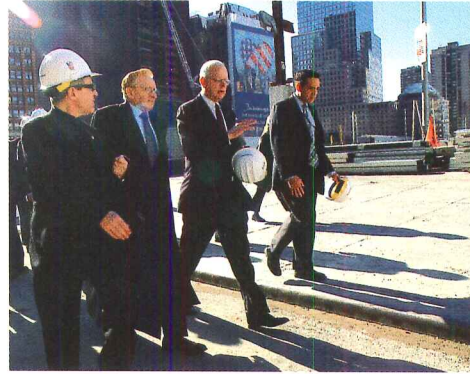
In an October 24 interview with the *New York Post*, Pataki appeared to side with Libeskind, saying, "I think it's very important that the vision that was enunciated for the master site plan be ultimately what is constructed at Ground Zero."

Meanwhile, at an October 30 luncheon hosted by the Association for a Better New York/Downtown

Lower Manhattan Association, Pataki insisted that the two cooperate, saying, "Today I will call upon all parties in the rebuilding effort to place the public's interest above self-interest, and I will chart a course to make it happen." He added forcefully, "I'm confident the Freedom Tower will eclipse anything either of them has produced before. That's typical of so many great artistic collaborations throughout history—Michelangelo and Pope Julius II made the Sistine Chapel; Philip Johnson and Mies van der Rohe made the Seagram Building—just think what Libeskind and Childs will make."

At the meeting, Pataki also set a firm December 15 deadline for display of the Freedom Tower's design.

Childs could not be reached for comment, but Libeskind told RECORD, "We're moving in the same direction, and we're pleased to be



Daniel Libeskind (far left), Larry Silverstein (second from left), and David Childs (center) at Ground Zero.

collaborating." World Trade Center developer Larry Silverstein's spokesman, Harold Rubenstein, responded by saying, "As is customary in any highly complex design effort, issues have arisen from time to time that need to be worked through." He later told RECORD, "Larry Silverstein told the

architects he expects to see a rendering. I believe they've gotten along well since."

In an effort to resolve another argument at the World Trade Center, Pataki has asked former Democratic Senator George J. Mitchell to mediate settlement discussions between Deutsche Bank and the Allianz insurance

company over the company's badly damaged building at 130 Liberty Street.

Deutsche Bank wants to declare the building an insurance loss, but Allianz claims the building can be saved and has filed suit to prevent making payment. *Sam Lubell*

WTC Briefs

Memorial finalists named

On November 19 at the Winter Garden in downtown Manhattan, the Lower Manhattan Development Corporation (LMDC) announced the eight finalists for the World Trade Center Memorial Competition.

The finalists' designs (see next page), which include renderings, models, and animations illustrating possible memorials to the events of both September 11, 2001, and February 26, 1993, will be on display at the Winter Garden until the winner is chosen, presumably before the new year.

The final schemes were selected from a field of 5,201 entries from 63 countries and 49 states and judged by a jury that includes artists,



Workers completing WTC Path station.

politicians, business leaders, and victims' family members.

"Never before has a memorial competition encouraged such an outpouring of humanity," said John C. Whitehead, chairman of the LMDC, at the event. Andrew Winters, LMDC vice president, noted that the designs are more about "subtlety" and "nuance" than size or verticality. Each has a sunken memorial space and an above-ground park area.

Finalists are predominantly

young (under 30) and relatively unknown. Some entries, like Michael Arud's *Reflecting Absence*, even test the limits of the memorial guidelines, taking liberties like the removal of some memorial buildings.

World Trade Center Station finished

At press time, World Trade Center Station, PATH's temporary transit center, is scheduled to open on November 23. The \$224 million, four-level facility will be the first structure to be completed on the World Trade Center site.

The entry is marked by a stanchion-supported steel canopy above ground, and a procession of gray columns leads passengers to new tracks and platforms 70 feet below grade. Because of natural light

throughout and mezzanine heights measuring 20 to 24 feet, "people will be surprised at how open and comfortable it will feel," says Port Authority chief architect Robert I. Davidson, FAIA, who designed the station.

The station, which will initially handle 20,000 to 30,000 passengers a day, eventually growing to 50,000, took less than two years to complete, which, says Davidson, "is nothing short of a miracle." The station will stand for three to five years, until the completion of a permanent transit hub, designed by Santiago Calatrava.

The \$11 million Vesey Street pedestrian bridge, a covered, paneled truss structure designed by Earth Tech, linking the World Trade Center with areas to its west, is planned for a November 21 opening. *S.L.*

Record News

OFF THE RECORD

Peter Rowe announced that he plans to step down as dean of the **Harvard Design School** at the end of this academic year. Rowe has been dean since 1992 and has taught at the Design School since 1985. He said he plans to continue as a professor at the school.

Roger Montgomery, former dean of the University of California, Berkeley's College of Environmental Design and professor of architecture and city planning, died on October 25. He was 78.

Arup has named **Terry Hill** its new chairman. Hill is a civil engineer and an economist who joined Arup in 1976.

Tulane University School of Architecture, in New Orleans, has appointed **Ronald C. Filson, FAIA**, interim dean of the School of Architecture. He will replace Donald Gatzke, who is leaving to assume deanship of the School of Architecture at the University of Texas Arlington.

Fred W. Werner, formerly **DMJM + Harris's** chief operating officer, has been named the company's new president.

Lord, Aeck & Sargent has named **Jerry Percifield** a principle in the firm's Science Studio in Atlanta. Percifield had been an architect at O'Neal, where he led the firm's advanced technology group.

The **Museu Picasso** has opened in Malaga, Spain, Picasso's birthplace. The museum was built by **Gluckman Mayner Architects** inside the Palacio de los Condes de Buenavista, a 16th-century palace in the city's historic center.

The **University of Michigan**, in Ann Arbor, has chosen **Allied Works Architecture** to oversee a major expansion and renovation of the university's **Museum of Art**.

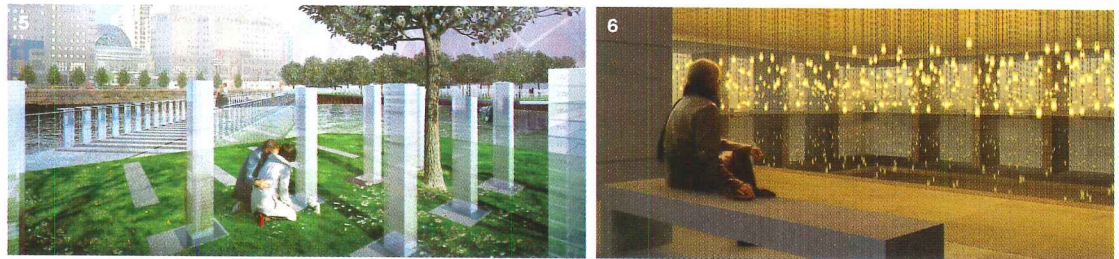
WTC Memorial finalists' designs

Garden of Lights (1), by Pierre David with Sean Corriel and Jessica Kmetovic, features a glass wall surrounding a below-grade memorial with 2,982 skylights shining on 2,982 altars. A garden comprising a prairie and an orchard will be maintained by a different gardener each year. *Inversion of Light* (2), by Toshio Sasaki, includes a lowered memorial area displaying the names of victims printed on glass, with water trickling continuously behind. *Passages of Light: The Memorial Cloud* (3), by Gisela Baurmann, Sawad Brooks, and Jonas Coersmeier, is highlighted by a crystalline cloud providing protection

from the sounds and pace of the city, while each victim is represented by a radiating circle of light. *Dual Memory* (4), by Brian Strawn and Karla Sierralta, has 2,982 portals shining over the "Individual Memory Footprint," where the north tower of the WTC once stood. Evolving images are reflected on glass and stone as water flows down the walls, which support a flat plane of water above. *Suspending Memory* (5), by Joseph Karadin with Hsin-Yi Wu, includes two memorial gardens rising from the footprints of the towers, supported by glass columns representing victims of the attacks. Each column is a timeline of the victim's life. *Votives in Suspension* (6), by Norman Lee and Michael Lewis, uses an expansive field of votive lights suspended in midair by cables above a reflecting pool. Each votive represents a vic-

tim. Only narrow gaps outlining the towers' footprints will allow sunlight into the sunken space. For *Lower Waters* (7), by Bradley Campbell and Matthias Neumann, the north tower memorial area, sitting atop a rectangular waterfall immersed in falling water, is clad in black granite, a reference to the towers. *Reflecting Absence* (8), by Michael Arad, utilizes a pair of reflecting pools to mark the location of the towers' footprints. The pools are fed by a constant stream of water cascading down the surrounding walls. S.L.

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So far, so good with design for Trump's new Chicago tower

Chicagoans take their architectural heritage seriously. So when flamboyant New York developer Donald Trump first announced plans for a \$650 million, 2.3-million-square-foot mixed-use skyscraper along the Chicago River, it raised eyebrows.

Slated to break ground in mid-2004, the 1,125-foot-tall Trump International Hotel and Tower—or Trump Tower Chicago—will be situated on 2.3 acres at 401 N. Wabash Avenue, alarmingly close to neighboring landmarks such as the Wrigley Building and Marina Towers.

Relief came from project architect Adrian Smith, FAIA, of Skidmore, Owings & Merrill, whose recently updated design creates a sleek glass-and-steel structure with setbacks, progressing from a broad base to a slender tower.

"We wanted to have a relationship that connected to the Modernism of Chicago," Smith says. "We strive to have a building that fits in even as it stands out."

The 90-story tower, scaled back from 150 stories after 9/11, will be the city's fourth-tallest building

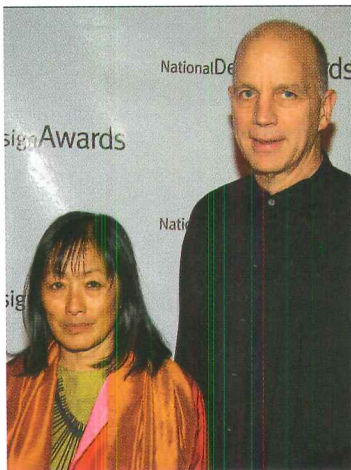


A rendering of Trump's new Chicago tower, dominating the riverfront.

when it opens in 2007. Plans call for 326 condo apartments, 174 hotel condominiums, plus retail, restaurants, a health club, office space, and a three-level, landscaped promenade along the riverfront.

Lee Bey, Mayor Richard M. Daley's chief deputy for planning and design, commented in the *Los Angeles Times*, "That site cries out for an architecturally significant building. This design is causing some excitement."

The new skyscraper will replace the seven-story, 47-year-old Chicago Sun-Times Building, which is being demolished to make room for the high-rise. The Trump Organization and Hollinger International, owner of the *Sun-Times*, are developing the project. *Tony Illia*



Williams and Tsien at the Cooper-Hewitt National Design Awards.

Williams and Tsien win Cooper-Hewitt Design Award for Architecture

Tod Williams, FAIA, and Billie Tsien, AIA, have been selected as winners of the 2003 Cooper-Hewitt National Design Award for Architecture Design.

The couple, who have worked together since 1977, are known for the design of the sharply angular, highly evocative Museum of American Folk Art in Manhattan, the Cranbrook School's Natatorium in Michigan, and an addition to the Phoenix Art Museum. Other finalists for the award included

Stephen Cassell and Adam Yarinsky of Architectural Research Office and architect and activist Frederic Schwartz.

"Tod and I of course were thrilled," says Tsien. "I think most important is the recognition on a federal level that there's great design in America. I think the United States in many ways has had a design history that's been based in a kind of utility and production. But as production moves outside the United States, I think there are

other ways that we can raise our aspirations in terms of other kinds of design."

Other winners announced at an October 22 gala at the Cooper-Hewitt, National Design Museum in Manhattan included I.M. Pei, FAIA, for Lifetime Achievement; Michael Van Valkenburgh, for Environmental Design; and the U.S. General Services Administration's Design Excellence Program, which was awarded a Special Commendation in Corporate Achievement award. *S.L.*

Royal Australian Institute of Architects hands out awards, with one firm winning twice

The Royal Australian Institute of Architects (RAIA) recently named the winners of its national architecture awards. The University of Newcastle's Birabahn Indigenous Centre (pictured, right), designed by Richard LePlastrier, Peter Stutchbury, and Sue Harper, won for best public building. The rammed-earth-wall structure has a double-cantilevered steel roof that resembles an eagle hawk—an important Aboriginal totem.

"By providing a beautiful roof over the building, and with every room except the library opening outward, activities can go on underneath that are independent of the building but dependent on the roof," says Stutchbury. "Large overhangs create a sense of a verandah around the whole building."

For the first time ever, the same architect has collected two major



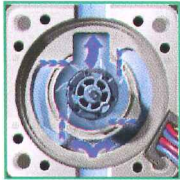
prizes. Stutchbury and partner Phoebe Pape also received one of two top residential awards for their Bay House in Sydney.

The RAIA's inaugural 25-year award acknowledged the Sydney Opera House by Jørn Utzon and interior architects Hall, Todd, and Littlemore as "a key example of the great contribution that architecture can make to a city and a nation."

Other awards include best urban design for Federation Square in Melbourne by Lab Architecture Studio with Bates Smart Architects, which transformed a rail yard into a multiuse civic center; and the Tasmania Forestry's EcoCentre in Scottsdale, a low-energy, three-story inclined cone by Morris-Nunn & Associates, that received the sustainable architecture prize. *T.I.*

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Researchers explore link between sprawl and poor health

America—home of fast food and the drive-in window—has the fattest, most sedentary population on earth, and it's only getting worse. The Centers for Disease Control reports that obesity has doubled among U.S. adults since 1980. Meanwhile, a recent Surgeon General's report says that 60 percent of Americans don't get even the recommended minimum of 30 minutes of exercise daily.

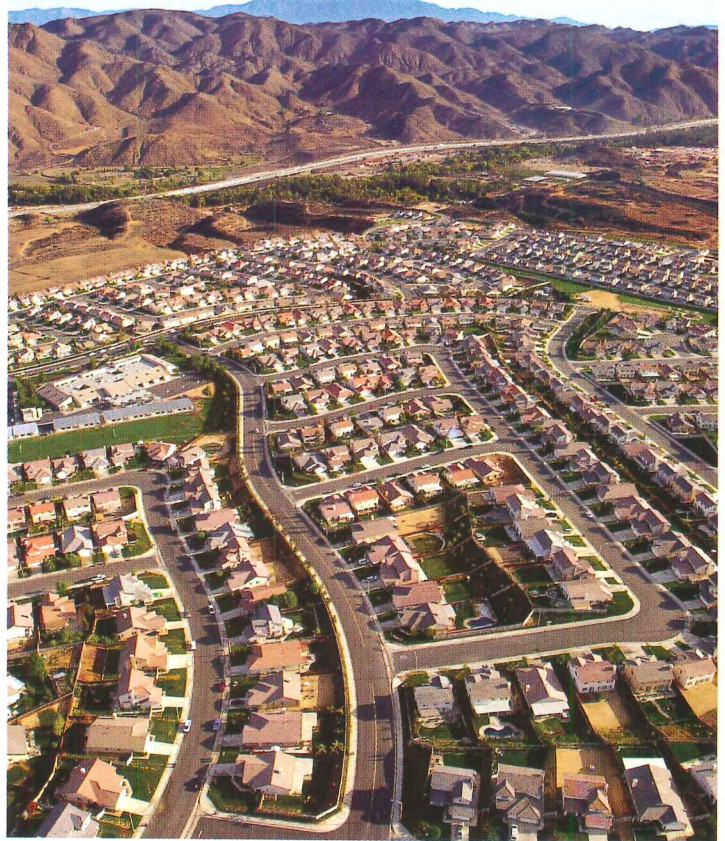
But can architecture and urban planning play a role? Several anti-sprawl groups say yes, with research to back up their claims—and they're pressing to resolve the problem.

An article in the September/October issue of the *American Journal of Health Promotion* employs census and public health data to link the degree of sprawl in several U.S. counties to decreased levels of physical activity and increased levels of obesity and obesity-related illnesses. Meanwhile, a September article in the *American Journal of Public Health* argues that zoning laws often "encourage spread-out suburban patterns where jobs, housing, and retail services are far apart, residents are

entirely automobile-dependent, and walking to a destination is difficult."

"It's a monster of a dilemma," says Richard Killingsworth, coauthor of the *American Journal of Health Promotion* article and head of Active Living By Design, a national program of the Robert Wood Johnson Foundation that aims to establish innovative approaches that support active living. "How can the built environment discourage or promote physical activity?"

Active Living promotes a more health-friendly built environment through research, grant programs, and funding initiatives. As its sponsor, the Johnson Foundation recently selected the winners of its Active Living Grants, which award \$17 million total to 25 towns and municipalities across the country to promote active building. The foundation gives millions to organizations like the American Planning Association and the Congress for New Urbanism. It encourages more compact development patterns, more prominently located exercise facilities, more pedestrian and bike paths, more open spaces and



Sprawl, like this development in California, could be bad for your health.

greenery, and even buildings that encourage the use of stairs instead of elevators and escalators.

The initiatives, Killingsworth stresses, are not meant to be a replacement for strenuous exercise, merely a "gateway" into such activity. "It may be the hook that gets people moving. While that may be a few hundred feet, it gets them engaged in being more active," he says.

Other groups promoting healthy planning include the Centers for

Disease Control's Active Community Environments (ACES) Initiative; the American Institute of Architects' Center for Livable Communities, a clearinghouse for the AIA's activities influencing the quality of life in U.S. communities; the Funders' Network for Smart Growth and Livable Communities; and Sprawlwatch Clearinghouse, an information distribution source. As Tom Schmidt, head of ACES, laments, "We've engineered ourselves out of activity." S.L.

Outlook Conference peers into future

The McGraw-Hill Construction Outlook Conference, which took place in October in Washington, D.C., painted a rosier economic forecast for the architecture profession, although enthusiasm was tempered.

Kicking off the conference, David Wyss, chief economist for Standard & Poor's, said he expected slow growth in coming years, and overall 2004 growth for the U.S. economy to the tune of 4 percent.

Bob Murray, vice president of economic affairs for McGraw-Hill Construction, was not overly optimistic but did tell the audience of

more than 300, "We're dealing with a much more stable construction industry," noting that total construction would be up about 1 percent in 2004, led by single-family housing construction, which, while down from 2003, would remain at record-setting levels for the third straight year. Gainers, he predicted, would be income properties (+9 percent), manufacturing buildings (+9 percent), and public works (+2 percent, after being way down last year), while losers would be electric utilities (-19 percent) and institutional buildings (-1 percent). S.L.

AIA releases firm survey

The American Institute of Architects has released its 2003 *Firm Survey*. Published every three years, the 96-page, trend-based study documented largely discouraging economic news. After years of solid growth, the architecture industry underperformed the rest of the economy between 1999 and 2002. Billings at firms, the survey shows, were up just 2 percent, compared with 4 percent growth in the overall economy. Firms, meanwhile, shed jobs at an excess of 2 percent per year. Better news showed that women and minorities, while still greatly underrepresented, fared better than in past surveys. In 1999, women made up 13.7 percent of registered architects, while minorities made up 5.9 percent. In 2002 those numbers grew to 19.9 and 11.5 percent, respectively. Further results showed that firms were increasingly integrating design professionals such as interior designers and landscape architects into their practices. Furthermore, while large and small firms grew, midsize firms shrank rather dramatically. To order a copy of the survey (in hard copy or digital format), go to www.aia.org/books. S.L.

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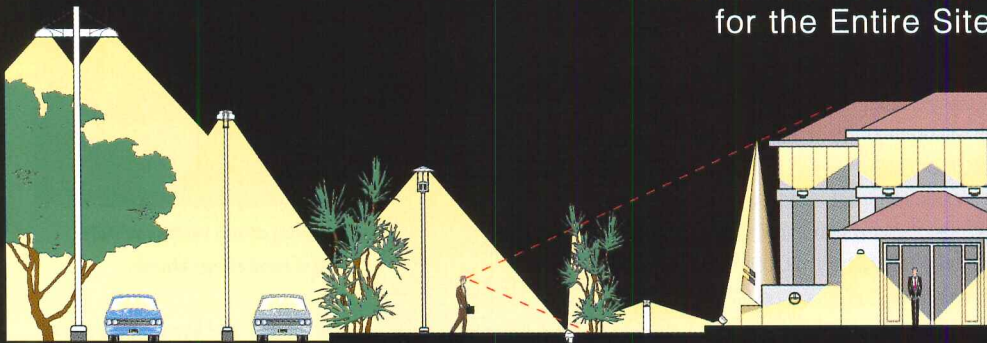
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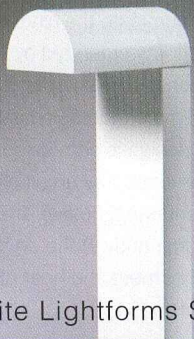
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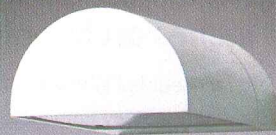
Bounce™ Series



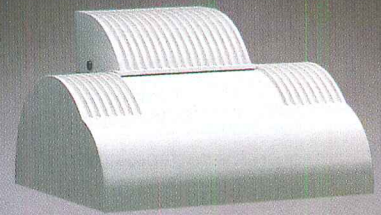
Gem™ Bollard Series



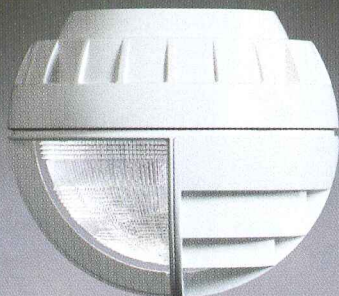
Site Lightforms Series



Site Wallforms Series



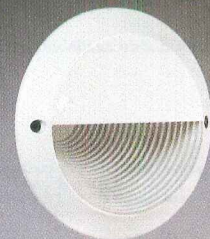
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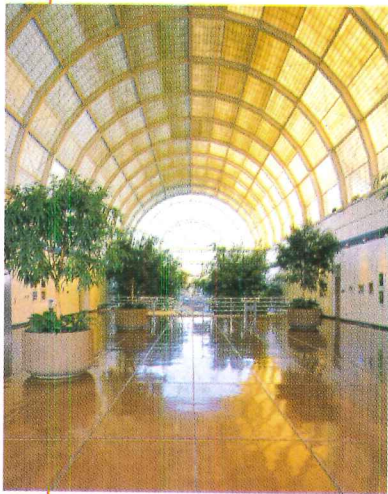
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Record News On the Boards

Beijing embassy largest State Department foreign project ever

The U.S. State Department has named the San Francisco office of Skidmore, Owings & Merrill architect of the new U.S. Embassy in Beijing. Located on a 10-acre site in Beijing's Third Embassy district in the city's northeast, the complex will be the largest State Department project to be built on foreign soil in history.

While filled with modern buildings, the complex is rooted in traditional Chinese forms. This includes three "neighborhoods," modeled on the urban gardens and courtyards of China: A social neighborhood, with a cafeteria, store, and recreation space; a professional neighborhood, with an eight-story tower (enclosed with patterned, ceramic-frit-coated glass) and a three-story pavilion; and the consular neighborhood, made up of the consular building and its gardens. The consular building will contain a "luminous roof" comprising baffled skylights across its length, win-



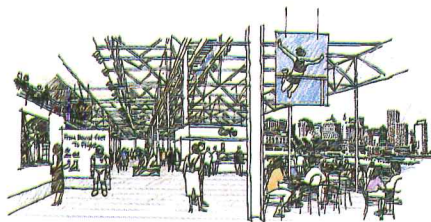
A model of the embassy (left) and a rendering (above).



dows protected by overhangs, and a translucent glass wall at street side. All the neighborhoods are

joined together by gardens, courtyards, wooden bridges, bamboo trees, and even a lotus pond.

The team, led by design partner Craig W. Hartman, FAIA, was selected through a Federal Design Excellence program competition. The embassy is scheduled to open before the 2008 Olympic games. S.L.



International Museum of Women names architects

The International Museum of Women has selected Leddy Maytum Stacy Architects and the firm Ai as the architects for its new museum, an adaptive reuse of a warehouse building on Pier 26 on the San Francisco waterfront.

Construction on the 150,000-square-foot permanent facility is set to begin in 2006, with galleries, an education center, a restaurant, and an auditorium scheduled to open in 2008.

As the International Museum of Women's board chair and founding president Elizabeth Coulton explains, the museum seeks to "create a unique, dynamic space where, for the very first time, women's history will be chronicled from a global perspective and women's voices heard and valued equally." It will be, she adds, the first of its kind.

The design team will be led by women architects: Marsha Maytum, FAIA, and Allison Williams, FAIA. Andrew Blum

HOK Kuwait City tower will dominate skyline

HOK International has won a design competition to design and supervise construction of a new headquarters building for the Central Bank of Kuwait, a skyscraper that will dominate the city's skyline.

The competition was organized by Project Management and Control of Kuwait and DMJM (U.S.A.) and involved more than 15 consultants.

The building's design is composed of a 40-story pyramid tower topped by an all-glass viewing platform (rendering, below). The walls of the tower are predominantly stone on the south side, to absorb and harness the heat of the sun, and glass on the north. S.L.



IMAGES: COURTESY SKIDMORE, OWINGS & MERRILL (TOP TWO); INTERNATIONAL MUSEUM OF WOMEN

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Record News On the Boards

Gehry designing first New York project



Media mogul Barry Diller's InteractiveCorp announced on October 14 that its new headquarters, located in Manhattan's Chelsea district, will be designed by Frank Gehry. The project (rendering, left) will be Gehry's first building in New York City.

The nine-story, 29,380-square-foot office will consist of a curved facade treated with sculptured glass. Construction will begin in early 2004 and is expected to be completed by the end of 2006. The building will be located on the West Side Highway between 18th and 19th Streets.

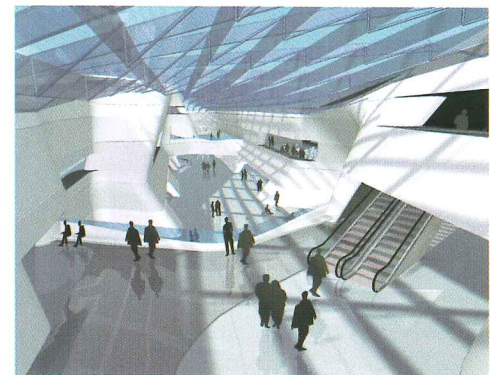
InteractiveCorp's companies include Expedia, Hotwire, Ticketmaster, and Citysearch. S.L.

Zaha Hadid Architects unveils plans for Naples train station

On November 4, Zaha Hadid Architects' design for a new 215,278-square-foot high-speed train station in Naples, Italy, was unveiled.

The new station is described by the architects as "a bridge above the tracks announcing the approach to the city." Its fluid, almost liquid design flows as though moving over the tracks. The design is also determined by the trajectory of travelers, the architects explain. Another highlight is two strips of parkland that run through the site.

Hadid's scheme was chosen from a shortlist of 10 firms. Completion is expected in 2008. S.L.



Weiss/Manfredi chosen for Barnard student center

Weiss/Manfredi Architects has been chosen by Barnard College to design a campus center, called the Nexus.

The 110,000-square-foot building, Barnard's first in 15 years, will include a library, common study spaces, a dining and café area, seminar rooms, and a 900-seat theater.

The design features a facade (right) alternating between a glass curtain wall, small windows, and a material that the firm describes as "a modern composition that suggests the tactile nature of brick." Renderings also reveal a multistory entrance foyer and glass-enclosed balconies. The building is estimated to cost \$45 million and will be located on Broadway at 119th Street in New York City. Construction is set to begin in August 2005. S.L.



Foster and Partners to design new Beijing airport terminal

Foster and Partners has been chosen to design a \$2 billion expansion of Beijing's airport.

The firm will be working with a team that includes Dutch airport planners NACO, engineering firm ARUP, and the Beijing Institute of Architectural Design and Research.

The massive, modular structure will include an "aerodynamic" roof that is evocative of an airplane wing as well as traditional Chinese characters.

Beijing Capital International Airport Terminal 3, as it will be called, will increase the airport's capacity from 27 million to 60 million passengers. S.L.



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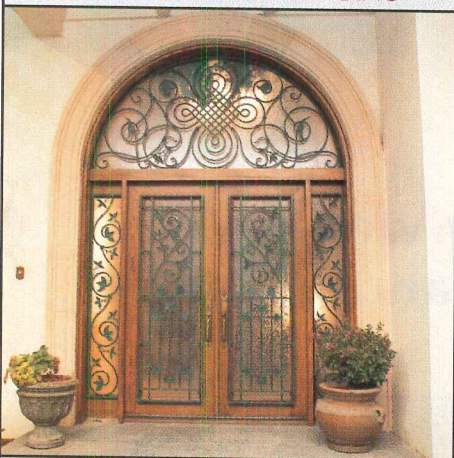
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Record News



Design for the Orangerie Museum.

stabilize the famous Monet paintings, and add air-conditioning for the half-million people who visit each year. More importantly, the planned alterations would demolish the upper floor and create an underground gallery level to include a boutique, education facilities, and toilets. The modernized museum was meant to reopen by fall 2004.

In August, as construction crews began to excavate, they ran into the stone wall built by Charles IX to enclose his palace and gardens, forcing a delay in underground construction. At this point, no decision has been made as to whether the

Construction mistake mars renovation of Orangerie Museum

The renovation of Paris's Orangerie Museum has hit a major obstacle as the redesign mistook the location of a 16th-century wall that runs underneath the building.

The 24 million euro project, designed by Brochet/Lajus/Pueyo architects of Bordeaux, would open up the museum with natural lighting,

wall is so important that the design must be radically changed, or if the architects can somehow work the wall—which would cut diagonally across the gallery space—into the new design, much as I.M. Pei did in the Louvre, where ancient walls are clearly visible along underground corridors.

Claire Downey

Pei museum irks preservationists

Despite protests from local preservationists, the Chinese government plans to begin construction on the 161,458-square-foot, Pei Partnership-designed Suzhou Museum (rendering, right), on the site of a classical garden in the city of Suzhou. The light-infused museum will hold city artifacts and will include exhibition space, an auditorium, administrative offices, and a gift shop.



The Humble Administrators garden was originally laid out in the early 16th century, and its nearly 13 acres rank among a handful of the most famous classical gardens in China. Pei's family has lived in Suzhou, and a relative of his once owned another classical garden in the city. Most of the garden and its courtyard buildings are protected by the United Nations World Heritage Convention. Pei's museum would replace a group of 200-year-old traditional wooden buildings (pictured, below) in the southwest courtyard of the garden, which do not have United Nations protection.

Pei's designs were unveiled in August 2003, with construction originally scheduled to begin in September. The historic preservationist Huang Wei was able to hold up the project temporarily while he petitioned the United Nations for protection, according to Su Yingzi, a U.S. contact. Ground breaking is currently scheduled for November 2004. *Kevin Lerner*



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lectures

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Peter Eisenman
Principal of
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December 4
Building Suburbia
Dolores Hayden,
Professor of Architecture and
Urbanism, Yale University

December 16
William E. Massie
Principal of massiearchitecture.com,
New York, NY

exhibitions

**Stories of Home:
Photographs by
Bill Bamberger**
December 4, 2003 –
March 7, 2004



STORIES OF HOME PHOTO DETAIL © BILL BAMBERGER

**Rowhouse
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Architects Renew City Living**
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Preservationists rally to save Mies's Farnsworth House

The National Trust for Historic Preservation, the Landmarks Preservation Council of Illinois (LPCI), and the nonprofit Friends of the Farnsworth House have begun a fund-raising campaign to purchase the Mies van der Roh–designed Farnsworth House in Plano, Illinois, which will be auctioned this month.

The elegant, luminous glass house, completed in 1951, is one of the most significant homes of the 20th century. Lord Peter Palumbo, its owner for the past 35 years, has arranged for Sotheby's to auction the house on December 12 in New York City. Sotheby's estimates that a successful bid will be between \$4.5 to \$6 million.

Both the National Trust and the LPCI plan to contribute \$1 million toward the fund to buy the house, and the institutions say they plan to open the house to the public as a museum if they succeed in purchasing it. Preservation leaders fear

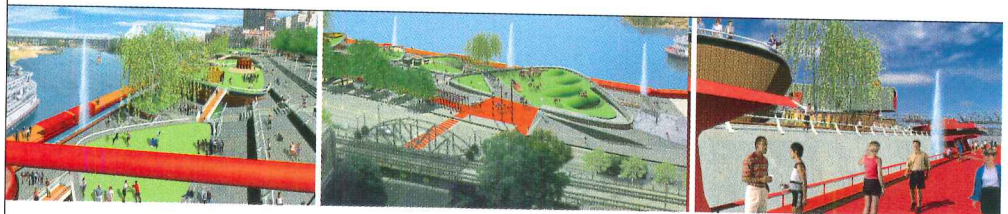
that if bought by insensitive owners, the home—unprotected by any landmark designation—may be closed to the public or moved.

"A house of this significance deserves to be protected forever and made available to the public," said Richard Moe, president of the National Trust, and David Bahlman, president of LPCI, in a joint statement. Moe told RECORD, "This is one of the great architectural icons in history; we're determined that it not be moved. That would be an architectural disaster of the first order."

Moe said further appeals for support have "met with some interest," but he would not disclose how much has been raised. He did note, "We're not there yet." State legislators' plans to buy the house in 2001 fell apart, mostly because of budget deficits. Those interested in saving the house can call the National Trust at 202/588-6105 or the LPCI at 312/922-1742. S.L.



Farnsworth House: for sale.



Winner chosen for Memphis Riverfront design competition

The Memphis Riverfront Development Corporation has announced the winner of its "Shaping the American Riverfront" competition to devise a design for the Mississippi River's bluff at the foot of the city's well-known Beale Street.

Designers were required to "establish an ending" to Beale and create a vista to the nearby river. Other requirements included a docking facility, grand civic plaza, and small commercial venue.

The winning design was River Outlook, submitted by RTN Architects of Buenos Aires. The plan consists of six landscaped islands formed in the ramp slope of the Mississippi River's edge. The islands are connected by pedestrian bridges and begin with a riverside pier; they culminate at an upper plaza containing a small commercial space. Other elements include a playground, a performance space, and open recreation land.

"These islands were for us like musical notes. The terraced slope was an unfolded can-

vas, like a sheet of music over which the islands are located," says Javier Rivarola, a member of RTN, who says he hopes the design draws people to the river and establishes a connection with nearby Tom Lee Park.

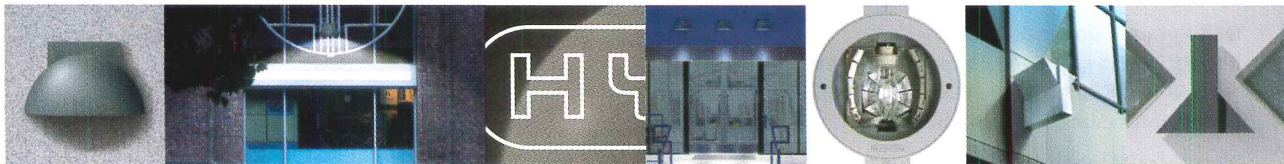
The Riverfront Development Corporation received 171 entries from 20 countries and 27 states within the United States. Other finalists included EDAW of Virginia; Flores Fafunchio Architects of Buenos Aires; Lateral Architecture of Ohio; and David Hong & Simon Hanson of Hanson Architects of New York City.

The project has received \$20 million from the city of Memphis and the Federal Department of Transportation. Construction is expected to begin in the fall of 2004 and to be completed by fall 2006. S.L.

RTN's design includes landscaped islands, pedestrian bridges, and walkways.

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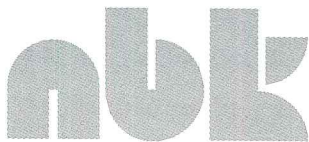
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News Briefs

AAF's schools initiative kicks off this fall

The American Architectural Foundation (AAF) has launched an initiative to explore the state of the nation's public school facilities and stimulate discussion concerning school design.

To begin, the AAF is scheduling a series of meetings that will involve stakeholders in the school design process. The first meeting took place in Chicago this September, with 30 of the nation's leading school design architects participating.

Ron Bogle, president and C.E.O. of the AAF, says the initiative "plans to shape a national dialogue about how school design can support student learning and contribute to stronger communities."

He notes that the program is coming at a vital time. According to the National Center for Education Statistics, one in four schools is in less than adequate condition, and estimates of the costs of repairing existing schools totals billions of dollars. About 6,000 new school facilities need to be built nationwide over the next decade to keep pace with population growth, Bogle adds.

Jane F. Kolleeny Architects design doghouses for charity

Doghouses by architects such as Robert A.M. Stern, FAIA, Michael Graves, FAIA, and Enrique Norton were sold last week at an auction for Puppies Behind Bars, an organization that teaches prison inmates to raise dogs for the blind, and for law enforcement purposes.

The event, which took place at Steelcase, at 4 Columbus Circle in New York City, raised over \$120,000 for the charity, with the help of energetic auctioneer Chevy Chase. Doghouses up for bid included Stern's Working Dog's Weekend House, a

miniature farmhouse complete with bay windows, wood siding, and a shingle roof that sold for \$1,500; Dan Wood's Villa Pup, a Plexiglas, rubber



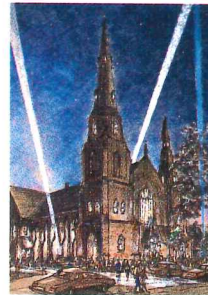
A doghouse by Spitzer + Associates.

and aluminum structure with television screens on three sides to project a virtual world; and Michael Bird's classic-style Adirondack House, made of cedar and river stone, which sold for more than \$2,000.

Ismael Leyva, AIA, who designed the Penthouse Doghouse, a translucent distorted cube made of Plexiglas with a curved fiber roof, realizes that his and other designs are for some pretty pampered dogs. "It's for a very special puppy," he observes, noting that it cost him \$3,000 to put the design together. "It's for a good cause, so I decided I should help," he says. *S.L.*

Singer to restore Buffalo church

Musician Ani DiFranco and her manager, Scot Fisher, have purchased the dormant, 130-year-old Asbury Delaware Church in DiFranco's native Buffalo. They are in the process of preserving the exterior and renovating the interior for offices for her record label, Righteous Babe Records; a new home for the Hallwalls Art Gallery; and a 1,200-seat performance hall.



A vision for DiFranco's church.

The Gothic Revival church faced potential demolition in the late 1990s. DiFranco, whose mother is a retired architect, put up at least \$1 million for the \$5.8 million project, which will be financed through loans, grants, and preservation tax credits. Flynn Battaglia Architects is the lead and historic preservation architect, and Architectural Resources will design the interior offices and gallery spaces. Exterior work should be complete in January, and the interior by late 2004. *John E. Czarnecki, Assoc. AIA*

Dates & Events

New & Upcoming Exhibitions

Stories of Home: Photographs by Bill Bamberger **Washington, D.C.**

December 4, 2003–March 7, 2004

Compelling photographs of low-income, first-time home buyers explores what it means to own a home. *Stories of Home* pairs portraits and visual essays by Lyndhurst Prize-winning photographer Bill Bamberger with excerpts from interviews conducted by families in Chattanooga, Tennessee; San Antonio; and rural eastern North Carolina. The resulting panorama is a unique contribution of the national dialogue about the impact and importance of affordable home ownership. At the National Building Museum. Call 202/270-2448 or visit www.nbm.org.

Welcome to Eastern State Penitentiary **New York City**

December 10, 2003–February 6, 2004

Albert Vecerka is an architectural photographer affiliated with ESTO. This exhibition shows large color photographs of a prison that was built with the belief that solitary confinement would bring prisoners penitence and redemption. Visitors can experience the isolation of the prison by entering the exhibition through prison doors and stepping into a life-size cell. At the Parsons School of Design, Arnold and Sheila Aronson Galleries. Call 212/229-8987.

Currents: Fall 03 **Los Angeles**

December 19, 2003–January 16, 2004

An exhibition of the best student work from the Department of Architecture and Urban Design at UCLA fall quarter. Held in the Perloff Gallery. Call 310/206-6465 or visit www.arts.ucla.edu.

Shock of the Old: Christopher Dresser **New York City**

March 5–July 25, 2004

Considered one of the first industrial designers, Christopher Dresser was also one of the most influential figures in design of the 19th century. This exhibition, the first full-scale museum retrospective devoted to Dresser, will introduce his varied and extraordinary work to American audiences. At the Cooper-Hewitt, National Design

Museum. Call 212/849-8400 or visit www.si.edu/ndm.

The Maine Perspective: Architectural Drawings, 1800–1870 **Portland, Maine**

February 7–May 22, 2004

The first of a three-part series that will examine the history of Maine architecture, this exhibition encompasses drawings made between 1800 and 1875. The array of 50 drawings on view range from the naive graphics of early local amateurs and builders to the sophisticated midcentury projections of trained designers from as far away as Boston, New York, and Washington, D.C. At the Portland Museum of Art. Call 207/775-6148 or visit www.portlandmuseumofart.org.

Ongoing Exhibitions

National Design Triennial 2003: **Inside Design Now** **New York City**

April 22, 2003–January 25, 2004

The Triennial is a review of cutting-edge trends and future horizons in design practice, from architecture, interiors, and landscape design to product design, graphic design, fashion, and new media. At the Cooper-Hewitt, National Design Museum. Call 212/849-8400 or visit www.si.edu/ndm.

Frank O. Gehry: Work in Progress **Los Angeles**

September 7, 2003–January 26, 2004

The exhibition highlights Gehry's unique design process through an examination of his firm's current projects and commissions. At the Museum of Contemporary Art (MOCA). Call 213/626-6222 or visit www.moca.org.

Samuel Mockbee and the Rural Studio **Birmingham, Alabama**

October 5, 2003–January 4, 2004

The late Samuel Mockbee, founder of Auburn University's Rural Studio, was an idealist who put into practice one of the boldest programs in contemporary architecture. This exhibition includes three built structures, a selection of Mockbee's personal notebooks, a dozen models, photos of completed projects, and large-scale paintings by Mockbee. At the Birmingham Museum of Art. Call 205/254-2565 or visit www.artsbma.org.

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Dates & Events

Urban Life: Housing in the Contemporary City New York City

October 17–December 10, 2003

An exhibition comprising a group of recently completed housing projects from different cities around the world that are relevant as examples for the American urban context. At the Urban Center Galleries. Call 212/753-1722 or visit www.archleague.org.

Glass and Glamour: Steuben's Modern

Moment, 1930–1960 New York City

November 7, 2003–April 25, 2004

Reflecting the elegance and dynamism of Manhattan, Steuben became synonymous in the mid-20th century with the Modern idiom, creating hundreds of designs by legendary artists. From functional tableware to singular exhibition works, the show features almost 200 objects from important international museum and private collections. At the Museum of the City of New York. Call 212/534-1672 or visit www.mcny.org.

Rowhouse Redux: Washington Architects Renew City Living Washington, D.C.

November 14, 2003–January 18, 2004

The National Building Museum's seventh biennial exhibition and competition organized jointly with the Washington Chapter of the AIA. Washington-based architects will present their visions for the future of our homes in a context that is sometimes overlooked these days: the urban row house. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

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William E. Massie Washington, D.C.

December 16, 2003

Architect William E. Massie utilizes computer applications and digital information to redefine formal architectural constructs. Massie will discuss his design process and projects, which include Playa Urbana/Urban Beach, the winning entry for the Museum of Modern Art's Young Architects Program displayed in the courtyard of the PS. 1 Contemporary Art Center. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Using the Arts to Revitalize the District Washington, D.C.

December 17, 2003

The executive director of the Cultural Development Corporation of Washington, D.C., will lead a discussion of its recent efforts. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Architecture and Memory: Memory/Works Boston

December 17, 2003

By examining projects that respond to historic/traumatic events, an architect/educator explores the relationship between architecture and memory and the meaning of memorials and monuments. At the Boston Public Library. Call 617/951-1433 or visit www.bpl.org.

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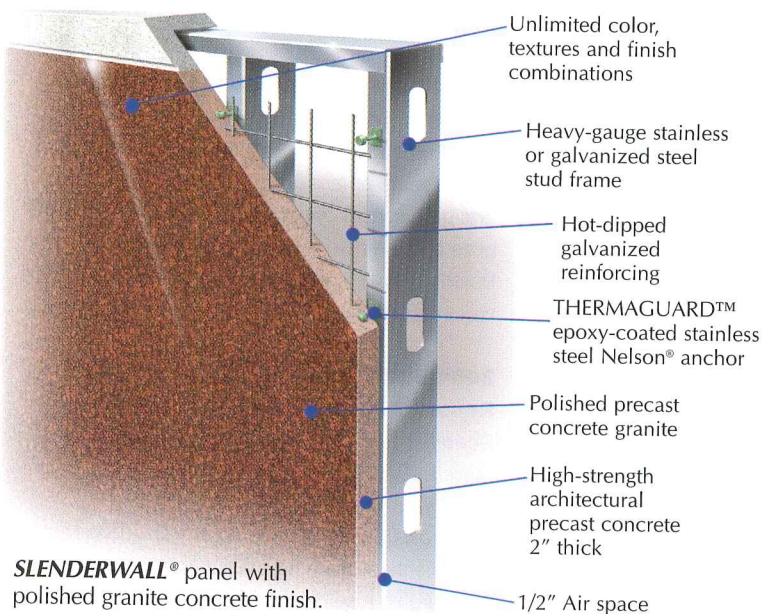
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212/715-1205, e-mail gsnible@japansociety.org, or go to www.japansociety.org.

Competitions

Architecture in Perspective 19 Columbus, Ohio

Deadline: December 5, 2003

The American Society of Architectural Illustrators invites entries for the Nineteenth Annual International Competition and Exhibition of Architectural Illustration. The competition

features the best in architectural illustration and visualization from around the world. Call 614/552-3729 or visit www.asai.ws.

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Deadline: December 10, 2003 (Sarasota)

Deadline: December 20 (London)

The International Making Cities Livable Conferences in Sarasota, Florida, and London (co-organized with the University of Notre Dame School of Architecture, in Indiana) are seeking papers and relevant work. For information and guidelines, contact Suzanne Lennard at suzanne.lennard@livablecities.org or visit www.livablecities.org.

New Housing New York Design Ideas Competition

New York City

Deadline for Registration: December 15, 2003

New Housing New York entries should provide a new vision of housing in New York City. They should incorporate new ideas for urban living, new technologies, cutting-edge architectural design, and innovative construction that will invigorate contemporary affordable housing. Three prototypical lots in Manhattan, Queens, and Brooklyn will serve as sites for the ideas. Visit www.newhousingny.com.

2003-2004 Young Architects Forum

Deadline: February 13, 2004

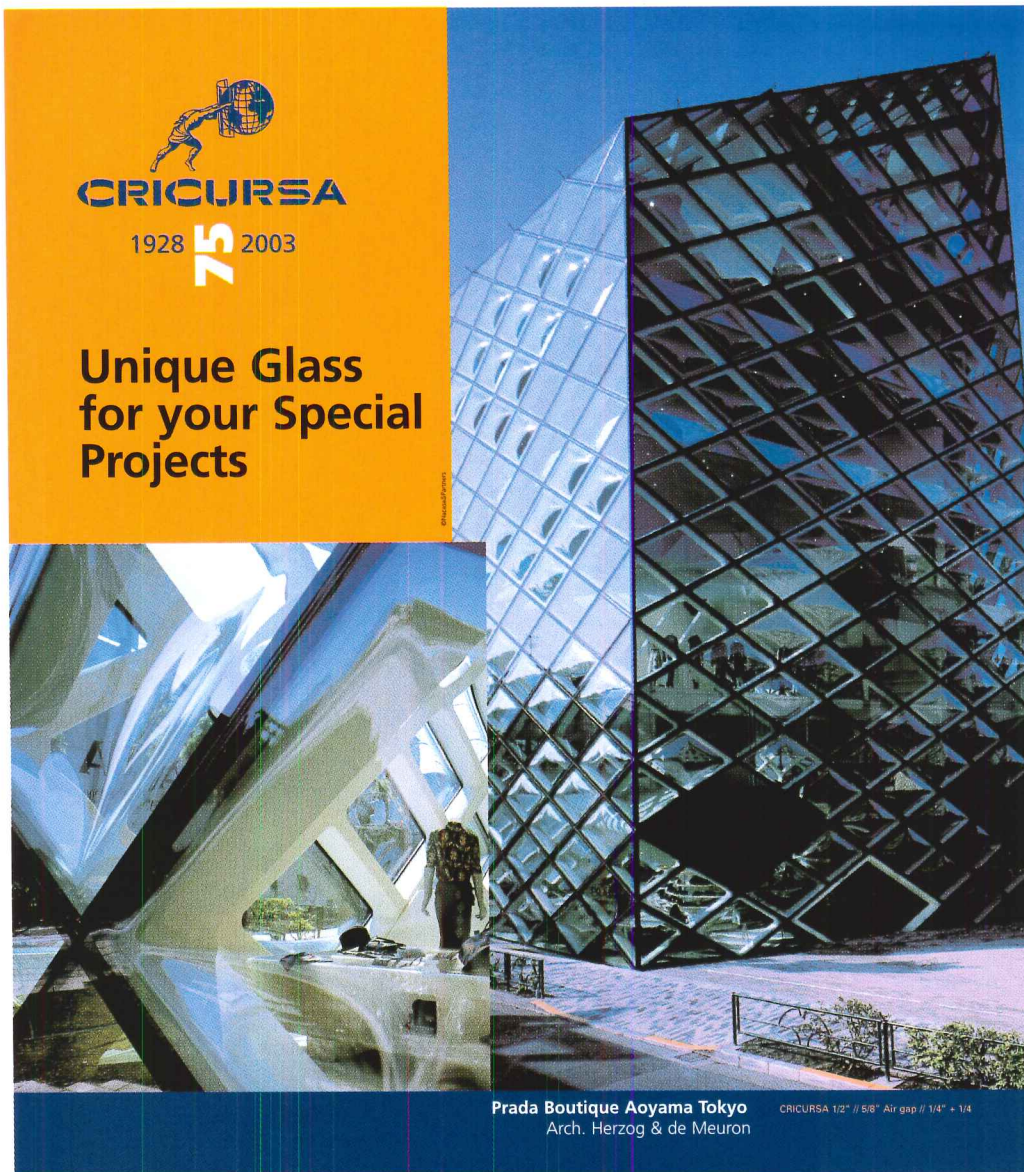
The competition is open to architects and designers 10 years or less out of undergraduate or graduate school. Winners receive a \$1,000 cash prize and their work will be exhibited and published in an annual catalog. Call 212/753-1722 or visit www.archleague.org.

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For and about the new generation of architects

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FOR THE EMERGING ARCHITECT

archrecord2 prides itself on featuring designers who are moving up in the world, and this month we present two. The first, in **Design**, takes “moving up” literally. Werner Aisslinger found a new place to add housing to cities: the roof. And in **Work**, archrecord2 checks up on one of last year’s **Design Vanguard** architects, who has recently completed a year of working with a Pritzker Prize winner and is contemplating his next, metaphorical, move up—to a higher level of practice.

DESIGN

Up on the roof

Mobile homes are nothing new—the ubiquitous trailer hitched to the back of a pick-up is a common sight on the road. But imagine looking up to the sky to see one fly through the air. That’s what young German designer Werner Aisslinger had in mind when he conceived of **Loftcube**, a minimal mobile home unit designed for rooftop living.

Aisslinger’s view of Berlin from his fifth-floor studio inspired his vision for rooftop communities inhabited by urban nomads. He believed that the flat roofs of high-rise city buildings could be used as a space for temporary living. “Much of Berlin, especially East Berlin, is composed of bland housing blocks built after the war,” Aisslinger says. “Very few architects, except maybe for Gaudí or Le Corbusier, took advantage of the design potential on top of buildings. This is an opportunity to create a wonderful ‘skyscape.’”



Aisslinger, who is known internationally for his furniture designs for companies like Cappellini and Interlübke, looked to the work of another furniture designer, Jean Prouvé. Likening a chair to a house, Prouvé was influential in the development of the idea of nomadic architecture, designing with portability in mind.

The rooftop aspect of the Loftcube, however, makes portability a bit more difficult. Plumbing and heating within the unit would require an extension of the host building’s utility lines, a feature that leads Aisslinger to refer to the project as a form of “parasite” architecture. Transporting it could prove to be quite a large undertaking, as well: The most expensive means would be by freight helicopter. Alternatively, the modular shell could be dismantled and transported in a number of different ways. An even more cost-effective option, Aisslinger concedes, might be Loftcubes for rent.

According to project architect Tory Lichterman, “We designed Loftcube so that it could be put together and taken apart rather easily by a few people.” Lichterman also acknowledges that the project is full of paradoxes. “On the one hand, we tried to make it as light as possible. On the other hand, it is a structurally contained unit whose own weight should be able to neutralize wind drag. Most prefabricated units start out as a solution to the problem of creating shelter. This



Loftcube, Berlin, 2003

The Loftcube can be airlifted to the roofs of buildings by helicopter, or it can be dismantled and reassembled atop buildings by a

crew of only a few people. The “parasite” structure was inspired by the bland, flat roofs of Communist-era apartment buildings in East Berlin.

project started out as a vision for a new way of living, a beautiful idea that we all fell in love with and tried to find solutions for.”

Loftcube was first exhibited last May on the roof of the Universal Music building in Berlin during the inaugural DesignMai, a two-week celebration of design that Aisslinger himself helped organize. It has since traveled to Amsterdam and will next find itself atop the roof of the Galeries Lafayette department store in Paris.

Aisslinger and his studio will continue to explore different options for Loftcube, which has already generated considerable interest from individuals who want it not only for their roofs, but in their gardens and on their lakefront properties, as well, and from companies hoping to mass-produce it. “This started out as an experiment,” Aisslinger explains. “As a creative person, it’s necessary to push limits now and then.” *Josephine Minutillo*

Go to architecturalrecord.com/archrecord2 for more on Aisslinger and Loftcube, to see previous features, and to submit your own projects.



Loftcube’s plumbing and electrical systems require it to be connected to its host building’s infrastructure.



Designed for Kuwait City, this pair of apartment towers is clad in a continuous pattern of steel-mesh panels, which shade the loft-style apartments and the rooftop pool.



WORK

A “Vanguardian,” one year later

In the December 2002 issue of RECORD, Sahel Al-Hiyari, an architect from Amman, Jordan, joined the ranks of the Design Vanguard. Al-Hiyari was then just beginning a one-year apprenticeship of sorts, sponsored by Rolex, during which he worked with Alvaro Siza, the Pritzker Prize-winning Portuguese architect.

The inaugural year of the Rolex program ended in November 2003, with a gala in New York City that brought the various mentors and scholars (the others were from arts as diverse as literature and dance) together for one last time.

By his count, Al-Hiyari met with Siza in Portugal 11 times—although he notes that Siza always answers “five” when asked how many meetings they had. The two discussed individual projects, including the one shown above, and in some cases Siza nudged Al-Hiyari toward better or simpler solutions.

“I showed him plans I was working on for this project,” he said, gesturing toward an early site plan for a large house that followed the slope of a steep grade, “and he told me to build a model. When I did, I discovered problems that I would never have seen in drawings.”

The two architects also discussed some of the more philosophical aspects of architecture and topics as

far afield as the history of Islamic architecture in Portugal.

Al-Hiyari relished the periodic gatherings Rolex arranged among the participants from the various arts, where he was able to compare notes and to make friends, as well.

“It was wonderful to be in Switzerland,” he said, “and to have long discussions about the artistic process.”

But with Siza, he also saw the challenges that will face him as his career progresses.

“It was inspiring to see him work completely without regard to his past honors,” Al-Hiyari said. “But it was also scary to see how much work it will take to be able to practice at that level.” *Kevin Lerner*

Reading New York's genetic code: The inside dope on the magic of a simple geometric order

Critique

By Robert Campbell, FAIA

I write during my recovery period from another desperately close late-inning defeat of the Red Sox by the hated Yankees. Even my friends in New York were hoping for a Sox-Cubs World Series. It would have been as if Scotland were to invade Paraguay: a war of the Lilliputians.

Aside from those insufferable Yankees, New York is heaven. I spent the spring semester there on a fellowship at Columbia University and fell in love with the town once again. "New York is the only city," a friend once announced. This is a typically hyperbolic New York statement with which I pretty much agree. No other city comes close to that city's energy, its immense creative drive. Hear the late Brendan Gill: "If you're not in New York, you're camping out."

The place can be a little provincial, to be sure. In fact, New York is the most provincial of all American cities, in the sense that it is the city least interested in anything outside itself. When I visit, my New York brother hastens to fill me in on Upper West Side politics. I must, of course, be starved to know.

Equal and interchangeable

What fascinates an architect about New York is the city's genetic code. Every city has one, and they are all different. In New York, the code is

Contributing editor Robert Campbell is the Pulitzer Prize-winning architecture critic of The Boston Globe and was a fellow in the National Arts Journalism program at Columbia University this past spring.

structured by the street grid. The grid ensures that every place is anonymous and interchangeable with every other place. You cannot site a building in a prominent location on the grid. There is no prominent location on a grid. You cannot place your palace or cathedral at the termination of a dramatic axis, because there is no axis. All sites are, in principle, equal. This principle is proclaimed by the fact that most streets are numbered, like DNA, rather than named.

New York simply does not present itself to you in the way that a city like Paris presents itself, as a clear hierarchy of major and minor buildings and named civic streets and spaces. New York, at one's first encounter, seems unknowable. Anything can be anywhere in the grid. That is its magic.

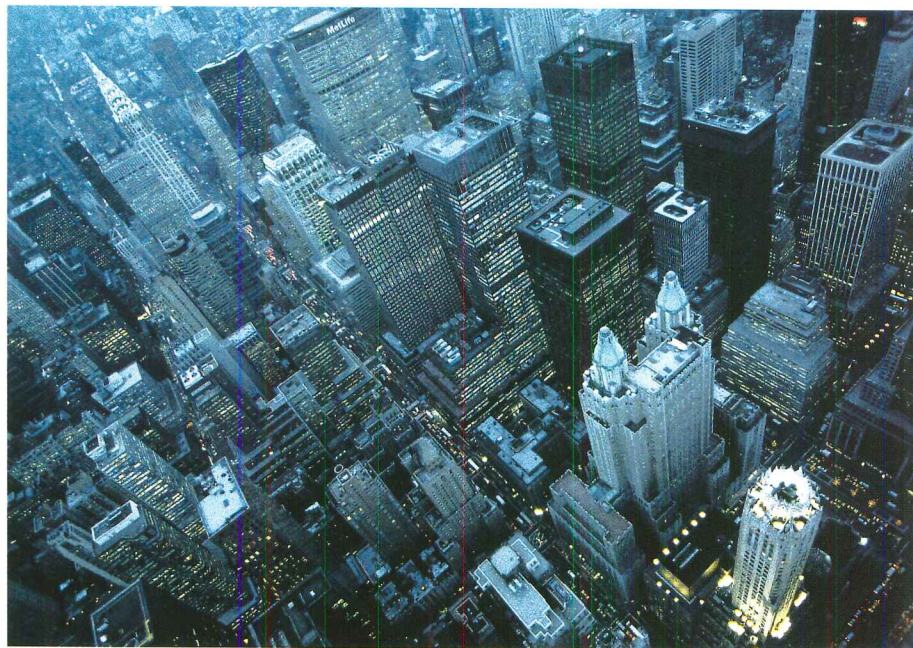
Reading the code

It is the grid's essential anonymity, its secret unknowableness, that creates the prototypical New Yorker. This inhabitant is the Inside Dopester, the guy who can read the grid for all its coded meanings. "Behind that window, Greta Garbo lived," the Dopester will tell you of a window that looks like all the other windows. "The axe murderer is behind that one." The Inside Dopester is the cryptographer of the anonymous environment—the smart

aleck. He knows where the best party is, the best martini, the great Greek restaurant nobody knows.

The existence of Inside Dopesters is the reason why, in New York, such a clear distinction is made between the natives and the people the natives call the "bridge and tunnel crowd," who are

for (by its number, of course), and turned down it, all the two-family houses looked exactly alike. When we found the house for the reception (by its number) and rang the bell, the door opened. There stood the groom and his twin brother in identical powder-blue suits. A metaphor for New York.



New York's street grid creates a democratic setting for all kinds of expression.

the tourists and commuters from somewhere else. They are rubes because they are not Inside Dopesters. They do not know the city. They can't decipher the grid and its endless interchangeability.

Interchangeability. Years ago I attended a wedding reception in Queens, in a neighborhood of which I knew nothing. As we drove, all the streets looked exactly alike. When we found the street we were looking

Besides its anonymity, the grid has another characteristic. Because it does not support hierarchy, it enables change. A building on any site may take on any height, any purpose, or any architectural expression without violating the order of the grid. A 70-story office tower may stand beside a single-story pizza parlor. Greatness can rise anywhere on the grid. One thinks of the loneliness of the

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Critique

Empire State Building. Buildings cannot step out of the system, but they can strain against it. Someone once wrote of the novelist Charles Dickens that he was always creating elaborate plots from which his characters were always escaping. It's a good description of New York. The grid is the plot the buildings are straining to escape from.

In rising from the grid wherever they seem to want to, buildings

real estate plots, but for individual people. New York is the place where you go to get rich and famous.

Real-time change

Nothing need remain constant except the grid itself. The city and its inhabitants can change as rapidly as a time-lapse movie, and sometimes seem to. "The American city is experienced as

RISING FROM THE GRID WHEREVER THEY WANT, BUILDINGS BECOME A METAPHOR FOR THE HUMAN DREAM OF NEW YORK.

become a metaphor for the human dream of New York. That is the dream that in this city, a man or woman can rise to greatness from anywhere in the population, from any background and any ethnicity. The interchangeable grid speaks of equality of opportunity, not only for

an incessant series of happenings, as a never-resting process that engages and fascinates," writes Christian Norberg-Schultz. Here again, the grid creates a need for the Inside Dopester. He knows not only where, but when: He knows what's the latest. Norberg-Schultz

makes another observation. When a building can't achieve distinction by where it's sited, he says, it can do so only through its architecture.

This is perhaps the reason why the inhabitants of grid cities like New York and Chicago become obsessed with the architecture of individual buildings.

Philip Johnson understands the difference between a grid city and a city of formal axes. Years ago, when he took me to visit his then-new AT&T (now Sony) Building on Madison Avenue, I complained that it didn't respect the grid. Unlike such New York masterpieces as the Chrysler or the Empire State, which face equally in all four directions out of respect for the grid, AT&T faces only east, with the powerful frontality of an Egyptian statue. It appears, I said, to want to be sited not on a narrow street in the grid, but at the termination of some great tree-lined avenue. "Oh, you are so right," said Johnson, without a nanosecond's pause. "I tried to get them to buy those

blocks all the way to the East River and demolish all those buildings, but they just wouldn't do it."

Out in the streets

The novelist Thomas Wolfe is one who went to New York to get rich and famous. He captures the mystery of the city in his story "The Train and the City," in which the narrator tells us: "And instantly, an intolerable desire would awaken in me to go out in the streets. I would feel, with a feeling of wild longing, pain, and joy, that I was allowing some superb happiness and good fortune to escape from me by staying in my room ... I did not know where I must go to find it, on which of the city's thousand corners it would come to me, and yet I knew it was there."

The grid of a thousand corners: Wolfe's hero, like the southerner Wolfe himself, yearns to become an Inside Dopester, to know where the superb happiness is hidden, and thus to become a true citizen of New York. ■

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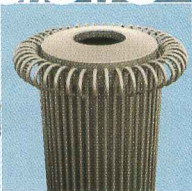
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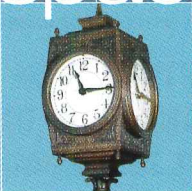
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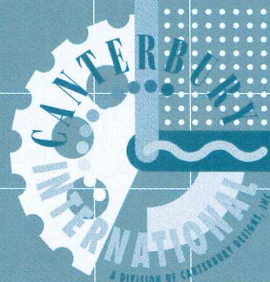


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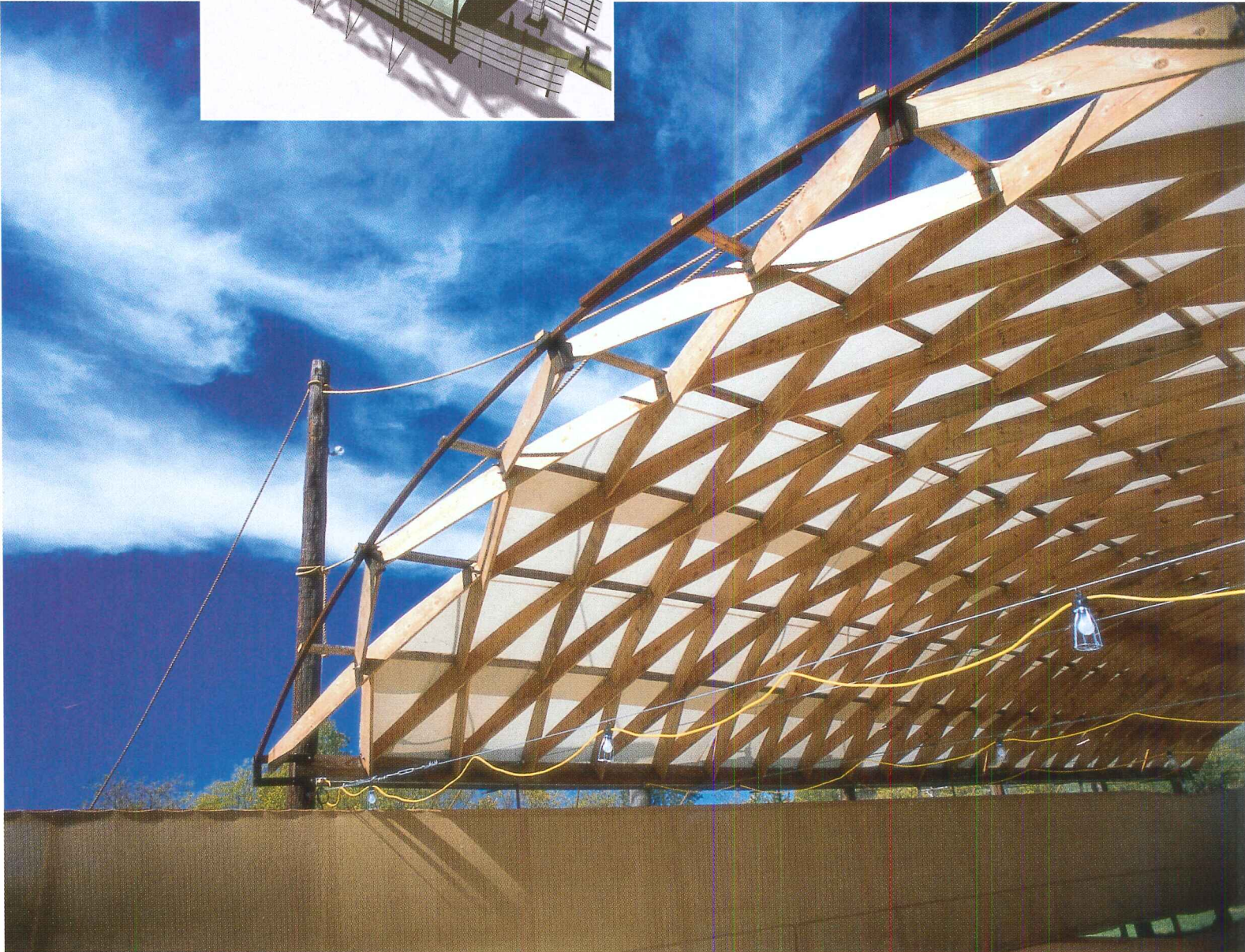
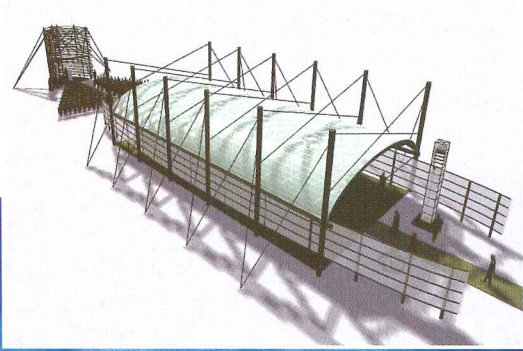
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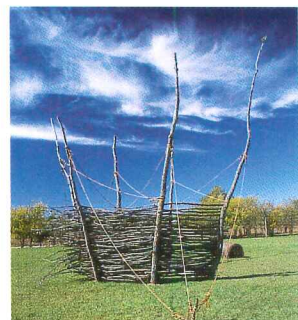
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The rendering (right) shows the bride's path through the reception hall (below) to the apse-like chapel (bottom)



By Diana Lind

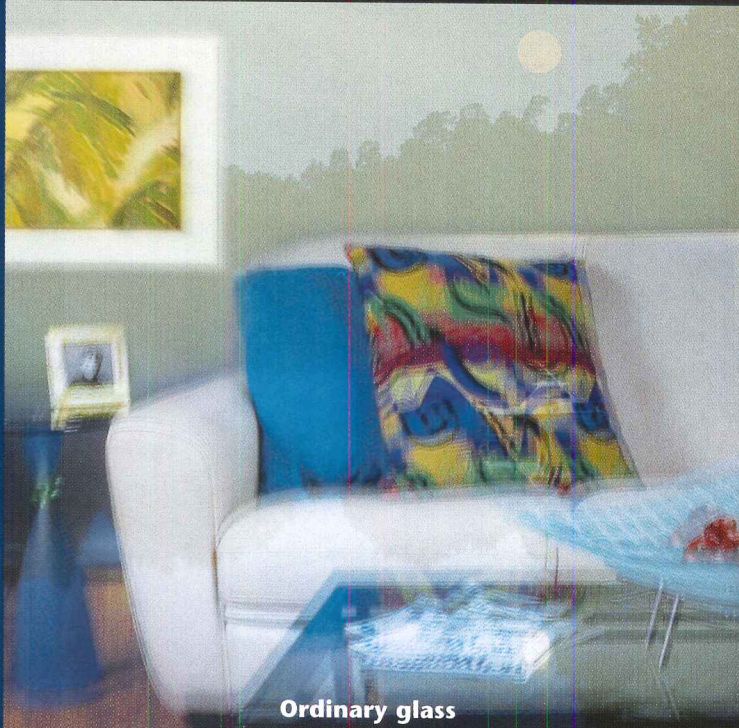
There's something unlikely and yet brilliant in the way that architects Rockhill and Associates juxtaposed an orderly lamella arch and an untamed construction of tree limbs and saplings to function as, respectively, a reception hall and chapel for a wedding. The two pieces combined together reflect life's most mystical dichotomy: that of the spiritual realm and the man-made world.



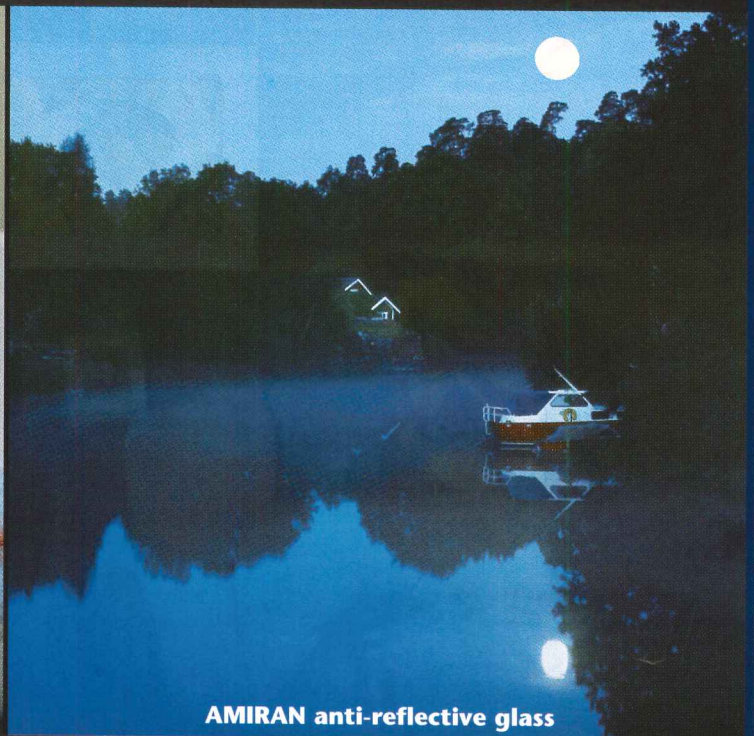
An exercise in poetry, economy, and parenting

Principal Dan Rockhill managed to pull off another difficult pairing, as both architect and father-of-the-bride. His unique position infused the project with equal amounts of economy and poetry and inspired the use of unusual building techniques and materials. Maple flooring cut from a damaged gym provided the path for the bride's processional. Under the canvas-covered lamella arch, a 1.5-inch-thick concrete floor was poured directly onto the field and reinforced with a fiber additive. That floor, which accommodated the 200-person reception, has since been cut into pieces for reuse, and grass has grown back in its place. As the wedding was located on the family's estate in rural Kansas, Rockhill intended to make the project entirely temporary; he admits, however, that he can't take down the chapel just yet. ■

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Design Vanguard 2003

OUR FOURTH ANNUAL GROUP OF EMERGING ARCHITECTS ARE TALENTED, PROVOCATIVE, AND UNCONFINED BY GEOGRAPHIC BORDERS OR TRADITIONAL PRACTICE

By Clifford A. Pearson

Forget about Blur buildings. Blur firms are taking over architecture. Just as the now-famous exhibition pavilion in Switzerland wrapped visitors in a creative haze that obscured traditional definitions of materiality and form, many of the architects in this year's Design Vanguard are blurring old notions of practice and geography. Instead of having one office in one place, several of this year's firms operate from multiple locations, even though they have few employees. The network, not the centralized headquarters, serves as the operational model.

With the Internet, not the blueprint, now the key medium of dissemination, new kinds of organization are emerging among young architectural firms. The four principals at *servo* live in four different cities (New York, Los Angeles, Stockholm, and Zurich). Thomas Spiegelhalter teaches in Los Angeles but works on projects in the U.S. and Germany. *heneghan.peng* moved its office from New York to Dublin two years after it started and now has its biggest project in Egypt. Qingyun Ma (MADA) and Soo Chan (SCDA) earned graduate degrees and worked in the U.S. before returning to Asia to set up their firms.

For audio interviews and enhanced coverage of our 2003 Design Vanguard architects, visit www.architecturalrecord.com.

What all these anecdotes show is a remarkable fluidity in the

profession of architecture, a wave of cross-border collaborations that challenge established perspectives of nationality and culture.

Do we identify Cornell-and-Harvard-educated Shih-Fu Peng as an Irish architect because he's a member of the Royal Institute of Architects of Ireland and has an office in Dublin? Is Spiegelhalter, a native of Freiburg, Germany, now part of the American team because he has worked in the U.S. for the past five years? Does nationality make any difference in a world where every architect is just a few mouse clicks away from the same publications and we all seem to dress alike?

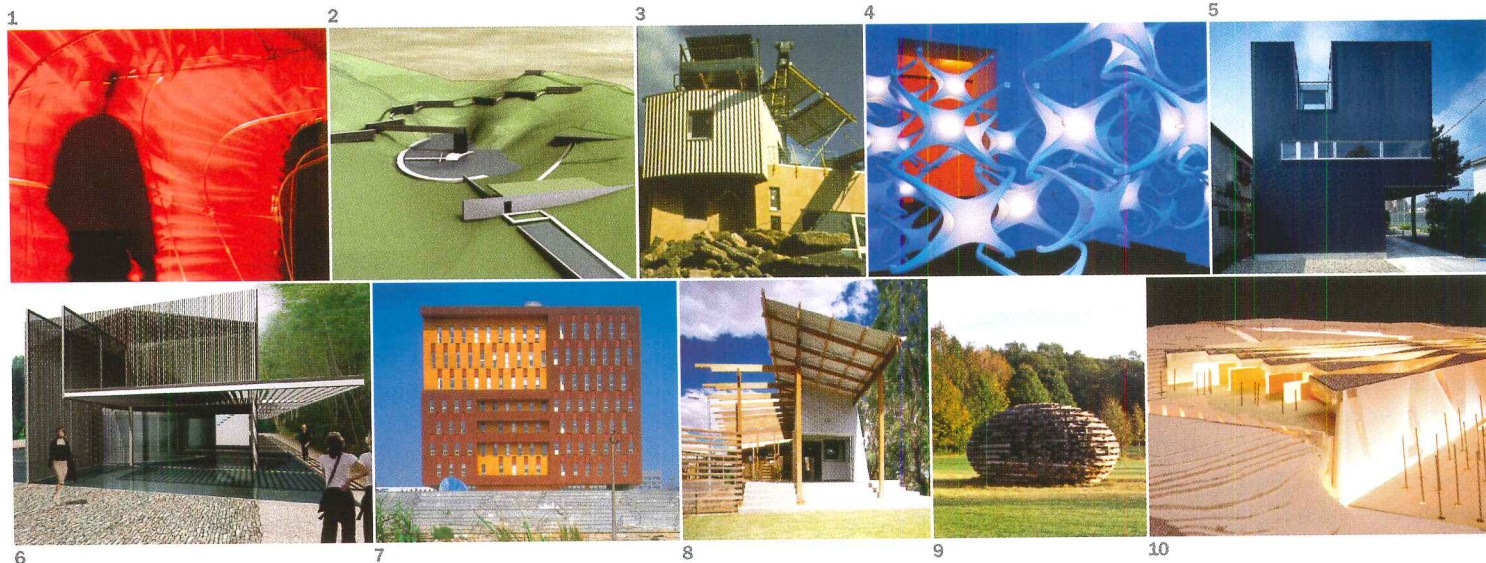
For what it's worth, this year's class of Design Vanguard architects includes only four firms based in the U.S., compared to seven in 2000, the year we started the feature. Three of this year's group come from Asia; four, if you count Australia. Other than the U.S., Japan is the only country to have a winner each year. The United Kingdom and Finland have had two winners each, while Italy, Ireland, Canada, Slovenia, Holland, Austria, Jordan, China, Singapore, and Australia have had one. Switzerland, Sweden, and Germany get into the act, if you count at least one member of a firm working there.

The blurring that's happening in the profession, though, is not just geographic. Sculpture, landscape, graphics, and new media are infiltrating the designs of many emerging architects. Mehrdad Hadighi, for example, works as much at art as he does at architecture, and he likes to collaborate with a different partner from another discipline on every project. His Studio for Architecture has no permanent employees.

What kind of firm is that? One of the new kind that's changing the face of architecture. ■

The firms featured are:

1. OpenOffice
2. SCDA Architects
3. Thomas Spiegelhalter Studio
4. *servo*
5. Chiba Manabu Architects
6. Labics
7. MADA s.p.a.m.
8. Merrima
9. Studio for Architecture
10. *heneghan.peng.architects*





OpenOffice redefines practice by blurring borders between design and art

By James S. Russell, AIA

Architect: OpenOffice

Arts + Architecture Collaborative

Location: N.Y.C.

Founded: 1998

Design staff: 5

Principals: Lyn Rice, Galia

Solomonoff (seated, left and right);

Astrid Lipka, Leif Halverson, Joanna

Gulik, design staff (standing)

Education: Rice: Columbia

University, M.S., Advanced

Architectural Design, 1994;

University of Oklahoma, B.Arch.,

1984; University of Oklahoma,

B.S., Environmental Design, 1983;

Solomonoff: Columbia University,

M.Arch., 1994; City University of

New York, M.S.Arch., 1991

Work history: Rice: Practice—

Diller + Scofidio, 1997–99; Lyn Rice

Architect, 1995–96; Stan Allen

Architect, 1994–95; Ellerbe Becket,

1989–93; Jon Gunson Architect,

1984–88; Academic—Barnard

College, 2001–03; Columbia

University, 2000–03; Solomonoff:

Practice—OMA, 1997–98; Bernard

Tschumi Architects, 1995–97;

Pasanella + Klein, Stolzman + Berg,

1994–95; Rafael Viñoly Architects,

1993; Academic—Cooper Union,

2002–03; Princeton University, 2001;

Rensselaer Polytechnic Institute,

2001; Columbia University, 2000

Key completed projects:

Dia:Beacon, Beacon, N.Y., 2003

(with former partners Linda Taalman

and Alan Koch); exhibition design for

Beyond the Catwalk: The Fashion

Show as Performance Art, Bellevue,

Wash., 2003; brand concepts and

retail environments for Shiseido (with

Diller + Scofidio), 2002; art and exhi-

bition master plan, Fort Lauderdale/

Hollywood Airport, Fla., 2002; pas-

sageway, Javits Center, N.Y.C., 2001

Key current projects: Brooklyn

Academy of Music, N.Y.: office

building; Sosnick Penthouse, N.Y.C.

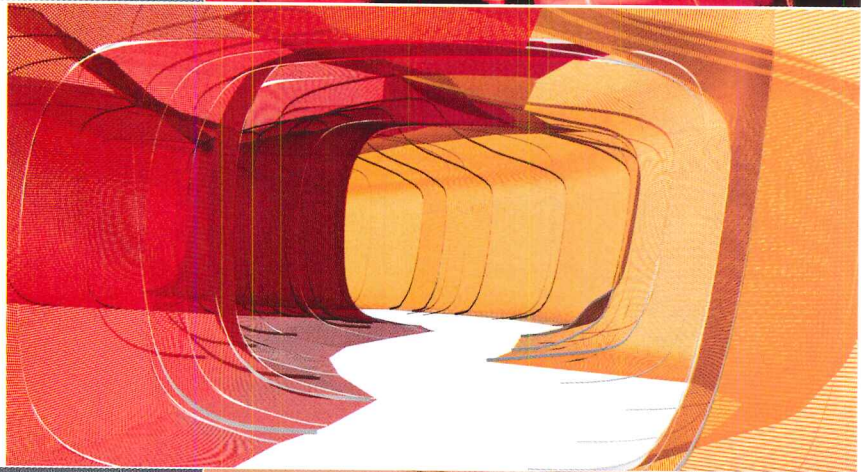
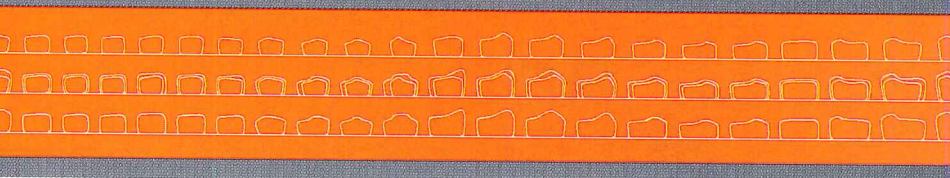
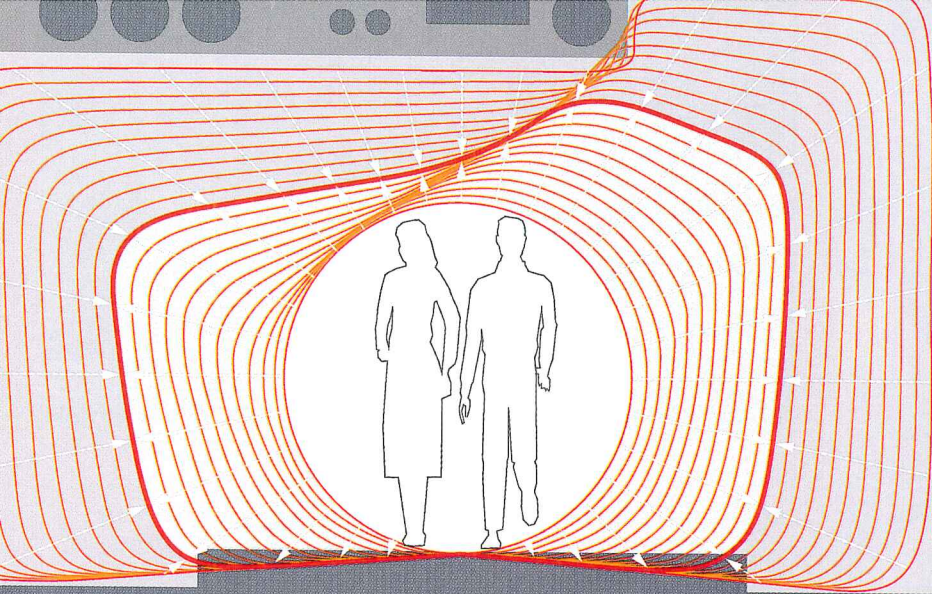
The world may increasingly embrace star architects, but OpenOffice and others who are exploring alternative territory anticipate a world where collaboration and partnership play out in entirely new ways. “That Howard Roark idea that architecture can cure all ills is past,” says Galia Solomonoff, one of the firm’s two partners. By contrast, OpenOffice frequently collaborates with other design firms and with artists to the degree that the hand of the designer can actually be hard to detect. “We’re ‘open,’ as in ‘open to new approaches,’” explains Solomonoff. “We’re ‘office’ in terms of defining parameters, a framework in which negotiation takes place.”

The firm’s design handprints are nearly invisible at their best-known work, the Dia:Beacon art museum [RECORD, October 2003, page 108]. “Our mission at Dia was not to make a mark, but to get away from that,” explained Solomonoff in an interview.

For many architects, collaboration and crossing disciplinary barriers results in mediocre, compromised projects. At OpenOffice, a willingness to subsume both a signature style and an unambiguously leading role tends to inspire client confidence—which can lead to a deeper commitment to a compelling solution. Partner Lyn Rice describes their unique process for Shiseido (page 59), done with Diller + Scofidio, as scenario-building rather than designing: “You devise a continuity that mutates so that partial solutions become acceptable. Then you reshape the solution to meet the evolving circumstances. You define territorial possibilities rather than territories.” Shiseido threw out the first round of designs but liked what it learned so much that it engaged the two-firm collaboration to create a second iteration (subsequently built) to entirely different criteria. The firms succeeded because of their acuity to the often-unspoken cultural norms that underlie the self-identity of buyers—the kinds of concerns that artists far more than architects tend to examine.

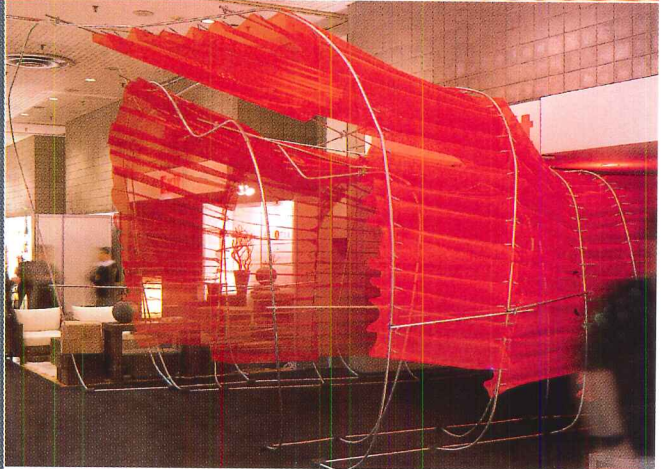
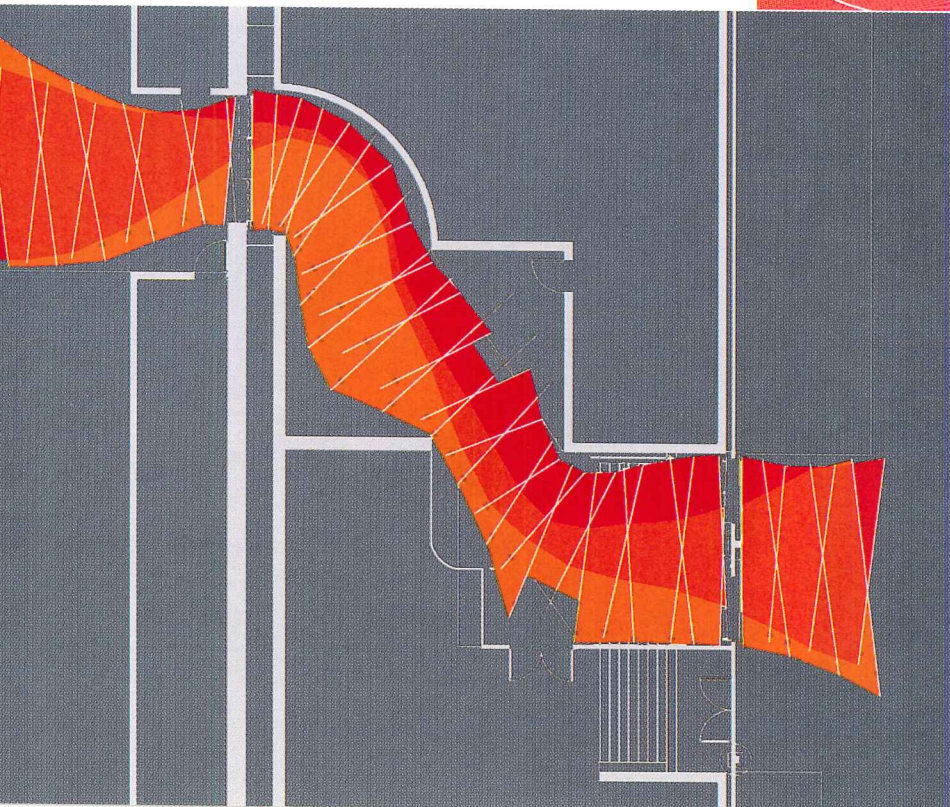
The partners’ practice point of view derives a great deal from their biographies. Solomonoff is married to an artist; she worked for Bernard Tschumi, Rafael Viñoly, and in Rem Koolhaas’s OMA. OMA could be described as a device for harvesting and processing great torrents of cultural data as much as an architecture firm. Rice worked on a variety of performance pieces, public-art projects, and museum installations while at Diller + Scofidio, a practice that has operated far more in the realm of art than of architecture. In late 2002, former partners Linda Taalman and Alan Koch moved to California, where they formed TK Architects, a firm whose intentions and mode of practice is akin to that of OpenOffice.

Not all of the work is collaborative and art-oriented. Revamping a temporary convention-center passageway (opposite) was a purely architectural exercise, though one resolved with economical aplomb. And the armatures OpenOffice designed for *Beyond the Catwalk*, an exhibition on fashion, are completely architectural. “We were chosen because we’re influenced by the art world, and so operate at the border of fashion and art,” says Rice. It may seem a circuitous means to build a practice, but Solomonoff is happy if the result is “a book, a well-designed object, a problem solved,” adding, “Buildings are not the beginning nor the end of architecture.” ■



Passageway,
New York City

For a contemporary furniture fair, OpenOffice devised a low-cost, temporary enclosure to make access to a utilitarian exhibition annex more appealing. “We looked for an ideal section cut [above] that could adjust to the different conditions [below],” explains Rice. Folds of vinyl plasticized mesh (frequently used at construction sites) proved not to sag when tensioned with metal tubes and springs (right).





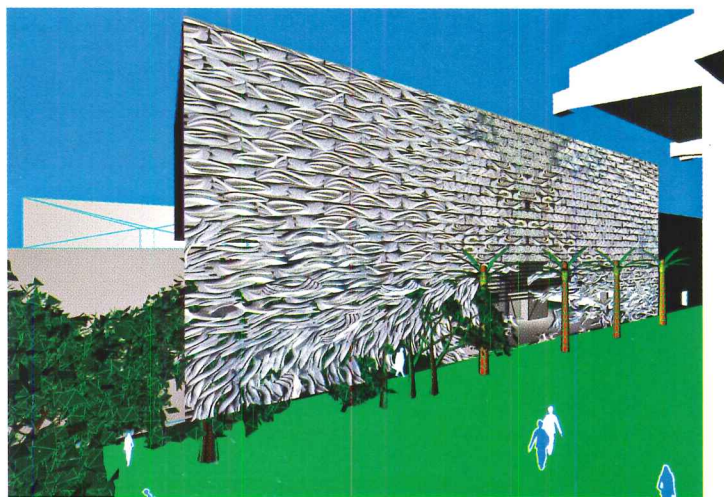
Art and Exhibition Master Plan, Fort Lauderdale, Florida

The firm integrated public art projects into the fabric of a new airport terminal designed by HOK. By analyzing the kinds of places that had the greatest intensity of use and involved the longest waiting times, OpenOffice identified such unconventional art locations as a jetway (top left) and the armrest of a waiting-room chair. The principals also involved artists whose way of working is attuned to such unusual public places. Peter Kogler created a waiting-area lighting-figure frieze (left). Retrieving bags is made more pleasurable by the watery texts and color bands of an installation by Liam Gillick, which also screens a parking structure beyond (top right).



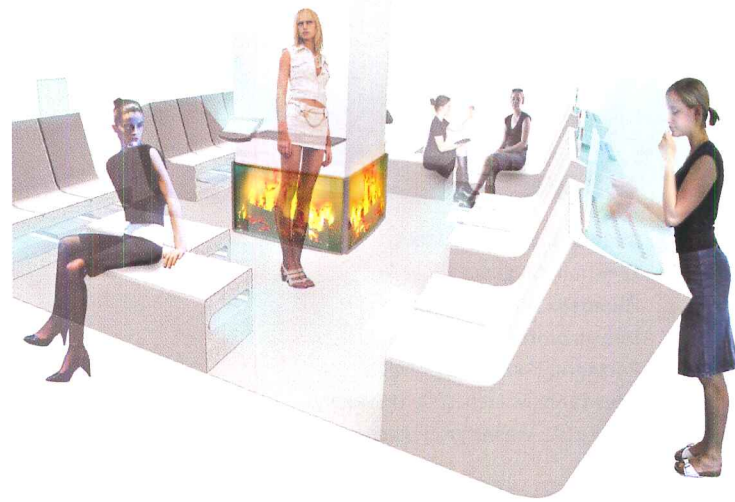
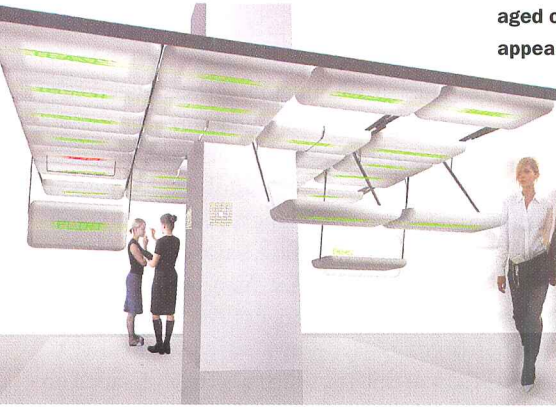
San Jose Museum of Art Competition

A wall of what Solomonoff defines as "defective bricks" ("stressed" to their limits by a computer-generated algorithm) defines the courtyard facade (below) of a proposal to add to an existing museum. Overlapping wings, stacked vertically, are united by a stair/elevator lobby.



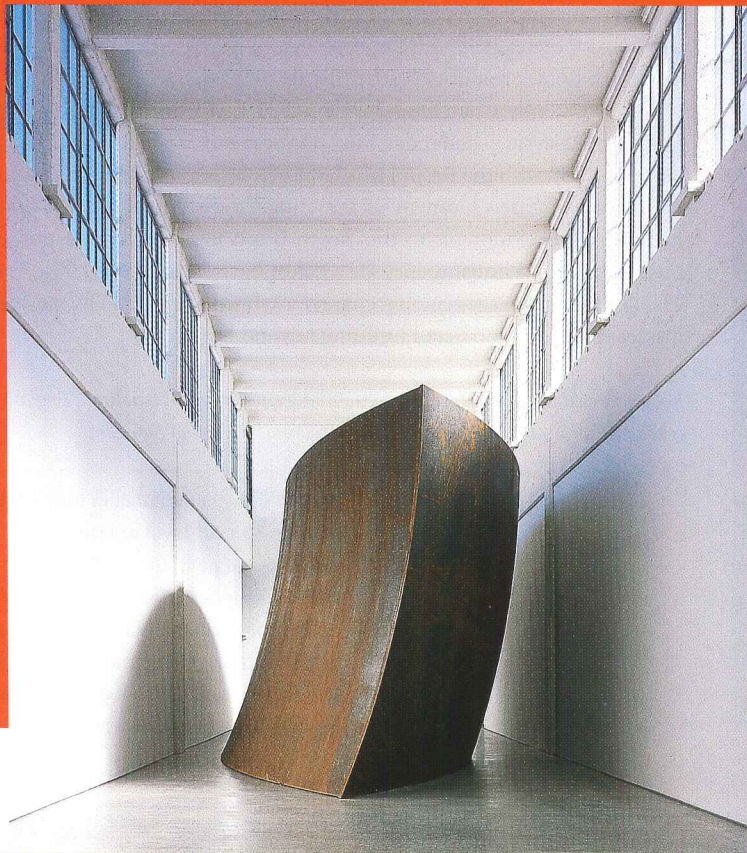
Brand Concept and Retail Environment for Shiseido

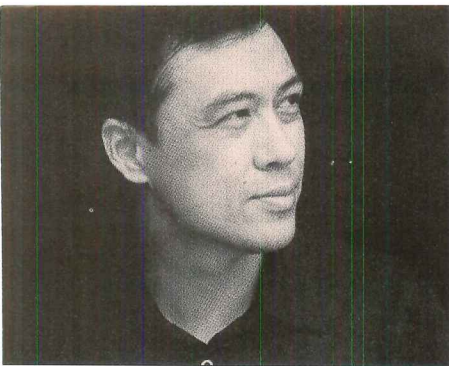
To reconceive the department-store cosmetics counter, OpenOffice (in partnership with Diller + Scofidio) analyzed how customers identified themselves, developing categories such as “bitch,” “vamp,” and “tomboy,” then designed prototypes that encouraged customers to consider the way appearance reveals character.



Dia:Beacon, Beacon, New York

OpenOffice's original four partners worked closely with artist Robert Irwin and director Michael Govan on the renovation of a vast factory as a permanent setting for a unique collection of contemporary art. Because so much of the art is concerned with “found” surroundings, the duty of OpenOffice was to subtract distracting elements, making the architecture as unself-conscious as possible.





SCDA Architects reaches beyond Singapore to explore new global horizons

By Robert Powell

Architect: SCDA Architects
Location: Singapore
Founded: 1995
Design staff: 25
Partners: Soo Chan, principal
Education: M.Arch., Yale University, 1997; B.A., Washington University, 1984
Work history: A61, Singapore, 1990–95; Kohn Pedersen Fox Associates, 1988–90; Allan Greenberg Architects, 1987–88
Key completed projects: Master plan and housing development, Shanghai, 2003; Lincoln Modern apartment tower, Singapore, 2002; Ladyhill condominium, Singapore, 2002; Andrew Road House, Singapore, 2002; Heeren Shophouse, Malacca, Malaysia, 2000; Coronation Road West House, Singapore, 1998
Key current projects: Toy Museum, Singapore, 2004; Singapore Embassy, New Delhi, 2004; columbarium, Guangzhou, China, 2005; Commercial and Lifestyle Center, Beijing, 2005; Polo Park mixed-use/residential development, Bangkok, 2006

Born in Malaysia and educated at Washington University and Yale, Soo Chan balances a reverence for the traditional vernacular of the tropics with a firm grounding in the legacies of Classicism and international Modernism. Chan says he does not consciously design with an Asian identity; rather, he is committed to rethinking typologies and modern architectural language, “seeking to capture the essence of a place.”

After working at Kohn Pedersen Fox Associates and Allan Greenberg Architects, Chan relocated to Singapore in 1991, motivated by a desire to reconnect with his Asian roots. He set up a design studio in 1993, and two years later founded SCDA Architects, which has largely focused on multifamily dwellings and private houses. The practice has preserved or adapted a number of shophouses, a traditional Asian building type with a retail shop at street level and residences on upper floors. Since 1997, SCDA has also completed several acclaimed high-rise apartment buildings, including the Mondrian and the Lincoln Modern. “The universality of the vocabulary allows for the works to transcend place,” Chan says. “The reference to the locale is often through construction, craft, and culture.”

Chan, 41, calls his design explorations the “choreography of space,” and refers to five key themes: light, space, structure, transparency, and texture. His work often focuses on the notion of procession overlaid on sequences in both plan and section. “Movements are choreographed to amplify the rhythm and volumes of the architecture,” he says.

If spatial choreography is the baseline of Chan’s architecture, it is his introduction of light that often exhilarates. Light floods the apartment interiors of the Ladyhill condominium through internal courts, for example, and filtered sunlight casts delicate shadows on the walls of the central courtyard in the Emerald Hill House. Surface textures—polished marble, concrete, glass, mirror, timber, and even pools of water—reflect or absorb light, providing further tactile pleasure.

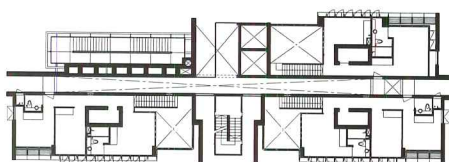
Recently, Chan has moved onto a larger world stage with projects in India, Malaysia, Thailand, China, France, and the U.S. This expansion began in 1998 with the Rashid Mir House in New Delhi and has continued with a housing development in the Qing Pu district of Shanghai and a mixed-use development on the North Bund in Shanghai. Recent commissions beyond housing include a columbarium in Guangzhou, China. The desire to preserve regional character within a universal framework of modernity keeps Soo Chan building beyond borders. ■

Robert Powell is an architect, educator, and writer based in Brighton, England. He is the author of a forthcoming monograph on the work of Soo Chan.



Lincoln Modern, Singapore

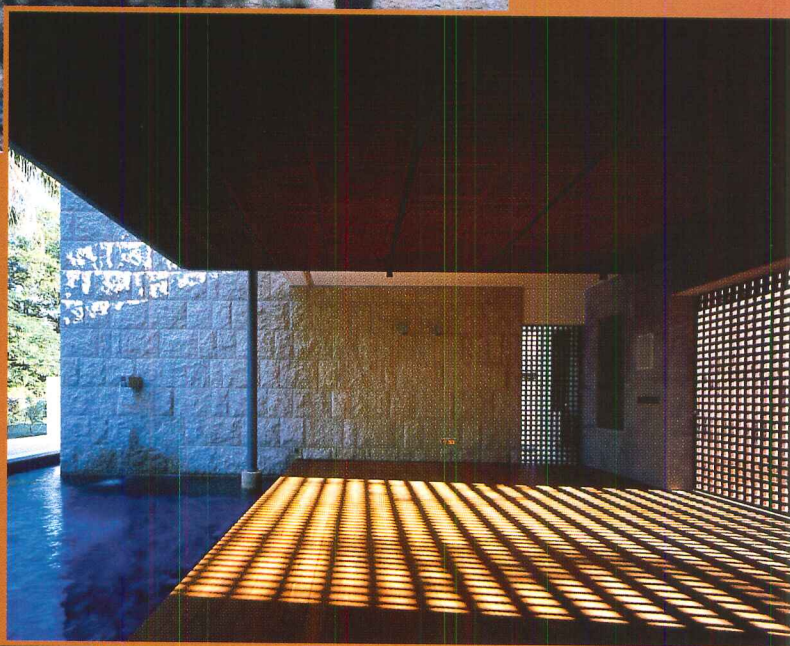
The 30-story condominium tower (left) houses 56 split-level apartments, studios, and penthouses. Exploring Corbusian ideas of spatial overlap, the upper floors of some units function as galleries overlooking main living spaces. The curtain wall of glass and anodized aluminum emphasizes transparency.





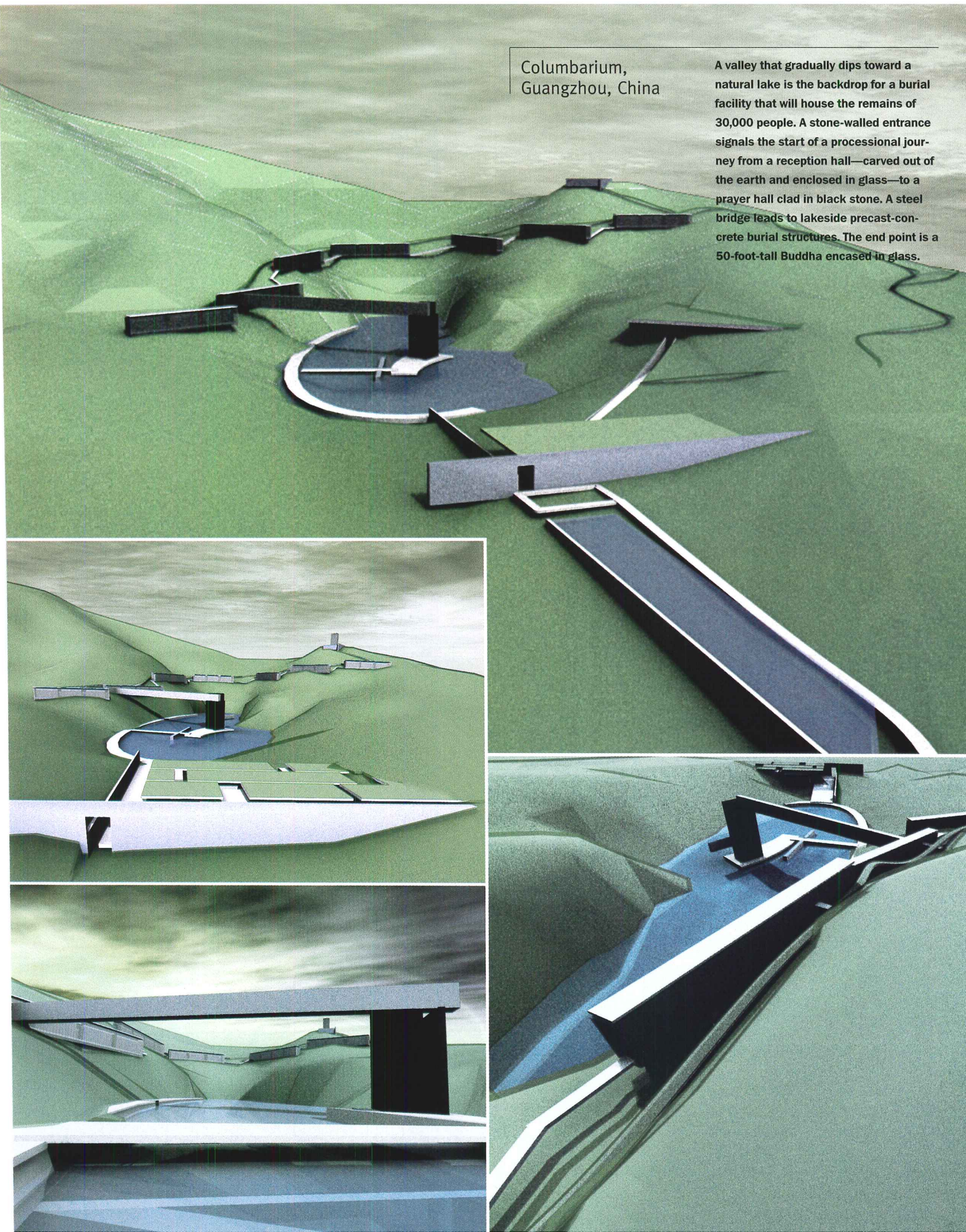
Coronation Road West House, Singapore

This largely open-plan private house is an asymmetrical composition of planes and boxes. The heavy line of a concrete wall inscribes the site, supporting two main living spaces. The smaller of the boxes is expressed in steel and glass with horizontal timber louvers on all sides. The main facade's concrete and stone cladding suggests privacy, while the extensively glazed rear elevation offers views of a coconut grove.



Columbarium,
Guangzhou, China

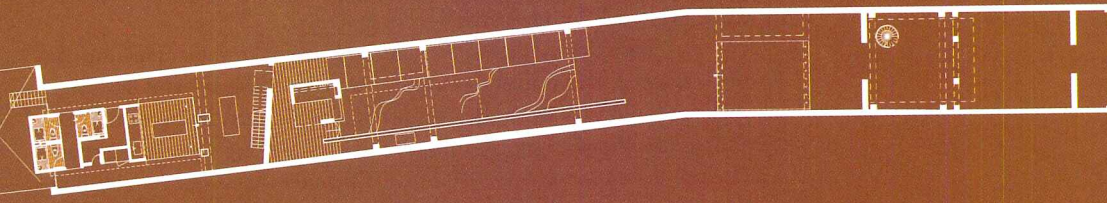
A valley that gradually dips toward a natural lake is the backdrop for a burial facility that will house the remains of 30,000 people. A stone-walled entrance signals the start of a processional journey from a reception hall—carved out of the earth and enclosed in glass—to a prayer hall clad in black stone. A steel bridge leads to lakeside precast-concrete burial structures. The end point is a 50-foot-tall Buddha encased in glass.





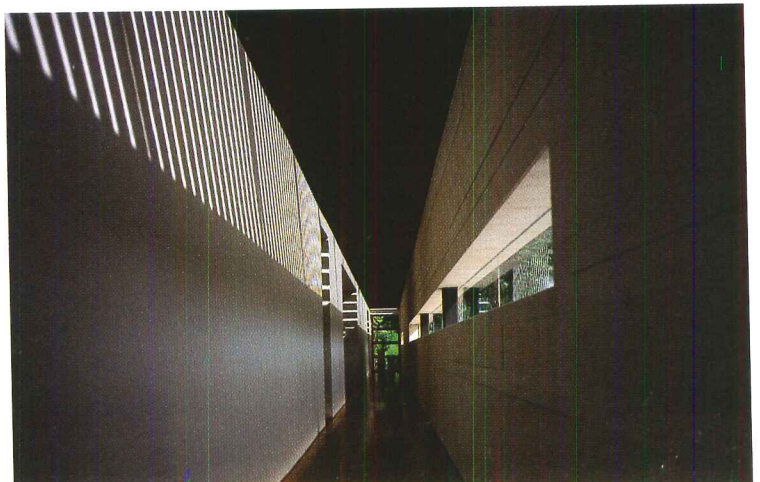
Heeren Shophouse,
Malacca, Malaysia

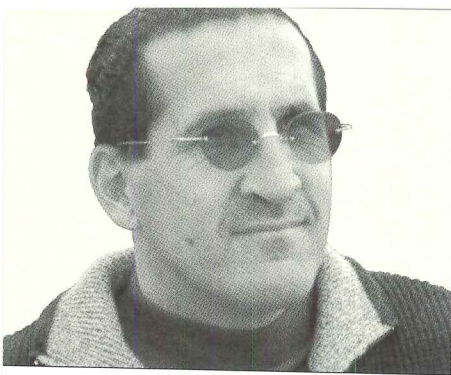
Four flat-roofed Modernist boxes were inserted into the ruin of a long narrow shophouse, whose walls and roof were collapsing. Steel I-beams stabilize the party walls and also support the new box structures. A room for meditation is enclosed within a masonry volume pierced by slots to introduce a play of shadow and light within.



Andrew Road House,
Singapore

This house, set on a sloping, rectangular site, features three flat-roofed blocks: a long, rectangular, timber-clad structure; a smaller block enveloped by a woven-steel screen; and a single-story reception pavilion open to four sides. The entry is revealed after passing through an opening in a stone wall and crossing a bridge. A two-level guest and entertainment suite overlooks a pool and waterfall. Roofs are zinc titanium.





Thomas Spiegelhalter turns neglected ruins into designs with a conscience

By Deborah Snoonian, P.E.

Architect: Thomas Spiegelhalter Studio

Location: Los Angeles and Freiburg, Germany

Founded: 1989

Design staff: 21

Partners: Thomas Spiegelhalter (above); Christoph Kapeller, AIA, Mitchell de Jarnett, AIA, Peter Drecker, Harry Rheinburger, Ingomar Belz

Education: University of the Arts, Berlin, Germany, M.A. in 3D design, architecture, and town planning, 1987–88; Art School, Flensburg, Germany, fine arts diploma, 1982

Work history: Practice—Partner in firms in Berlin, Stuttgart, and Freiburg, Germany, 1987–90; Academic—University of Southern California, 2003 to present; Center for Building Performance and Diagnostics, Carnegie-Mellon University, 2000–03; University of Applied Science, Leipzig, Germany, 1999–2000; University of Kaiserslautern, Germany, 1990–92

Key completed projects: Solar Cultural Center, Breisach, Germany, 1998; Solar-powered town houses, Freiburg, Germany, 1997; “Gravel Pit Architecture” exhibition space, Weil am Rhein, Germany, 1996–98

Key current projects: Prototype for prefabricated, multistory, mixed-use building, Exposition Park, Los Angeles, 2003–05; retrofit and additions to mixed-use multistory building, Exposition Park, Los Angeles, 2003–06

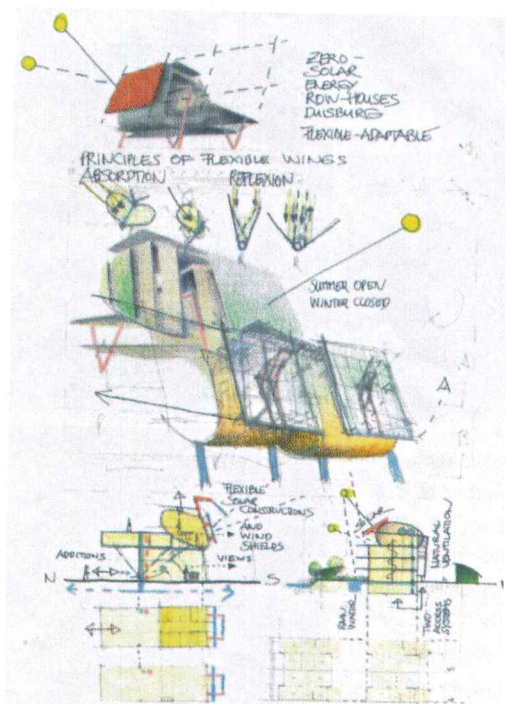
As a child growing up in Freiburg, Germany, Thomas Spiegelhalter logged many hours skinny-dipping in the gravel-pits-turned-pools of abandoned mining plants. “I became fascinated with these places, which seemed to be always moving and changing and having nature intervene,” he recalls. Early imprinting, it seems, led to his leanings as an architect: reclaiming brownfields, designing buildings for no-net-fossil-fuel use, and working with engineers and landscape architects to mitigate the effect of construction on the environment. His intentions are summarized in what he terms his “Gravel Pit Manifesto,” in which he calls for turning these old facilities into “culturally valuable architecture, where people live, work, and research.”

Unlike many designers who seek to make their mark on the world, Spiegelhalter is acutely aware of extant conditions and has rarely sought to build new from the ground up. “In Europe, 80 percent of the building stock has to be retrofitted,” he says, adding that in Germany alone there are more than 3,000 brownfield sites that await reclamation. The number swells to 10,000 when those in France and Switzerland are included. “Many of these sites are not on the power grid, so what I want to do is create a transforming design for working and living that will naturally involve using solar panels, hydrogen power, and fuel cells.” In Germany, he was active in the antinuclear movement; Europe’s energy-conscious building standards have clearly affected his practice.

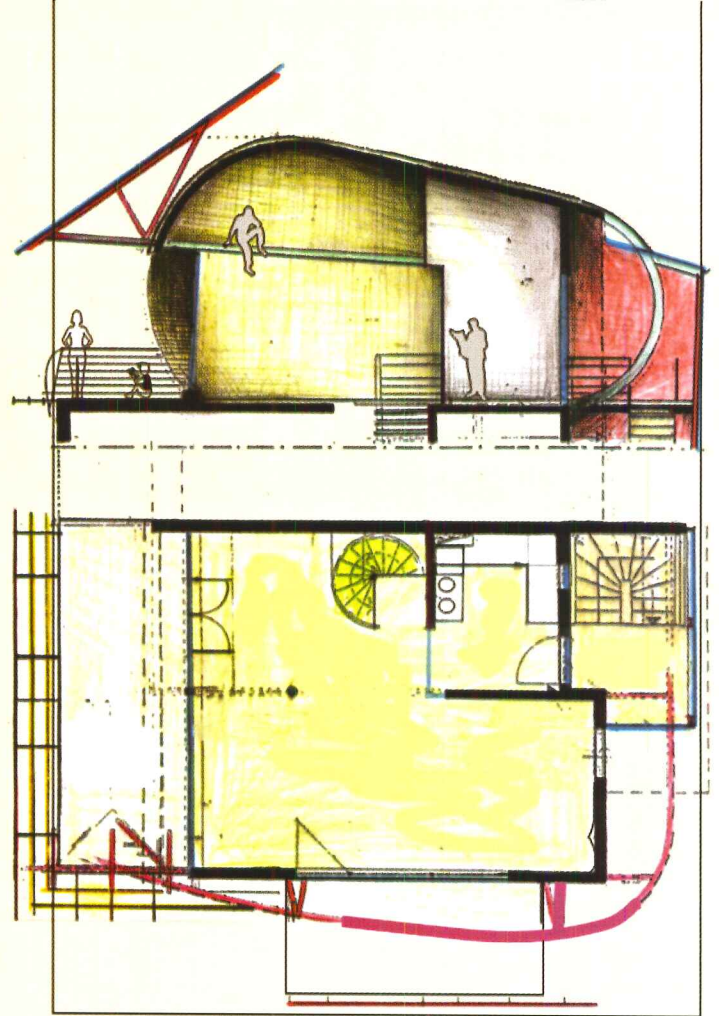
Spiegelhalter’s interest in design grew by degrees. First he earned a certificate in sculpture, creating large, environmental works and installations. “That got boring,” he says. “I wanted to see the insides of my sculptures, to see them living, moving, changing. So I studied industrial design.” Still he was dissatisfied. “You never get a permit to make infrastructure, or to build a city or a bridge.” Finally he got degrees in architecture and urban planning.

Though he’s lived and taught in the U.S. for the past few years, he collaborates regularly with his partners and designers in Germany, on whom he depends to keep abreast of developments in technology and energy conservation. Projects such as his solar-powered housing units in Freiburg have benefited from this knowledge and analysis, he says.

Spiegelhalter joined the faculty of the University of Southern California in January 2003 to teach building science, and he hopes to call Los Angeles home. Recently he struck a deal with the local utility, renting an old power distribution station and turning it into a workspace where students will build and test prototypes of facades, systems like HVAC, and other components. He’s also finessing USC’s virtual sustainability laboratory, an online database of resources for students and faculty. “People should understand that none of what we do is fixed in stone,” he says. “We’re all learning. I’m learning. And I’m glad to be learning.” ■

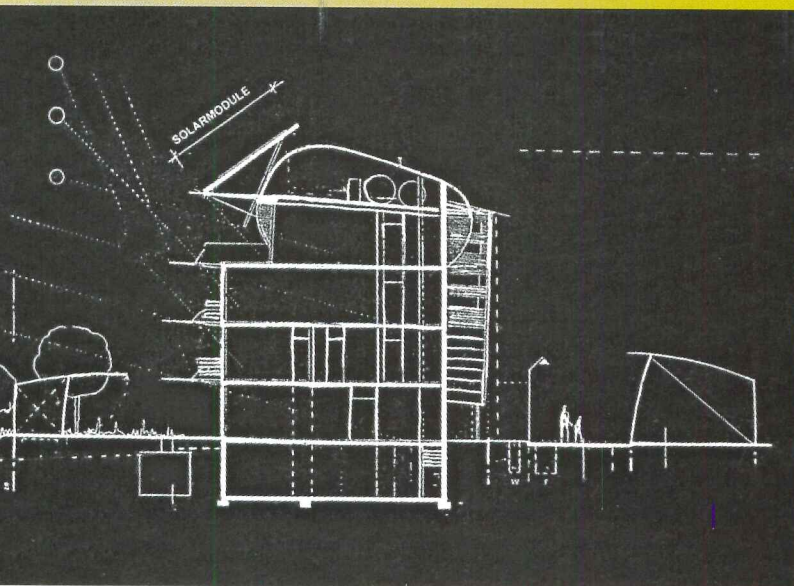


Spiegelhalter’s sketches for solar-powered, multistory town houses to be built in Duisburg, Germany.



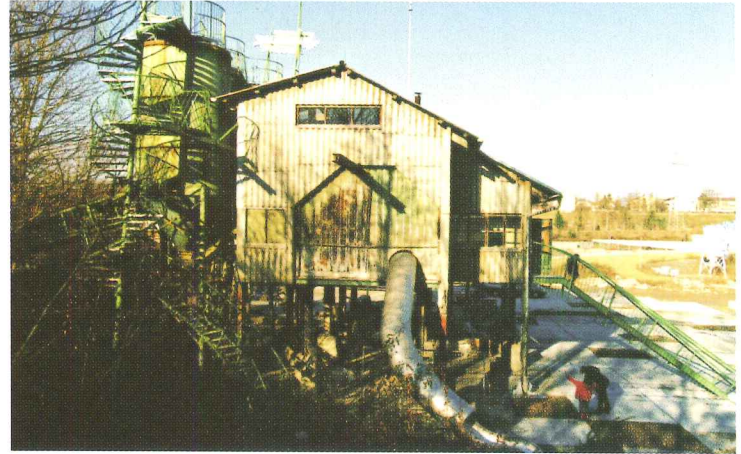
Solar-powered town houses, Freiburg, Germany

These town houses were constructed on land that was once used for sewage treatment. The forms and materials used were based on the landscape and topography near the Rhine, where the town is located. The wood-framed buildings use natural ventilation and solar energy. Bright exterior colors provide a cheerful contrast to rusted and recycled metal roofs and balconies.



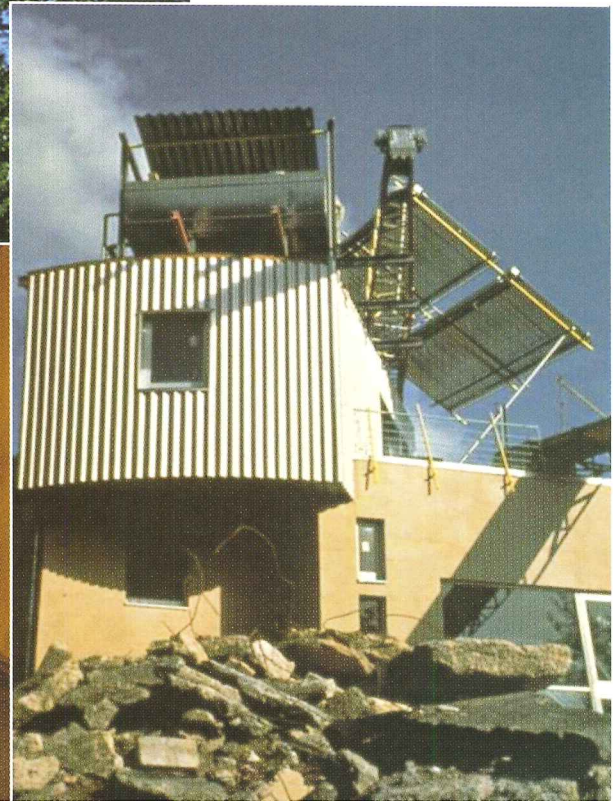
“Gravel Pit Architecture” exhibition space, Weil am Rhein, Germany

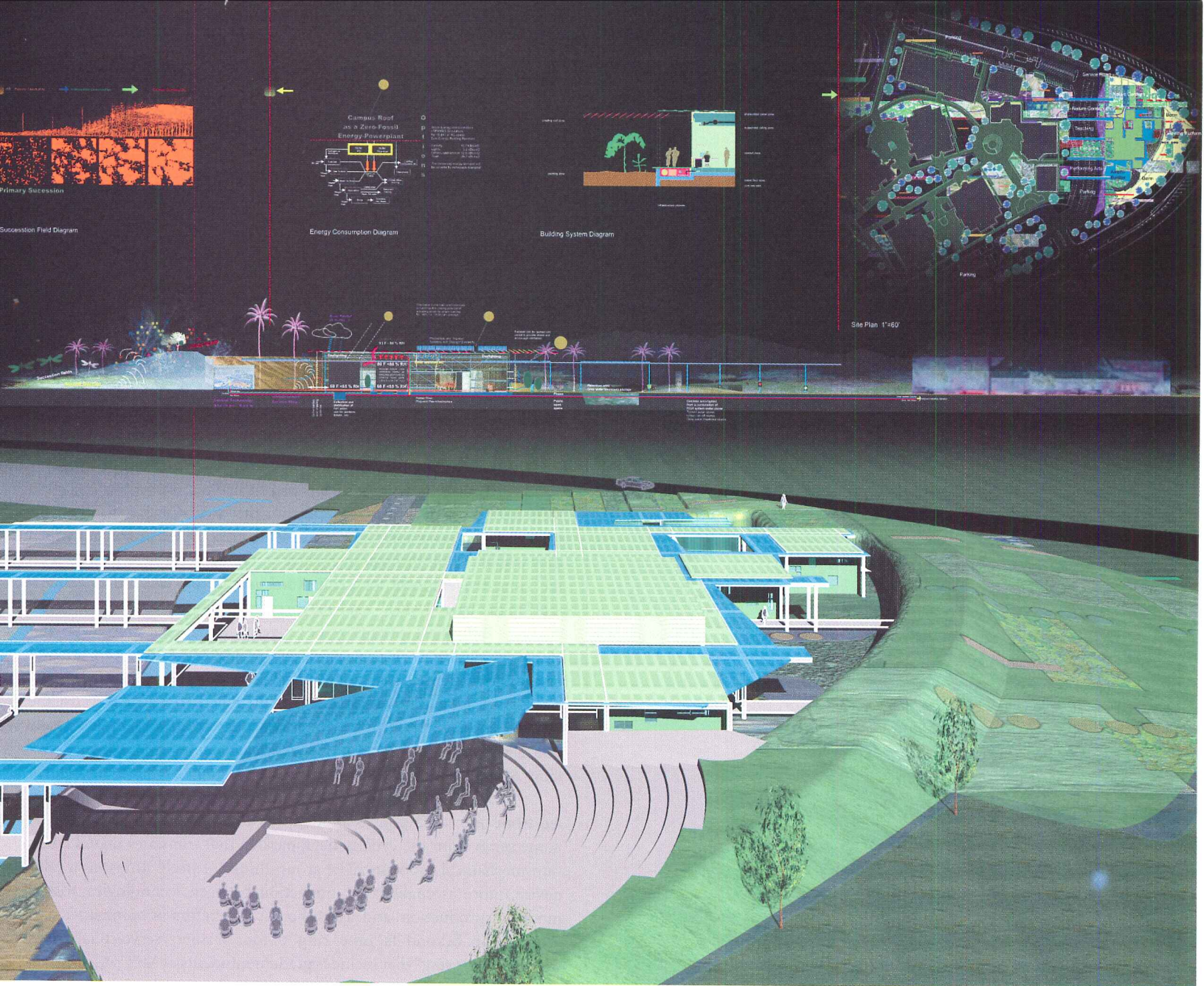
The designer transformed a former cement factory and gravel-and-sand mining area into spaces for art exhibitions and performances. The exteriors were largely left intact, reflecting Spiegelhalter’s desire to reuse and reimagine existing structures.



Solar Cultural Center, Breisach, Germany

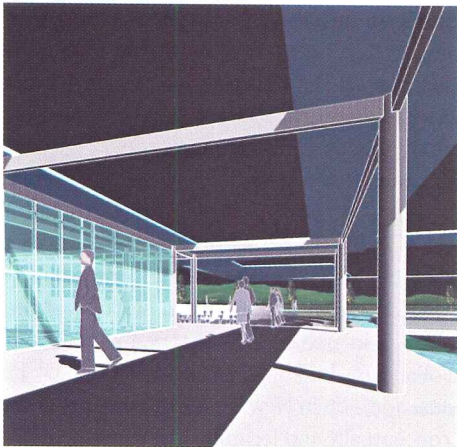
A variety of technologies were used in this demonstration project, including Internet-based project management, life-cycle cost assessment, prefabricated components, and postoccupancy monitoring of building performance. The buildings are naturally ventilated and intended to be used as live/work spaces. The site was once a mining facility.





Malama Learning Center, Maui, Hawaii

Spiegelhalter and his partners received a merit award for this competition entry to design a 25,000-square-foot facility where visitors can learn about Hawaii's natural resources and its culture and history via the performing and visual arts. The site is on a three-acre parcel at the entry of a new high school. The structure was intended to take advantage of the local climate and minimize use of resources.





servo explores and exploits the interface between architecture and new media

By Sarah Amelar

Architect: servo

Location: Los Angeles, Zurich, New York, Stockholm

Founded: 1999

Design staff: 10

Partners: (clockwise from top left): David Erdman, Marcelyn Gow, Chris Perry, Ulrika Karlsson

Education: Erdman: Columbia University, M.Arch., 1998; Ohio State University, Columbus, B.S.Arch., 1993; Gow: Swiss Federal Institute of Technology (ETH) Zurich, Department of History and Theory of Architecture, Ph.D. candidate; Columbia University, M.S.A.A.D., 1998; Architecture Association, AA Diploma, 1992; Perry: Columbia University, M.Arch., 1997; Colgate University, B.A., 1991; Karlsson: Royal Institute of Technology (KTH), Stockholm, Ph.D. candidate; Columbia University, M.S.A.A.D., 1996; Sveriges Lantbrukuniversitet, Stockholm, M.S. in Landscape Architecture, 1995

Work history: (for academic work, see archrecord.com) Erdman: Greg Lynn Form, 1998–99; Stan Allen, 1997–98; Stanley Saitowitz, 1993–95; Gow: Reiser Umemoto, 1998; Zvi Hecker, 1994–96; Perry: Stan Allen, 1997–99; Daniel Libeskind, 1995; Karlsson: Greg Lynn Form, 1996; Zvi Hecker, 1994–95

Key completed projects: *Servo Browser 2*, Venice Biennale, 2003; *Lattice Archipelogs*, at *Latent Utopias*, Graz, Austria, 2002; *Lobbi-Ports*, Cooper-Hewitt, National Design Museum, N.Y.C., 2002; *In the Lattice*, International Artist Studio Program, 2002; *Thermocline*, Wexner Center for the Arts, Columbus, Ohio, 2002

Key current projects: *Algo-Rhythmics*, exhibition design, Santa Monica Museum of Art, 2005; *Institutional Implants*, lecture space, UCLA, 2004; *Domestic Implants*, house addition, upstate N.Y., 2004

Structured like a global network, servo links four partners, each in a separate city: New York, Los Angeles, Stockholm, and Zurich. Emerging in the late 1990s from Columbia University's theory-infused graduate architecture programs, Chris Perry, Marcelyn Gow, David Erdman, and Ulrika Karlsson began as friends fascinated by architecture in relation to new media. Eventually, this ad hoc group started collaborating and were soon exploring the potential of exhibitions—versus competitions or straightforward commissions—as opportunities for its work.

Though the four principal players had not explicitly intended to form a collective or “distributed” practice, they were drawn to its multicultural and multigeographic aspects and issues of complex authorship, which they would exploit through interactive work. “Sure, we were familiar with the ‘Lone Ranger model’ for architectural practice, but we were more interested in the ‘band model,’” explains Perry (who happens to be a drummer).

Influenced perhaps by the zeitgeist, new types of collectives—not always architectural—had emerged on the Internet. And Ocean, another decentralized architectural practice, had already dispersed itself over many cities. Then, as Perry notes, a shift toward the collective appeared even at the World Trade Center, where a terrorist network took down quintessentially centralized edifices, and the subsequent design competition spawned new kinds of architectural collaboratives, including United Architects and Think.

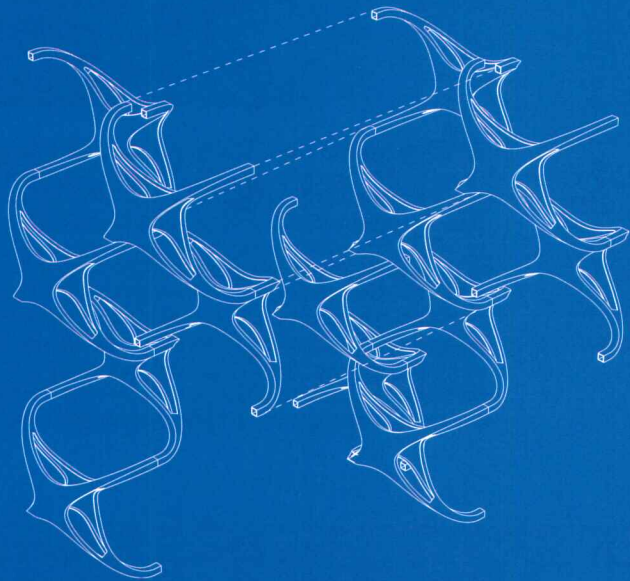
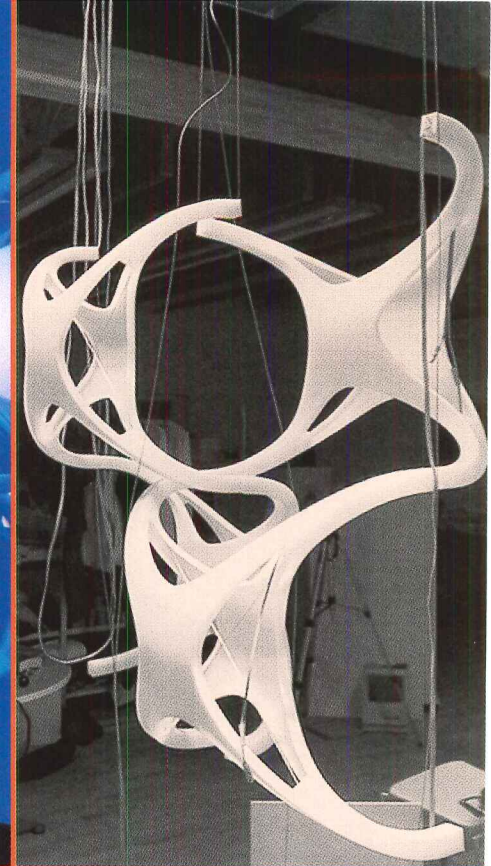
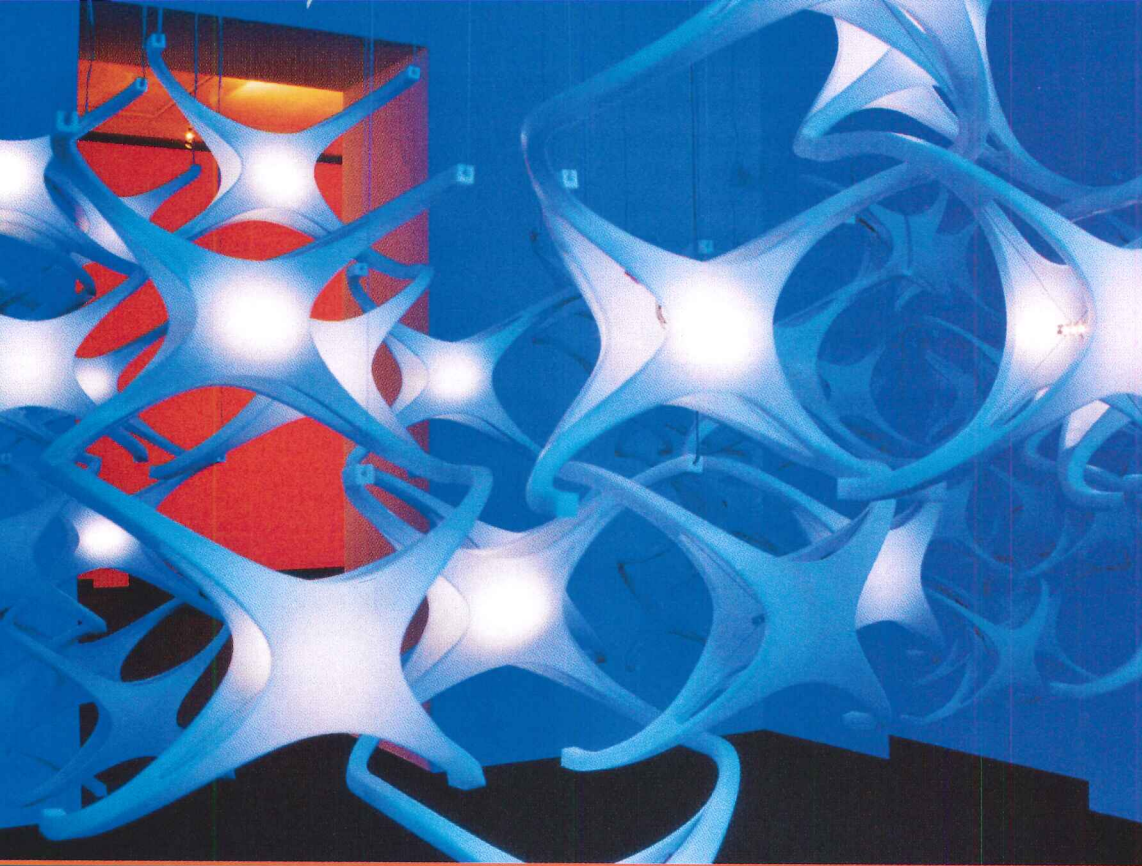
Meanwhile, as the work of Perry, Gow, Erdman, and Karlsson led from one exhibition to another, the foursome jointly adopted the name servo from the cybernetic apparatus that translates digital codes into mechanical processes. The group thinks of itself almost as a relay device, more as enablers of interaction between technologies, forms, modes of production, and users than as generators of commands and information. Beyond its “inner ring” of four partners, servo collaborates with an “outer ring” that includes graduate students at MIT's Media Lab.

Exploring questions of authorship, servo has developed projects such as *Thermocline*, sensory furniture that responds to users through incorporated digital, sound, and lighting technologies. But that interaction may deviate from user expectations, translating, for example, touch and movement into light or sound patterns—generating synesthetic experience.

For *Lattice Archipelogs*, servo combined physical and virtual infrastructures within a dynamic, multicellular lattice, laced with sensors that “listened” to people moving through it. The lattice responded to motion by transforming itself in ways that, in turn, influenced visitors' paths. Throughout the practice's work, relationships between cause and effect and program and form frequently come into question.

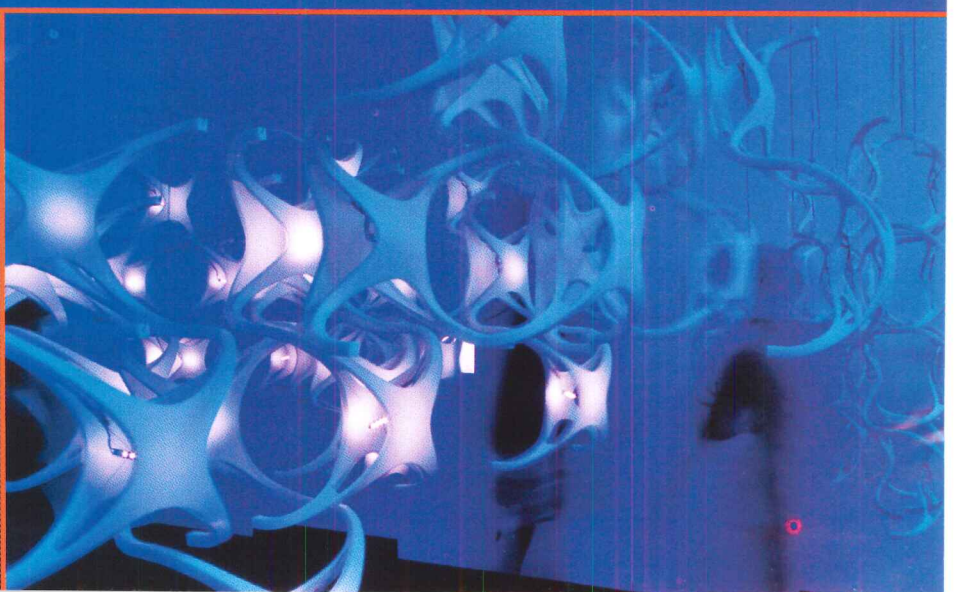
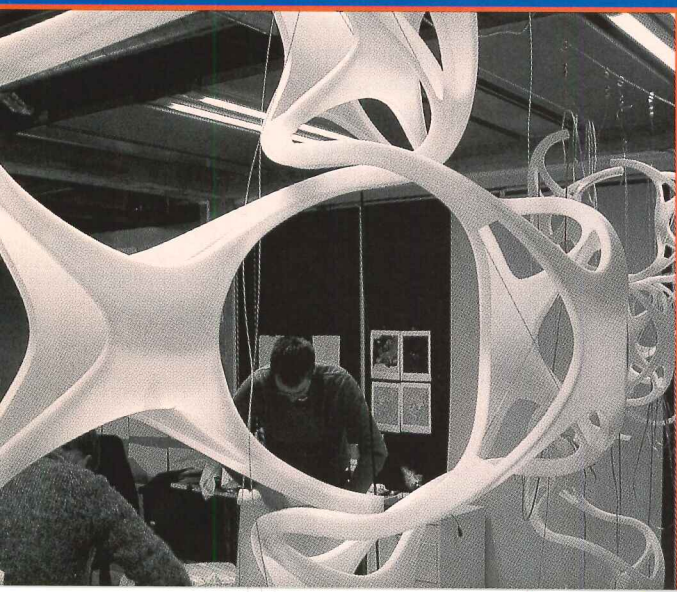
In *Lobbi-Ports*, the group reconsidered the nature of the hotel lobby, proposing “implants” to hook into existing curtain-wall skins. Media display surfaces and digital probes within the ports would tap into both local and global conditions, mediating between life in the hotel and the city itself.

Passionate about research and the virtual realm, servo's partners teach, and two are pursuing Ph.D.s in architectural theory. But the group also remains open to the idea of erecting buildings, having designed a UCLA lecture/gallery space and a house addition in New York State. Yet unrealized, both projects are, of course, conceptually and technologically charged. ■



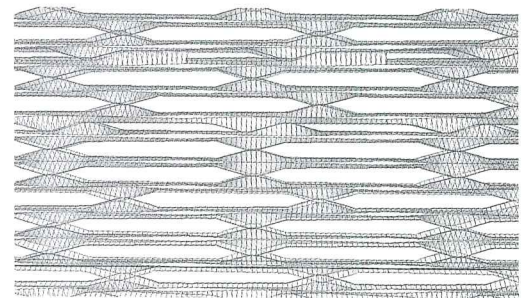
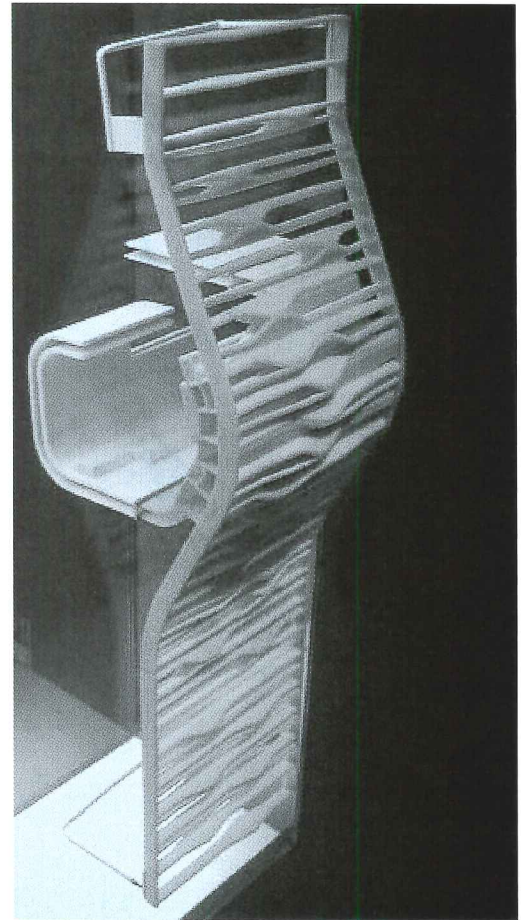
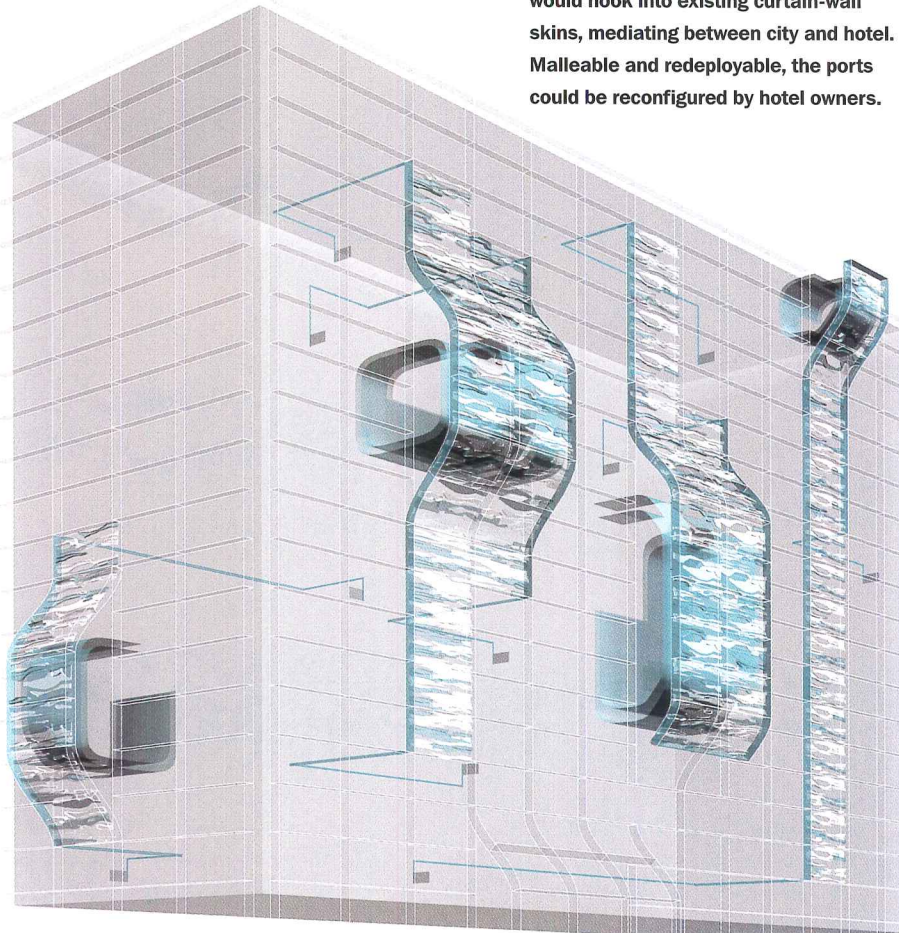
Lattice Archipelogs,
2002

Commissioned for the *Latent Utopias* exhibition in Graz, Austria, this multi-cellular lattice incorporated “intelligent technologies” that sensed the movement of gallery visitors. Interpolated by specially designed software, the motion patterns were then translated to illuminate LED elements within the physical lattice—which, in turn, affected human activity. The installation thus generated dynamic, real-time interaction with its users.

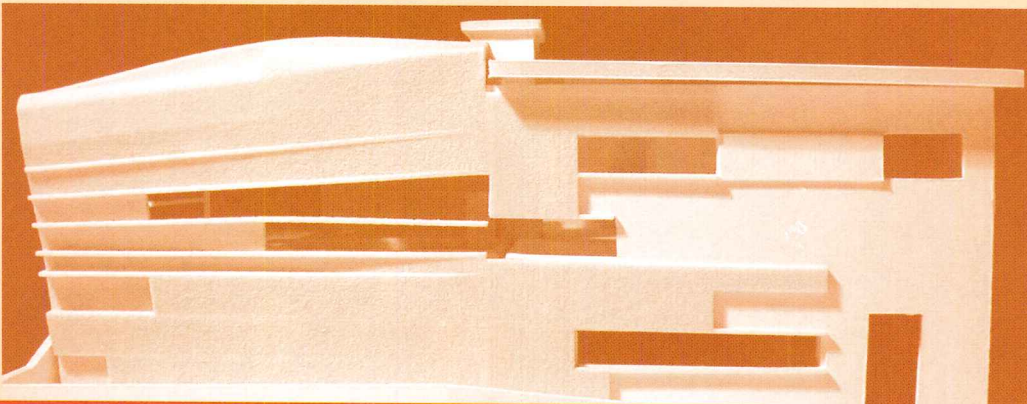


Lobby-Ports,
2002

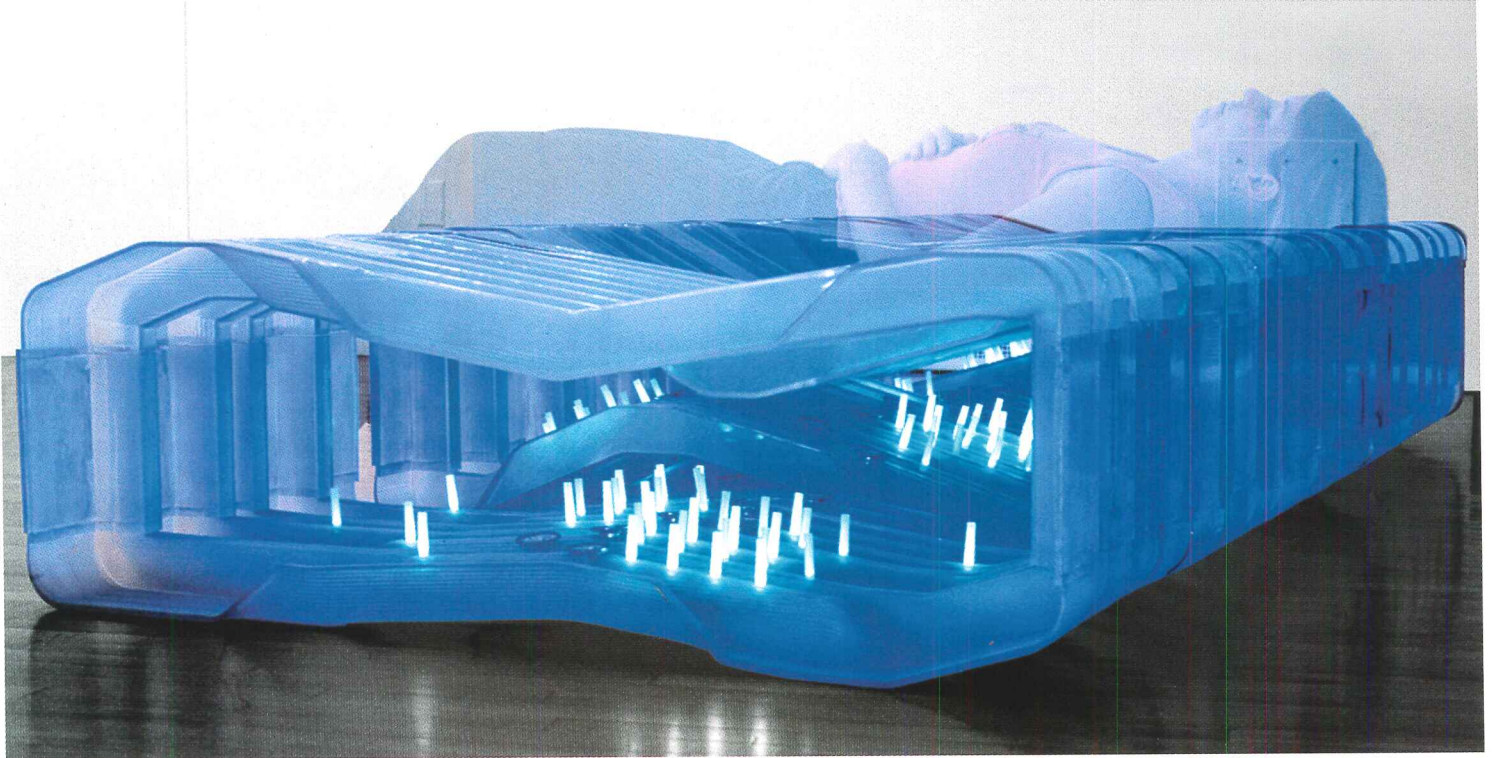
Created for the Cooper-Hewitt, National Design Museum's *New Hotels for Global Nomads* exhibition, this scheme investigated the transitional nature of the urban hotel lobby. "Implants," integrating media display surfaces and digital probes, would hook into existing curtain-wall skins, mediating between city and hotel. Malleable and redeployable, the ports could be reconfigured by hotel owners.



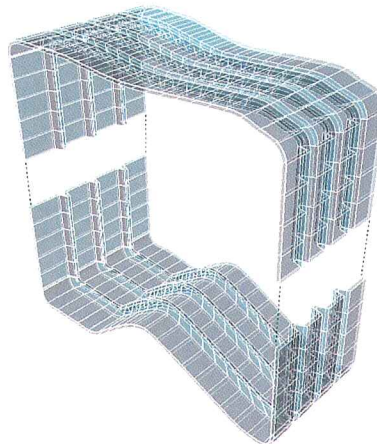
Kintz Residence,
2003 (design phase)



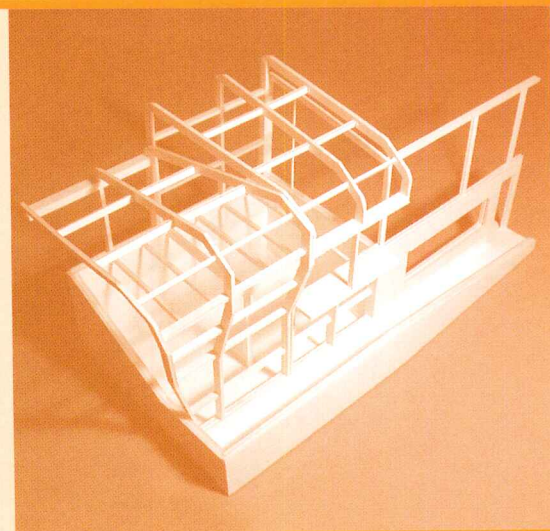
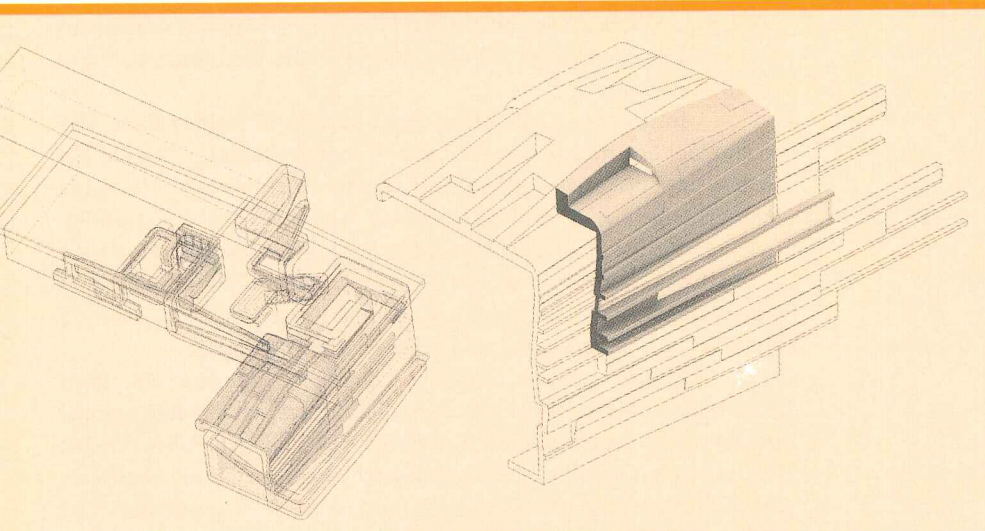
This house addition in upstate New York proposes to meet the conventional programs of master bedroom, lounge, and kitchen with innovative physical and virtual technologies. The primary shell, related both to *Thermocline* and *Lobby-Ports*, would be fabricated from thick, corrugated, vacuum-formed thermal foam. The shell would distribute complex infrastructural networks, including lighting and communications systems.



Thermocline,
2002



Devised for the Wexner Center for the Arts' *Mood River* exhibition, this full-scale prototype proposes a furniture system incorporating digital design and fabrication, as well as lighting and sound technologies. The vacuum-formed, corrugated acrylic shells allow for multiple ergonomic positions while simultaneously responding to the user with cascades of sensory input, including sound and light.





Manabu Chiba activates the voids in Tokyo's urban fabric with his quiet designs

By Naomi R. Pollock, AIA

Architect: Chiba Manabu Architects

Location: Tokyo

Founded: 2001

Design staff: 9

Principal: Manabu Chiba

Education: University of Tokyo, M.Eng., 1987, B.Eng., 1985

Work history: Practice—Factor N Associates, 1993–2001; Nihon Sekkei, 1987–93; Academic—University of Tokyo, 2001–present; teaching associate of Tadao Ando, 1998–2001; research associate, 1993–96

Key completed projects:

Cooperative Beach House, Ibaraki, 2003; Trio, Tokyo, 2003; Villa in Katsuura, Chiba, 2003; T-set, Tokyo, 2002; Split, Tokyo, 2002; White Cube, Tokyo, 2002; House in Black, Tokyo, 2001; Wayo Women's University Seminar House, Sakura (with Nancy Finley), 1997

Key current projects: S-House, Tokyo, 2003; N-House, Wakayama, 2004; Sakurashinmach project, Tokyo, 2004; Villa in Yatsugatake, Nagano, 2004; Eda Housing project, Kanagawa, 2005; S-City Historical Museum, 2006

Tokyo's visually chaotic built environment overwhelms many people. But architect Manabu Chiba focuses on the city's nooks and crannies and finds an underlying order. Lacking the contiguous blocks of buildings, unified street walls, and large-scale master plans found in other cities, Tokyo is bound together by an intricate maze of circuitous roads, narrow walkways, interstitial spaces, and vacant lots, explains Chiba. "Zoning and setbacks are the essence of modern urban design but do not result in good cities," says Chiba. "By focusing on void space, we can find a way to make relationships between buildings and the city."

Chiba's awareness of his urban environment began in childhood. Growing up in western Tokyo, he used to find his way to school each morning via a chain of connected paths, playgrounds, and backyards, instead of following the conventional route of streets and sidewalks prescribed by his teacher. This early encounter with the city's void spaces left such a deep impression on Chiba that he later made it the theme of his research as a graduate student at Tokyo University and then, as a practitioner, the focus of his design work.

His first opportunity to build was Wayo Women's University Seminar House, designed in collaboration with Nancy Finley. Located outside Tokyo, the project consists of several discrete pieces of architecture unified by a large pond. But the chance to test out his theory in the big city did not come until Chiba built House in Black shortly after opening his own office in 2001. A freestanding dwelling on a quiet Tokyo street, the house is a simple cube with chunks removed and corners cut away. Chiba's idea was to interlock architecture and adjacent open spaces above, on the sides, and in front of the house. Large glass panes that filter views into, out of, and straight through the house reinforce the connection.

Instead of filling in the city's gaps and glitches, Chiba acknowledges them and adds new ones with each realized project. For example, Split, an eight-unit apartment building and a separate house for the owner, was designed to preserve an unimpeded view from the street in front to the neighbor's yard in the back [RECORD, October 2002, page 239]. Modeled after *mokuchin*, the small wooden apartments that proliferated in Tokyo following World War II, it retains the scale of nearby buildings.

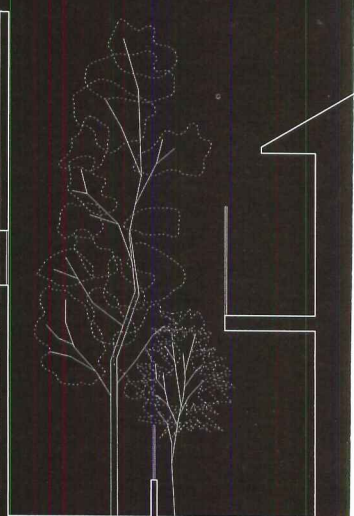
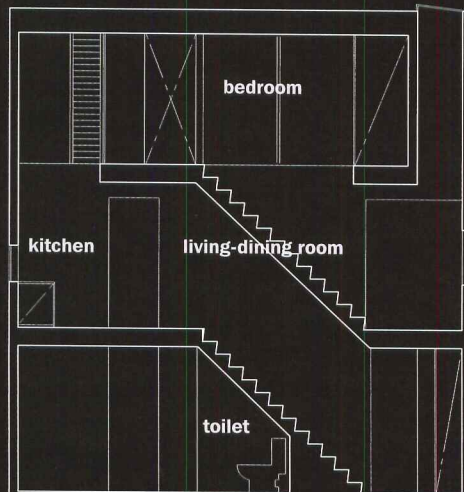
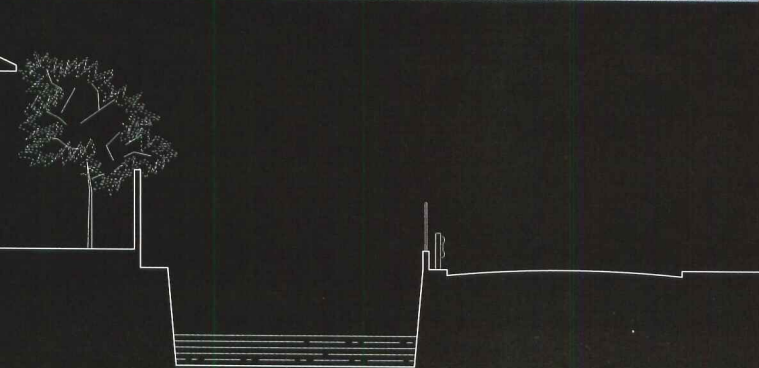
In designing Trio, Chiba faced the task of stuffing three 650-square-foot apartments into the space of a single dwelling. "We did not want to show that small a unit to the scale of the city, so we made it look like one big house instead," explains Chiba. On the inside, the uniquely configured apartments fit compactly together like a three-dimensional puzzle. Now Chiba is working on another housing complex in Tokyo that is a conceptual extension of Trio but contains 80 units with 10 different apartment types, each one multileveled and integrated with void spaces.

At the moment, Chiba is coming at contextualism from another direction, in a scheme for a small historical museum in a regional city in western Japan. Not just providing a new building type for Chiba, this project has been a chance to make architecture in a town where cars rule. While galleries will occupy the top two floors, the museum's two parking-filled bottom levels are an ode to the automobile. ■



House in Black, Tokyo

Completed in 2001, House in Black was Chiba's first project after hanging out his shingle. Designed for a husband and wife who each wanted private space within their shared home, this house is located in a quiet residential neighborhood in Tokyo. To knit house and urban fabric together, Chiba carved away parts of the building and created views through one side of the house and out the other.





Split, Tokyo

Intended to match the scale and building density of the surrounding neighborhood, this project consists of two independent buildings linked by an open courtyard. One block contains eight rental apartments and the other a freestanding home for the owner. While exterior stairs lead to the second-floor apartments on one side, an enclosed stair links the house together on the other.



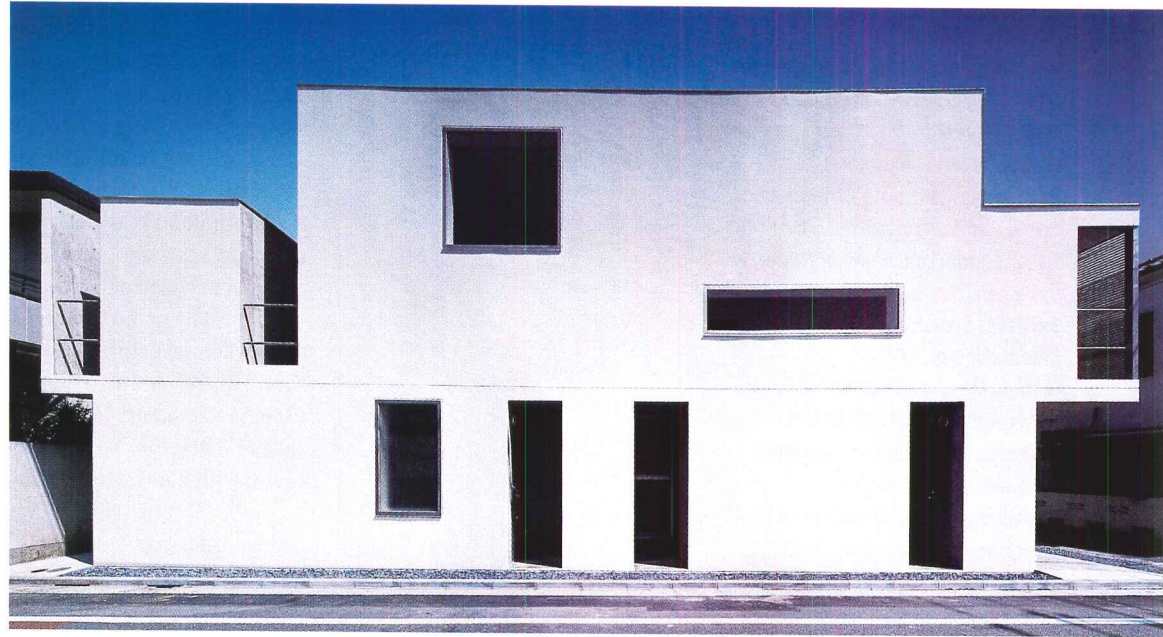
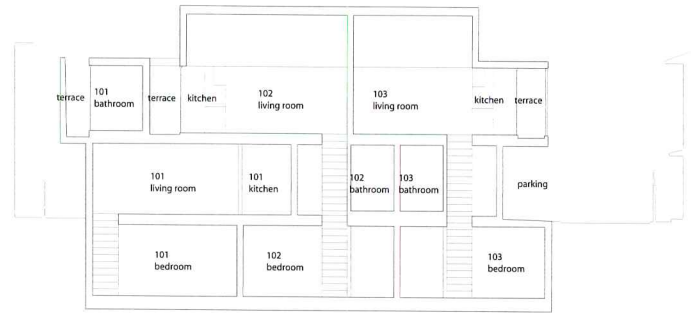
T-set, Tokyo

This project consists of two small, single-family homes designed and built sequentially. Although the houses are practically touching, they belong to different clients: A young couple owns the front house, and the rear one was built as a speculative project by a developer. By positioning the houses perpendicularly, Chiba was able to preserve privacy and ensure a direct relationship to the street for each home.



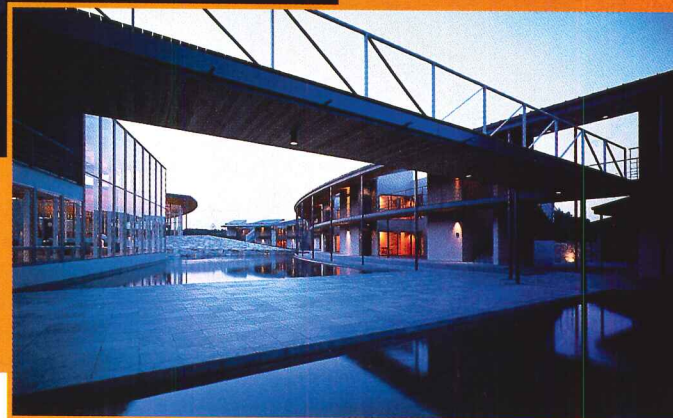
Trio,
Tokyo

Though it consists of three apartments, this project reads as one large house, so it can blend in with the scale of nearby buildings—mostly single-family homes. Each 650-square-foot unit differs in section, plan, and window placement, but they all fit together like a puzzle. Seen from the street, their unified facade makes it difficult to tell where one leaves off and the next begins.



Wayo Women's
University Seminar
House, Sakura

Located on a plateau in the beautiful countryside of Chiba Prefecture, this project was conceived of as a small village surrounding an open space. Used for weekend retreats from the main campus in Tokyo and as a base for visiting the numerous historic sites and museums in the area, it includes dining and lecture halls, a dormitory, and a communal bathhouse, all unified by an artificial pond.





In the quest for ideas, **Labics** fearlessly challenges the Roman status quo

By Paul Bennett

Architect: Labics

Location: Rome

Founded: 2002

Partners: (from left) Maria Claudia Clemente, Francesco Isidori, Marco Sardella

Design staff: 9 (variable)

Education: Clemente: University of Rome, La Sapienza, Ph.D., 1997, B.A., 1992; Isidori: University of Rome, La Sapienza, B.A. equivalent, 1999; Sardella: University of Rome, La Sapienza, B.A., 1999

Work history: Clemente: Nemesis Architetti, 1997–2002; Isidori: Nemesis, 1999–2002; Sardella: Nemesis, 1999–2002

Key completed projects: Podere 43 (residence), Albinia, Italy, 2003; interior of private residence, Rome, 2002; Santa Maria della Presentazione, Rome, 2001 (with Nemesis); Duke restaurant, Rome, 1998 (with Nemesis)

Key current projects: Walkways through Markets of Trajan, Rome, late 2003; Italpromo & Libardi Headquarters, Rome, 2004; Humanitas Teaching Hospital, Rozzano, Milan, 2005; Itama/Cantieri Navale Spa Headquarters, Rome, 2005

From their studio in an old warehouse in Rome's Ostiense industrial district, Labics's three principals cup their hands over their ears as jackhammering reverberates through the walls. Their transformation of the warehouse's upper reaches is lagging behind schedule. The project for an advertising firm was "supposed to be done last month," sighs principal Marco Sardella. "But this is Rome."

Despite Rome's reputation as a city where nothing new gets built, this firm's thirty-something progenitors are decidedly optimistic. And with good reason. After jumping ship from Nemesis Architetti less than two years ago, the three Labics partners already have a half-dozen projects in construction, including significant work in Rome.

The name Labics—an amalgam of "laboratory" plus the first letter of each principal's surname—suggests the firm's fluid, intellectually lively approach to design. "We believe in fighting," explains partner Claudia Clemente. "We like to say that everything is up for discussion, always. Therefore we spend a lot of time fighting for ideas—with the client, with contractors, with each other."

"But two things always drive the idea equally," partner Francesco Isidori interjects, playing his characteristic role as Clemente's alter ego, "function on one hand and poetic image on the other." As a rule, Labics entwines the two in everything it does.

Take the firm's design for a student dormitory/classroom facility at a new teaching hospital in Milan. Site characteristics combined with Labics's formal experimentation suggested the idea of folding a topographical surface into ripples, allowing architecture and land to merge with, and emerge from, one another. Accommodating the client's dual programmatic needs for classrooms along with casual meeting and living areas, the design wraps a winding atrium around rectangular classroom boxes, interweaving public and semiprivate spaces in constant relation to one another.

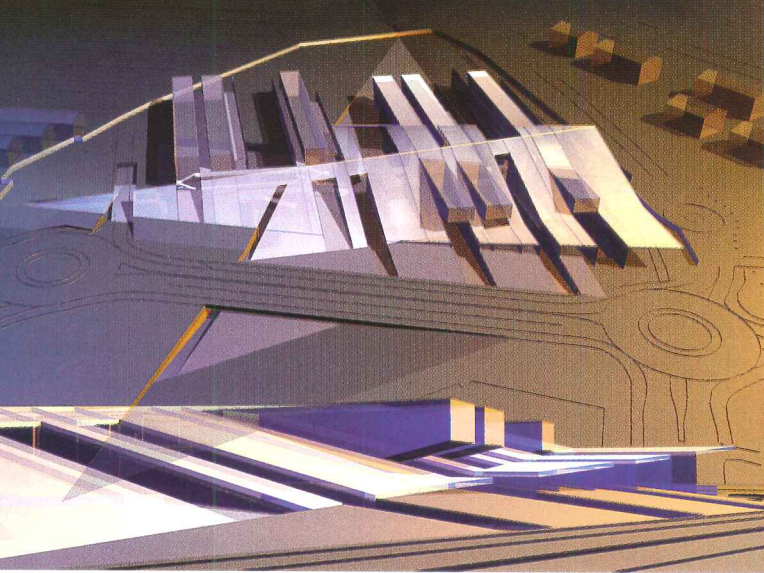
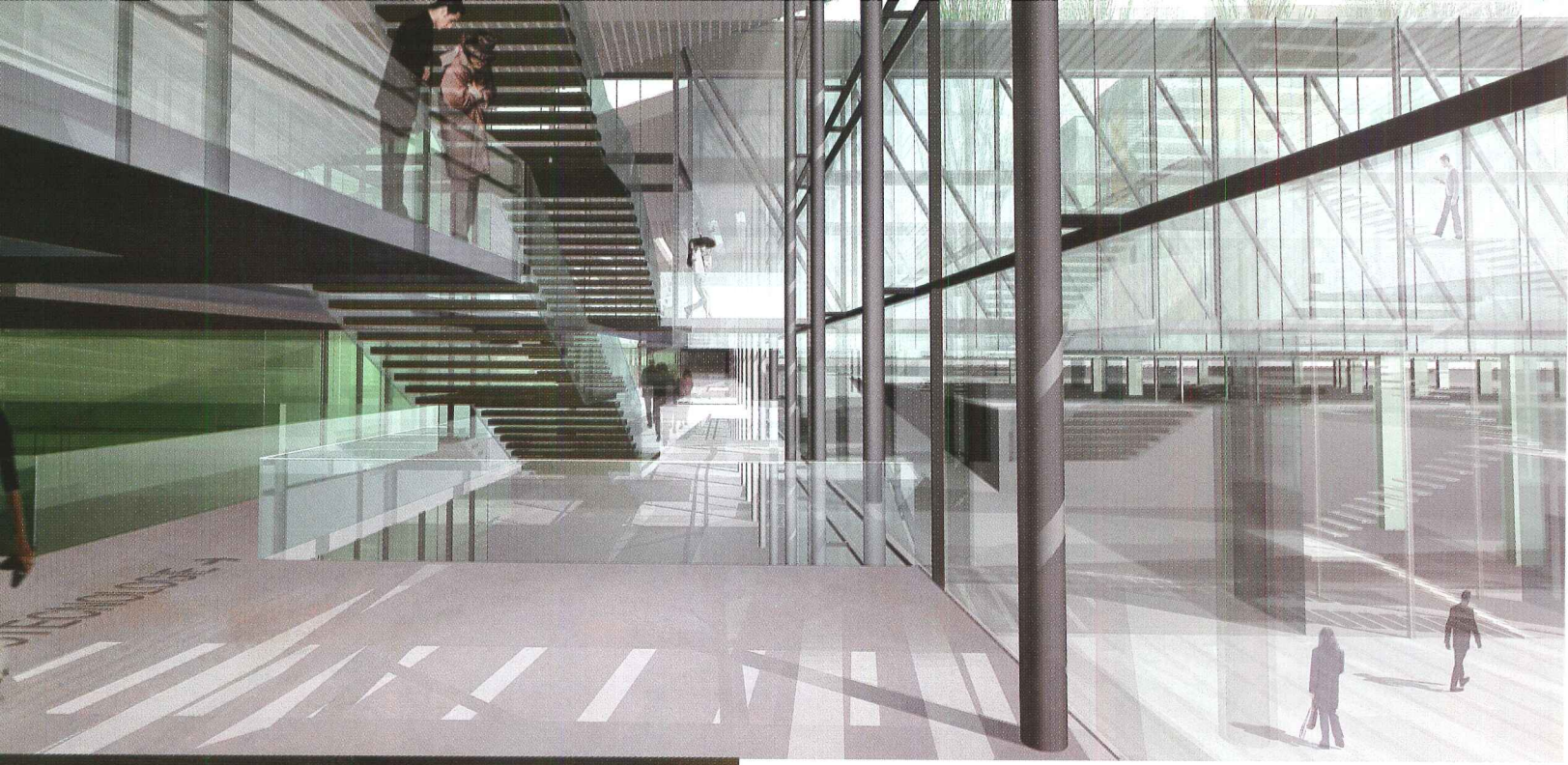
While Clemente and Isidori provide the firm with its yin-yang creative tension, the third partner, Marco Sardella, balances the equation with a clear focus on construction details and project management—performing true miracles within Rome's bureaucratic climate.

In addition to new pedestrian walkways currently under construction through Rome's 2nd-century Markets of Trajan, Labics is designing the conversion of an industrial shed along the Tiber River into a

boat manufacturer's corporate headquarters. The firm has proposed slicing the structure into fragments and creating a system of vertical aluminum screens and horizontal pools of water, putting a series of conference rooms and offices in a dialogue with the riparian landscape. The preliminary renderings, strongly influenced by Clemente, seem to challenge the very nature of materiality. "My role is to question and analyze, whereas Francesco takes a poetic approach," she says. "I want to be critical and continually ask, 'What are we looking for?'" True to the character of Labics, this scheme will get tempered and changed and fought over. And, if Sardella has his way, eventually built. ■

Rendering of new walkways for Rome's 2nd-century Markets of Trajan.





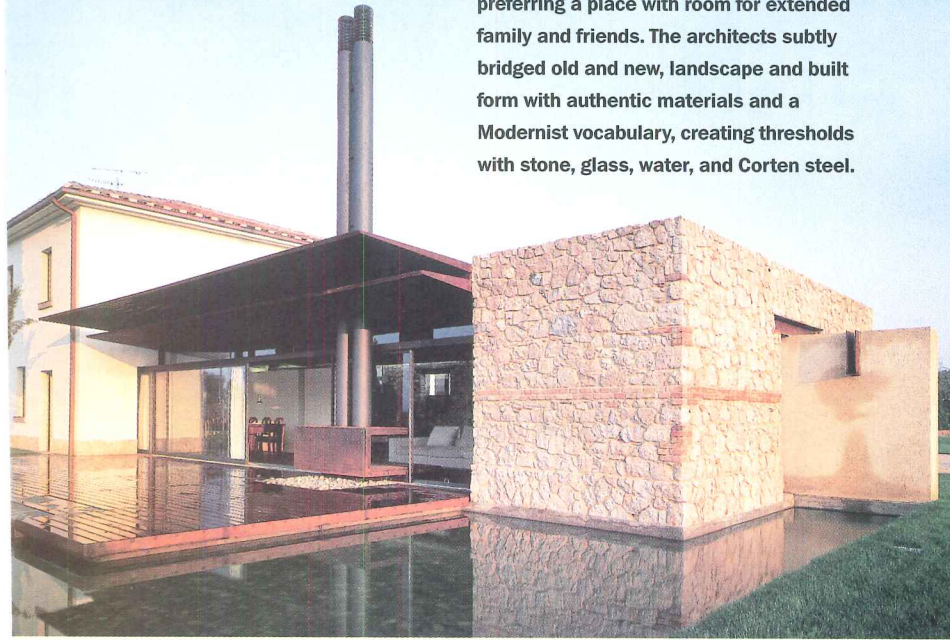
**Humanitas Teaching
Hospital, Rozzano,
Milan**

This scheme creates a classroom/dormitory facility for Milan's University of Medicine, Biotechnology, and Nursing. Responding simultaneously to man-made and natural aspects of the program and site, Labics analyzed the "artificial" character of a hospital—its complex, highly technological infrastructure—in relation to the topography and surrounding landscape.



Podere 43,
Albinia, Italy

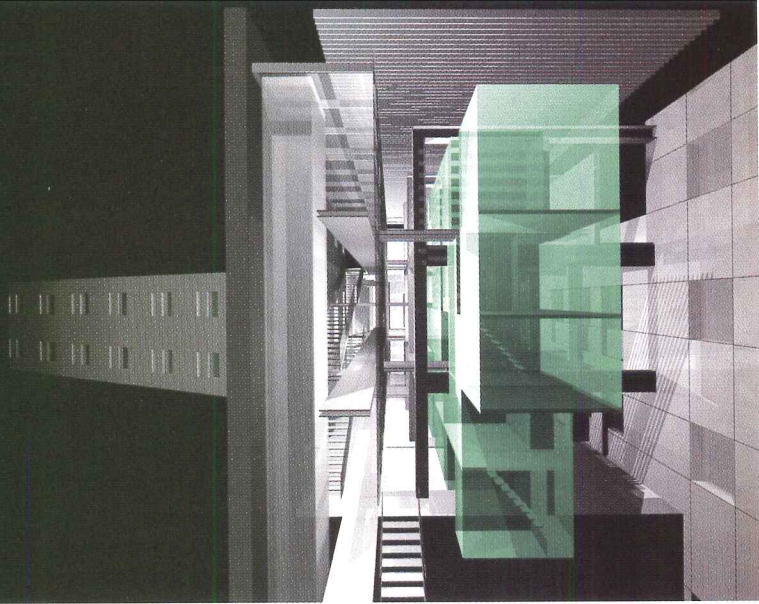
The original Tuscan farmhouse was part of a 1930s reclamation project, attributed to Fascist architect Marcello Piacentini, to build 45 identical farms in once-malarial marshlands. Labics's client, a young couple with two children, wanted more than a weekend retreat, preferring a place with room for extended family and friends. The architects subtly bridged old and new, landscape and built form with authentic materials and a Modernist vocabulary, creating thresholds with stone, glass, water, and Corten steel.



Itama-Cantieri Navali
Headquarters, Rome

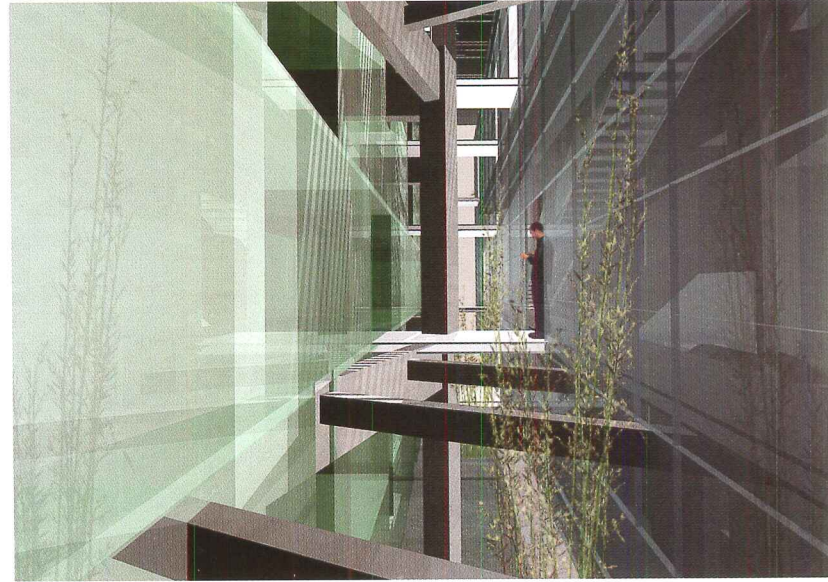
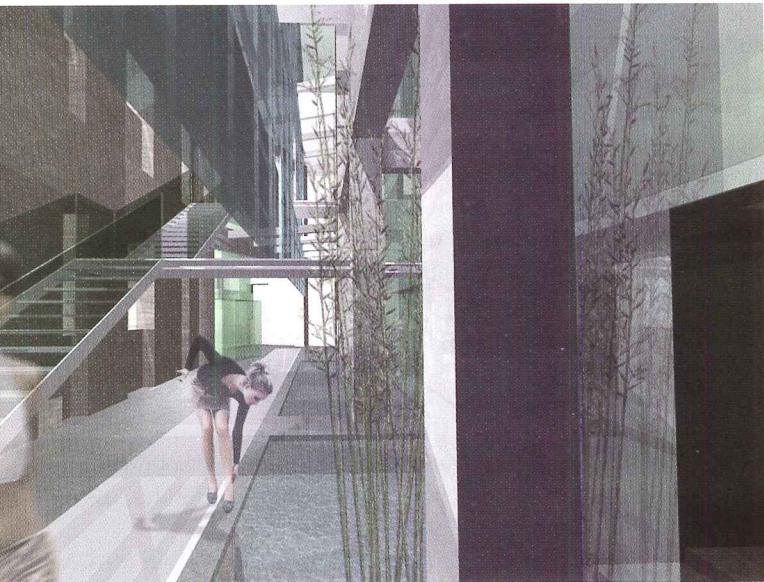
Labics is converting an industrial shed along the Tiber into administrative offices for a motorboat manufacturer. Struck by the site's suitability to the nature of the company, the firm is attempting a complex integration between object and background, or shed and landscape. Toward this end, the scheme would "artificialize the territory [the water and land]" with patterns analogous to plowed fields and, dematerialize the building skin through aluminum screening elements.





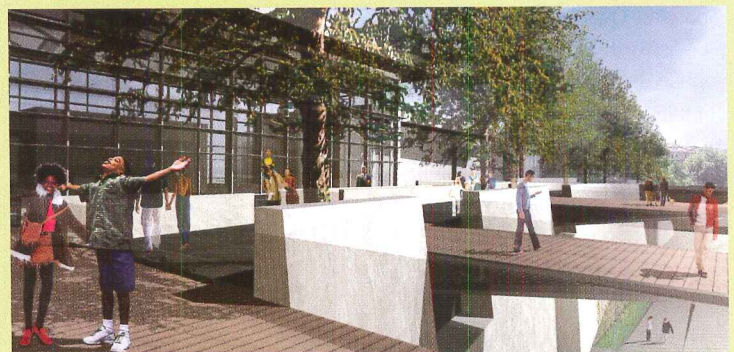
**Italpromo & Libardi
Associati
Headquarters, Rome**

In designing a company's headquarters, Labics explored the unrealized potential of the office workplace. The scheme investigates relationships between collective public zones and the individual cellular areas needed for quiet, isolated activities. The architects maintained distinctions among such spaces, but separated them by thin, often transparent membranes and visually light, aerial walkways. Enhanced by winter gardens, the resulting spatial network would be exceptionally luminous and airy.



**Crossings,
Rome**

This project, first commissioned as a study, would create a passage under the Tiber embankment opposite Richard Meier's Ara Pacis museum, while offsetting costs with a series of much-needed underground parking garages. An urban intervention with potential to reshape land/river relationships, the design proposes to revitalize the district.





Qingyun Ma blazes a new trail for innovative design firms in China

By Clifford A. Pearson

Architect: MADA s.p.a.m.

Location: Shanghai

Founded: 1999

Design staff: 32

Principal: Qingyun Ma

Education: University of Pennsylvania, M.Arch., 1990; Tsinghua University, Beijing, B.S.Arch., 1988

Work history: Practice—Kling Lindquist, 1997–99; Kohn Pedersen Fox, 1991–95; Academic—University of Pennsylvania, lecturer at Graduate School of Fine Art, 1997–99; Shenzehn University, lecturer at School of Architecture, 1996–97

Key completed projects: Father's House, Lantian Xian, 2003; Longyang Residential Complex, Shanghai, 2003; Ningbo Urban Museum, Ningbo, 2003; Boya Court, Beijing, 2002; Ningbo CCD, Ningbo, 2002; Library at Zhejiang University, Ningbo, 2002

Key current projects: Wuxi CBD, Wuxi, 2004; Wuxi Market Center (phase 1), Wuxi, 2004; Qinggu Thumn Island, Shanghai, 2004; Shanghai Yu Yuan, Shanghai, 2004; Shanghai Qiao Zi Wan, Shanghai, 2005; North Bund, Ningbo (phase 3), 2005; Hundred Island Park (H.I.P.), Beijing, 2005; Hangzhou Technology Enterprise Initiative Park (T.E.I.P.)

Explaining his status as a Chinese architect educated in the United States, Qingyun Ma refers to the old Confucian principle of “together but not the same” (*he-er-bu-tong*). “I’m in a double position between insider and outsider, and it’s both an advantage and a disadvantage,” he says. But he’s wary of anything that comes too easily, knowing that struggle is an essential part of achievement. So he hasn’t tried to fit in since returning to China in 1999 after more than 10 years in the U.S.; instead, he strives to digest foreign ideas and reformulate them, following the ancient Chinese concept of *chi*.

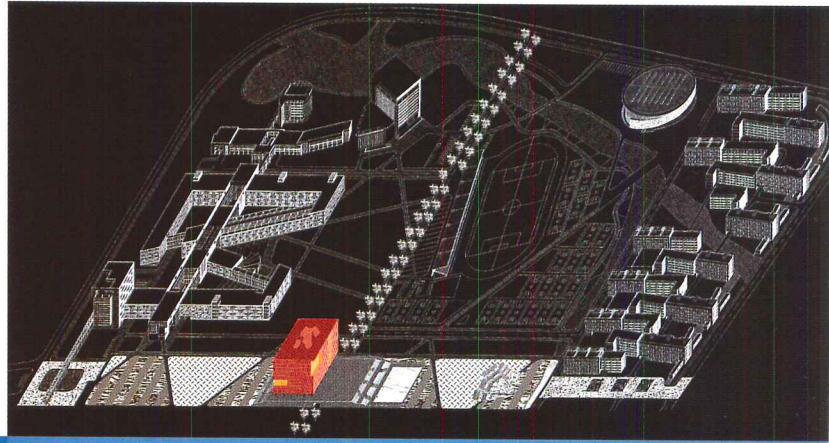
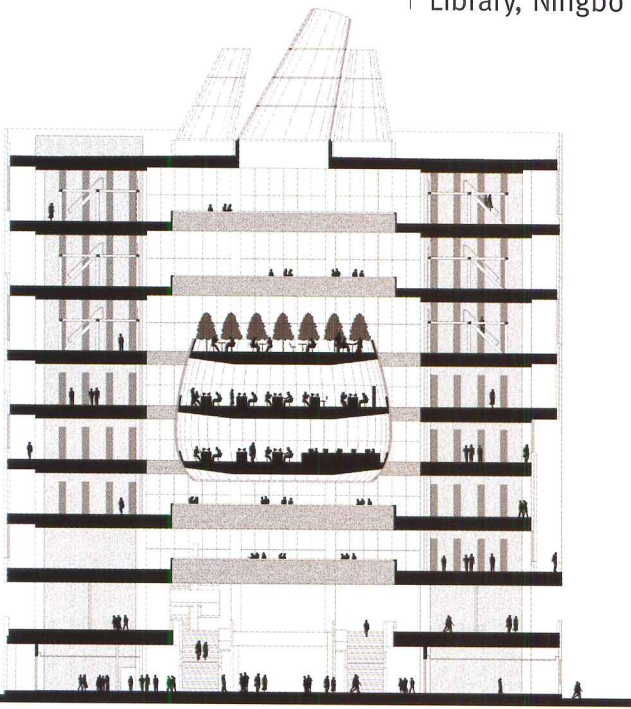
What he learned at the University of Pennsylvania and then on the job at Kohn Pedersen Fox and Kling Lindquist was to take a comprehensive approach to architecture, one that encompasses theory and investigation as well as the hard-nosed realities of real estate finance and construction. By the time he returned home, China was racing forward with a building boom of unprecedented scale, and clients were starting to look for more sophisticated architecture. During the previous two decades, construction had been dominated by China’s huge design institutes, the quasi-governmental agencies that serve as the country’s major architectural practices. But in the past few years, changes in architects’ licensure have allowed independent design studios such as MADA s.p.a.m., Ma’s firm, to set up shop and land commissions. Although theoretically in competition with the big guys, the new boutique firms usually end up working in association with the design institutes, says Ma, and often establish good relationships with them.

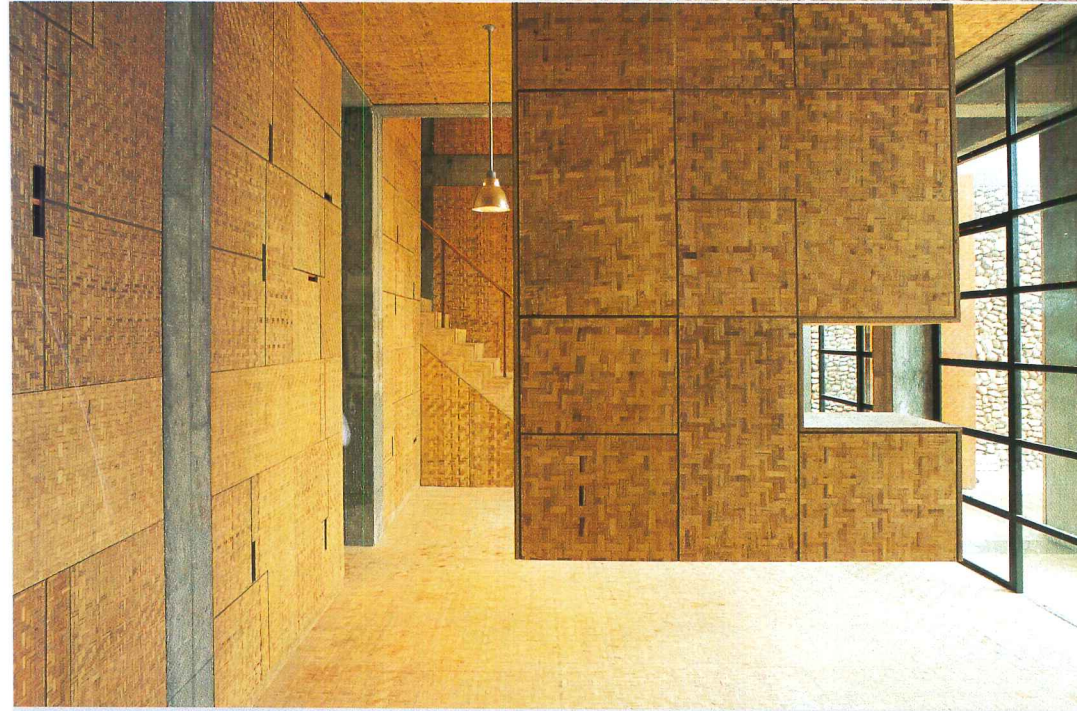
China is a famously difficult place to build well, but MADA is proving that high-quality architecture can be done there. “Strangely enough, China is one of the few places today that still encourages creative energy,” says Ma. “Being innovative is not a problem in China right now.” Making the finances of an innovative architectural practice work, however, is the major challenge, he explains. To reflect his design approach, Ma incorporated the acronym s.p.a.m. (strategy, planning, architecture, media) into the name of his firm. And while MADA stands for Ma Design and Associates, in Chinese it means “engine” or “horse power,” a nice reference to the need for determination in architecture.

Through talent and drive, Ma has built a remarkable amount in the short time he has been back in China, mostly in the port city of Ningbo, south of Shanghai. After winning a competition to design the Ningbo News Cultural Center in 1995, he worked on the project while still in the U.S., then set up his firm in Shanghai and added an office in Beijing where the still-centralized government makes key planning decisions. In the past two years, he has completed construction of the Ningbo campus library of Zhejiang University, the Ningbo News Cultural Center, a real estate sales office and garden in Beijing, a stone house in Lantian Xian, a high-rise housing complex in Shanghai, and a 2-million-square-foot retail and civic center in Ningbo. He is now working on a commercial center in a run-down area in the city of Wuxi and a competition for a mixed-use complex on the site of a Tang Dynasty market in Xian. With China continuing to build at a breakneck pace, Ma is in position to play a leading role in the physical transformation of the world’s largest nation. ■

Zhejiang University
Library, Ningbo

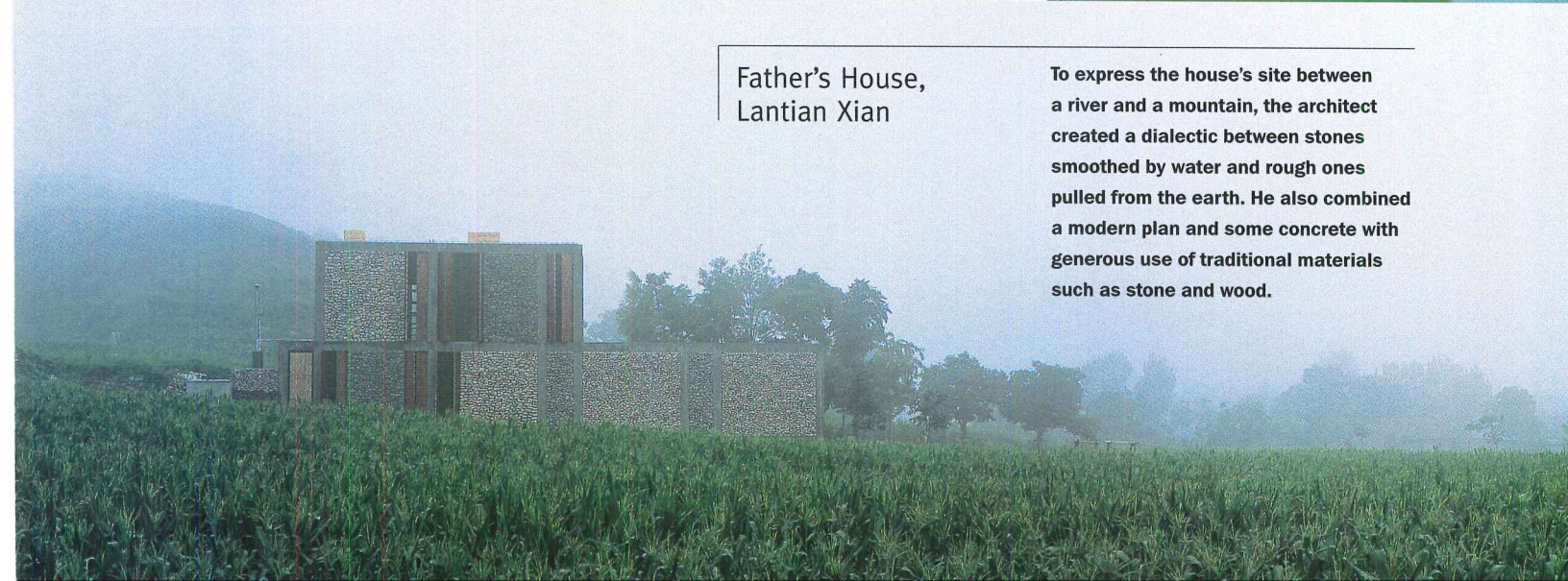
This 320,000-square-foot library serves as the centerpiece of a new university campus planned by MADA. An allusion to ancient Chinese scripture pavilions, which were set within temples, the library places book stacks around the perimeter and frees up the center for a large open space. A café, reading room, and index room occupy the central space on different floors.





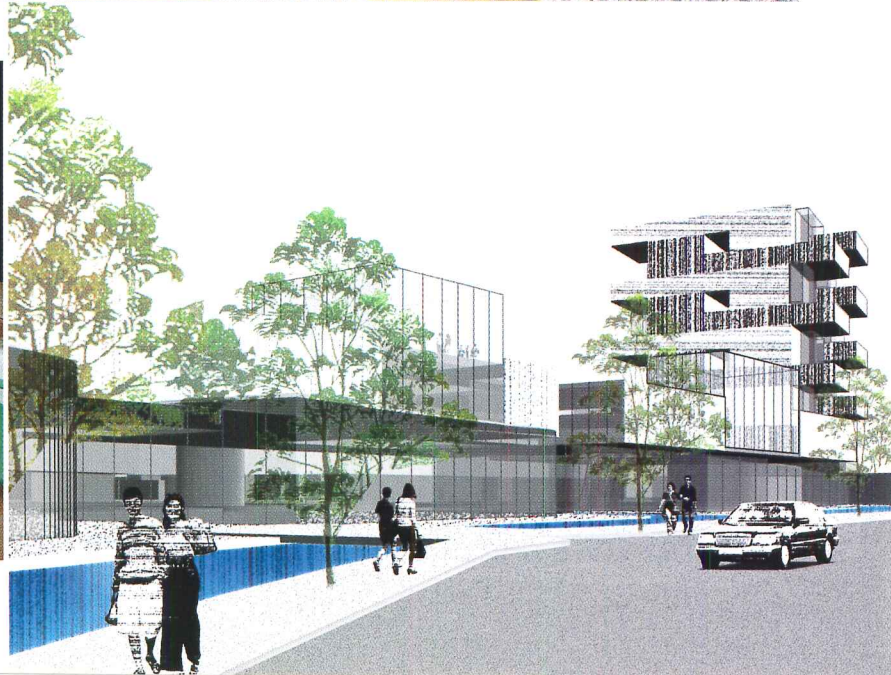
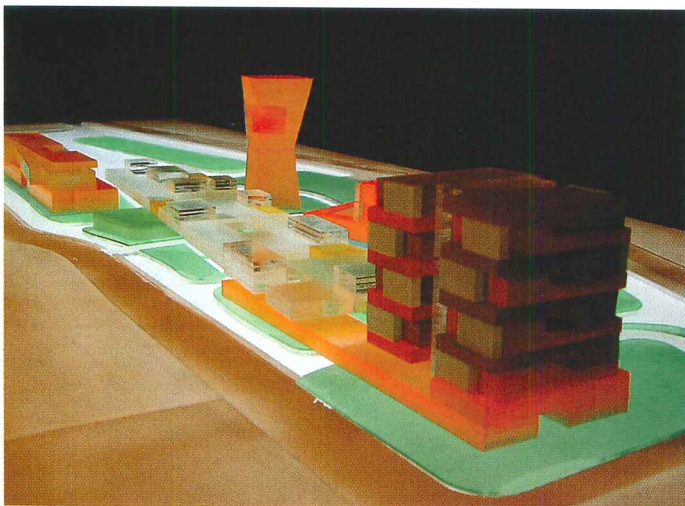
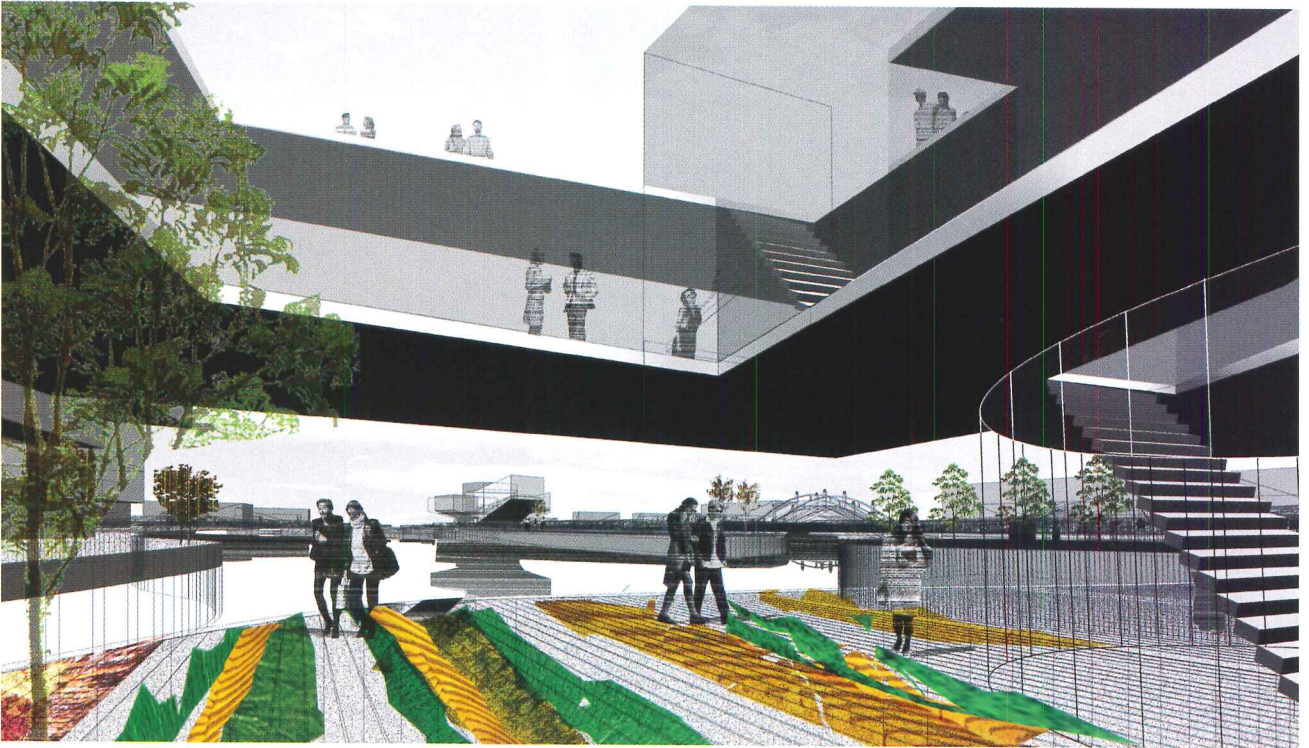
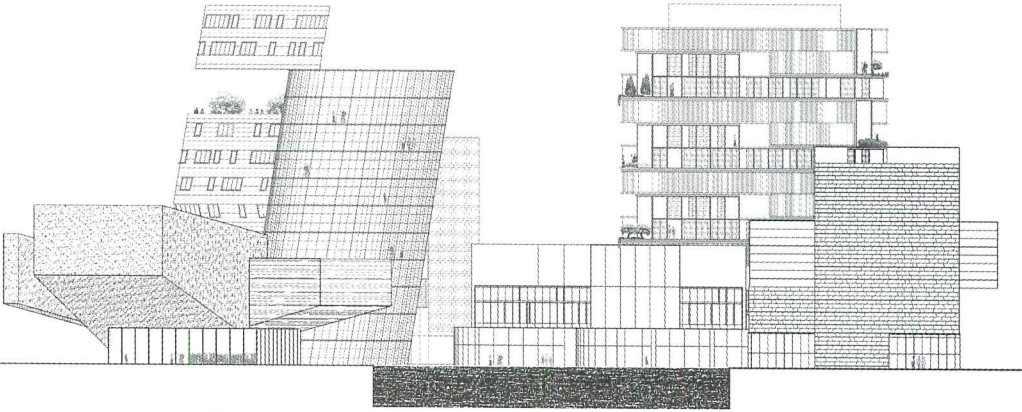
Father's House,
Lantian Xian

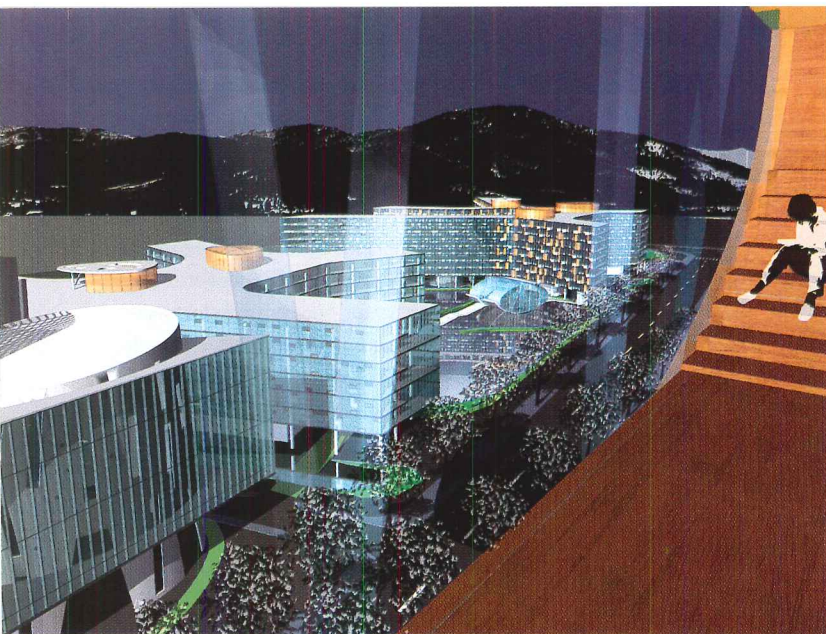
To express the house's site between a river and a mountain, the architect created a dialectic between stones smoothed by water and rough ones pulled from the earth. He also combined a modern plan and some concrete with generous use of traditional materials such as stone and wood.



Beijing H.I.P.,
Beijing

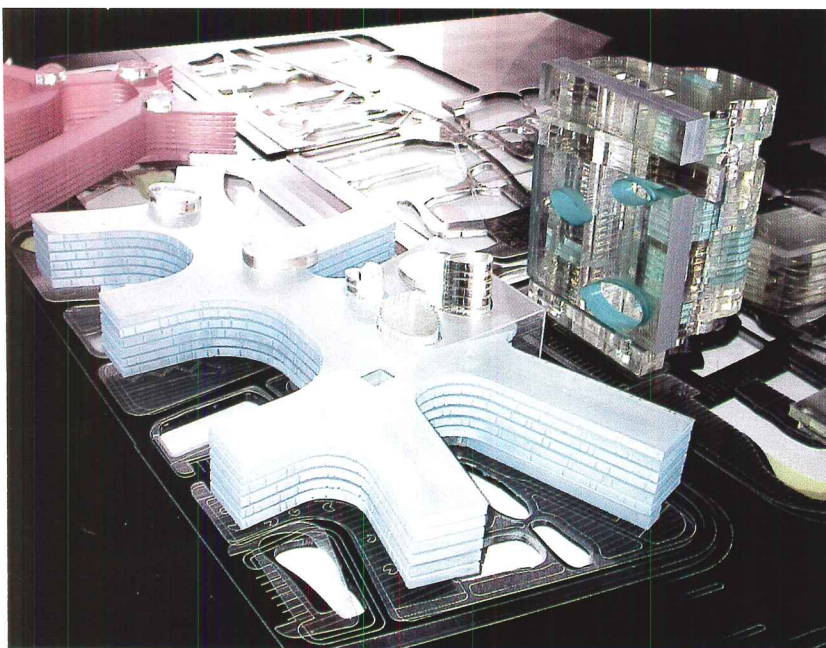
MADA has proposed a 575,000-square-foot mixed-use development for an open area behind the Soviet-style Beijing Exhibition Center. The firm envisions a chain of islands built within an existing lake and providing a garden setting for housing, retail, and commercial facilities. Waterfront promenades and parks would help connect this neglected area to the rest of the city.





Hangzhou T.E.I.P., Hangzhou

For a 350,000-square-foot Technology Enterprise Initiative Park (T.E.I.P.) designed for a swampy area of Hangzhou, Ma limited the footprints of buildings to retain much of the site as wetlands. The development would include buildings for research, offices, and learning, and a master plan that encourages chance encounters between users as they move around the site. An office tower would also provide opportunities for workers to mingle in "sky lobbies" with great views.



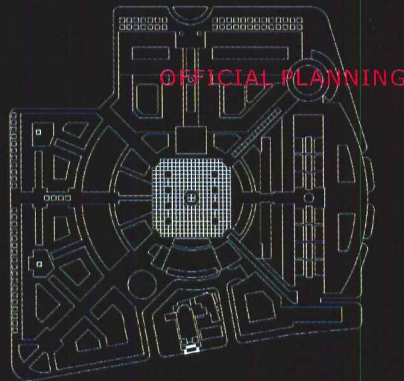
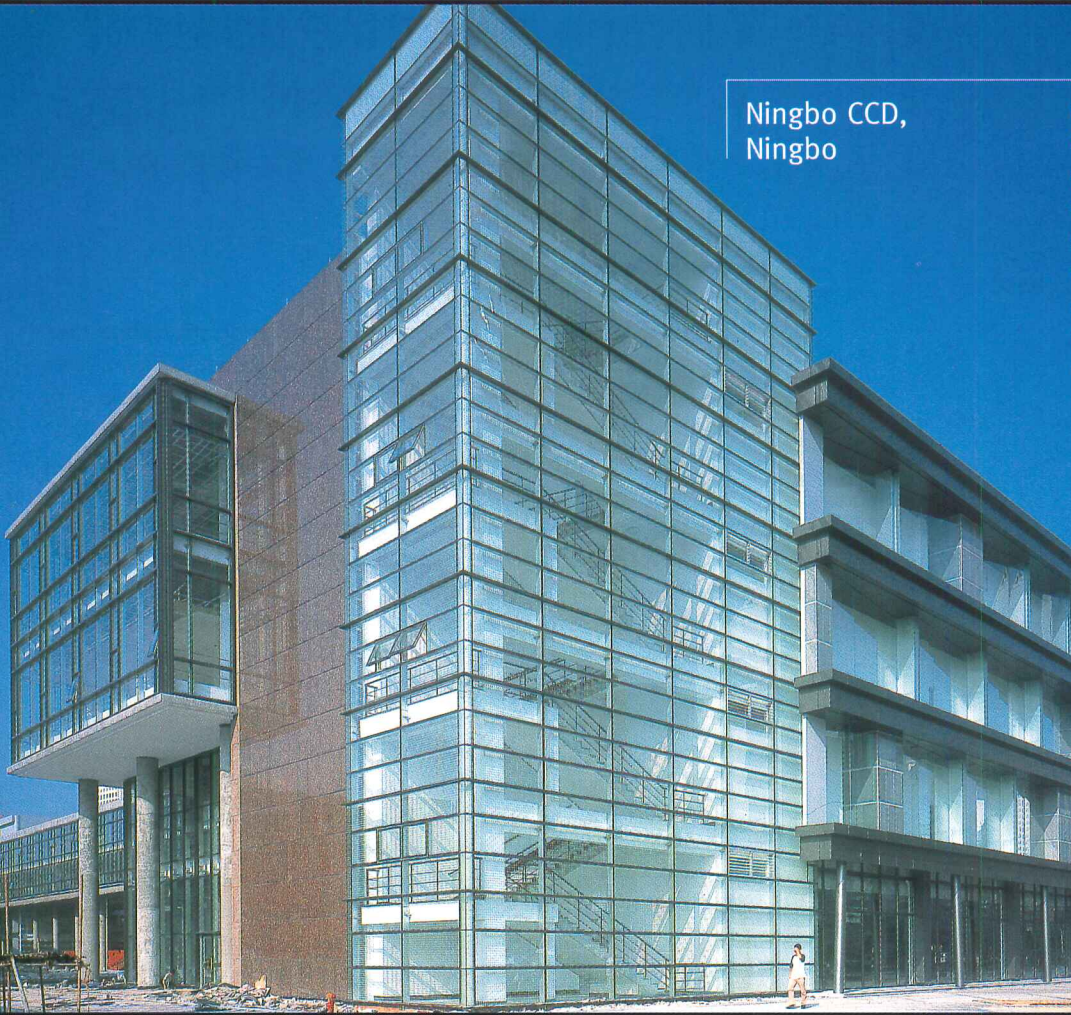
Longyang Residential Complex, Shanghai

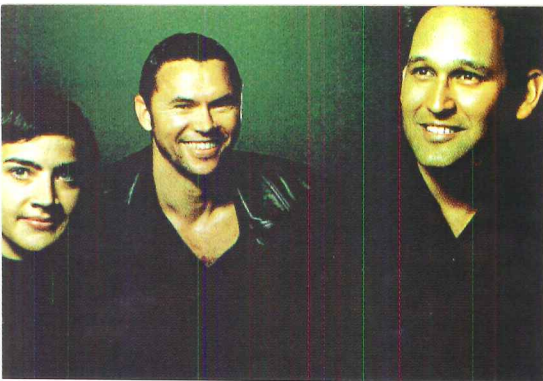
While high-rise residential development tends to be formulaic throughout Asia, this multitower project breaks the mold. Alternating patterns of balconies and materials create a jazzy rhythm on the exterior, while a range of units (including duplexes on the top of some buildings) offer a diversity of living arrangements inside the towers.



Ningbo CCD, Ningbo

Completed near the end of 2002, this 240,000-square-foot retail complex replaces an older neighborhood of small-scale structures and contributes a civic square in the center of the site, and other public outdoor areas. By providing a range of indoor spaces, the architecture encourages a variety of retail types—from small boutiques to large stores—to take root here. The use of a Modern design vocabulary and varied materials help break down the scale of the project and give it a unique identity.





Merrima mines the riches of Australia's Aboriginal heritage and points to its future

By Davina Jackson

Architect: Merrima Aboriginal Design

Location: Sydney, Australia

Founded: 1995

Design staff: 4

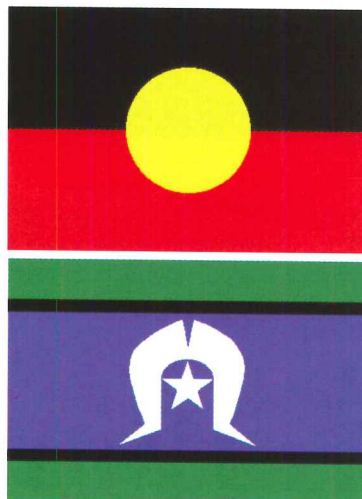
Partners: Dillon Kombumerri (center), founding principal; Kevin O'Brien (right), Alison Page (left), founding associates

Education: Kombumerri: University of Sydney, B.Arch., 1995; O'Brien: University of Queensland, B. Arch., 1995; Page: University of Technology, B.Design, 1997

Work history: Kombumerri: New South Wales (NSW) Government Architect's Office, 1990–present; O'Brien: Bligh Voller Nield, 2003; Ballymun Regeneration, 2000–02; NSW Government Architect's Office, 1997–99; Hassell, 1996–97; Page: Designers in Collaboration, 1999–present; NSW Government Architect's Office, 1998–99

Key completed projects: (all in Australia) Wilcannia Health Service, Wilcannia, 2002; TAFE Indigenous Art and Adult Studies Centre, Moree, 2001; Bayagul Indigenous Gallery, Sydney Powerhouse Museum, Sydney, 2000; Acmena Juvenile Justice Centre, Grafton, 1999; Girrawaa Creative Work Centre, Bathurst, 1988

Key current projects: Aboriginal Medical Centre, Redfern, 2004; Aboriginal Health and Research Centre, Sydney, 2005



Australian Aborigines are not known for their iconic architecture. In the past, nomadic tribes in subtropical latitudes adopted caves and rock overhangs, others built shelters and windbreaks with sticks, grass, leaves, and bark. Some early Australians constructed stone igloos. Such structures were never widely documented. Now, Merrima, a collaborative of young architects with roots among indigenous peoples, is putting architecture with an Aboriginal influence firmly on the map.

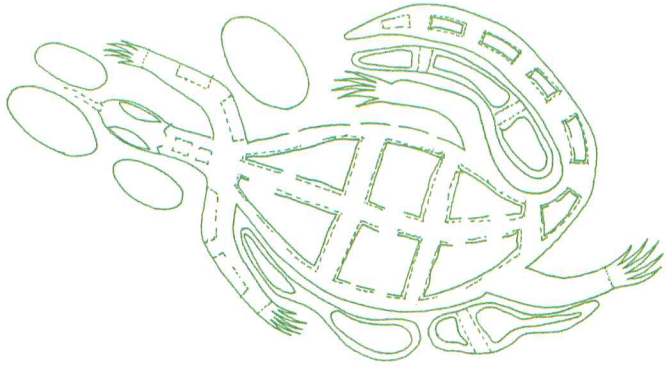
Australia had no professionally registered Aboriginal architects until 2000, when Dillon Kombumerri of Queensland's Yugembar Nation earned his stripes. Since then, more than half a dozen peers, including Kevin O'Brien of the Meriam Mir from the Torres Strait Islands and Alison Page of Sydney's Tharawal community, have followed his lead. Now Kombumerri, O'Brien, and Page run Merrima—which roughly translates as “falling stars,” in reference to a belief that deceased elders in the sky can return to help descendants in need.

Merrima was founded in 1995 as a unit within the New South Wales Government Architect's Office. Kombumerri joined this historic bureaucracy (dating from the colonial era) because it offered a better chance for a young practitioner to design notable projects than is initially possible in independent studios or large practices. After working with Cracknell Lonergan Architects on renovations to Sydney's Tranby College for indigenous students, he convinced his senior colleagues that he had the talent to lead the design unit specializing in Aboriginal cultural, educational, health, and tourism buildings. O'Brien joined the outfit in 1997, and Page in 1998. Although both now lead independent practices, they continue to work with Kombumerri on Merrima projects. This year, a young computer expert, Michael Mossman from the Gungganyji people of Cairns, signed on.

Merrima offers design services to Aboriginal communities around the country, breaking their historic reliance on Caucasian architects coming in and interpreting their culture. As Kombumerri notes, “We're trying to achieve some kind of honesty in the contemporary expression of Aboriginal culture,” reaching beyond stereotypically primitive motifs “to move on and represent our connection to the future.”

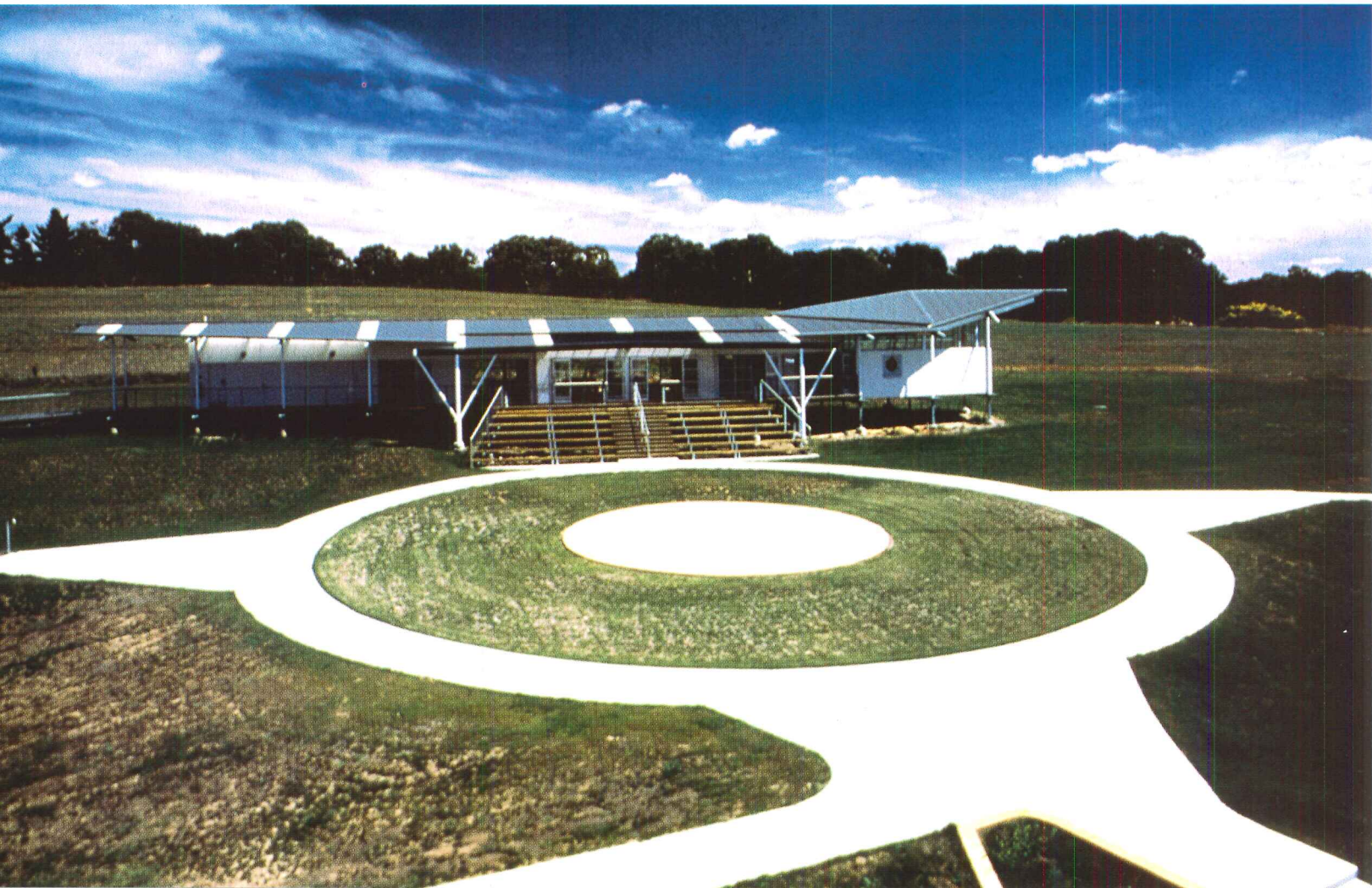
Merrima's first project was a craft workshop for prisoners. After consulting with potential users and local Aboriginal elders, Kombumerri designed a steel and plywood pavilion styled like the goanna (lizard) revered as the totem of the local Wiradjuri people. Among recent work is an unbuilt design for a reconciliation memorial in Canberra, a memorably poetic concept. Its iconic metal ring of unity is treated to attract a fluttering carpet of the bogong moths that seasonally infest the area. Honored in a festival once hosted by Canberra's Ngunnawal people, bogongs are among the many unique creatures that are mythically and eternally imprinted on Australia's culture. ■

Davina Jackson is the author, with Chris Johnson, of Australian Architecture Now and former editor of Architecture Australia.



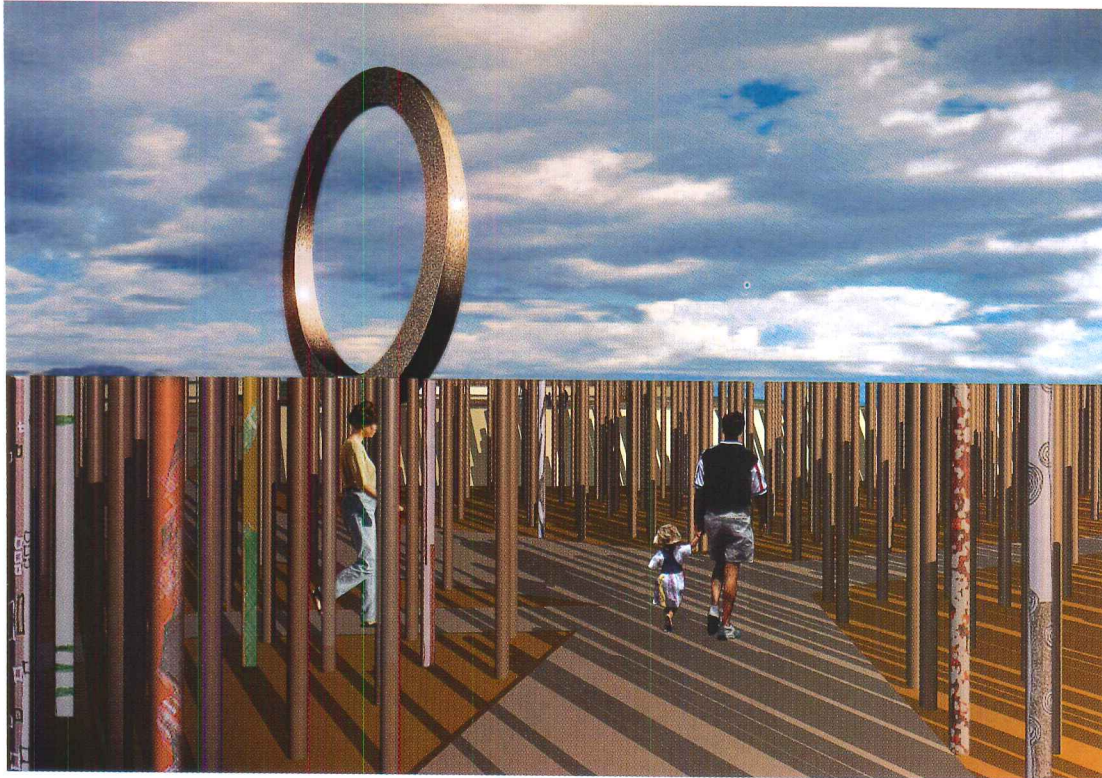
**Girrawaa Creative Work
Centre,
Bathurst, Australia**

This project grew from a desire to transfer creative and business skills to indigenous inmates at the minimum security Bathurst Correctional Centre. A design charrette engaged the prison population. The plan plots spaces within a goanna-shaped building, with stairs overlooking a performance circle. (The wheelchair-accessible ramp is the "tail.") Interior partitions open to connect three craft workrooms.



Reconciliation Place
(Unbuilt), Canberra,
Australia

As a competition entry for a civic site to promote reconciliation between Australia's diverse ethnic groups, this project features an open gathering space anchored by a vertical steel ring. The ring has spotlights along its inner surface that will pulse when "sorry" is said. To signify the Southern Cross, the group of stars used as a navigational tool in the Southern Hemisphere, five stone cairns dot the site.





Wilcannia Health Service,
Wilcannia, Australia

A redevelopment of a hospital 600 miles northwest of Sydney, this building also functions as a town meeting place. Locally made brick provides thermal mass and moderates extreme temperature fluctuations. Construction with timber and corrugated metal refers to the vernacular of local sheds. The long, narrow plan facing north-south, in combination with clerestories, maximizes daylighting.

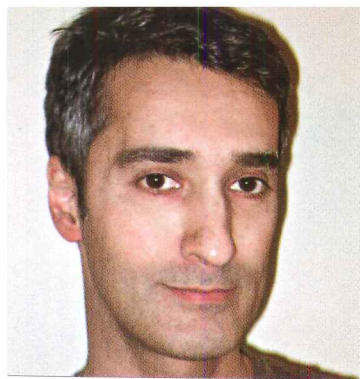


Aboriginal Health and Research Centre,
Sydney, Australia

On the edge of Little Bay, a new housing development overlooking the ocean in South Sydney, this health-care center is entered via a landscaped courtyard. A central foyer reduces distances to stairs and elevators, while the dining room spills out onto a deck covered by

a timber pergola. Made mostly of lightweight glazing, the building sits on a masonry base. The architects landscaped courtyards and terraces with drought-resistant native plants, and used mostly prefinished or natural materials on exposed surfaces.





Mehrdad Hadighi uses the disciplined ordering of materials to make theory visible

By Charles Linn, FAIA

Architect: Studio for Architecture

Location: Buffalo, N.Y.

Founded: 1987

Design staff: Varies by project

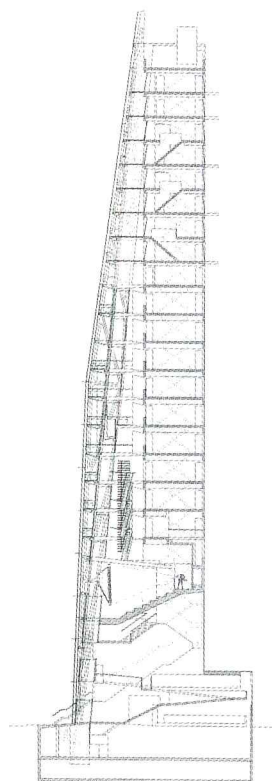
Principal: Mehrdad Hadighi

Education: Cornell University, M.Arch., 1986; University of Maryland, B.Arch. and B.A. in Studio Arts, 1983

Work history: Practice—Bernard Tschumi Architects, N.Y.C., 1988; J. Victor Bagnardi Architects, 1987–88; Academic—State University of New York, Buffalo, School of Architecture and Planning, 1994–present; Birchfield Penney Art Center, Buffalo, 2001–present

Key completed projects: Tall Acres (house addition and renovation), Pittsfield, N.Y., 2002; McHale Archives (collaboration with Tim Burke, Jose Chang, Joseph Chiafari, Noboru Inoue), Buffalo, 2002; Big Orbits, site-specific installation, collaboration with Frank Fantauzzi, Buffalo, 2000

Key current projects: Semifinalist, 9/11 Memorial Competition, Pier A, Hoboken, N.Y.; housing competition, Chile; residential renovation project, Rochester, N.Y.



Culture Vulture, New York City

Mehrdad Hadighi counts among his influences serious study in painting and studio arts, the study of contemporary literature, his career as a teacher, and his numerous collaborations with design teams whose members vary from project to project. Oh yes, and then there is that other small matter—he was born in Iran. He moved to the U.S. when he was 15 and did some of his upper schooling and all of his undergraduate and graduate work here.

Hadighi does not emphasize his early life in Iran when asked about his influences, but that experience has been a positive force for what he does. “People in Iran have no choice but to be political—you live it day in and day out. Nothing is at face value.” This created in him a kind of curiosity about all things, which propelled him into many areas of intellectual exploration from an early age.

“I have painted since I was a child,” he says, and notes that he was a serious painter throughout his undergraduate years. “I loved painting because it was so *free*. It wasn’t like architecture, which seemed to me to be very formalistic.” Hadighi reports that during work on his thesis in graduate school he began to understand how to make his architecture free, like his painting. Then, contemporary literature and theory began to exert more of an influence on his work. Since 2000, he has been an associate member of the Department of Comparative Literature at SUNY Buffalo in addition to being an associate professor of architecture there. His idea is that theorists in comparative literature study the meaning that comes from the ordering of words that, taken as a whole, create compositions. He notes, “Instead of words, architects manipulate the order of dimensioned construction materials in order to make them fit together to create assemblies. Architecture uses materials to make theories visible.”

But Mehrdad doesn’t toil alone; he prefers to work with collaborators. These groupings usually vary from project to project. This dynamic, sometimes contentious work process allows him to constantly reexamine the way he practices architecture. “The learning that goes on when I collaborate is truly unbelievable,” he says. But he has not formalized the process with permanent employees because, “in an office situation, there are always hierarchies. If you put three people together who have no bond except the desire to finish a competition, and they’re all fighting for what they believe in, then something can really happen.”

Teaching gives him a similar lift. “As an architect, it’s the only job you can do that makes you ask yourself every day, ‘What do I believe in?’ because you have to be able to answer that for yourself when students ask you about their work.” ■

This 1992 competition entry for the Austrian Culture Institute in New York City was designed in collaboration with S. Nazarian and W. Tschapeller. The project “questions the relationship of real estate and cultural values in a

30-story Midtown Manhattan tower,” according to Hadighi’s project brief. The architects transposed the typical areas devoted to rental space with those usually dedicated to public use, in effect turning the building inside out.



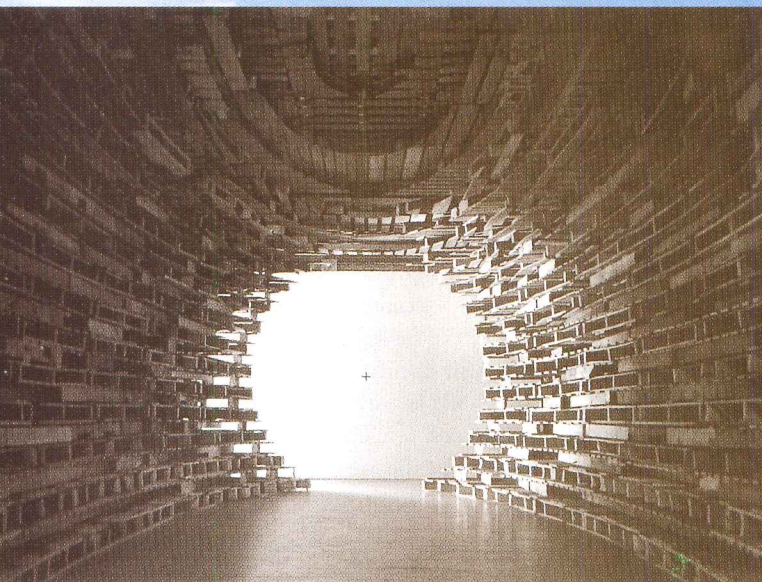
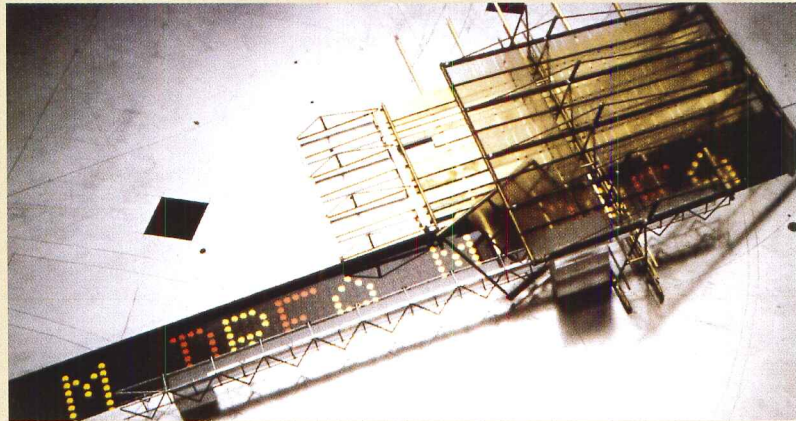
Tall Acres,
Pittsfield, New York

In this residential addition and renovation, Hadighi explores the relationship between the existing, nearly disposable vinyl-sided saltbox and a new addition comprising a 75-ton tube of black polished concrete. The work examines how weight, color, structure, and permanence can oppose each other.



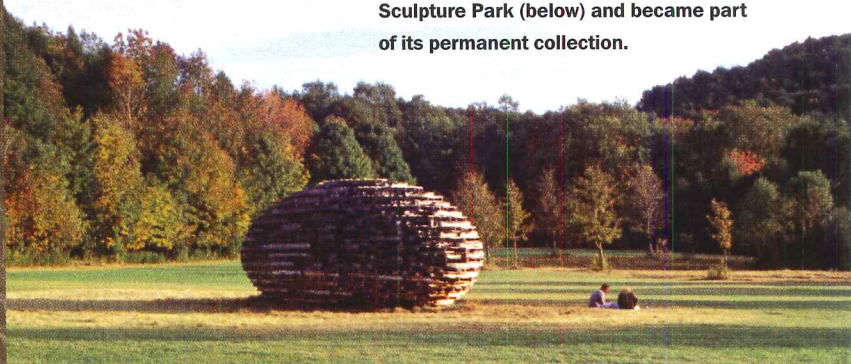
Electric River,
Alexanderplatz, Berlin,
Germany

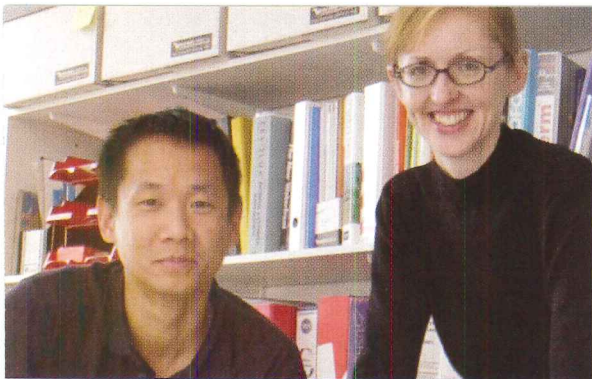
This 1993 entry, designed with W. Tschapeller and J. Zissovici for the Gewachshaus Berlin competition, uses electronics to create a landscape of information and images. According to Hadighi, the design is a "tool to question the competition's requirement of an exhibition space as the location for the democratic exchange of ideas."



Big Orbits,
Buffalo, New York

Hadighi and collaborator Frank Fantauzzi filled a gallery with pallets (left), carving an ellipsoid-shaped negative space out of them. The architects also created the corresponding positive form in a nearby courtyard. It was later moved to Griffis Sculpture Park (below) and became part of its permanent collection.





heneghan.peng.architects boldly pursue the most ambitious commissions

By Sara Hart

Architect: heneghan.peng.architects

Location: Dublin, Ireland

Founded: 1999 in New York,
moved to Dublin 2001

Partners: (from left) Shih-Fu Peng,
Róisín Heneghan

Design staff: 8

Education: Peng: Harvard GSD,
1992; Cornell, 1989; Heneghan:
Harvard GSD, 1992; University
College Dublin, Ireland, 1978

Work history: Peng: Skidmore,
Owings & Merrill, 1996–2001;
Michael Graves & Associates,
1992–96; Smith Miller &
Hawkinson, 1992; Heneghan:
Michael Graves & Associates,
1992–2001; Mitchell Giurgola,
1992; Deamer + Phillips, 1989–90;
Mayers & Schiff, 1987–89

Key completed projects: No
completed projects

Key current projects: Kildare Civic
Offices, Kildare, Ireland, 2005;
Hotel, Kilternan, County Dublin,
Ireland, 2006; Grand Museum of
Egypt, Giza, 2009

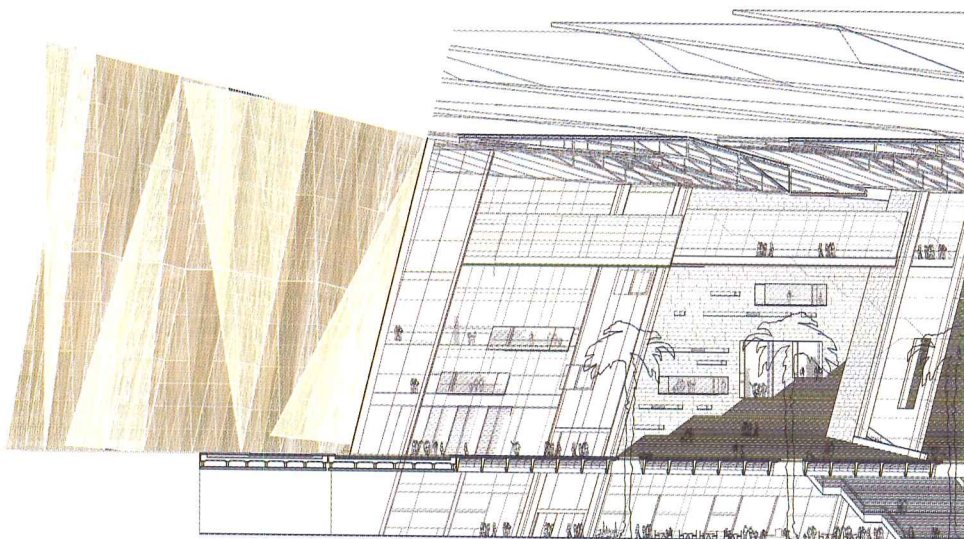
The fact that they've yet to build anything significant has not cowed Róisín Heneghan and Shih-Fu Peng. They enter competitions and win, so this dearth of built work will soon be over. Since moving from New York to Heneghan's native Ireland two years ago, heneghan.peng.architects has won three high-profile commissions.

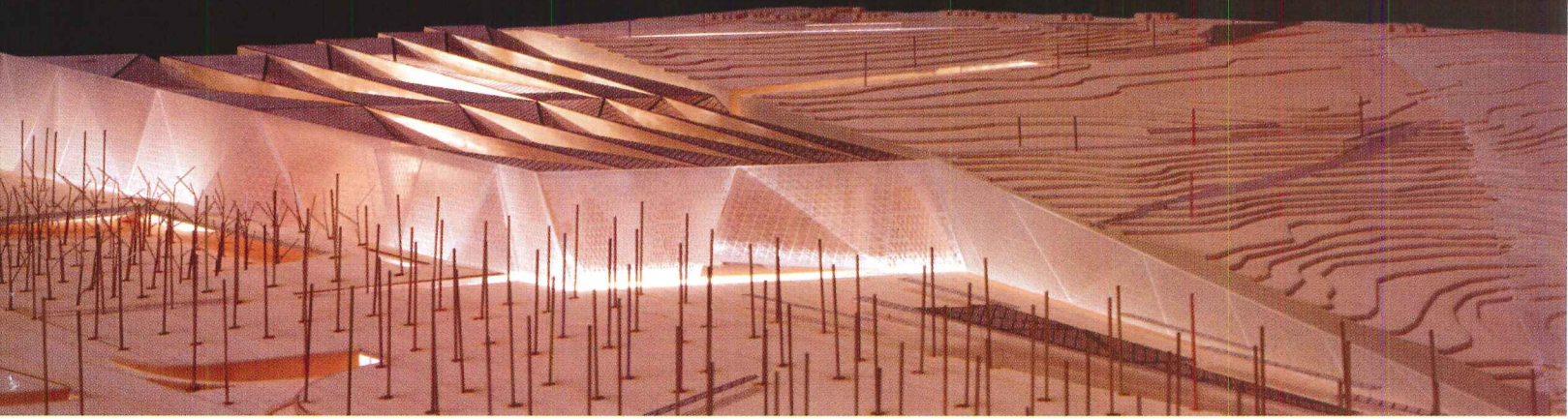
The most impressive is for the design of the Grand Museum of Egypt, at Giza. The international competition attracted 1,557 entries from 83 countries, which certainly makes it one of the largest competitions ever held. With a \$350 million budget, the 1-million-square-foot complex is not a commission for the timid, but Heneghan and Peng are anything but timid. They assembled an all-star team with such engineering heavyweights as Cecil Balmond of Arup's London office, who will rationalize the translucent stone structure using his expertise in fractal geometry.

Conceptually, the architects absorbed the entire region between Cairo and the Great Pyramids in their design, rather than limiting their vision to a plateau and the area of the museum's footprint. This was a crucial element that probably allowed their entry to stand out in a crowded field of proposals. Heneghan and Peng imagine the museum to be the interface between modernity and antiquity; therefore, the experience within the museum must provide a transition for the visitor. Although still in the pure schematic stage, the strategy is lucid. The museum's abstract planes will stack horizontally across the site. The interiors will have a sophisticated navigation system that will rely on both architectural elements, such as a grand stair, and interactive displays, which serve as destinations. Ubiquitous views of the pyramids prevent visitor disorientation, which often happens in vast, complex spaces. Yet the architects are not using the pyramids as simple guideposts: They stand as a persistent reminder that for all the technological virtuosity and virtual reality that will enhance the museum experience, nothing beats the real thing right beyond the walls.

The relationship between inside and outside, public and private, is investigated in every Heneghan and Peng project. Often a park or plaza is given architectural expression to heighten the dialogue between an object in a field and the landscape on which it sits. These exterior spaces are often sloped upward toward the building or out toward other objects with which the architects hope to establish visual and spatial connections—an architectural marvel or the green edge of an urban center, for example. This approach turns the emptiness between points into sculptural spaces.

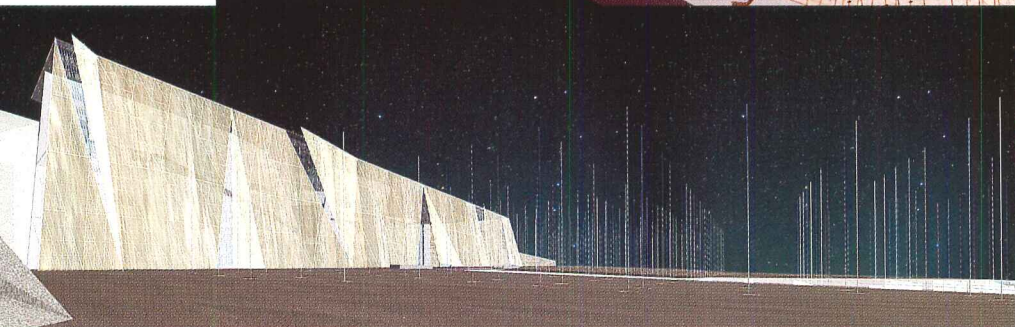
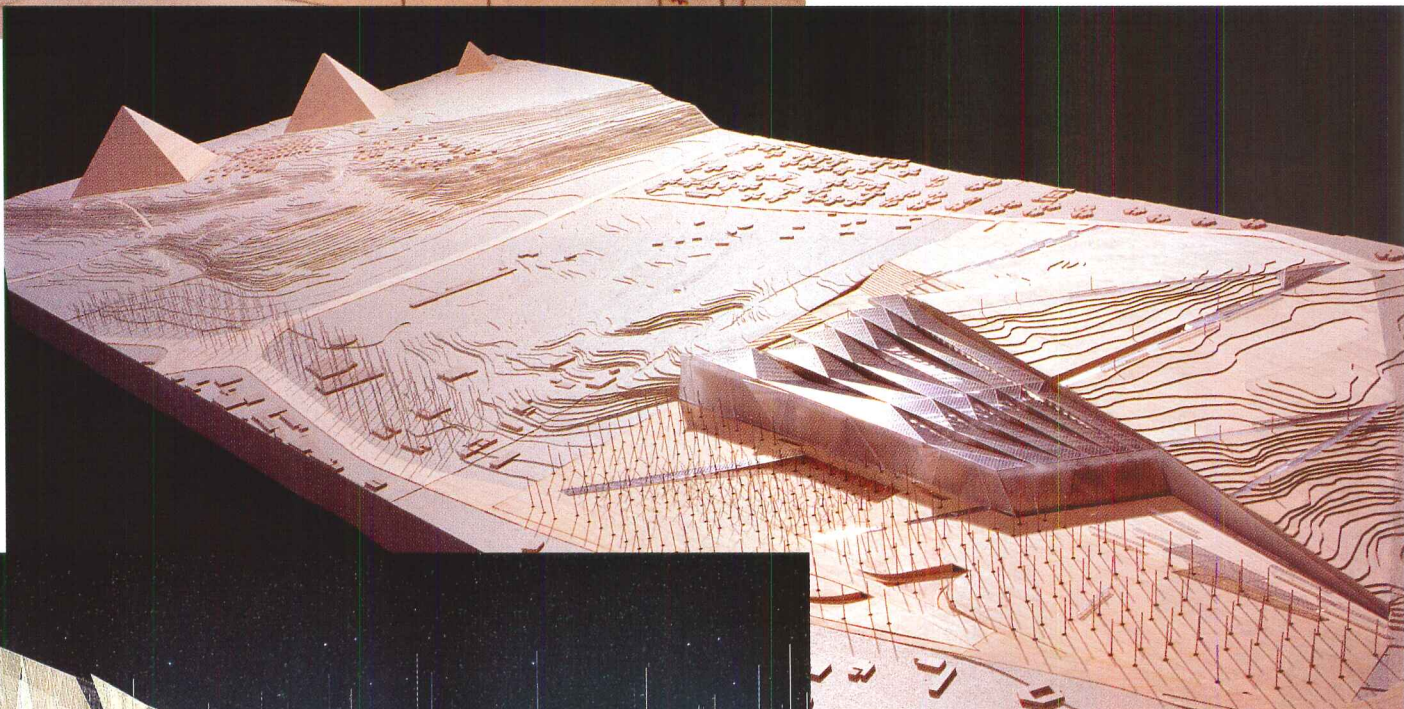
Of course, no matter how prestigious, commissions are not buildings, any more than an outline is a book. Architecture doesn't exist until a design is executed in bricks and mortar, or, in the case of the museum, translucent stone and glass. And yet, there's every reason to believe that heneghan.peng.architects will succeed at making architecture, while expanding its influence beyond accepted boundaries. ■

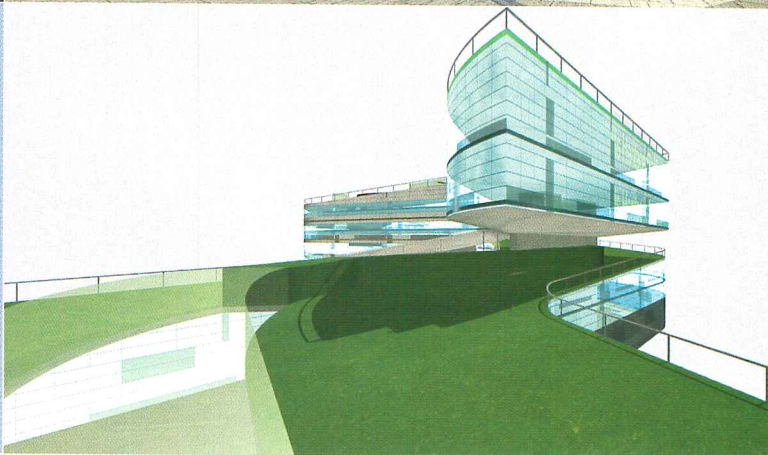
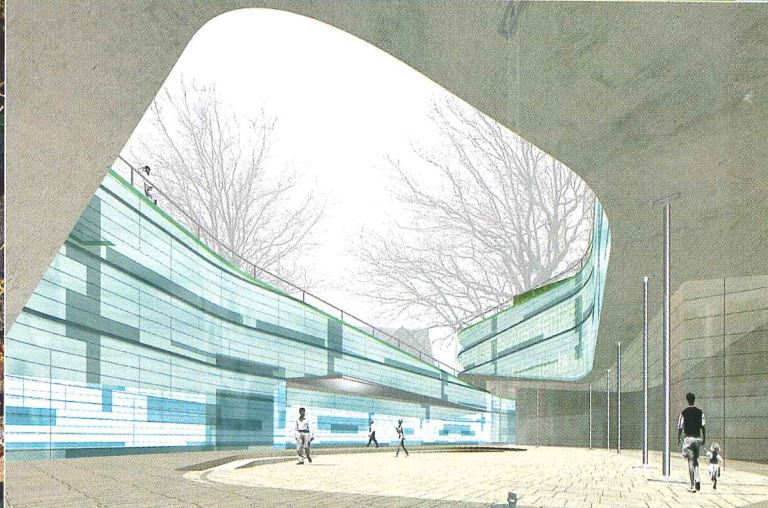
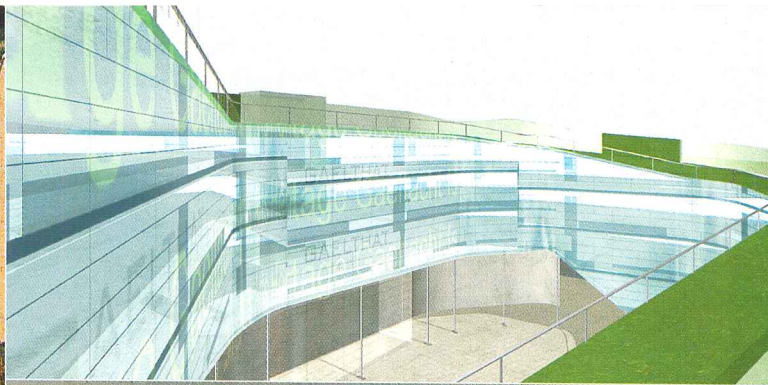




Grand Museum of Egypt, Giza

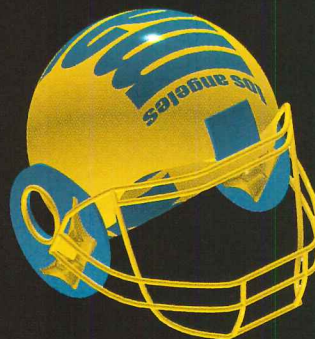
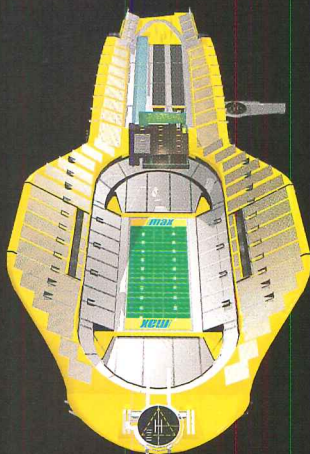
The Grand Museum of Egypt will be sited at the first plateau outside Cairo, between the Great Pyramids of Giza and the city of Cairo. The architects' goal is to create a new edge in the desert with a thin veil of translucent stone and inscribe a set of visual axes from the site to the three pyramids. The cultural environment will center around Egyptology and will be a repository for artifacts and interactive exhibitions.





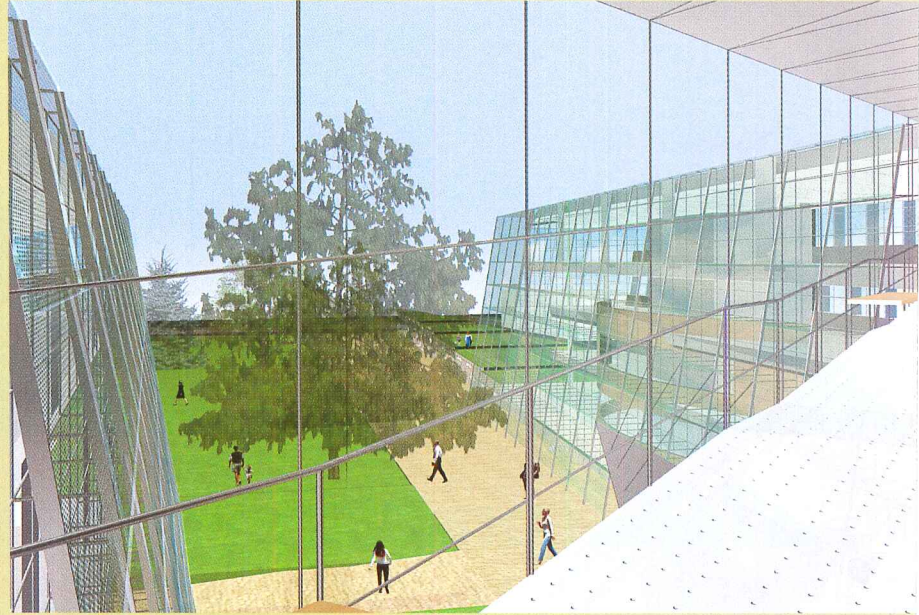
Headquarters for the Department of Arts, Heritage, Gaeltacht, and the Islands, Dublin

The AHGI building will be a slowly rising loop, which will continue uninterrupted from one end of Phoenix Park to the urban edge of Dublin. The distinction between park and building is blurred, as the park continues into the building, and the building slides into the park. Environmentally vigilant, the architects have designed a green roof and a high-performance facade. The project loops back around at the park edge to form an interior courtyard.



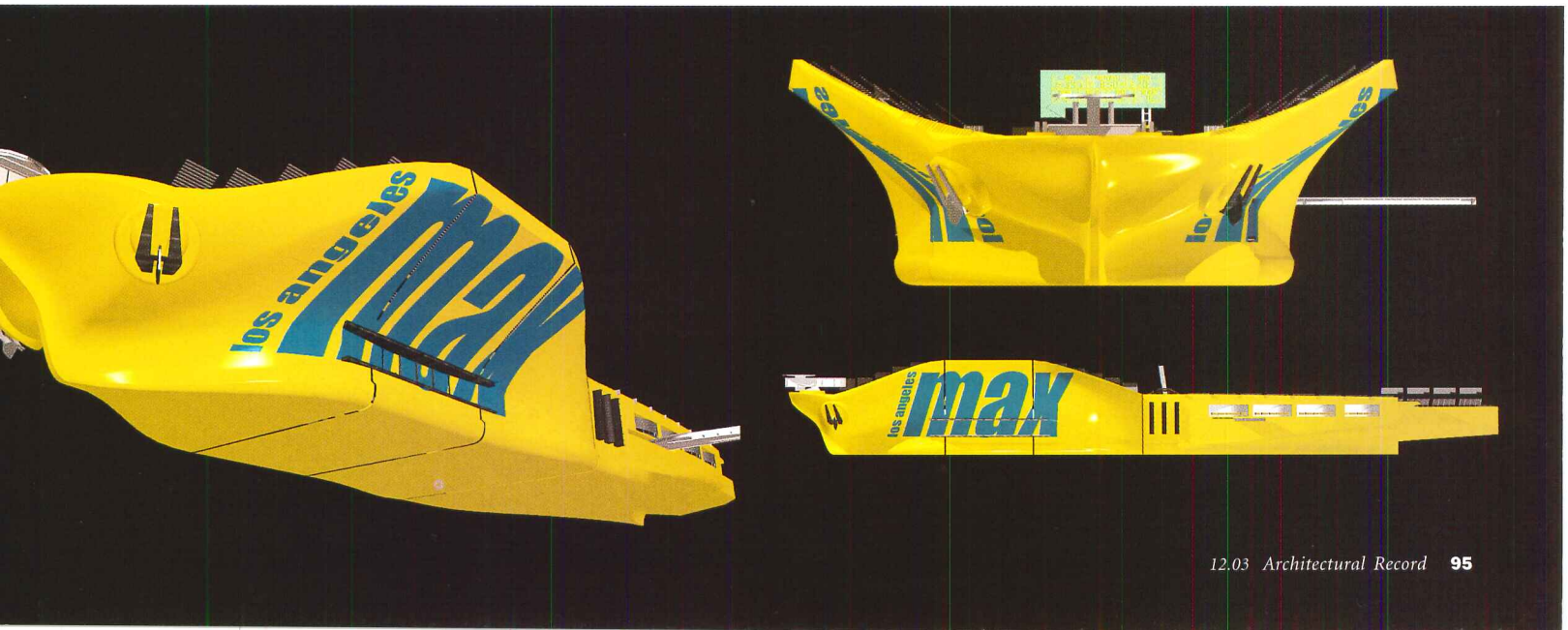
Bigfoot: A Football Stadium for Los Angeles

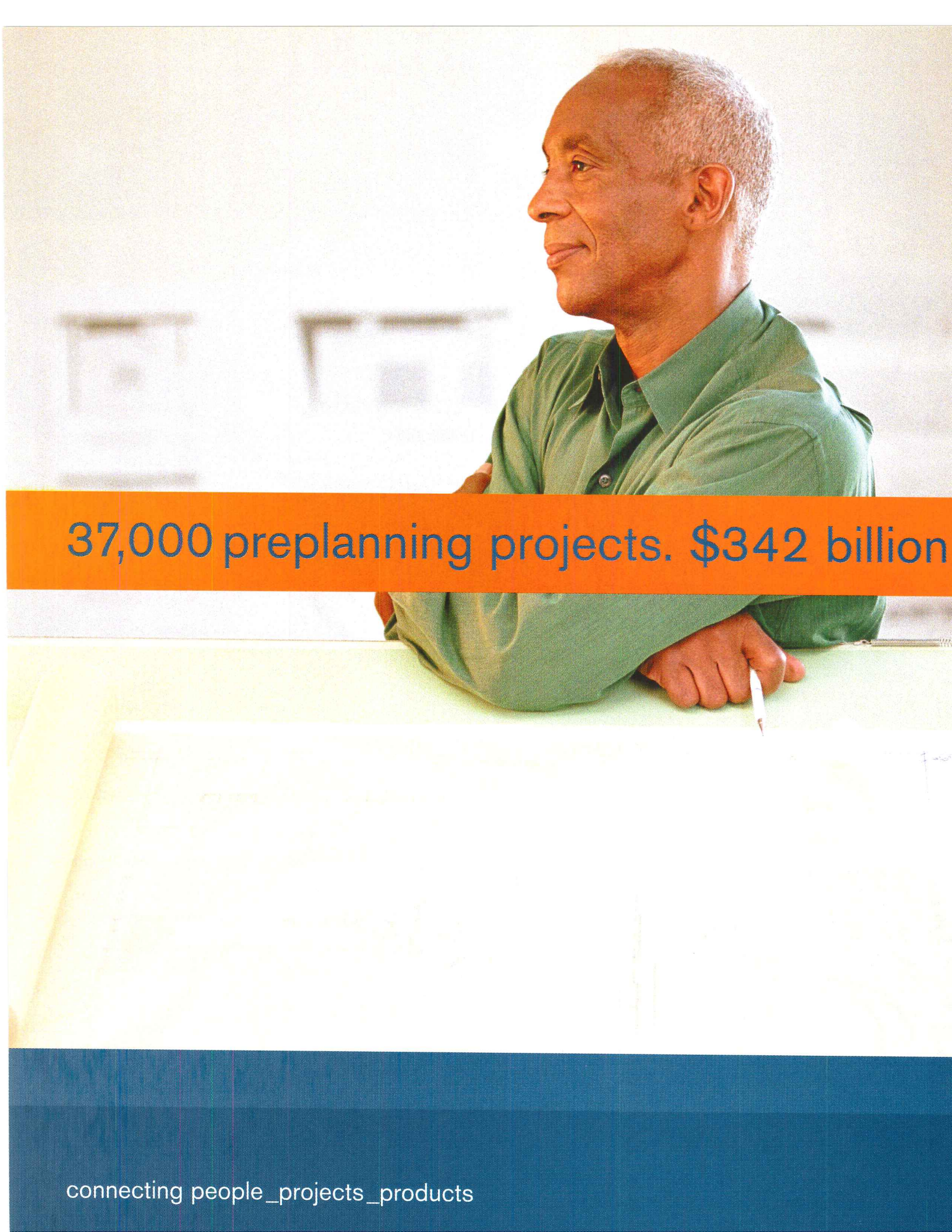
Bigfoot was heneghan.peng.architects' 1997 submission to the annual ideas competition organized by the Academy of Architecture Arts & Sciences in Los Angeles. The firm's scheme conceives a stadium as cruise ship, docked in Santa Monica. The program would reflect a mall mentality, but in this case, the football stadium is the anchor store. If the team leaves town, the city could sell the stadium ship to any town with a port.



**Civic Office Building
and Park, Naas, Ireland**

The building and a stepping park will work together to form an urban amphitheater. The sloped park will be an "event surface" for both the office-building occupants and the townspeople of Naas and Kildare County. The main entrance is a double-height foyer and exhibition space with strong visual connections to the park.





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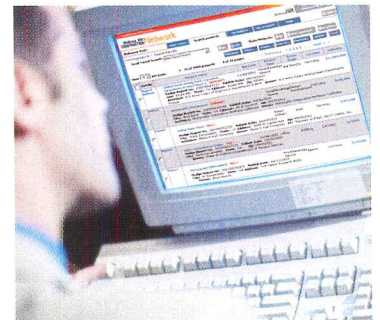
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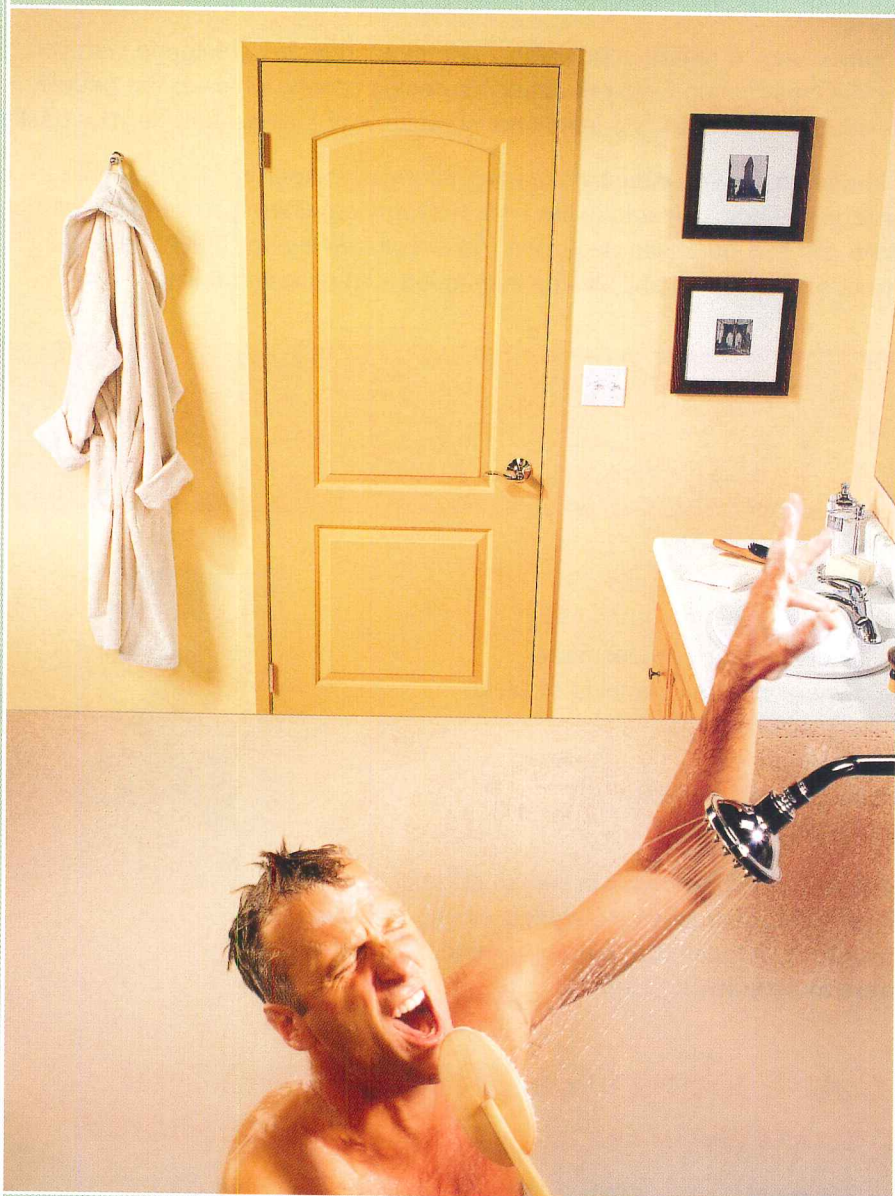


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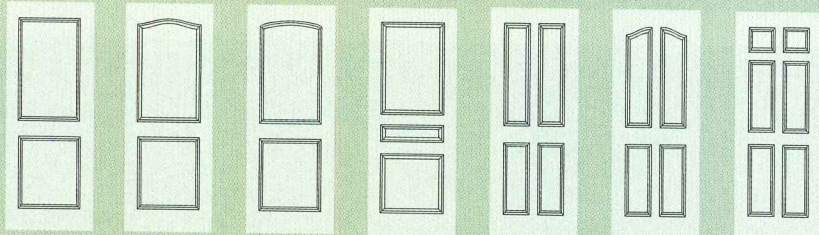
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1.

Los Angeles

In Patina at the Walt Disney Concert Hall, Belzberg Architects brings out dramatic contours and folds in walnut panels and plywood strips.



2.

New York City

Richard Meier & Partners shows how a white Modernist vocabulary introduces soigné chic to 66, a restaurant in a Tribeca loft building.



3.

T
in
Restauran.

*n of Paris
aristic '50s for
ing Lever House
1952 landmark.*

By Suzanne Stephens

First, let's get one thing straight: The most important factor in restaurants is the design. True, a whole industry is devoted to the conviction that food is the central concern—which is fine. But show us a restaurant where you can see a fluorescent-lit kitchen through swinging doors, where furnishings are garish and out of scale with the room, and we say no amount of delicately seared foie gras will tempt us back.

We are not uninterested in the cuisine. But the restaurants assembled here illustrate thoughtful responses by architects and designers to challenges often unacknowledged by foodies. Location is one: In designing Patina, in Los Angeles, Hagy Belzberg, AIA, had to create a distinctively elegant space within the sculptural precincts of Walt Disney Concert Hall by Frank Gehry, FAIA. And while Belzberg's restaurant caters to a captive audience of concertgoers, it still needed to add oomph to the experience. After all, the Bel-Air and Beverly Hills crowd does not often willingly travel to downtown at night. Belzberg's strategy was to make wood look like draped fabric (dark folds for the walls, light billowing contours for the ceiling), an inversion referring adroitly to Gehry's own approach.

With Richard Meier, FAIA's design for 66 in Tribeca, the location issue was quite different. This rapidly expanding residential loft district is reasonably accessible to other parts of Manhattan. Yet the roomy ground-floor space on a street corner, advantageously visible to street traffic, lacked an aura of mystery and glamour. Meier created it through translucent, shimmering materials and soft ambient lighting.

Marc Newson was faced with quite a different task in adding a new restaurant to the just-renovated Modern landmark Lever House, designed by Skidmore, Owings & Merrill on Park Avenue in Midtown Manhattan. If he had stuck to SOM's vocabulary, Newson would probably have ended up with a '50s formality too close in spirit to the venerable Four Seasons Restaurant in the Seagram Building across the street. Instead, he turned toward a '50s retro-futurism, softening the restaurant with wood, semicircular banquettes, hexagonal motifs, and frosted glass. While the overhead hexagonal lighting is too flat for an intimate ambience, and the wood cocoon effect seems borrowed from the harder-edged Brasserie that Diller + Scofidio recently installed in the Seagram, the restaurant has a vibrant elegance that has attracted an uptown clientele.

These efforts may still have kinks and flaws. But on the whole, the three restaurants demonstrate a fresh injection of modern elegance and glamour in the dining experience. They make a case for going back—more than once. Especially if, like us, you dine on design. ■

For more information on these projects, go to Projects at www.architecturalrecord.com.

Patina Restaurant Walt Disney Concert Hall Los Angeles

1

HAGY BELZBERG, AIA, BRINGS FOLDS OF WOOD AND CONTOURS OF GLASS TO A RESTAURANT AND CAFÉ IN L.A.'S DISNEY CONCERT HALL.

By Joseph Giovannini

Architect: Belzberg Architects—Hagy Belzberg, AIA, principal; Eric Stimmel, Manish Desai, Erik Sollom, Ryan Thomas, Melanie Freeland, Dan Rentsch, Leyden Yaeger, Jaron Lubin, project team

Consultants: John Dorius Associates (mechanical); A+F Consulting Engineers (electrical); Daniel Echeto (structural: restaurant); John A. Martin Associates (structural: building); Tom Nasrollahi and Associates (plumbing); Martin Newson Associates (acoustic); Michael Blackman Associates (kitchen); Elizabeth Paige Smith (colors and materials)

Contractor: Matt Construction

Size: 5,000 square feet for 112 seats plus 48 on the terrace (restaurant); 4,000 square feet for 200 seats (café)

Cost: Withheld

Completion date: October 2003

Sources

Wood millwork: Mueller Custom Cabinetry and Spectrum Oak Products

Carpet: Bloomsburg Carpet

Chairs: Holly Hunt

Tables: West Coast Industries (dining room); Janus et Cie (café)

Stainless-steel fittings:

CR Laurence

Surfaces: Dupont Corian

For more information on this project, go to Projects at www.architecturalrecord.com.

The commission to design a restaurant and café in Walt Disney Concert Hall was fraught with potential pitfalls. The design could neither upstage Frank Gehry's masterwork nor play possum. The most treacherous misstep could turn this corner of Disney Hall, along Los Angeles's Grand Avenue, into ersatz Gehryland. "We wanted to be respectful, but we had to have our own identity," says Hagy Belzberg, the Santa Monica architect chosen from a long roster of local designers who submitted credentials for the coveted work.

Program

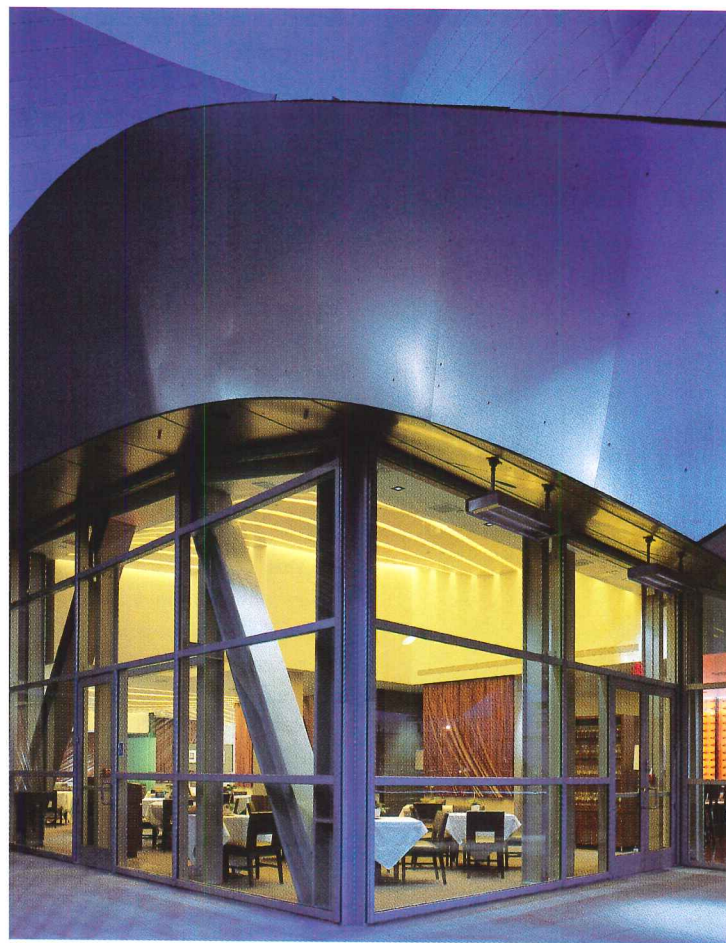
Belzberg, whose previous restaurants and houses have been materially rich and spatially robust, had to work within Disney Hall's prescribed shell. Here, he inherited a plate-glass facade: little more than a recessed strip subordinated to Gehry's streaming forms.

Existing doorways, already positioned in the facade, became starting points for Belzberg's plan for the 5,000-square-foot ground-floor restaurant and 4,000-square-foot café.

Solution

As built, the restaurant's main entry opens onto a waiting area in front of a bar. Wine bottles, arrayed

Joseph Giovannini practices architecture in New York City, teaches at UCLA, and is New York magazine's architecture critic.



with their corks forward, form a translucent wall. A small private party room lies to one side of the entry. A translucent curtain veils the room's sidewalk views, while a picture window offers glimpses into the kitchen. To the other side of the entry, a large dining room appears in dark, muted, low-contrast colors.

Sliding, square wall panels display art curated by the Los Angeles Museum of Contemporary Art across the street.

For Belzberg, computer-enhanced metaphors proved the best defense against the mythic, potentially overwhelming presence of the Gehry building—a historic icon even before its inauguration

Computer-milled, solid walnut panels in the dining room evoke rippling curtains. Bent luan plywood strips create an undulant ceiling that recalls an awning.





Channels between the billowing contours of bent plywood strips contain cold-cathode lighting (top and opposite), to which Belzberg added copper film to create a sunny glow in contrast to the dark, walnut wall panels (bottom).

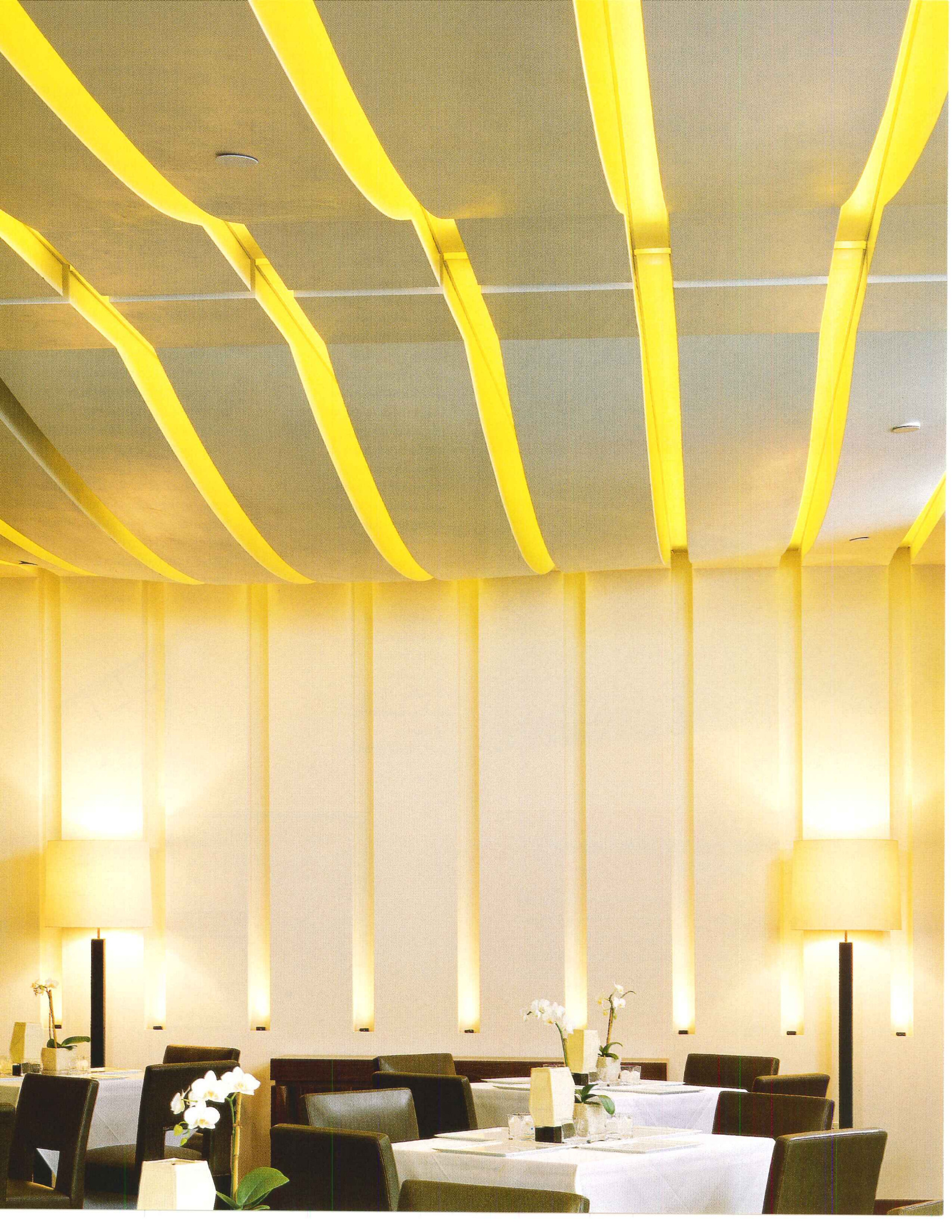
last September. For Belzberg's high-end restaurant (with its tenancy undecided even through its construction process), the allusion to a theatrical curtain inspired the design. This venue, after all, would be most active before curtain time and after performances. The absence of a literal curtain in the performance hall—which has a thrust stage instead of a proscenium—gave the metaphor a provocative edge.

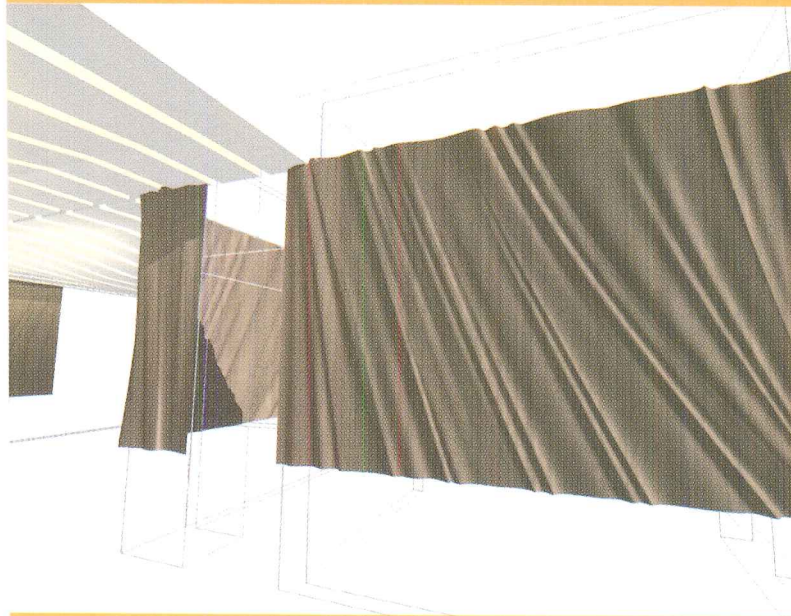
Curtains, however limp, come to life as they are drawn and released. And the notion of freezing such motion inspired Belzberg to play that effect against the implied motion, or sailing forms, of the Disney facades.

Curtains, however limp, come to life as they are drawn and released. And the notion of freezing such motion inspired Belzberg to play that effect against the implied motion, or sailing forms, of the Disney facades. Belzberg also responded to Gehry's monumental building through the application of computers in the design process. Gehry had famously used the aeronautical program CATIA to evolve the physical models for Disney Hall that he had first developed by hand with construction paper. Belzberg chose to enlist the computer, with form-Z software, to generate rather than confirm shapes (see sidebar, page 104).

Visually evoking stretching motion, Belzberg created and froze ripples on-screen and transmitted them to milling machines, which carved rigid "curtains" from solid panels of walnut two-by-fours laminated side by side. He placed these curtains through much of the restaurant, defining open spaces through slipped asymmetrical configurations. The ripples play against the walnut's grain and the stock lumber's module. Translating billowy "sails" into wavy "fabric," the panels restate Gehry's larger gestures in miniature. Abstractly, Belzberg reduced to a decorative







THE ONLY CURTAINS IN THE CONCERT HALL ARE MADE OF ... WALNUT

Go ahead, touch them: These wooden “curtains” are meant for your haptic pleasure. To make them, the designers created 3D models in form-Z software, then used the digital models to drive a CNC milling machine that carved them from 800-pound blocks of laminated walnut two-by-fours. Each block was 3 to 4 feet wide and 8 feet tall. The curtains were finished with a clear varnish and attached to the walls (“very carefully,” notes design principal

Belzberg drily) with steel angles and ledgers. The learning curve was steep for the firm’s first foray into 3D design, Belzberg says, “but we had a patient and trusting client—and the fact that Frank Gehry approved the designs was a big help, too.” He’s enthusiastic about doing more work of this stripe. “As architects, we can now use software to sculpt spaces,” he says. Eat your heart out, Claes Oldenburg. *Deborah Snoonian, P.E.*

In addition to the dining room (plan, below), with 160 seats and a bar (opposite, bottom right), Belzberg designed a more casual venue, a café for 200. Sandblasted ½-inch-thick tempered glass surrounds its kitchen, creating a luminous volume (opposite). The café and restaurant are distinct in character.

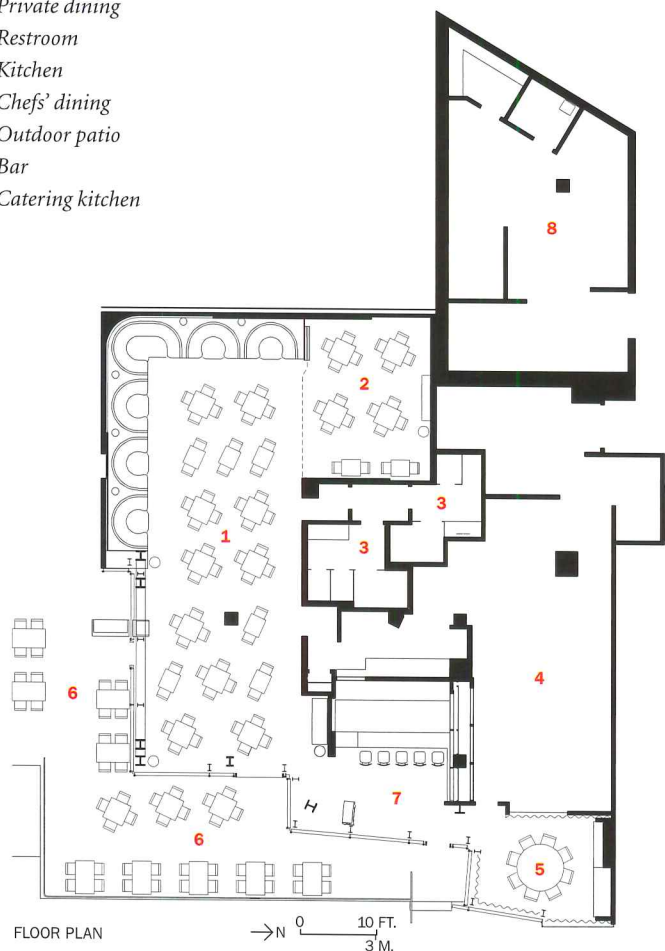
scale the turbulent forms roiling through Gehry’s building.

The ripples are deepest on the ceiling, where an undulant surface of curving luan plywood strips is illuminated by cold-cathode lights embedded in its interstitial troughs. A great wave of striated light, the ceiling provides a transitional scale between the panels and Gehry’s majestic curves.

Commentary

Belzberg has created a well-behaved interior that is compatible with Disney Hall, relating to it formally, spatially, and technically—but without being acquiescent. Its computer-generated hybrid of curvilinear and orthogonal forms translates the building’s macro gestures onto a microscale. Against Gehry’s metaphors, Belzberg established his own. Yet the congruence between the two approaches allows for a seamless transition. Distinguished respectfully from Disney Hall, the restaurant design favors understated differentiation over obvious opposition. ■

1. Main dining room
2. Private dining
3. Restroom
4. Kitchen
5. Chefs’ dining
6. Outdoor patio
7. Bar
8. Catering kitchen





66

New York City

2 RICHARD MEIER STICKS TO WHITE (WITH TOUCHES OF RED) FOR A CHINESE RESTAURANT IN NEW YORK CITY'S TRIBECA NEIGHBORHOOD.

By Suzanne Stephens

Architect: Richard Meier & Partners—Richard Meier, FAIA, principal; Don Cox, AIA, Thomas Juul-Hansen, design team
Client: Suarez Restaurant Group with Jean-Georges Enterprises
Consultants: Ambrosino DePinto & Schmieder (m/e/p); Goldstein Associates (structural); Mark Stech-Novak (restaurant consultation and design); L'Observatoire International (lighting)

Size: 5,400 square feet, 150 seats (plus 25 in the lounge)

Cost: Withheld

Completion date: Spring 2003

Sources

Glass partitions: Architectural Glass Craft

Stainless-steel mesh: GKD-USA

Absorptive acoustic-plaster ceiling: RPG Diffusor Systems' BASWAphon

Dining chairs: Eames by Herman Miller

Lounge chairs: Cassina

Stools: Bertioia by Knoll

Lounge tables: Saarinen by Knoll

Tables: Atta Studios (custom tabletops); Gratz Enterprises (custom table bases)

For more information on this project, go to Projects at www.architecturalrecord.com.

Since 66 opened last spring, its Shanghai-chic cuisine by Jean-Georges Vongerichten and Minimalist modern interior by Richard Meier, FAIA, have garnered the fervent attention restaurateurs crave. In this case, the clients are both the chef, Vongerichten, and Phil Suarez, also one of the investors in the Richard Meier–designed Perry Street Apartment towers in the West Village. Even though Meier had only designed one restaurant before—for the Getty Center in Los Angeles, where competition from other restaurants on its hilltop site is not formidable—Suarez was not deterred. “We knew Meier would provide the right excitement for Vongerichten’s cuisine,” he says. (Nevertheless, Vongerichten’s restaurant consultant, Mark Stech-Novak, was on hand to plan the kitchen and advise on other such matters, while the lighting consultant, L’Observatoire International, made sure the lighting would warm up Meier’s renowned white palette.)

Program

Since Vongerichten and Suarez already operate a slew of restaurants uptown (Jean Georges, Vong, JoJo), the two decided on the ground floor of the Textile Building, a toned-down, Classical-style structure in Tribeca. Designed in 1901 by Henry Hardenbergh, the architect of the Dakota apartments and the Plaza Hotel, the landmarked building



is not too far from Odeon, a pioneer of downtown arty-elegant restaurants, which opened almost 25 years ago. During this time, Tribeca has become a residential-loft paradise catering to the affluent who like the casual lifestyle with concierges.

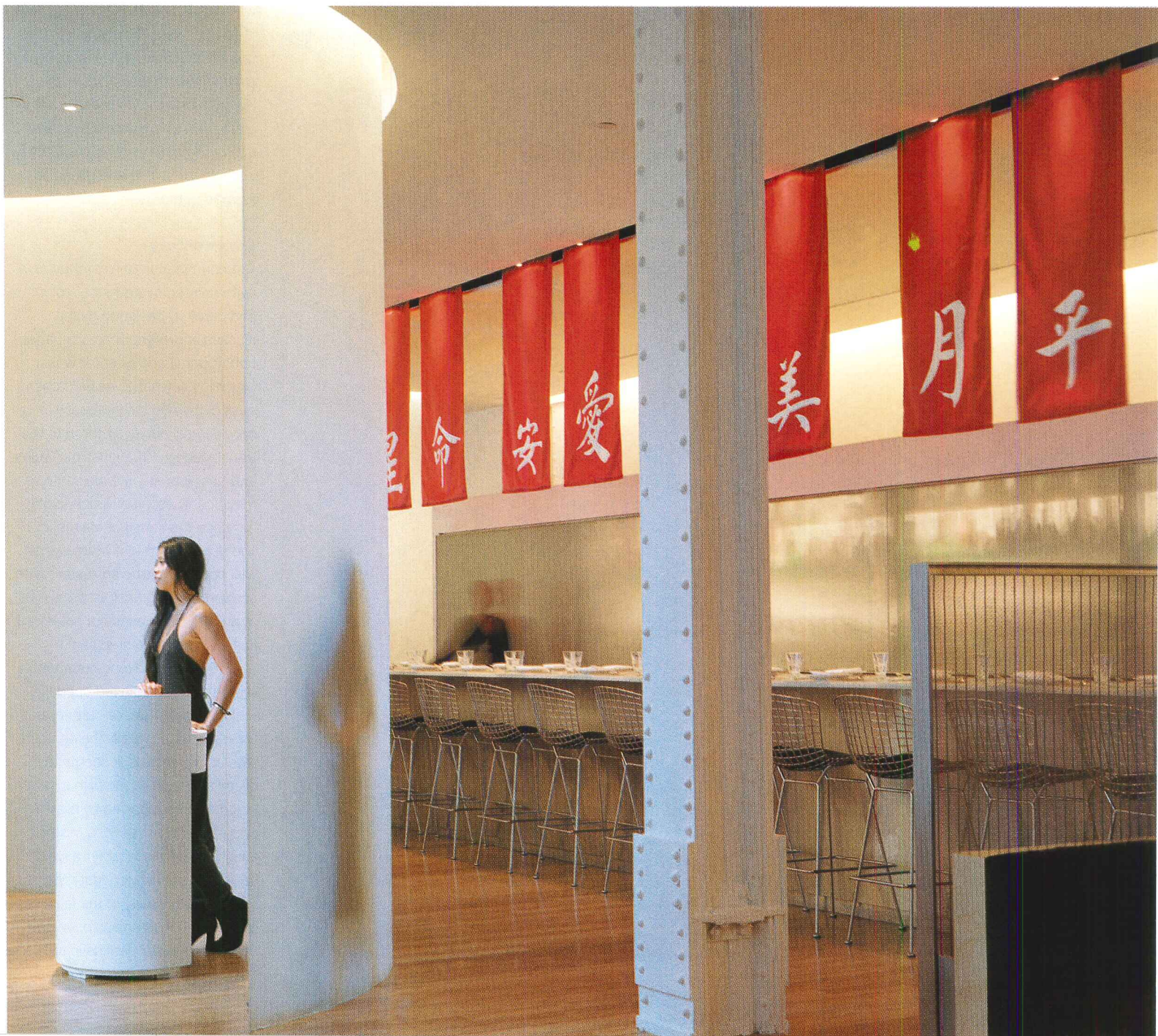
Accordingly, Meier thought the restaurant should be open and light. “I wanted people to experience a degree of intimacy as part of a larger space,” he says. “And,”

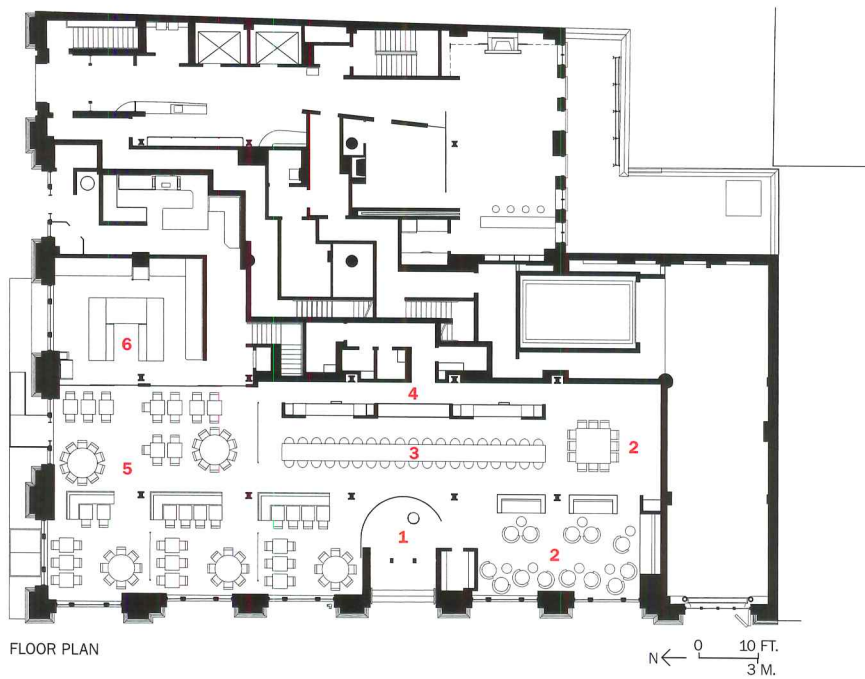
Meier adds, “I thought there should be no hierarchy in the dining spaces. Wherever you sit, you feel this is the most important spot.”

Solution

Meier divided the rectangular space into three main sections around a central entrance vestibule, defined by a 12-foot-high, curved-frosted-glass wall. Floor-to-ceiling frosted-glass panels partition the various areas,

A curved, 12-foot-high glass wall (below) separates the communal table from the entrance vestibule (opposite). Behind the table, a frosted-glass wall (right) partially conceals drink preparation.





1. Entrance vestibule
2. Lounge
3. Communal table
4. Bar
5. Dining
6. Kitchen (final prep)

The 44-foot-long communal table (below) has an epoxy resin top and stainless-steel base with Bertioia stools. Chinese ideograms on red silk banners visually lower the 12-foot-high ceiling.

which are further subdivided by built-in stainless-steel-mesh cubicles with wood-panel and leather banquettes.

Behind the entrance vestibule, a 44-foot-long communal table seating 40 acts as the orienting locus in the restaurant, dramatized by a row of red silk banners hung from a slot in the dropped acoustic-plaster ceiling. The bar at the back of the communal table is concealed behind a frosted-glass wall, through which the bartenders' shadowy movements and the bottles' contours offer only ghostly traces of their presence.

In the dining area, the kitchen can be glimpsed through four glass water tanks containing vividly polychromatic fish. The immaculately organized kitchen is devoted mainly to the final stages of cooking; Halogen downlights prevent a harsh glare from being admitted to the dining room. (A second preparatory kitchen, for slicing and dicing, is located in the basement.)

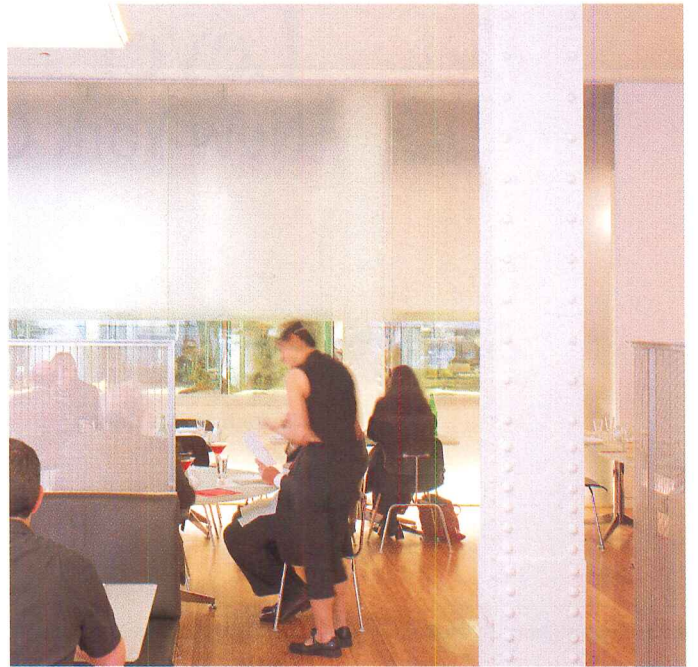
Commentary

The combination of loft-renovation (with painted riveted-steel columns) and carefully designed dining alcoves shows the masterful attention to detail and craft for which Meier is known. The desired openness combined with intimacy is handsomely achieved through the translucency of the glass partitions and the gleaming stainless-steel-mesh cubicles, all of which subtly enhance the sense of elegance. The dominant use of white works well because of the softness of the ambient lighting (including candles at night) and splashes of color (red flags, variously colored fish).

Although the long communal table seems to be a fad appealing mainly to a cell-phone culture that thrives on strangers listening to private conversations, it seems to go over well (for now). The high culinary standards—supported by highish prices—have made 66 a magnet, even for those looking for a lunch spot while serving jury duty. Will it match the longevity of the less-expensive Odeon and its open and active bar scene? We'll have to see. ■



Four fish tanks divide the dining area from the kitchen (right). Sconces attached to the backs of wood and leather banquettes provide ambient lighting that flickers through the stainless-steel mesh of the squared U-shaped cubicles (below and far right).



Lever House Restaurant

New York City

3

MARC NEWSON INSERTS A STYLISH, FUTURISTIC FIFTIES RESTAURANT TO THE LANDMARK LEVER HOUSE.

By Cynthia Davidson

Interior Designer: *Groupe Marc Newson, Paris—Marc Newson, principal; Sébastien Segers, consulting architect*

Client: *Joshua Pickard, John McDonald, Robert Nagle, Aby Rosen*

Architect of record: *CAN Resources—Taavo Somer, Derek Sanders, Serge Becker, Judy Wong, project team*

Associate architects: *MGZ Architecture*

Consultants: *Vogel Taylor Engineers (mechanical engineering); L'Observatoire (lighting); Super Structures (structural)*

Size: *6,500 square feet, 130 seats*

Cost: *\$5 million*

Completion date: *August 2003*

Sources

Custom seating and furniture: *Meritalia (Como) according to designs by Marc Newson*

Bar counter and tunnel surface: *Dupont Corian*

Carpet: *Durkan*

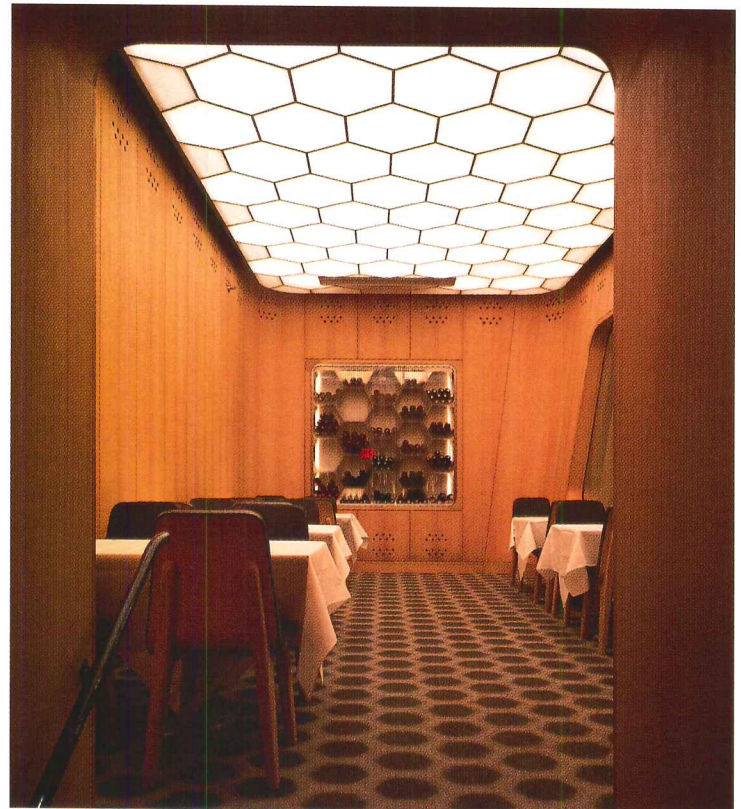
Granite: *Cold Springs Granite*

The value of the Lever House as a Modern icon on New York's Park Avenue was recognized when the city's Landmarks Preservation Commission designated the building a landmark in 1983, even though the Skidmore, Owings & Merrill design was only 31 years old (hardly an antique). Appropriately, by its 50th anniversary in 2002, the building was nearing complete restoration and rehabilitation [RECORD, March 2003, page 122], but bringing it back to life required more than new lobby furniture and curtain wall. A critical issue for lease-holder RFR was to animate the ground-floor space formerly occupied by a conference room and Lever Brothers company store.

Program

Enter New York restaurateurs John McDonald and Josh Pickard, who opened the Lever House Restaurant in August. The available 6,500-square-foot space is actually subterranean and windowless but accessible directly from 53rd Street on the south side of the building. The frontage available for establishing the restaurant's identity is minimal, and landmark laws prevent excessive signage on the building. Then designer Marc Newson came on board, an Australian (living in Paris) with a reputation for things curvilinear—bikes,

Cynthia Davidson is the editor of Log, a new publication of observations on architecture in the city.



chairs, airplane interiors, the “stuff that surrounds you”—with a retro Modern aesthetic that *Wallpaper* magazine has made so fashionable.

Solution

In less than three years, Newson concocted a pod of hexagons and curved surfaces that is both retro (fitting for a 1950s mothership) and very now. Working with in-house consulting architect Sébastien Segers, he created windows in the windowless space by lining one side of the

room with large curved openings that resemble the windows in passenger trains. Diners step through them to sit at curving banquettes and look back at the crowd on the floor 6 inches—but feeling much farther—below. A large opening in the wall at the far end spans nearly the width of the room, framing a private, 22-seat dining room. This window is fitted with sliding sheets of clear glass that when closed provide acoustic, but not visual, privacy; hence diners here are always onstage, a twist on the

For more information on this project, go to Projects at www.architecturalrecord.com.

Visitors enter the main dining room (this page) after passing through a 20-foot-long tunnel lined in Corian. At the rear, an elevated dining area overlooks the space.

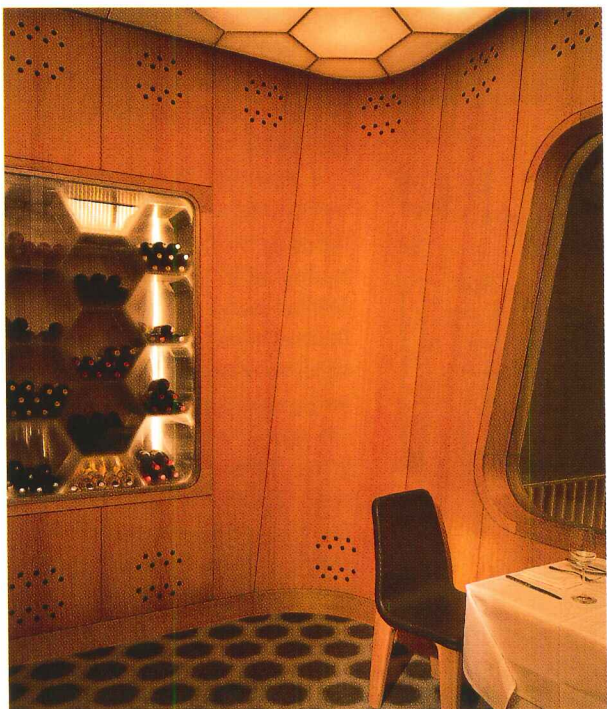




Rounded booths trimmed in blond oak line the west wall of the main dining room (above and opposite, top). Visitors enter from the street through a dark vestibule where

the wine is displayed (right), before entering the white tunnel. A glass wine cabinet and a view of the main room enliven the 22-seat dining room (opposite, bottom two).





Adjacent to the entrance tunnel is a bar (this page) with a Corian top and wood facing. The hexagonal motif is repeated on the vitrines.

idea of dinner theater.

At the bar and in the dining room, Newson uses banal materials—white Corian; rough, putty-colored plaster; blond oak; mirror glass—with a high-style sensibility. The lightness of these materials and the curves Newson introduces to the room are highlighted by a completely black, orthogonal entry off 53rd Street, where coats are checked, and at the back, a completely black corridor leading to all-black restrooms (fixtures and all). The blackout look hides the damage that occurs with intensive use of the spaces, but more important, the darkness heightens one's sense of passage into the light, central space. The honeycomb of hexagons underfoot on the carpet, overhead in the coffered ceiling and private dining room lighting, as well as behind the bar, simply add geometric amusement for the eye.

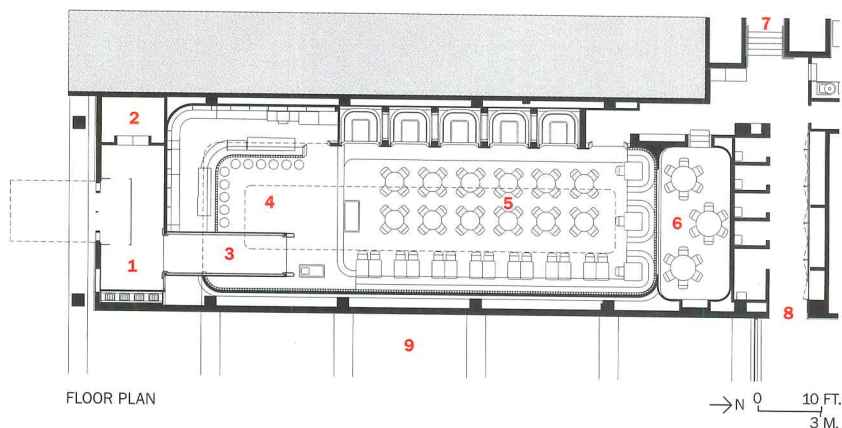
Newson sets the scene for the action with an illuminated curved tunnel of white Corian that descends from the street-level lobby to the below-grade main dining room. This passage transports diners—like astronauts—into another dimension, where, unaware of eating in what is nearly a basement, the diners offer themselves to chef Dan Silverman.

Commentary

Lever House Restaurant opened in August 2003. On a Tuesday evening in September, the room was humming with an overflow crowd; without a reservation, one must wait 2 hours for a table on what is reportedly the slow night of the week. Is it the food or the ambience that the throngs are seeking?

The lobster tempura and roasted wild salmon are delicious, but no more impressive than the food served at the historic, Philip Johnson–designed Four Seasons Restaurant only one block away. That center for the power lunch seems to be the logical Lever House precedent. The difference in the decor is notable. Where Johnson's rooms continue to ooze a certain elegance, Newson's are more pop. Their lack of subtlety seems to destine them for a much shorter lifespan. ■

1. Entry
2. Coat check
3. Tunnel
4. Bar
5. Main dining room
6. Private dining room
7. Entrance to kitchen
8. Passage to Lever House lobby
9. Lever House exterior courtyard



Prefabrication, the Speculative Builder's Tool, Has Been Discovered by Modernist Designers

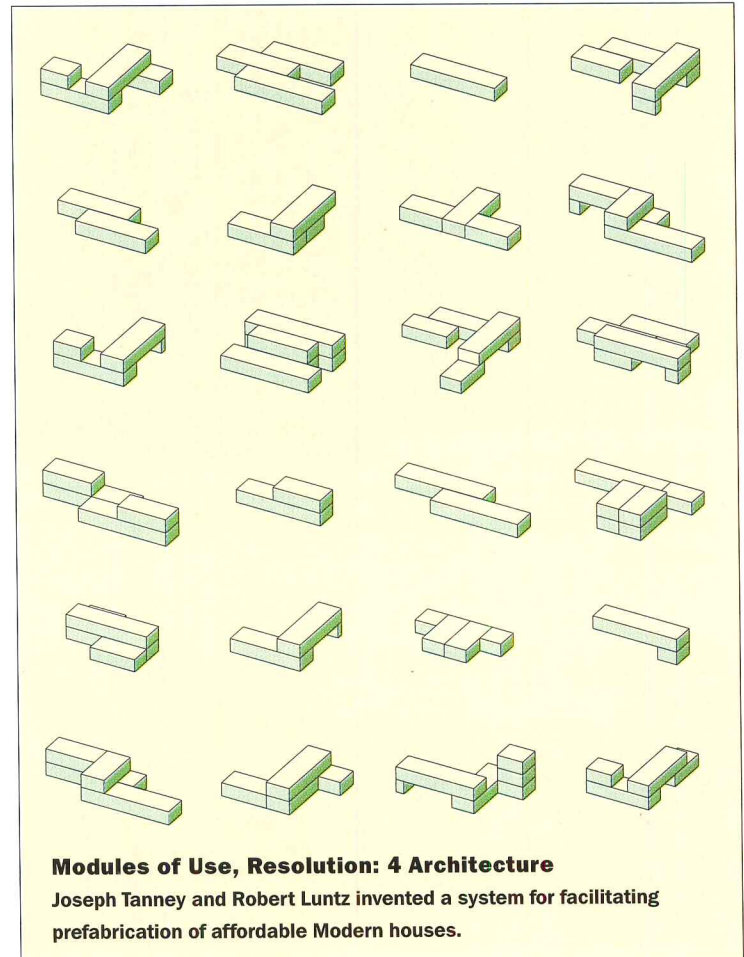
ARCHITECTS ARE INVESTIGATING WAYS TO CAPTURE AN UNSERVED MARKET FOR RESIDENTIAL DESIGN

By Sara Hart

I wanted to move to the front of the information queue," says Michael Sylvester, who started fabprefab (www.fabprefab.com) last year as an online market-research project because he saw commercial possibilities in the suddenly high-profile modular-construction industry. His Web showroom exhibits designers on the cutting edge of prefabricated and modular construction, but only those who are doing it in the language of Modernism. The fact that he's limited his investigation to Modernist design is the key to his business strategy. He and an increasing number of architects are discovering that there is an unserved niche in the residential market—Modern houses for consumers who can't afford the one-off, expensive architectural masterpiece.

"There is a lot of misinformation out there about prefabrication," says Sylvester, an Australian expatriate living in Southern California with an architecture degree and an M.B.A. Misinformation is indeed the fog that has impeded innovation in prefabrication for decades. First of all, neither architects nor consumers understand the nomenclature, and as a result, terms such as prefab, modular, unitized, or manufactured construction are used interchangeably, when they actually describe different processes (see sidebar, page 126). As a result, prefabrication has come to describe any manufacturing process that takes place in a controlled environment, usually a factory. It's also a term with pejorative connotations, suggesting low-quality, one-size-fits-all mass production.

In contrast, the term "custom" has emerged as the requisite modifier to high-end building, the purpose of which is to identify the product as one-of-a-kind and of the highest caliber. This suggests incorrectly that "custom" and "prefab" are mutually exclusive. Prefabrication



Modules of Use, Resolution: 4 Architecture
Joseph Tanney and Robert Luntz invented a system for facilitating prefabrication of affordable Modern houses.

BUILDING SCIENCE

CONTINUING EDUCATION



Use the following learning objectives to focus your study while reading this month's ARCHITECTURAL RECORD/AIA Continuing Education article. To receive credit, turn to page 130 and follow the instructions. Other opportunities to receive Continuing Education credits in this issue include the following sponsored sections: "Renovation, Remodeling, and Window Replacement: Renewed Life for Vintage Architecture," sponsored by Andersen Windows & Doors, page 133, and "Building Products: How Architects Find Ideas and Information," sponsored by Sweets, page 139.

After reading this article, you should be able to:

1. Discuss quality and cost issues of prefabricated housing.
2. Explain how architects can get builders to accept innovative ideas.
3. Define different terms used for prefabricated construction.

LEARNING OBJECTIVES

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For this story and more continuing education, as well as links to sources, white papers, and products, go to www.architecturalrecord.com.

has been creeping into high-end construction for years. According to George Petrides, owner of an eponymous home-building company (www.petrideshomes.com) headquartered in New York, nearly 50 percent of all so-called custom houses have some prefabrication, usually panelized floor joists and trusses.

The case studies that follow represent a growing desire among innovative designers and their manufacturing partners to pursue Le Corbusier's "machine house" quest, casting off preconceived notions and turning prefabrication into the preferred method of building, with the goal of capturing the affordable, middle-class housing market for the architectural profession.

Working inside the box

Architect Joseph Tanney, AIA, acknowledges that architects are shut out of all but 4 percent of single-family residential building and virtually all of affordable, middle-class housing in the U.S. Tanney, with partner Robert Luntz, AIA, and a growing number of architects and designers, wants a piece of the action. His 10-person, New York-based firm,



m-house, Tim Pyne

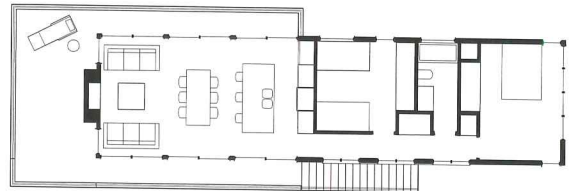
Designed to meet the U.K. regulatory definition of a caravan, or mobile home, the unit is exempt from most building codes and regulations.

Resolution: 4 Architecture (www.re4a.com), was the winner of the 2003 *Dwell* Home Design Invitational, a competition to explore prefabrication as an alternative to stick-built homes. Not just another intellectual exercise within the profession, Resolution's winning entry will be built for a client in North Carolina, and there's reason to believe that Tanney and Luntz are emerging as the ambassadors for Modern Modular design and construction.

The fact that the *Dwell* competition generated so much ink in the mainstream press suggests that there is serious interest in the commercial viability of affordable prefabricated homes. Tanney and Luntz have exposed two truths about factory-built housing. First of all, it's not inferior to stick-built construction. As a matter of fact, fabrication in a controlled environment produces components that are more consistent in quality than those built on-site in all kinds of weather by a labor force of varying skill.

This truth then begs the question, why aren't all homes built in factories? Traditional home builders build traditional homes, which are rendered in familiar quasi-historical styles. Conventional wisdom says that this is what the middle-class American consumer wants. It's hard to argue with a huge industry that saw an estimated 1.7 million housing starts in 2002. Tanney and Luntz, however, have uncovered the second truth: There is a considerable market for affordable Modern residential architecture, and no one is serving it. The glamorous, sleek, high-concept houses that fill shelter magazines and professional journals, such as this one, are one-offs that require unconventional methods and materials, which make them prohibitively expensive for all but the wealthiest clients.

Besides the fact that traditional builders are content with the market status quo, Tanney has also observed that architects have failed to understand the methodology of builders. Those who have approached home builders with innovative but unconventional ideas are greeted with resistance, if not downright hostility. The philosophy at Resolution: 4



SECOND FLOOR



FIRST FLOOR



Modern Modular, Resolution: 4 Architecture Joseph Tanney and Robert Luntz have applied their experience and skills designing

custom urban residences to developing a system of prefabrication employing "modules of

use"—factory-produced, easy-to-transport rectangular units. Rather than reinventing the process, the firm incor-

porates off-the-shelf materials and techniques. The prototypes shown above represent mass-customization

possibilities in the Modern Modular system, bringing Modernism down to earth.

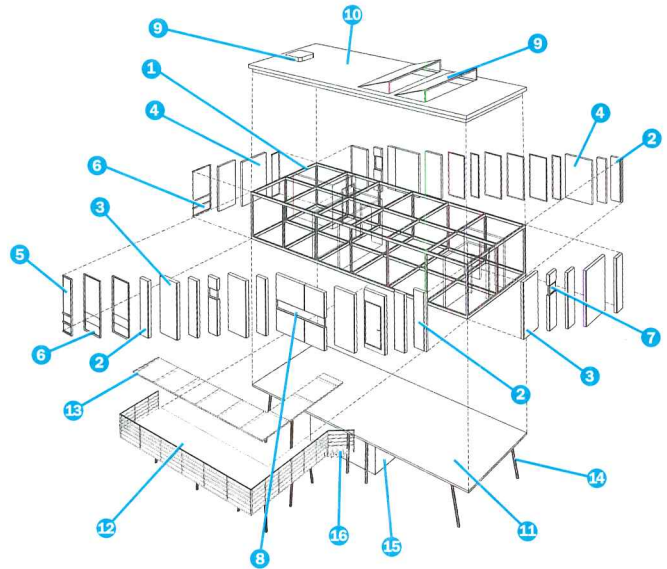
Architecture is as ingenious as it is simple: work within the box if you want to build. “We harness what’s out there and don’t reinvent the process,” explains Tanney. The firm first funded its own research into established prefabrication processes, then applied the knowledge to its own brand of modular Modernism.

Their process differs little from standard practice, including the five phases of architectural services, but the bidding process requires soliciting bids from both manufacturers and site contractors. Still, cost reduction is striking, as is the sudden realization that reduced cost does not mean inferior quality. By limiting their process to a typology based on standard units, Tanney and Luntz can take full advantage of the efficiencies of factory-built components. Luntz identifies the two most important factors at work. First of all, there are the economies of scale in which high-volume purchasing drives down costs. But in the prefabrication world, manufacturers buy from manufacturers directly, so there are more savings. Luntz is quick to identify the high cost of labor. “In stick-built construction, the labor can run as high as 60 or 70 percent of the total cost. In the factory, labor can drop to 20 percent,” he explains. Tanney and Luntz predict that the *Dwell* house will probably come in at \$100 per square foot. They have several prefab houses on the boards now to be built in various places from East Hampton to Nashville.

Although classified on fabprefab.com as “in development,” Peter Strzebniok and Matthias Troitzsch started Nottoscale (www.nottoscale.com) in San Francisco for reasons similar to those of Tanney and Luntz. Upon arriving in the Bay Area from Germany, “we were puzzled by the size and financial strength of the housing market and were surprised to see how few architects were trying to compete with the ‘blueprint housing’ market and the developer-driven track homes we all know so well,” says Strzebniok.

Unlike Tanney and Luntz, who opted for traditional modular

1. Steel frame 16 x 48 x 10 feet
2. 2-foot insulated panel
3. 4-foot insulated panel
4. Panel with integrated insulation
5. 2-foot aluminum window
6. 4-foot aluminum window
7. Punched window
8. Panoramic window
9. Operable skylight
10. Roof assembly
11. Floor assembly
12. Wood deck with guardrail protection
13. Shading and weather protection
14. Steel tube columns for chassis
15. Utility block
16. Exterior stairs to deck



EXPLODED AXONOMETRIC



Modulome, Nottoscale

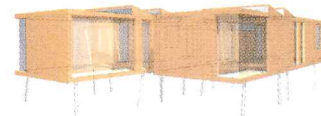
This modular, prefabricated housing system incorporates production principles from the automotive industry.

Different panel types are available—plastic (above), metal (below), and wood. The basic construction concept

(top right) shows modular components based on a 2-foot grid. Modular construction allows flexibility and easy expansion (right).



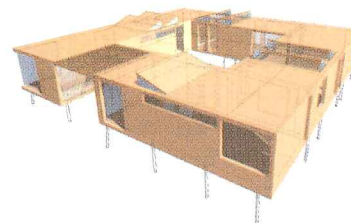
1
COUPLE



2
ATOMIC FAMILY



3
FAMILY



4
EXTENDED FAMILY/COMMUNITY

GROWTH DIAGRAM

technology, Strzebnik and Troitzsch chose automotive engineering as the model for a modular system for residential design and construction. Volkswagen has ecumenical appeal. The architects recognized it as “a car for the masses, affordable, well-designed, dependable, and one that responds to the consumer’s contemporary lifestyle.” Using the VW model, they developed what is currently called the Modulome, which uses production principles from the automotive industry to create housing solutions for different income levels, site requirements, and owner preferences.

They have clients but are still in the construction document phase of development. All components will be prefabricated in a factory and assembled on-site. The structural core is a moment diagram of a prefabricated and preassembled steel chassis that measures 16 by 48 by 10 feet, which is trucked to the site in one piece and mounted on columns embedded in point foundations. Except for the point foundations and utility core, the assembly is referred to as a dry-construction system. The fully insulated floor, roof, and wall panels are screwed or bolted into predrilled holes in the steel members of the chassis.

The prefabricated wall panels come in three different widths, based on a 2-foot module (see diagram, page 125). Similar to Resolution: 4 Architecture’s Modern module, one of the attractive features of Modulome is the ability to customize without corrupting the system. Modules can be added to or subtracted from the unit as needed, and there are at least three cladding systems available: wood, metal, and plastic. The chassis can be raised to 8 feet above grade to allow for covered parking, and extensions, similar to bay windows, can be added. The price range has not been calculated, however.

Tim Pyne has uncovered or invented another kind of niche market in the United Kingdom with m-house (pronounced “mouse”). The

Distinguishing the Prefab Synonyms

Prefabrication has come to describe any manufacturing process that takes place in a controlled environment, usually a factory. Its slang version—*prefab*—is currently in vogue, and while it is applied to many things, it differentiates none of them. • **Mobile homes** are generally manufactured and assembled in toto off-site and transported to either a permanent or temporary location and hooked up to existing utilities. There is minimal on-site labor. • **Conventional modular technology** consists of wood-framed sections typically 14 to 16 feet wide and 45 feet long. Eighty to 90 percent of the construction is done in a factory, limiting on-site work to the foundation, septic system, and some finishes. They are built to state and local codes and are not required to have a chassis. (Compare this with manufactured housing below.) Cost ranges from \$120 to \$150 per square foot (excluding land). • **Panelized or kit houses** were popularized by the Sears, Roebuck Company in 1908, when it began selling do-it-yourself house kits. Panelized factory-built walls are inserted into a modified post-and-beam structure by a builder on-site. The kits run about \$65 per square foot. • **Manufactured housing** refers specifically to certain factory-built housing, formerly known as mobile homes. The U.S. Department of Housing and Urban Development (HUD) regulates the manufacture of this type of housing. Units must have a permanent chassis to assure transportability. Since July 15, 1976, all individual sections must display a red shield, which certifies that the manufacturer met all HUD code.

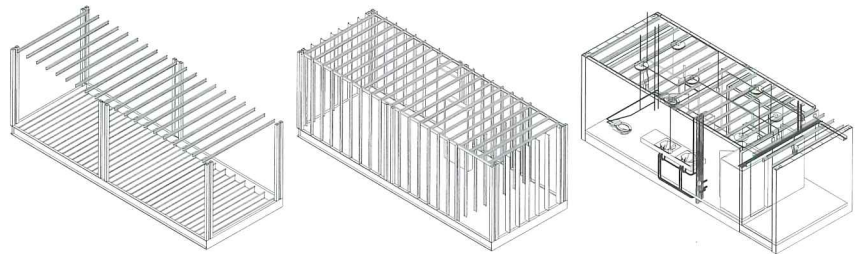
Sources: George Petrides; fabprefab; U.S. Department of Housing and Urban Development; Harvard University’s Joint Center for Housing Studies.



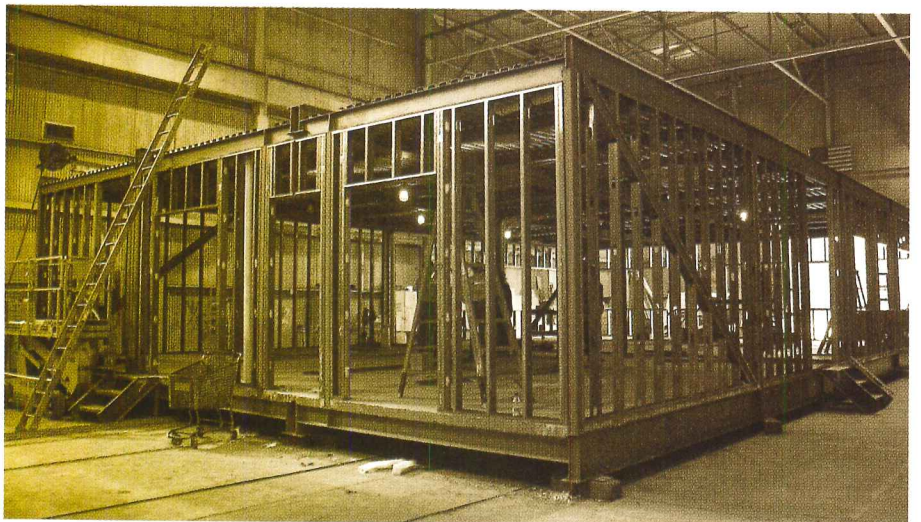
Upper Court, Pierson College, Yale University

These dormitory units were fabricated in a factory to save time and conserve limited on-site space. The module frames were designed to accommodate seismic load, not because New Haven is in an earthquake-vulnerable zone, but because the

units had to endure a 500-mile trip on flat-bed trucks and the stresses of being lifted by crane to 70 feet. The units were punch-listed at the factory, inspected, then shrink-wrapped. On-site, each frame is bolted to the adjacent one.



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m-house (www.m-house.org) is designed to qualify as what the British call a “caravan” and Americans call a “mobile home.” The design is rather sophisticated, but the main advantage is the same as in the traditional mobile home: a minimum of expensive on-site work. As with Resolution, Pyne has adopted standard manufacturing procedures for m-house. The units are built of plywood on timber studs in a factory. A home is made of two modules, each about 10 feet wide and 48 feet long, which conforms to most laws regarding transportation of wide loads on the highways.

The modules can be fitted together in a day and ready for immediate occupation. But unlike Resolution’s Modern Modular and Nottoscale’s Modulone, m-house is not as accepting of customization beyond exterior cladding and interior finishes. As with the familiar mobile home in the States, m-house needs no foundation, and it is deliverable in 12 weeks; it therefore makes it a good choice for temporary shelter.

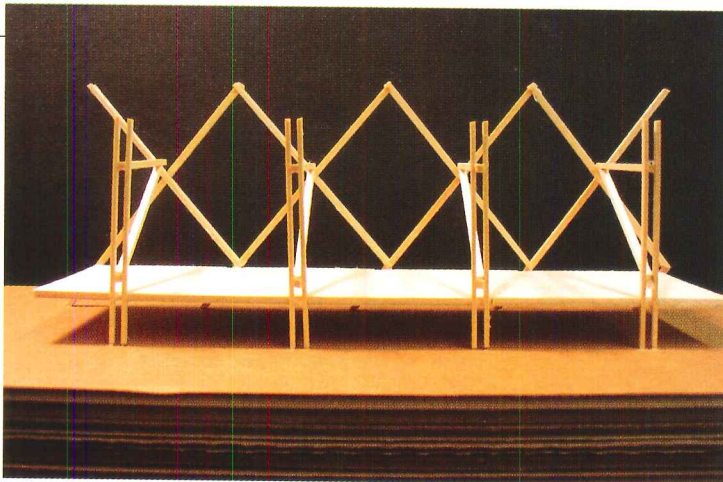
Pyne would like to break into the U.S. market, because it is considerably larger than in the U.K. “Seven percent of Americans live in mobile homes,” he says, which makes the American market very attractive to him. “We will have to meet all U.S. regulations, but, in fact, we do already.” Whereas Resolution: 4 houses and Modulomes are permanent, site-specific, expandable structures, the m-house could be described as a high-concept, well-tooled mobile home, but a mobile home nonetheless. Do upscale consumers really want that? At approximately \$246,000 for a fully fitted one and \$192,000 for a shell, it’s an

expensive accessory. The answer might not be so obvious. Last December, the *The New York Times* ran a small article about the m-house, and Pyne received 400 inquiries in 12 hours.

Size matters

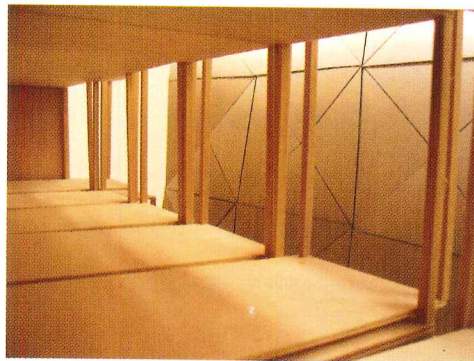
Prefabrication and modular construction are well suited to the residential scale, but things get complicated as scale increases. In their latest book, *Refabricating Architecture: How Manufacturing Methodologies Are Poised to Transform Building Construction* (McGraw-Hill, November 2003), Philadelphia architects Stephen Kieran and James Timberlake share their experiences applying the principles of component building to commercial projects and the challenges this brings. Mass customization is already the standard in industrial design, as evidenced by Dell computers, Nike shoes, and Swatch watches. Product choice secures an increased market share for a brand. Kieran and Timberlake have observed that by breaking products into small parts, companies can assemble these parts to meet consumer demand. They do this through supply-chain management, controlled with newly designed manufacturing software.

Commissioned by Yale University to add a dormitory to an existing complex of buildings, their firm, KieranTimberlake Associates (KTA), was immediately confronted with daunting logistical problems. The site was nearly inaccessible because it was located within a quadrangle of existing buildings. To make matters worse, what little space existed



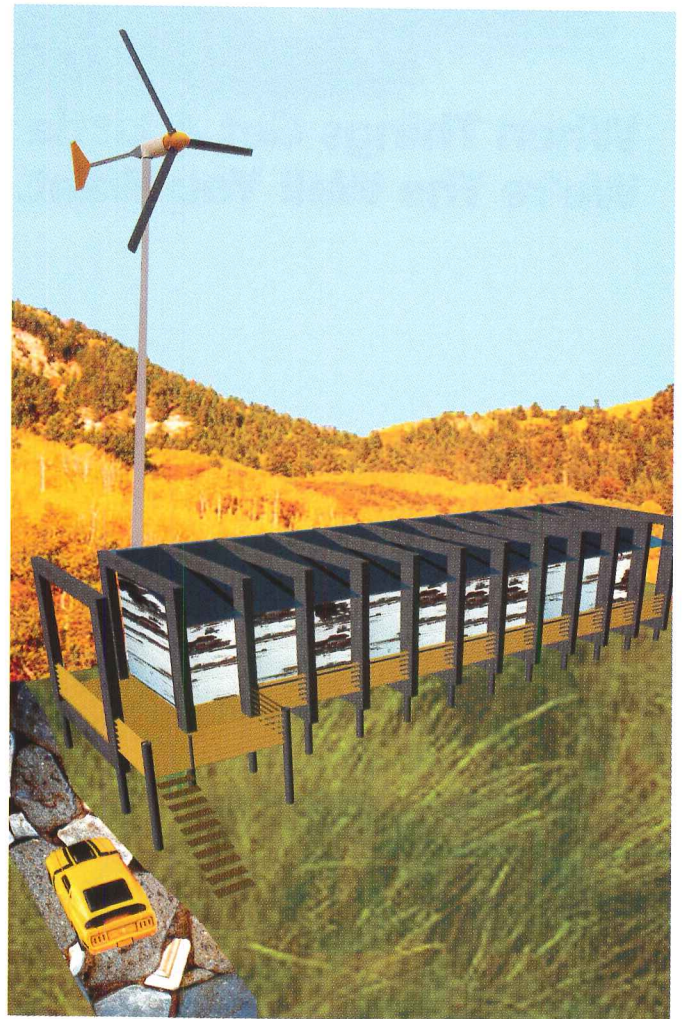
Option Studio, Yale University, Fall 2003

Students explored the various means and methods of off-site construction. Their worked drew heavily on weeks of research into existing and theoretical methods of prefabrication. Their goal was to design a flexible system for building off-site, not to construct a single object, as in the traditional studio. Emphasis



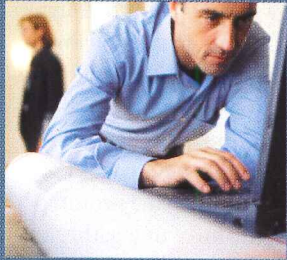
was placed on the creation of proposals that were realistic and informed. At the end of the semester, each student delivered a

book documenting the system and how it would work through a supply chain, production, delivery, assembly, and costs per unit.



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was already taken as a staging area for another renovation project. It quickly became clear that this project was the perfect candidate for off-site fabrication, if the building components could be customized to fit the site. Time was a factor, as well. If the dorm units were manufactured elsewhere, then they could be shipped to the site and craned into place over spring break, thus minimizing disruption of classes.

As logical as KTA's proposal sounded, the politics of convincing all interested (read: liable) parties to accept a prefab solution required a test of skill greater than solving the design problems. Many architects who have solved the technical problems of prefabrication have not yet been confronted with the political side effects of proposing the unfamiliar. In this case, the New Haven Building Trades Council, 20 people at the university, the construction manager, the modular assembly company, the fire marshal, and the building inspector all had to be convinced that modular prefabrication was the best and most cost-effective solution.

Proponents of prefabrication and factory-built components will also have to reconsider the contractual arrangements that are standard in on-site construction. The construction manager, for instance, is generally paid according to how much construction takes place on-site. In the case of Pierson, another fee arrangement was worked out, but Kieran and Timberlake believe that new paradigms will have to be invented if prefabrication is ever to gain widespread acceptance beyond the single-family dwelling.

Thinking ahead

Perhaps it's not yet a juggernaut that promises to revolutionize the build-

ing industry, but there's evidence in other places that this is a serious development in the construction industry and the architectural profession. Research into technological innovation and emerging design possibilities are cropping up in academia. This semester at Yale, one studio of graduate architecture students is engaged in just such an inquiry. Associate Dean Peggy Deamer has been surprised by the results of creating an atypical studio assignment. "The research has led students away from thinking of this primarily as an opportunity for a middle-income, single-family house type. On a trip to Sweden, we saw IKEA's prefabricated Bo Klok housing—a six-unit building, deployed in a six-building (36 unit) community," she recounts. "The experience led the students to rethink the typical program for a single-family house in the open landscape. The ambiguity of producing for a market that was not really in need of prefab but might choose it for its hipness seemed slightly troubling. So the students have concentrated on urban sites, communal structures, or a redesign of a lower-end manufactured house."

Admittedly, prefabrication is not yet a development threatening to revolutionize design and construction. There are problems to solve, but they no longer appear to be deal killers. A power struggle may ensue as architects seek more control over the means and methods of construction. There will be regulatory challenges, too, although HUD's standardization of manufactured housing (see sidebar, page 126), known unofficially as the HUD Code, may turn out to be the prototype for other kinds of building. More importantly, the force of a gathering storm of architectural talent and imagination does seem to have the makings of a movement. ■



AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION

INSTRUCTIONS

- ◆ Read the article "Prefabrication, the Speculative Builder's Tool, Has Been Discovered by Modernist Designers" using the learning objectives provided.
- ◆ Complete the questions below, then fill in your answers (page 209).
- ◆ Fill out and submit the AIA/CES education reporting form (page 209) or download the form at www.architecturalrecord.com to receive one AIA learning unit.

QUESTIONS

1. The unserved niche of the U.S. housing market is which?
 - a. Expensive Modern houses
 - b. Expensive custom houses
 - c. Affordable Modern houses
 - d. Affordable custom houses
2. The term to describe manufacture in a controlled environment is which?
 - a. Prefabrication
 - b. Custom
 - c. Stick-built
 - d. Manufactured
3. What percentage of custom homes have some prefabrication?
 - a. 10 percent
 - b. 20 percent
 - c. 35 percent
 - d. 50 percent
4. Architects design what percentage of single-family residences?
 - a. 2 percent
 - b. 4 percent
 - c. 8 percent
 - d. 10 percent
5. Which is not true about factory-built housing?
 - a. A controlled environment produces more consistent quality
 - b. Labor skills are more varied in a factory environment
 - c. There is a market for affordable Modern housing
 - d. Factory-built housing is not inferior to stick-built
6. Why are architects met with resistance when they approach builders?
 - a. They don't speak the same language
 - b. They are working inside the box
 - c. They don't understand the methodology of builders
 - d. Builders don't want to learn new concepts
7. Which is not a factor when lowering construction costs for prefabrication?
 - a. High-volume purchasing
 - b. Buying directly from manufacturers
 - c. Labor costs
 - d. Construction quality
8. In stick-built construction, labor cost can run as high as what percentage?
 - a. 80–90 percent
 - b. 60–70 percent
 - c. 40–50 percent
 - d. 20–30 percent
9. What percentage of Americans live in mobile homes?
 - a. 7 percent
 - b. 12 percent
 - c. 18 percent
 - d. 23 percent
10. The Modulome uses production principles from which industry?
 - a. Aeronautics
 - b. Electronics
 - c. Automotive
 - d. Nautical

Digital Practice

IN THIS SECTION: Research on digital fabrication [page 145]; a green residential tower has wireless Net power [page 146] • Magic carpet ride: Digital tools aid carpet and textile design [page 148] • Digital Architect: A visit with Masters Gentry Architects [page 153] • Digital products include management tools, online resources, and design software [page 155]. *Deborah Snoonian, P.E.*

BYTES

In New York, the [Skyscraper Museum](#) has created [Webwalk](#) ([www.skyscraper.org/webwalk](#)), an interactive tool for [exploring the history of high-rise construction](#) in Lower Manhattan. Visitors can tour an established route or chart their own course by choosing individual buildings and streets.

[Texas A&M University's](#) College of Architecture recently launched a 52-hour M.Arch. program in a Web-based, distance-learning format.

The [OpenDWG Alliance](#) has changed its name to the [Open Design Alliance](#). The change was made to accommodate the growing number of file formats supported by the Alliance, a nonprofit group that [promotes open file formats for exchange of CAD data](#).

T.A. Grimm & Associates completed a [study of seven 3D printers for rapid prototyping for time, cost, and quality factors](#). It's available for purchase at [www.tagrimm.com/benchmark](#). An executive summary is available online.

[Sharp Electronics](#) has released the Actius RD3D, a [laptop that displays 3D images](#) without the aid of 3D glasses or special software.

The [National Science Foundation](#) has begun a [new research program for earthquake engineering](#) that will emphasize computational measurements and [testing of digital rather than physical](#) building models.

The [first supercomputer network](#) made using [Macintosh](#) computers was launched at Virginia Tech this fall. The ["Big Mac"](#) was ranked the third-fastest machine in the world in late October.

Fall conference presents new case studies in digital collaboration

When architects gathered in San Francisco last October for Connecting the Dots, a three-day event aimed at practitioners and planned by the AIA's Technology in Architectural Practice (TAP) committee, the theme that emerged was one that's been pressed on the profession since CAD has come of age: Take Back the Process. But unlike in years past, case studies were presented that indicate it's now feasible for firms of all sizes to combine digital tools with new methods of collaborating with partners to make design more information-rich and less production oriented.

Tom Brady, AIA, gave a presentation about the ongoing construction of the Letterman Digital Arts Center in San Francisco,

a campus of several buildings designed with standard, off-the-shelf CAD software. The builders are using a digital 3D model instead of drawings as the basis of construction. "They are finding that the time invested in making the model has already paid for itself many times over, because they're able to detect conflicts you can't see in 2D drawings," says Jonathan Cohen, AIA, TAP's chair.

Also during the conference, representatives from two organizations, the Project Alliance in Australia and the Private Finance Initiative in England, were on hand to provide insight into ways to partner with contractors and other parties to reward risk and limit liability for the project team. Architects in

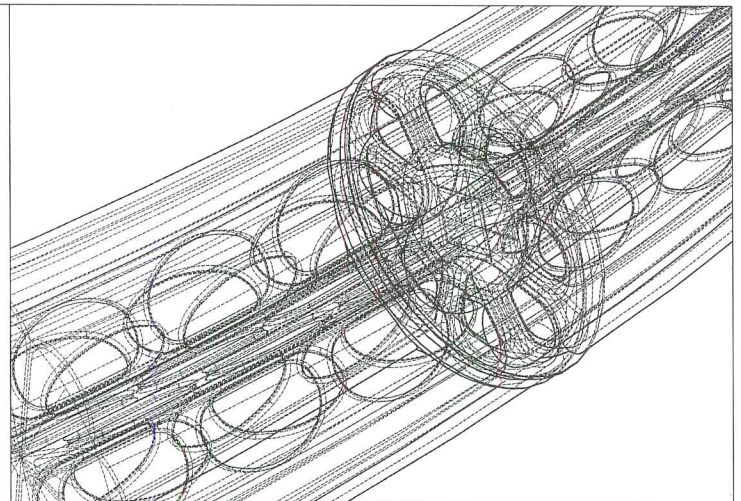
the U.S. could use such models as a basis for their own practices, said Cohen.

To bring the event full circle, representatives from leading software companies like Autodesk, Bentley Systems, and Graphisoft were assembled in a panel discussion, where attendees posed questions about how their tools were evolving to accommodate new ways of teaming with building partners. Cohen added that more than 250 people attended Connecting the Dots, and many of the attendees were firm principals, rather than IT managers, as they have been in the past—indicating increasing interest in and commitment to transforming architectural practice. *Deborah Snoonian, P.E.*

Nonprofiter seeks to help designers take on rapid prototyping

Dr. Kevin Rotheroe is not a traditional architect. Nor is his latest business venture a traditional one. Earlier this year, he formally established a nonprofit practice called the Freeform Research Studio, which he envisions building into a think tank for projects involving digital design, advanced manufacturing techniques, and mass customization.

Rotheroe, who has a Ph.D. from Harvard's GSD and teaches at the University of Illinois at Urbana-Champaign, is fluent in a number of rapid-prototyping methods for making models and mock-ups of building components. He's more interested, however, in emerging large-scale fabrication methods,



A wire-frame view of a study for a complex, tubular structural-steel member.

such as metal deposition used for making consumer products, that could form full-size components directly from computer models. "These technologies remove many of the formal constraints that exist-

ing manufacturing methods impose on designers," says Rotheroe, a sentiment echoed by many of his peers.

In the past, he has worked with architects and software mak-

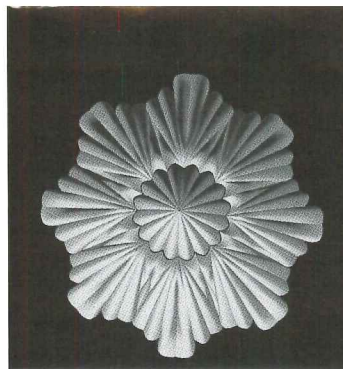
Digital Practice

ers, such as Lord Norman Foster and Bentley Systems, to modify their existing methods and tools to make them suitable for digital manufacturing. He wants to bring these groups together with researchers, educators, students, and manufacturers so they can advance the state of the practice—hence the formation of his studio, which will be funded through a combination of research grants and contracts with private organizations. He hopes it can provide technology transfer that's often missing in traditional

research programs for design and construction.

Organic architecture has been one of the harbingers of the digital age, and Rotheroe is likewise interested in looking to nature for inspiration for new forms, which he calls biomimetic design. It's not a new idea—Gaudí, among others, was doing this decades ago—but modern technology makes it easier and cheaper to model, analyze, and build such structures.

In a study Rotheroe conducted with the GSD, he designed



Rotheroe modeled this complex roof with Bentley's GenerativeComponents software.

and is seeking a patent for a complex system of metal tubular parts, similar to tree branches, that can be manufactured at full scale, shipped to a site, and assembled into a load-bearing building frame.

The interiors of the tubes are strengthened and stiffened by 3D lattices of metal. The tubes are made by casting them onto foam models cut with a CNC milling machine, but the latticework has to be made separately and installed later. A future, unknown manufacturing technique may rectify this inefficiency.

It's not just unique architecture that Rotheroe wants to enable through his research. "Nature uses materials very efficiently," he notes. The potential end result is buildings that are strong, use less material, and are cheaper to construct—powerful selling points for designs of any stripe. *Victoria Rivkin/D.S.*

Housing complex under construction in Manhattan boasts high-tech accoutrements

Affordable housing complexes aren't usually showcases for new building technologies, but 1400 on Fifth, a moderate-income condominium development under construction in New York City's Harlem, will be one of the city's most high-tech residences, boasting both an advanced internal IT system as well as several green-building features.

The building, which will be eight stories tall with 128 condominium units, will be equipped with its own Internet service provider via a 45-megabyte fiber-optic connection. It will also broadcast a special wireless "mesh" network throughout the immediate neighborhood, making an extremely high-speed broadband service available for a fee to local residents and merchants, with the funds going to the building's condominium association. Its Internet connection will be powerful enough to substitute for traditional telephone and cable TV services, says Carlton Brown, chief operating officer of Full Spectrum, the development company in charge of the project. "If someone in this building decided, 'I don't want to use Time Warner Cable, I don't want to use Verizon,'" he says, "they could get all of those [services] over the one cable we bring in." The service will provide residents with a host of capabilities such as video conferencing, Internet-based telephone service (voice-over IP), real-time video on demand, and a Web-based security system that allows residents to monitor common spaces in the building from their computer screens. He estimates these services will cost between \$7 and \$25 per month per unit, as the owners will buy broadband service at a bulk rate for the building's fiber-optic backbone.

The digital network at 1400 on Fifth was designed by HP under the company's i-building initiative, which has developed leading-edge technology for multitenant buildings such as hotels, apartment complexes, and college campuses. 1400 on Fifth is the most sophisticated project to date in this program.

The building was designed by Roberta Washington Architects and P.A. Collins Engineers to be 35 percent more energy-efficient than required by city codes, garnering it the 2003 Energy Project of the Year Award from the New York chapter of the Association of Energy Engineers. Many of the green features in the building are rarely used in New York City or in apartment buildings at all, says Fredric Goldner, president of the International Association of Energy Engineers. Among the development's most notewor-

thy features, he says, is a geothermal heating and cooling system that cycles water deep into the bedrock below Manhattan and through the building's HVAC system, eliminating the need for traditional gas heating or air-conditioning. Another is the steel superstructure with panelized walls and low-e windows that together are expected to reduce air infiltration by 85 percent compared to traditional block-and-brick construction. "Smart" electrical outlets will also help residents monitor their own energy use. "You can go to your computer and it can tell you how much electricity you are using, the rate you are using it at, and what the energy costs are per unit," Brown says.

The development cost about \$200 per square foot, which is on par with other affordable housing going up throughout New York. "The notion that we are exploring with this project," Brown says, "is that you can build green at about the same cost to build otherwise, if you are just a little bit more thoughtful about what you do."

As a small development company working in transitional neighborhoods, Brown says Full Spectrum has an extra incentive to develop high-tech buildings. "We're a newcomer, we don't have name recognition," he says. "So what we do is focus on what will make emerging markets stronger and make us grow stronger with them." *Alex Ulam*



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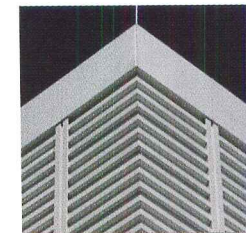
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DESIGNERS OF CARPET AND TEXTILES HAVE TURNED TO ADVANCED TOOLS AND METHODS

Jhane Barnes (right) has long been an advocate of digital design. Textile designs are nudged along, pixel by pixel, and then produced in various colors (opposite). One of her carpet patterns was designed for Collins + Aikman (below).



By Alan Joch

It's tempting to think of soft materials like carpets, textiles, and coverings as mere decorations or backdrops for the indoor spaces they occupy. But interior architects choose these materials with great care, knowing they convey as much of a design aesthetic as the layout and lines of the enclosing space itself. As they have done with building construction, innovations in digital design techniques and manufacturing methods have changed the way these products are made. The result is a win-win situation: A wider array of choices and easier ways to explore and create color and pattern combinations.

Designers within mills and independent textile artists alike are using a combination of technologies to make their ideas into reality. The

Alan Joch is a technology and business writer based in New England and a frequent contributor to RECORD. Contact him at ajoch@monad.net.



tools they use include design software, scanners, and image editing applications like Photoshop. Better simulation and communications software also mean that clients can initially review designs from afar via digital images or paper printouts, rather than costly swatches. Come production time, new types of machines translate design instructions from computer files directly into fabrics and materials, significantly speeding up turnaround times.

This revolution, which has been building quietly for several years, has come about purely on market forces. The highly competitive carpet and textiles industries pressure mills to develop new designs, colors, and textures for a demanding clientele. For mass-produced products, software companies have sprung up with off-the-shelf tools geared toward textile designers. Booria CAD/CAM, with offices in India and Iran, makes a number of packages specific to the carpet industry. They also supply carpet mills with new automation processes for weaving and dye application that are compatible with the software tools they make. Apso Digital Software Solutions, based in India, makes design tools for textiles and fabrics.

Technology also enables individuals working on smaller-scale projects to create and perfect their own design niches. Here, two designers—one well-established, one whose practice is growing quickly—share their experiences with digital tools for their work.

Machines that can think

Ten years ago, Jhane Barnes, a textile designer, met Bill Jones, a mathematician at Syracuse University, at a textiles convention. Jones was exhibiting software he had developed that created patterns using mathematical algorithms. Barnes was intrigued. “He was sitting in a booth, and all these patterns were flashing across a computer screen,” she recalls. She purchased a copy of the program and soon found it produced designs different than any she had previously seen. Eventually, she hired Jones and a colleague as full-time software designers who constantly refine the tools she uses. Today, Barnes is a highly successful textile designer who has established a reputation for visually complex, compelling patterns. She has worked with many leading carpet and textile manufacturers, and estimates her studio spends more than \$100,000 a year for software development, tools that she keeps in-house.

Barnes uses the computer as a kind of electronic sketch pad. She may start, for instance, by instructing the software to draw diagonal lines at certain angles and thicknesses, and in various colors. The arrangements



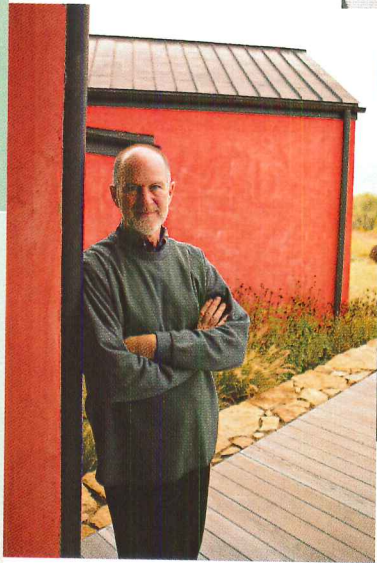
may be entirely new, but often they're saved versions of patterns from former projects, which she calls “generators.” The generators operate as an expert system, combining her live input with subject-specific rules programmed into the software. “For example, if I wanted to draw diagonal lines at a certain angle, I'd type in the angle and tell the software how thick I wanted the lines to be,” she explains. “Thicknesses can be a range, from, say, two pixels to seven pixels. Then I choose the spacing of lines and the colors. Every time I hit ‘play,’ I get a new design based on those rules.” For additional effects, Barnes may layer multiple generators on top of each other. She can save iterations she likes and record her progress along the way, making it easy to create related yet slightly different patterns. Barnes also tailors her designs with “modifiers,” filters she's created that can skew lines into wave patterns or alter the initial design in some other way. At times, she already has a pattern formed in her mind's eye, and her task is to instruct the software to produce it. If the right generator to produce it doesn't exist in her library, Barnes can connect to Jones's computer in upstate New York so they can work together on the solution.

Even when the patterns the software generates aren't what she pictured, she considers this a welcome outcome. “[The design] may be neat, anyway. I'll use it someday for something.”

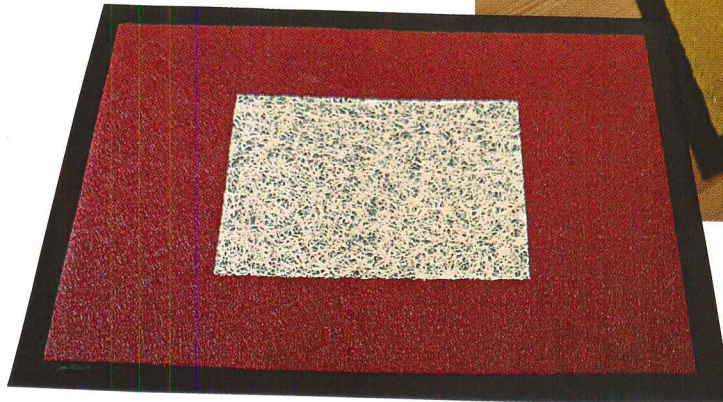
Being a doormat can be a good thing

Jason Pollen stumbled into his new design process by accident. Two years ago, Pollen, the creator of fine-art textiles and chairman of the fiber department at the Kansas City Art Institute, organized a class trip to a local manufacturer of floor coverings to show his students how the company turned cotton into commercial products. During the tour, Pollen chanced upon the company's 7-foot-wide, 40-foot-long industrial inkjet printing machine, which sprayed nylon-pile floor mats with permanent acid dyes—the same type of dye Pollen used in his work.

The digitally controlled machine sported nozzles for 12 different colors and was capable of reproducing corporate logos and other complex design elements. Pollen's fascination with the process was immediate. He began to picture possibilities for his own work. After convincing the company president to indulge his curiosity, “I spent a year hanging out at the



Jason Pollen (above) designs mats that are made with a digitally controlled printing process he discovered while touring a plant with his students. Architects and interior designers are beginning to use the mats in modern spaces; their durability and ease of maintenance are major selling points.



plant and playing with new designs," he says.

Unlike Barnes, Pollen doesn't use custom-built software to automatically generate design options. Instead, he relies on combinations of off-the-shelf software like Photoshop, scanners, and digital control equipment that guides the inkjet printer he uses. Many of his early ideas came from physical objects he encounters in the natural world. In one case, he created a design for a floor mat called Taormina, named after the Italian

ARTISANS ARE TAKING ADVANTAGE OF SPECIALIZED SOFTWARE AND UNIQUE COMBINATIONS OF READY-MADE TOOLS.

seaside city, where he once found shards of glazed tile washed up on the beach. He scanned the multicolored shards into an image, edited the image in Photoshop, and ultimately developed three different variations on a basic pattern. Lately, Pollen is using a similar design process to produce a second line of mats made of a material he calls Pollenium, the rubber-mat backing with colored vinyl threads that are melted into it during the manufacturing process. The result is "a very elegant, hybrid

product" without the nap of his original line, he says.

His floor mats have been springing up at museum gift shops and on the floors of contemporary interiors across the country. Pollen says he's receiving particular interest from architects and interior designers who do "very contemporary designs, people who want to make a new statement." Cary Goodman, FAIA, with the architectural firm Gould Evans Goodman Associates in Kansas City, says Pollen's creations are as appealing for stone entryways as fine oriental carpets are for wood floors. "You just want to have the mats on your floor because they're so beautiful," he says.

Machine intelligence can't replace know-how

Technology can't increase a designer's talent. Nor will digitally delivered designs replace the importance of feeling and touching a carpet or textile sample before putting it into large-scale production. Yet these case studies demonstrate the potential for technology to enable designers to be more productive and more exploratory in their everyday work. The end results—more choices, faster time to market—are welcome by-products of this evolution. ■

Interview: A visit with Masters Gentry Architects

By Deborah Snoonian, P.E.

Mark A. Masters, AIA, and Kevin M. Gentry, AIA, both hail from Asheville, North Carolina. They met at the University of Tennessee. After school, Masters returned to Asheville to practice while Gentry worked for several firms in Atlanta, Indianapolis, and Washington, D.C. In 1998, Gentry returned to Asheville and teamed up with his former classmate to found Masters Gentry Architects (MGA). At MGA and other firms, the two have designed a range of projects, from commercial buildings, medical facilities, and public schools to churches and residences.

ARCHITECTURAL RECORD: You are a small firm practicing in a smallish city, and most of your work is local. Is there a difference in your clientele here versus other places you've worked, with respect to technology skill and implementation?

KEVIN GENTRY: The level of knowledge and expectations about technology has been rising steadily among all our clients. Internally, because we're a small firm, we don't have much of a need to e-mail each other for day-to-day communications. But we find ourselves expected to use electronic communications for change orders, requests, clarifications, things like that. But I find a lot of the project-management technology isn't scaled for the size practice we have. For us, a \$5 million job would



In Rezaz Restaurant (from left): Kevin M. Gentry, AIA; Mark A. Masters, AIA; Yumiko F. Virant; and Mayumi Steins.

be huge, but for larger firms those commissions are typical.

AR: You have taught classes in SketchUp. Why are you such a fan of that software?

KG: I've been using SketchUp for two years now, and I use it on 99 percent of projects I do. I really believe it will do for 3D work what AutoCAD did for 2D work. In minutes to hours, I can design a project and walk a client completely through the

building. Even our office manager can rotate models and write a PR piece based on it, because it's so simple to use. It requires almost no knowledge of other CAD programs to get into it.

AR: But you still rely on 2D drawings for documentation, right?

KG: Yes, because that's standard practice. But personally I think there's no need anymore for many of the 2D drawings architects have always produced. Elevations, for instance. If I draw a model in 3D, and it's detailed and accurate, then why do I have to go back and redraw it in 2D? Most people don't even really understand 2D drawings, unless you're in the industry.

My point is that elevations are a way to communicate 3D design information, and we've been doing them for years and years because there was no better way to get that information across. Now even small firms can design in 3D well. That's not to say we shouldn't do foundation or wall details in 2D—those are important, and it's just as fast to draw such things in 2D or 3D. But elevations are outmoded in my

opinion. The last five projects I've presented to clients, they've had no elevations whatsoever—I showed clients 3D views, and I got no questions from them; they understood the project very well.

AR: What kinds of software or hardware, either existing or imagined, would you love to try?

KG: I believe that architects will take plasma-screen technology and go back to the drafting table with it. Between CAD, applications like Photoshop, and others that we use, it'd be really useful to have big screens, say 30 inches by 40 inches, mounted on table legs like drafting boards. Every architect I know hates using even a 20-inch screen. We want to be able to draw on something big, a large surface, using a single input device, like a pen or a touch pad. There's been so much effort put into panning and zooming technology for all kinds of software, and who needs it? We're still drawing on less than 25 percent of the area we usually print on. If somebody's out there listening, I hope they take that to heart. I wish I had the money to do it myself. ■

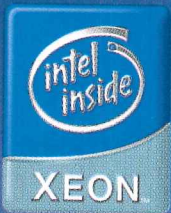


A SketchUp model of a new entry for a lab and classroom addition at Wilkes Community College in West Jefferson, North Carolina.

An ADT rendering of Rezaz Restaurant in Biltmore Village, North Carolina, an adaptive reuse of an old hardware store.



MGA worked on a renovation and addition to the Jowers residence in Asheville, including a new kitchen. The original structure dates to 1925.



We can make cars go faster
before you even dream them up.

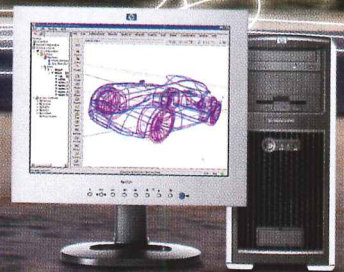
With so many parts, calculations and components—it's a wonder today's car designs even fit on a single computer. So HP engineers soup up performance with Intel® Xeon™ processors—and rigorously test their workstation designs before they're trusted to your design departments. With thousands of regression tests performed to diagnose and repair glitches between software and hardware before your designers put pen to paper (figuratively, of course)—things won't get messy until you start making clay models. Get more productive. Get HP workstations with Intel® processors.

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Tools for managing, learning, designing

By Deborah Snoonian, P.E.

ArchiOffice

OrangeLoft
www.orangeloft.com
(for Windows and Macintosh)

This software was designed by practicing architects to meet the management needs of small firms. It's a database that allows users to enter and manage information such as contacts, time and expenses, projects, billing, and schedules. Information can be entered just once and then linked to other information—for instance, a company listed in the contacts database can be called up and associated with relevant project documents, invoices, billed hours, and so forth. The system comes with several pre-formatted templates for common reports such as invoices and address books, or users can search and filter the data they enter to create custom reports. The contacts database and calendar features can be synched with all the popular handheld organizers. If installed on a network, an administrator can allow team members to have different security settings and access depending on their roles.

AEPlans

AEPlans
www.aeplans.com
(for Windows only)

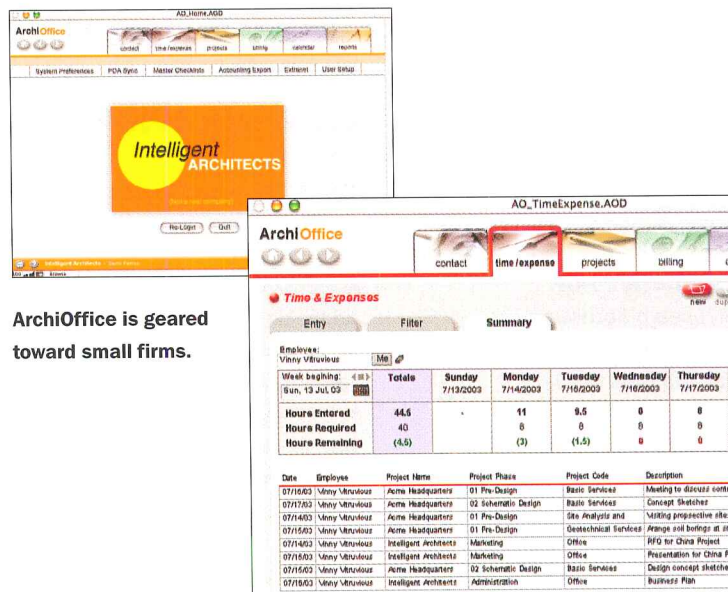
The Air Force and the U.S. Army Corps of Engineers are among the 30,000 users of this online clearinghouse for plans and specifications. A public area of the site showing basic information on project bids is available to all registrants free of charge, while private areas containing more information are password-protected and available

via subscription. Creators of project documents can organize and upload their files (CAD drawings, bids, specifications) to the Web site, with others viewing, downloading, and marking up the files as needed. Developed by software maker MaxView Corporation of Seattle, the tool is marketed and distributed through AIA Louisiana, which contributed to its development. It follows an innovative business model: A portion of the proceeds from the software's purchase goes to the local AIA chapter with whom the buyer is affiliated, so that the local community sees some profit from the product.

Contract Documents

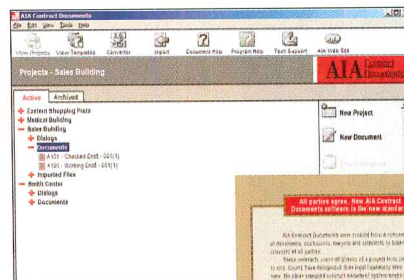
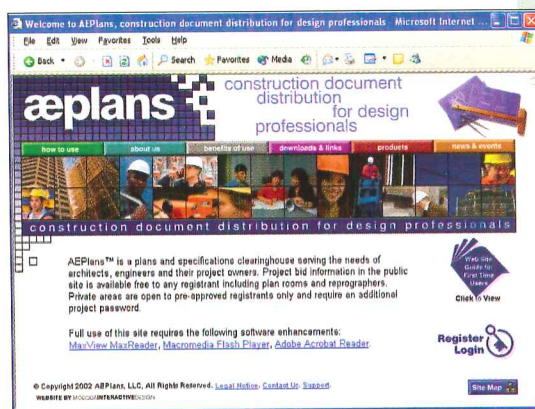
American Institute of Architects
www.aia.org/documents/
(for Windows only)

A new interface, navigation, and data-entry process are the important features for this overhaul of the AIA's popular tool. The Contract Documents software now has a formlike entry process, à la Turbo Tax, with prompts, auto-complete functions, and other enhancements that make it less error-prone and faster at tailoring the standard documentation with data specific to a project, firm, or client. Information has to be entered only once—then it's filled in automatically within each document needed, and stored for use on future contracts. The system now uses Microsoft Word as its editing platform. Users can also make PDFs of contracts to prevent further revisions. Icons guide users through the interface, and a handy "additions and deletions" report shows readers any changes made to the standard AIA language.

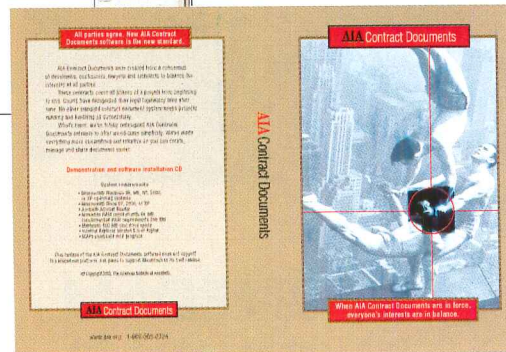


ArchiOffice is geared toward small firms.

AIA Louisiana assists in the distribution for AEPlans.



The new Contract Documents software is form- and field-driven.



Digital Products

3ds max 6

discreet (an Autodesk company)
www.discreet.com
 (for Windows only)

The newest release of this high-end visualization software offers an integrated ray-tracing rendering tool, a new event-driven particle system, and improved compatibility with Autodesk design software, including an integrated workflow with VIZ to share VIZ Render.

Pushbutton PDF

Bluebeam Software
www.bluebeam.com
 (for Windows only)

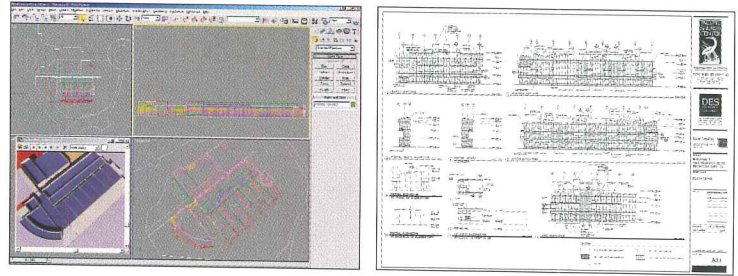
This plug-in for AutoCAD allows users to save their design drawings as PDF files. The tool appears as a button on an AutoCAD toolbar, so that creation is as simple as a single mouse click. The plug-in also offers

batch processing of PDFs from large drawing sets; hyperlinking PDFs to other documents such as schedules, RFIs, and Web sites; and the Bluebeam PDF Printer driver, which lets users create PDFs from files native to any Windows application, like Word and Excel.

Building Systems 2004

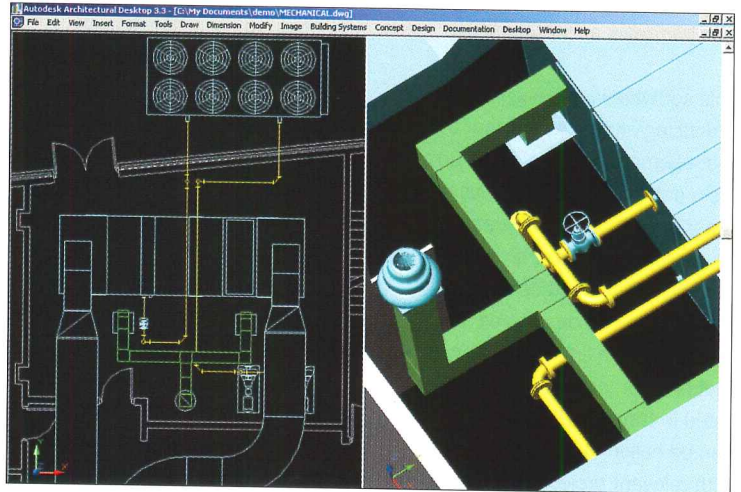
Autodesk
www.autodesk.com
 (for Windows only)

Autodesk created this package to aid the design of complex MEP and fire-protection systems. Its tools help engineers route ducts and pipes; they suggest layouts; and they generate 3D views. Design is also automated via incorporation of manufacturer catalogs of standard and customizable parts. Many other productivity features and tools are incorporated.



3ds max 6 lets users work in many views at the same time (left). Designers can save AutoCAD files in PDF form using the Pushbutton PDF plug-in (right).

Building Systems 2004 automates the design of MEP systems (below).



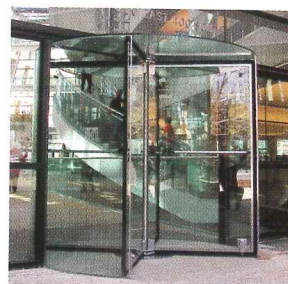
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Rainstore3 is an underground detention retention, or water harvesting system you store stormwater under parking lots or landscaping. It has a modular structure v cell depths from 4" to 8.2" in 4" increments. Rainstore3 is made from approximately post-industrial recycled HDPE.

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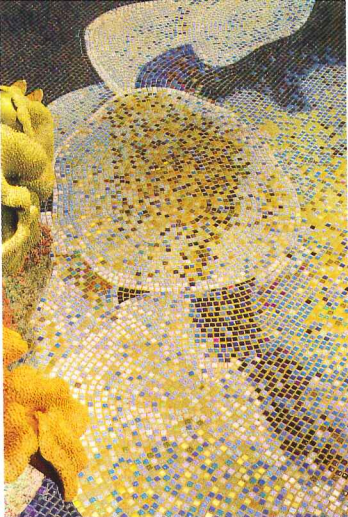
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The BuildingGreen Suite online service (above) cross-references product information, case studies, and articles about sustainable building practices.



Architectural Imagery software turns an image into a mapping of mosaic tiles that are made by Bisazza, the Italian glass company (above).

BuildingGreen Suite
BuildingGreen
www.buildinggreen.com
(for Windows and Macintosh)

Publisher of the GreenSpec Product Directory and Environmental Building News (EBN), BuildingGreen has retooled its electronic resources to make them more comprehensive and user-friendly. Its new Web-based subscription service includes access to the GreenSpec Product Directory, current and all past issues of EBN (more than 12 years' worth), and a database of more than 60 case studies. Even better, all the material is cross-referenced, so that users can, for example, see if a product in GreenSpec has been mentioned in an EBN article. Users can navigate the site and search for content by CSI section, LEED credit, topic, location, and other criteria. The tool is aimed at mainstream

architects who are seeking to become fluent in green building principles.

Architectural Imagery
Bisazza
www.bisazza.com
(for Windows only)

Bisazza, an Italian glass-mosaic company, has developed specialized software that allows designers to transform any type of image into mosaic format. The software takes a digitized image and "pixelates" it into a mapping of mosaic tiles with specific sizes and a color mapping, according to the dimensions specified by the designers. Then Bisazza custom-produces the tiles to order. Recent installations include murals at Detroit's Metro Wayne County Airport (pictured at left), where more than 800,000 tiles were used for a large mural. ■

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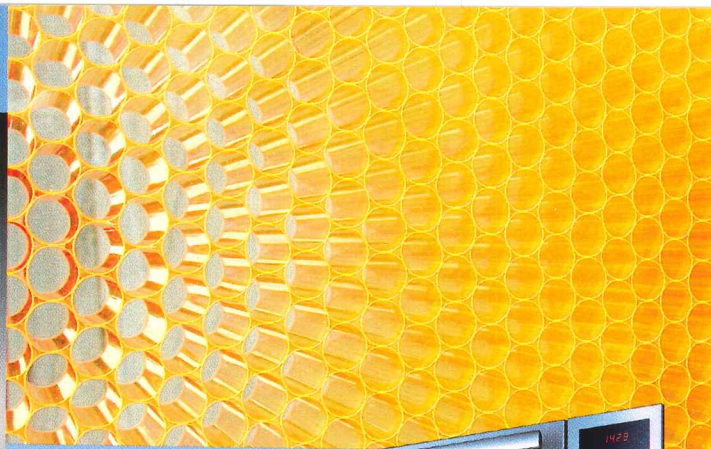
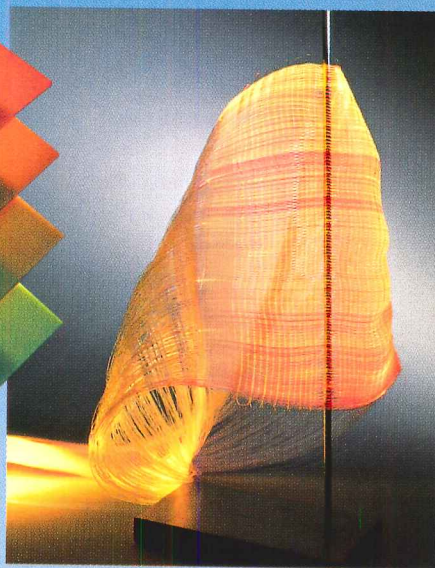
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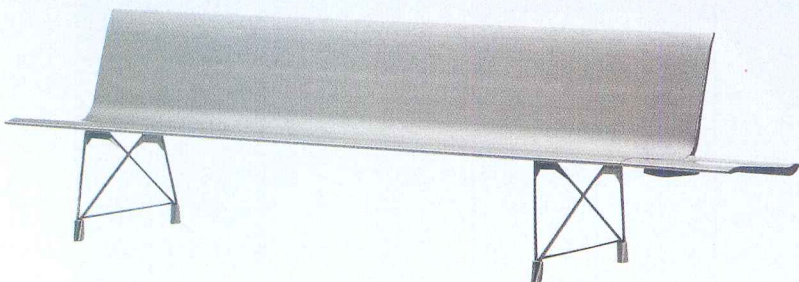
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Product Reports



You may have noticed that the magazine's product coverage has increased incrementally over the past few years. In addition to our quarterly lighting, digital, residential, and interior product sections, this year we've covered new products in several supplements to the magazine, as well, including our recent Innovation supplement. Our readers, who don't have the time or resources to attend every trade show or product launch, rely on *RECORD* to present the latest, most innovative offerings available from today's building product manufacturers.

Our annual Product Reports is a culmination of that dedication—each September, *RECORD* assembles a jury of product experts (this year focusing on New York firms) to review the hundreds of submissions sent in for product categories ranging from software to sofas. As an important enhancement this year, we have included the year's Top 10 Green Products, selected by the recognized green product experts who edit the GreenSpec Product Directory and Environmental Building News. To add special expertise to the digital-products judging this year, editor Deborah Snoonian, P.E., organized a jury including Paul Seletsky, Assoc. AIA, director of IT for Davis Brody Bond; James Brogan AIA, director of IT for Kohn Pedersen Fox Associates; and Michael Horta, principal of Consultants for Architects.

Before reviewing the submissions, the jury was instructed



2003

to focus on products that stood out from the competition because they solved a problem in a unique way or were smart ideas that also offered good scale, balance, or aesthetics. In the end, our jury selected more than 100 new products to include in this year's Product Reports. The jury told us that they were eager to see more tile and fabric samples accompanying submissions in those categories, and that they are hungry for innovative green products, better-designed door options, mold- and mildew-control products (noted by one juror as "the scourge of the moment"), energy-efficient mechanical systems, and security-product offerings for projects they are working on in the new year.

While we encourage more manufacturers to share their new products with us during the year, we also suggest that our readers be a part of the process. Just a short note brought to my attention is all it takes to put your favorite products on our radar, and perhaps on these pages in the future. —Rita F. Catinella

| | |
|-------------------------------------|---|
| 160 Editors Picks | 185 Finishes |
| 163 Top 10 Green Products | 189 Specialties & Equipment |
| 167 Digital Products | 192 Furnishings |
| 171 Sitework | 195 Special Construction & Conveying Systems |
| 173 Concrete & Masonry | 197 Mechanical |
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| 181 Doors & Windows | |

Our 2003 Product Reports Jury

Joan Blumenfeld, AIA (seated, left), is a principal at Swanke Hayden Connell Architects, where she specializes in large-scale architecture, renovation, and interiors projects. Her recent work includes the interiors for Reuters' headquarters in Times Square and Sotheby's headquarters, both in New York City. She holds an M.Arch. with Distinction from Harvard's GSD.

James G. Howie, AIA (left, back row), is a senior associate at Perkins Eastman Architects, where he is responsible for facility development and enhancement for nonprofit clients. Howie has a B.Arch. from the University of Detroit and is a visiting professor at New York's Pratt Institute, where he teaches the senior thesis and the fundamental materials and technology courses.

Margaret Castillo, AIA (center, back row), is a principal at Helpert Architects, where she has designed office and conference interiors for Carnegie Hall, Yale University, and the Marble Collegiate Church in New York City. Her work includes new facilities and renovation, as well as the restoration/conversion of landmarked homes for corporate use. She was trained at Harvard's GSD after undergraduate work at Boston College.

Samuel M. Anderson (right, back row) is a partner at Alspector Anderson Architects. His recent project work includes conservation facilities for Harvard University, and for the Museum of Modern Art and Pierpont Morgan Library in New York City. Anderson is a visiting professor at Cooper Union in New York, where he received his B. Arch. in 1982.

JoAnne Lindsley, FIALD, FIESNA, LC (seated, right), is principal of the lighting design firm Lindsley Consultants and director of the M.F.A. Lighting Design Department at Parsons School of Design in New York City. A past president of the International Association of Lighting Designers, her projects include the San Francisco Performing Arts Center with Polshek Partners.

Michael J. Fahy, AIA (standing, far right), is a principal of Facilities Planning Collaborative. With more than 25 years of experience in corporate, commercial, and financial design, Fahy's major clients include Bankers Trust Company, Merrill Lynch, and Citibank. Fahy earned a B.Arch. with honors from New York Institute of Technology, Old Westbury.





Editors' Picks

Thirteen standout products that made an impression on us this year



Gemstone architectural blocks, Clayton Block Company. Concrete & Masonry, page 173.

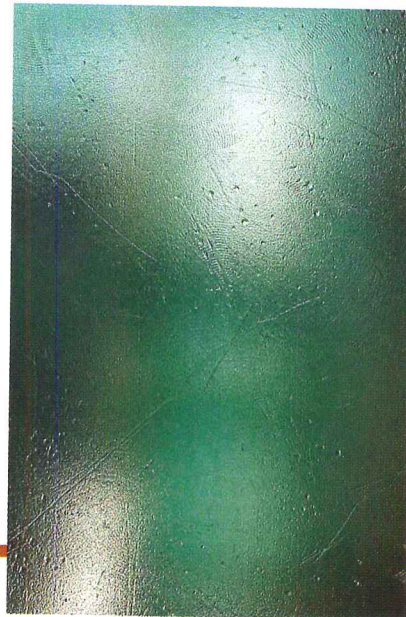
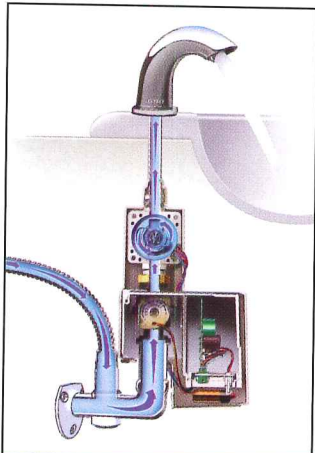


Rope outdoor furniture collection designed by Paola Lenti, Modern Living. Furnishings, page 193.



Quiet Technology sound masking, Herman Miller. Furnishings, page 193.

EcoPower self-generating hydropower faucet, Toto USA. Top 10 Green Products, page 163.



Berman Glass Editions, Joel Berman Glass Studios. Doors & Windows, page 181.



Flux systems program broadloom carpet collection designed by lauckgroup, Shaw Contract. Finishes, page 185.

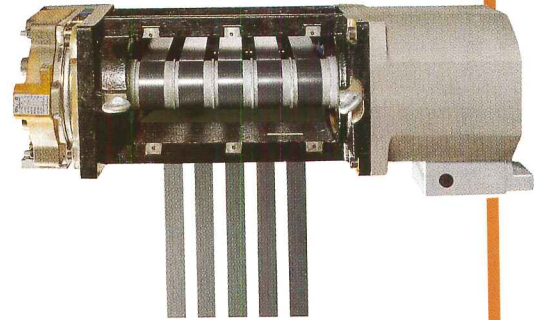
Most of the offerings below go a step beyond what is expected of typical products in their category, such as an automatic faucet that generates its own energy or a cooktop that knows when the chef is done cooking. Others can be considered to be in categories of their own, such as structural-glass cylinders that replace steel or concrete weight-bearing elements in building construction or a cable- and machine-room-free elevator. We hope you find these products as useful and exciting as we have. —Rita F. Catinella



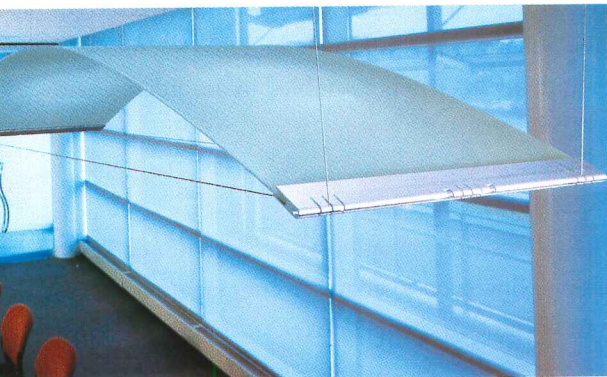
Environmental Impact Collection of seating and panel fabrics, Steelcase. Furnishings, page 192.



Profi-Cook Center, Küppersbusch USA. Specialties & Equipment, page 189.



Gen2 elevator, Otis Elevator Company. Special Construction & Conveying Systems, page 195.



Infusions accent canopy ceilings, Armstrong ceiling systems. Finishes, page 185.



Laminated structural-glass cylinders, Schott Corporation. Doors & Windows, page 181.

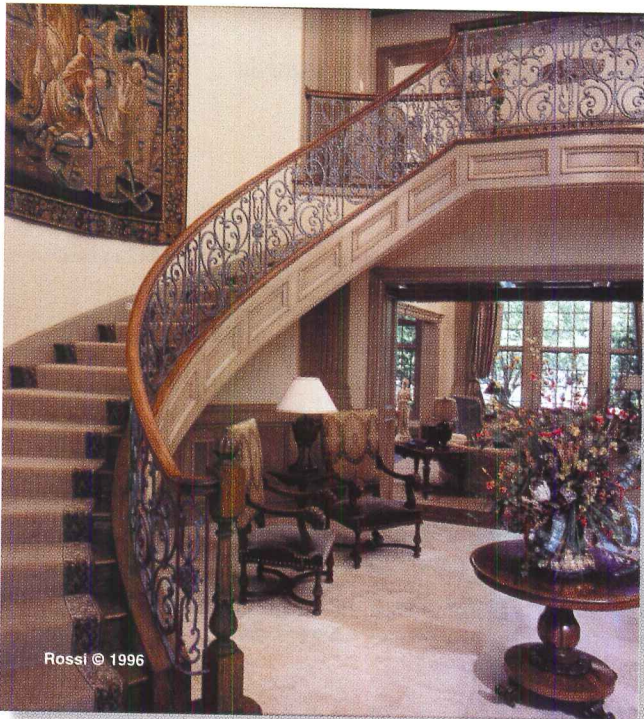


Weather Shield's multipanel telescoping sliding glass door can open to 19 feet wide. [See RECORD, October 2003, page 197.]



Pure Crush recycled glass and resin sheets, 3Form. Metals, Woods & Plastics, page 175.

Regency Railings



Rossi © 1996



Bordeaux © 1996

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Top 10 Green Products

Second annual award showcases the year's most exciting green product innovations

BuildingGreen, publishers of the GreenSpec Product Directory and Environmental Building News, announced this year's top 10 green building products at the U.S. Green Building Council's GreenBuild Conference, held last month in Pittsburgh. This second annual award recognizes outstanding products added to the GreenSpec directory during the past year. "Designers of LEED buildings are looking for green products, and manufacturers are responding," notes Greenspec coeditor Alex Wilson (right). "This trend shows no evidence of slowing." For more info on these products, check out www.BuildingGreen.com —Rita F. Catinella



For more information, circle item numbers on Reader Service Card or go to www.archrecord.com, under Resources, then Reader Service.



The Mirra mid-priced ergonomic office chair has a minimum number of components, most of which are designed for recycling and made from relatively benign materials, including polypropylene and nylon-6. Herman Miller, Zeeland, Mich. www.hermanmiller.com CIRCLE 200



BioBase 501 is a low-density, open-cell-polyurethane, spray-foam insulation derived in part from soybean oil. Bio-Based Systems, Spring Valley, Ill. www.biobased.net CIRCLE 201

EnviroGT wall and corner guards are made from 100 percent recycled high-density polyethylene and FSC-certified ash. InPro, Muskego, Wis. www.inprocorp.com CIRCLE 202



EcoPower is the first self-generating-hydropower sensor faucet that harnesses the electrical power generated by its own water flow. Each time water flows over an internal turbine, a rechargeable battery is reenergized. Toto USA, Morrow, Ga. www.totousa.com CIRCLE 203



Top 10 Green Products



EnvironOxide is an iron-oxide pigment recovered from abandoned coal mine drainage. Hoover Color, Hiwassee, Va. www.hoovercolor.com CIRCLE 204



Case Systems has switched to a straw-based particleboard (the WoodStalk product featured on page 186) for its entire line of technology casework products. Case Systems, Midland, Mich. www.casesystems.com CIRCLE 205

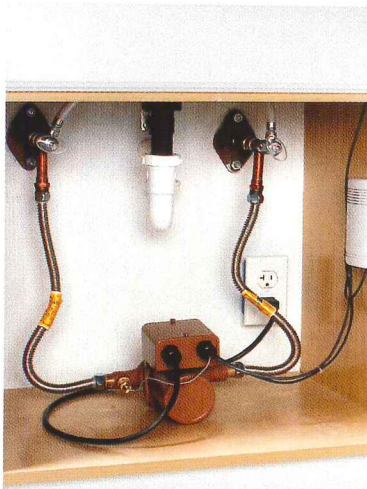


Mineral silicate paints offer low odor, natural ingredients, and low maintenance. Cohalan, Lewes, Del. www.keimmineral-systems.com CIRCLE 206

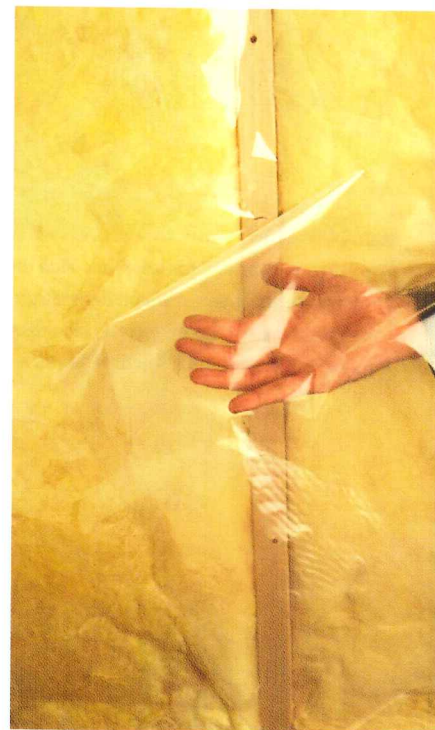
The MemBrain vapor retarder is made from a transparent polyamide (nylon-6) film that changes permeability according to relative humidity. CertainTeed, Valley Forge, Pa. www.certainteed.com CIRCLE 207



The second paint to be certified by Green Seal, American Pride latex paint utilizes acrylated castor oil as the building block and contains no VOCs. Southern Diversified Products, Hattiesburg, Miss. www.southerndiversifiedproducts.com CIRCLE 209



The D'MAND pumping system delivers hot water quickly and returns unused hot water to the tank. Taco, Cranston, R.I. www.taco-hvac.com CIRCLE 208



Digital Products

CAD • Hardware • Visualization software • Printers • Web-based tools • Portable devices • Productivity tools • Online services

This year, there were excellent upgrades of many types of 3D design software, as well as an affordable 3D printer for rapid prototyping. —DEBORAH SNOONIAN, P.E.



Model performance

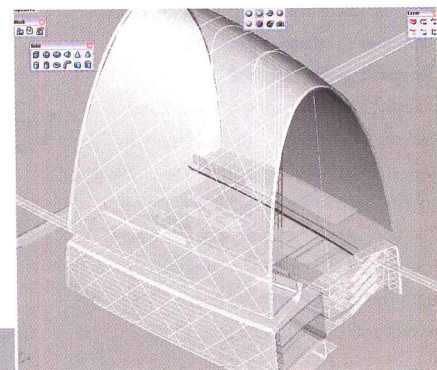
ArchiCAD 8.0 takes building information modeling to the next plateau. Designers make models—really databases of information—from virtual 3D objects such as slabs, doors, and stairs. Drawings are then generated automatically from the model and updated in real time as changes are made. The software also produces other design information such as construction details and bills of material. Graphisoft, Burlington, Mass. www.graphisoft.com **CIRCLE 210**



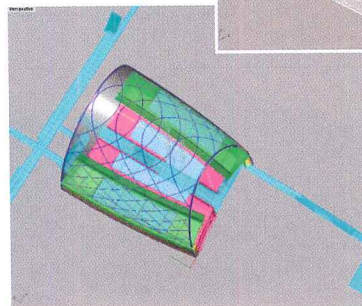
210

Making waves

Rhino was one of the first programs to handle NURBS curves, polygon meshes, and point clouds. Designers like its robust tools and low price compared to other 3D packages. The newest version includes dockable dialog boxes and auto-completion of commands. Its programming has been overhauled to make plug-ins easier to develop. Robert McNeel & Associates, Seattle. www.rhino3d.com **CIRCLE 211**



211



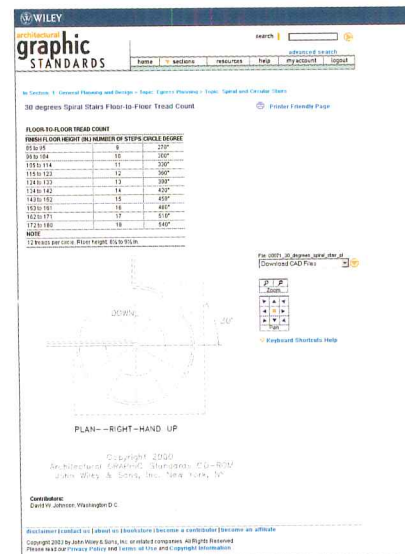
212

3D printing for less

A rapid-prototyping machine that costs under \$1,000 has grabbed the attention of the design community. The ZPrinter 310 creates physical models directly from digital data in hours instead of days. Models as large as about 8 inches in each direction can be built by this machine. Z Corporation, Burlington, Mass. www.zcorp.com **CIRCLE 212**

Standards in online format

Since 1932, *Architectural Graphic Standards* (AGS) has provided valuable design data and construction details for the building industry, and now you can find it online. The site is indexed, searchable, and updated regularly. Philip C. Johnson, FAIA, calls AGS “one of the most unifying and focused reference works available in the world.” John Wiley & Sons, Hoboken, N.J. graphicstandards.wiley.com/gs/home **CIRCLE 213**



213

Digital Products

CAD • Hardware • Visualization software • Printers • Web-based tools • Portable devices • Productivity tools • Collaboration services

Phone and PDA

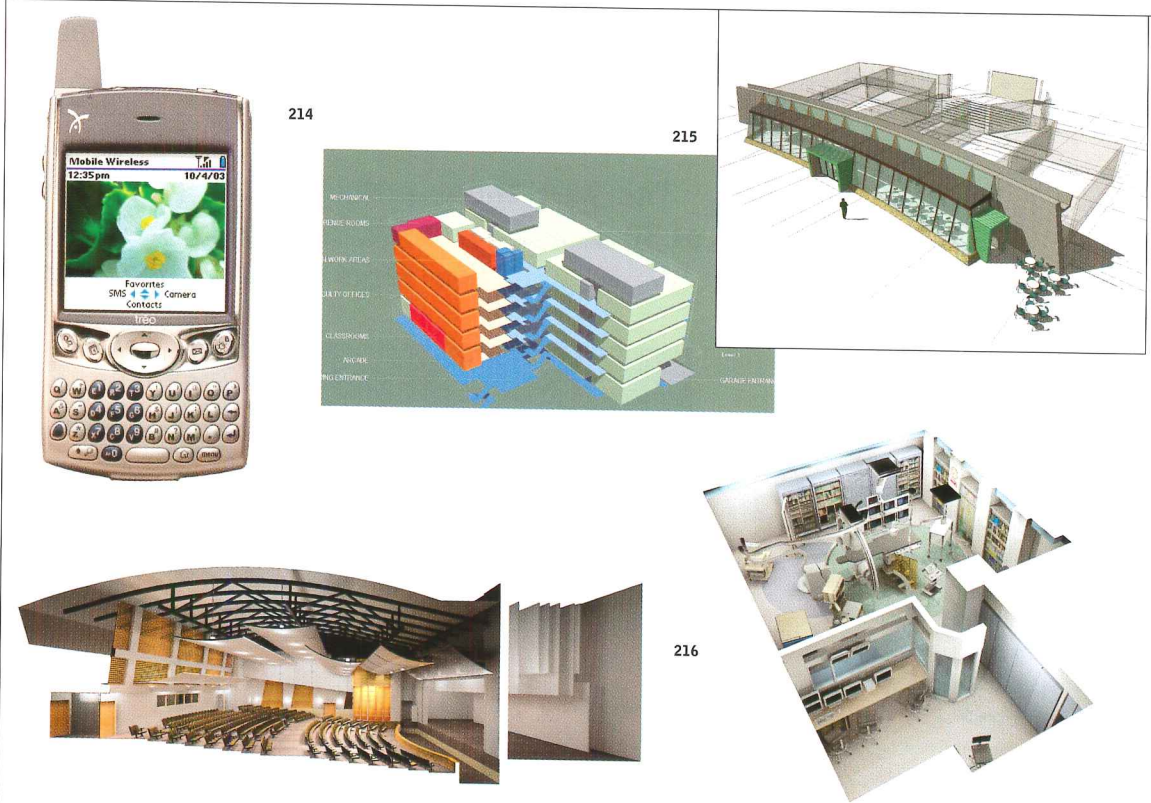
The Handspring Treo 600 has gotten kudos for its compact size, color display, and full keyboard. It's packed with a Web browser and digital camera and was designed for one-handed use. Handspring, Mountain View, Calif. www.handspring.com **CIRCLE 214**

Sketching with ease

SketchUp now has PC and Mac-compatible versions. Selling points are a simple interface and streamlined drawing tools that enable 3D design without arcane commands or complicated menus. The software auto-fills many sketched shapes. @Last Software, Boulder, Colo. www.sketch3d.com **CIRCLE 215**

Form it with form-Z

A favorite of 3D modelers, form-Z 4.0 boasts an improved interface, reorganized menus, and new design and drawing tools, with a focus on NURBS surfaces. The software is now capable of network rendering for faster image production. auto-des-sys, Columbus, Ohio. www.formz.com **CIRCLE 216**



For more information, circle item numbers on Reader Service Card or go to www.archrecord.com, under Resources, then Reader Service.

Green

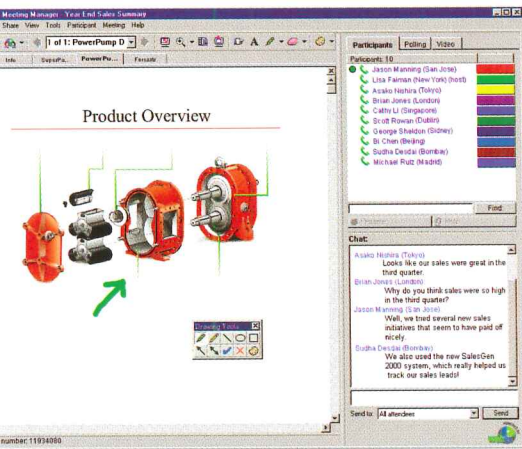
**with a twist,
on the rocks.** ECOrocks is a green floor with a difference: the look of terrazzo, but with the cushioned comfort of recycled rubber. The newest product from ECOsurfaces gives new meaning to the term "soft rock," without losing any of the edge it gives designers. Available in tiles and rolls, ECOrocks is the newest twist on terrazzo. Free samples and info are good to go. Just call 1-877-326-7873 or www.ecosurfaces.com.

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218



217

Tablet PC with a dual role

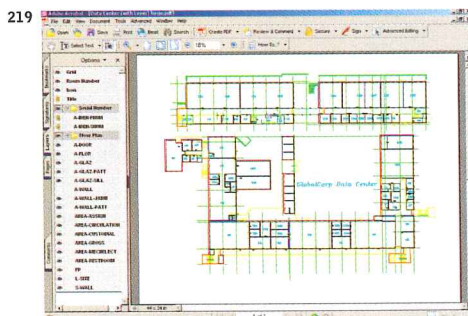
Toshiba's Portégé 3500 has become a favorite for its flexibility. The screen swivels around to reveal a full keyboard for users who want to point, click, and type—but it's also designed for the pen-based input that designers have long sought from digital tools. Toshiba, New York City. www.toshiba.com **CIRCLE 217**

Online meetings

WebEx's online meeting service helps users convene over the Internet to review information such as drawings, photos, or text documents. Mark-up tools and discussion archiving add to the value of their offerings. WebEx, San Jose, Calif. www.webex.com **CIRCLE 218**

Archiving with Adobe

Adobe Professional is designed to convert CAD files to the omnipresent PDF format while preserving line weights, styles, and layers. In some CAD programs, PDF creation with Professional can be as simple as a single mouse click. Adobe, San Jose, Calif. www.adobe.com **CIRCLE 219**



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Ever Heard of Murphy's Law?

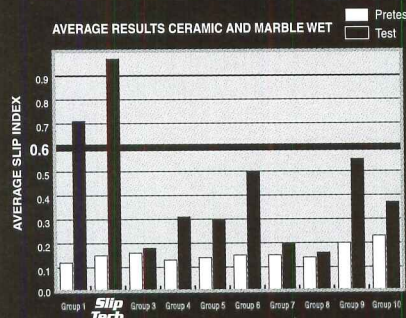


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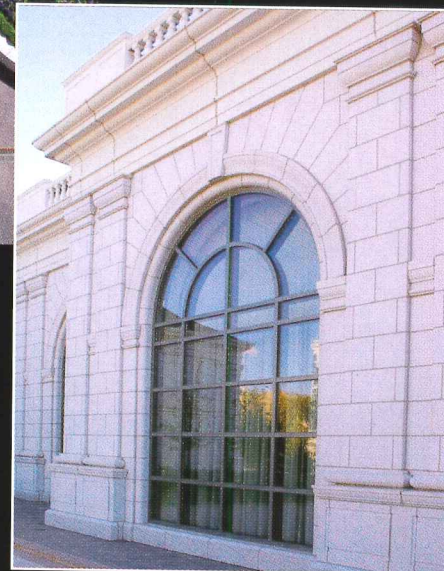


Grand America Hotel
Salt Lake City, UT

Exterior: 295,000 SF
Bethel White Granite

Paving: 40,000 SF
Tan Brown Granite
Eagle Red Granite
Bethel White Granite
Valders Grey & White
Limestone

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The EcoGrid Paver offers an inventive alternative to the rote use of blacktop paving. —JAMES G. HOWIE, AIA

Long-lasting seating

Comfortable and modular, the wave bench and spring seats are available in three types of finishes (hot-dipped galvanized, powder-coat finish, and thermoplastic coating) and a range of colors. Huntco Supply, Portland, Ore. www.huntco.com **CIRCLE 220**

A permeable paving unit

The EcoGrid Paver is a permeable paving unit that interlocks for stability. At 11 $\frac{1}{4}$ " x 11 $\frac{3}{4}$ " x 4", the paver has the greatest percentage of open space in the industry, allowing the most opportunity for water to permeate the subsoil. Hanover Architectural Products, Hanover, Pa. www.hanoverpavers.com **CIRCLE 221**

Seating and more

The Washington Square collection, designed by Brian Kane, includes seating, litter receptacles, and ash urn attachments. Seating supports users in a slightly reclined position to provide comfort for longer periods. Side tables and tablet arms provide a spot for coffee mugs or laptops. Landscape Forms, Kalamazoo, Mich. www.landscapeforms.com **CIRCLE 222**

Picnic tables

PicNik's design incorporates table and seating into a light, stackable object. Made from a standard, massive plate of 10-mm-thick aluminum, PicNik comes in two sizes, one for adults and PicNik Junior for children. Ideas for Living, Albuquerque. www.extremis.com **CIRCLE 223**

Friendly foundation system

The Low Impact Foundation Technology (L.I.F.T.) is a foundation system that can be installed with almost no excavation. Foundation wall is poured above ground and "pinned" into the ground using steel pins that extend deep enough to support the structure and prevent uplift. Pin Foundations, Gig Harbor, Wash. www.pinfoundations.com **CIRCLE 224**



Landmarks in Brick



Since 1885, The Belden Brick Company has been making brick in hundreds of colors, sizes and textures. Throughout these years, Belden has established and sustained a widely recognized reputation for the quality of its products.

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Colors

Belden Brick is available in a world of colors including soft whites and creams, greys, buffs and dusty tans, delicate pinks, cinnamons, cinnamon reds, chocolate browns, purples, grays and coal blacks. With so many colors to choose from your options are truly endless. Here is a small sample of over 200 color ranges.

Textures

Belden Brick offers thirteen different textures that range from silky smooth finishes to rugged randomly textured styles. Each texture can make its own distinctive contribution to the visual impact you desire.

Sizes & Shapes

More sizes mean lower wall costs. With as many as sixteen different sizes to choose from Belden has the size you need. Belden has made thousands of special shapes to provide special details for individual projects. Need an "impossible" shape for your project? Then call Belden Brick and learn how the impossible can become reality.

Concrete & Masonry

Simulated stone • Concrete accessories • Precast concrete • Statuary casting

Transparent simulated stone

Available in simulations of marble and granite, Okite is the only quartz-based stone surfacing material also offered in translucent colors. Unlike natural materials, Okite does not require sealing or polishing. Seieffe, Houston. www.okite.com **CIRCLE 225**

Liquid gypsum

Readyrock brand liquid gypsum is the first and only line of premixed slurries that remain in a liquid state indefinitely. Applications include statuary casting. Industrial Products Division of USG, Chicago. www.usg.com **CIRCLE 226**

Polished architectural blocks

The Gemstone Collection of highly dense, machine-polished architectural blocks contains recycled materials. Engineered for use in most indoor or outdoor applications, the units have a terrazzolike finish and are available in a variety of shapes and sizes. Clayton Block, Lakewood, N.J. www.claytonco.com **CIRCLE 227**

Straight edge

Timberstrand LSL EdgeForm is ideal for forming nonelevated sidewalks, driveways, and other ground-level slabs, as well as for tilt-up construction. The ample depth of the form boards eliminates the need for stacking. TrusJoist, a Weyerhaeuser Company, Federal Way, Wash. www.trusjoist.com **CIRCLE 228**

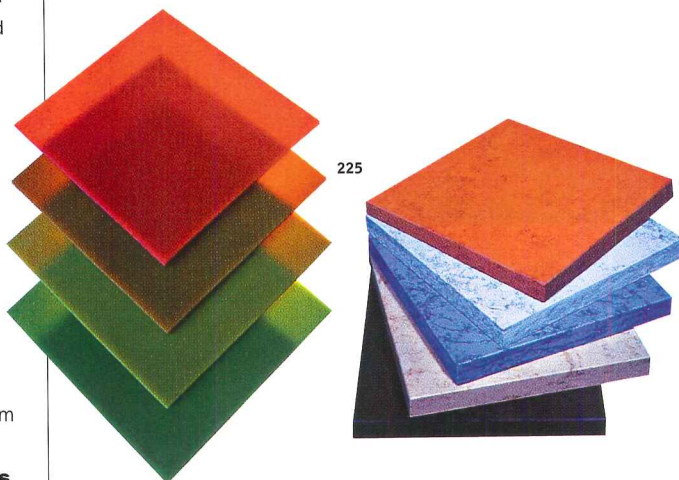
Believable stone

Eldorado Stone's new Core Product Line includes several believable stone-veneer profiles and accents. Eldorado Stone, San Marcos, Calif. www.eldoradostone.com **CIRCLE 229**

Light architectural panels

CarbonCast architectural panels weigh up to two-thirds less than conventional precast panels. A patented rib design delivers value-added insulation performance. Altus, Denver, Pa. www.altusprecast.com **CIRCLE 230**

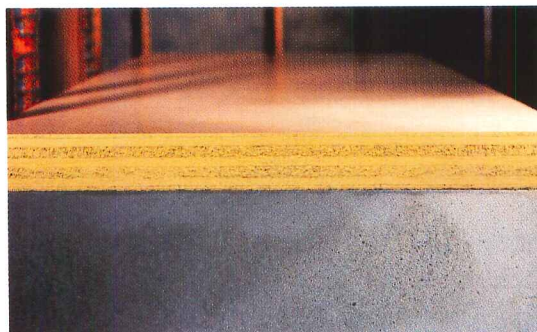
This was the first time I've ever been impressed by a simulated stone. —SAMUEL M. ANDERSON



225



226

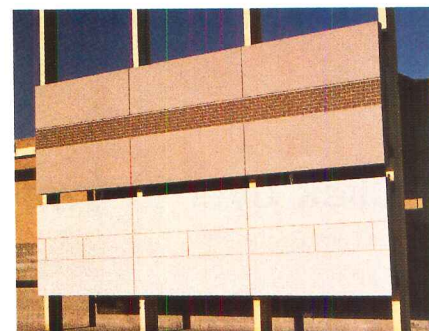


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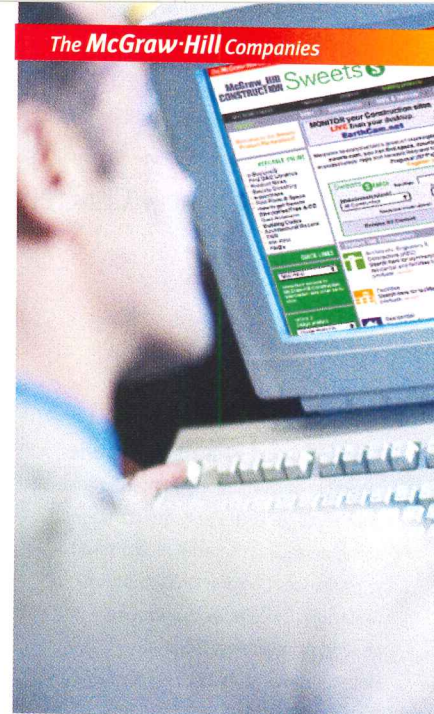
229



230

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Metals, Woods & Plastics

Structural plastics • Railings & handrails • Metal coatings • Wood stairs • Prefabricated wood joists & trusses • Plastic fabrications • Structural metal framing • Treads



Engineered lumber continues to alter the basics of the lumber market. —JAMES G. HOWIE, AIA

Slotted deflection track system

SLP-TRK absorbs vertical movement in high-rise buildings while making it easy to meet head-of-wall fire and safety codes. Dietrich Metal Framing, Pittsburgh. www.dietrichmetalframing.com

CIRCLE 231

Bamboo heads upstairs

Bamboo stair parts and accessories provide a unified look for clients using TimberGrass floors and panels. Harder than oak, Moso bamboo is also environmentally friendly. TimberGrass, Bainbridge Island, Wash.

www.timbergrass.com CIRCLE 232

Hemp countertops

These hemp counters are the industry's first, according to Richlite. Environmentally sustainable paper-based surfaces offer a durable alternative to such staples as stone and steel in a range of natural colors, including indigo, merlot, and sage.

Richlite, Tacoma, Wis. www.richlite.com

CIRCLE 233

Postconsumer glass

Pure Crush is made of 100 percent recycled postconsumer glass that is crushed, washed, and pressed in 40 percent recycled resin. Multifaceted glass fragments refract light to create a luminous effect. 3Form, Salt Lake City. www.3-form.com

CIRCLE 234

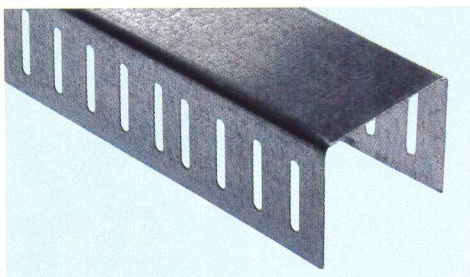
Panels from the past

The Archvisions cast-iron, glass-bead-panel system is reminiscent of sidewalks from the turn of the 20th century. Glass insets filter light while treads prevent slipping and sliding. Archvisions, Brooklyn, N.Y. www.archi-visions.com CIRCLE 235

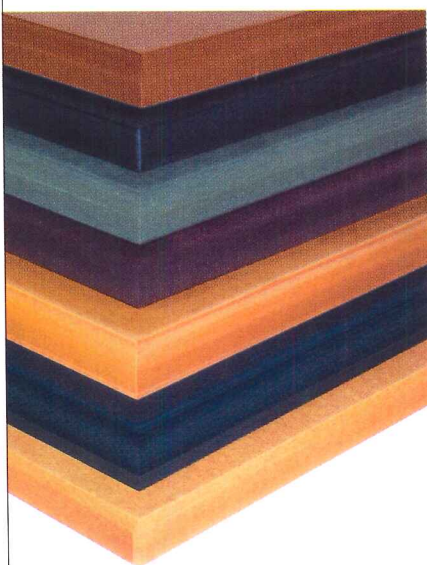
Safer treated lumber

TimberStrand laminated strand lumber is treated with Trus Joist's StrandGuard. Promising protection against insects and rot, the process's EPA-registered biocide tested safe for humans and the environment. Trus Joist, Federal Way, Wash. www.trusjoist.com CIRCLE 236

231



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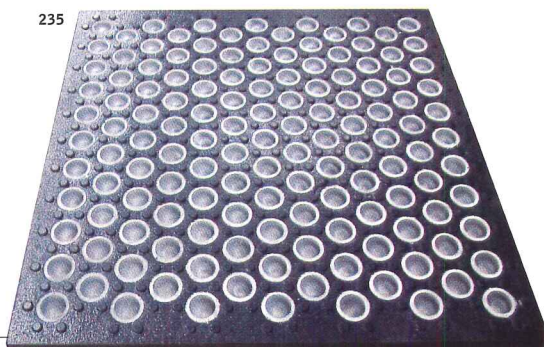


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Metals, Woods & Plastics

Structural plastics • Railings & handrails • Metal coatings • Wood stairs • Prefabricated wood joists & trusses • Plastic fabrications • Treads

Stainless-steel railing

Artec's Munich Railing System offers a variety of options, from finish (polished, satin, or titanium-plated) to infill panels (glass, horizontal, or vertical tubes). The sleek baluster consists of three oval tubes. Artec, Wood Dale, Ill.

www.artec-rail.com **CIRCLE 237**

Panels, light and strong

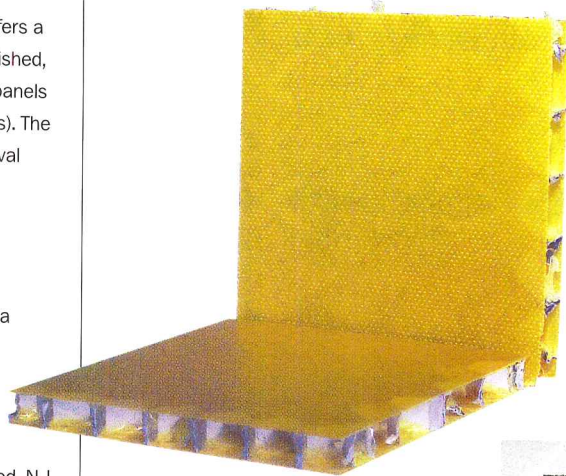
The decorative yellow exterior of Esacore's sandwich panel masks a lightweight but hardy aluminum honeycomb core. Light filters through the phenolic fiberglass surface, revealing the hexagonal pattern within. ABET, Englewood, N.J.

www.abetlaminati.com **CIRCLE 238**

Infrared roof coatings

PPG's Duranar SPF coatings use infrared pigments to increase medium and dark colors' reflectivity, allowing environmentally concerned clients to branch out from light colors while meeting Energy Star requirements. PPG Industries, Springdale, Pa. www.industrial-coatings.com

CIRCLE 239



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CPU6 is simple and elegant



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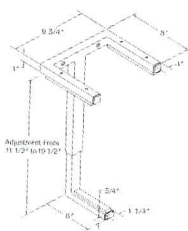
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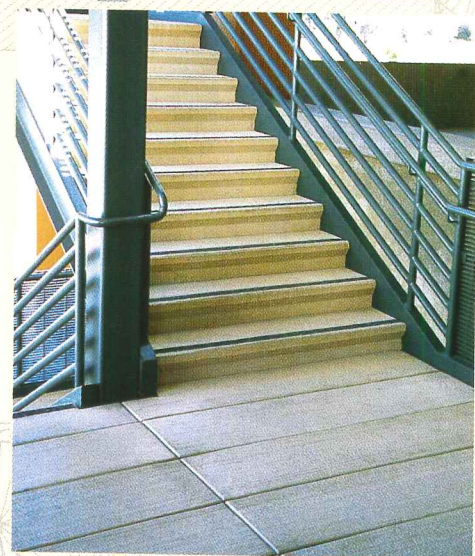
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Finishes

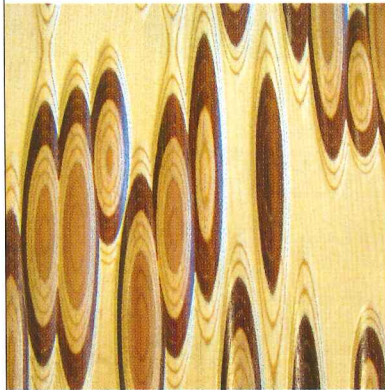
Prefinished panels • Ceiling systems • Tile • Wall coverings • Carpet

Creative MDF panels

The Solid and Gouged MDF Collection comes in a range of 3D surfaces, in addition to smooth. Specifiers can choose from more than 120 veneers, colors, and stains. Architectural Systems, New York City. www.archsystems.com **CIRCLE 255**

A walk on the wild side

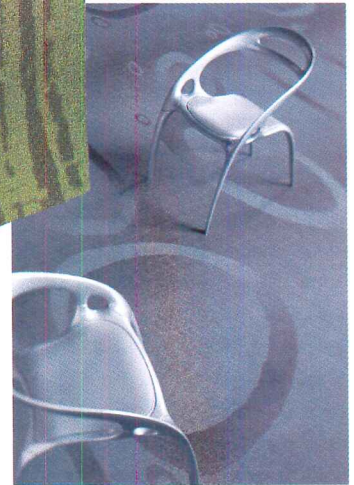
Modeled on William McDonough's photographs of China, Shaw and the architect have teamed up to create a green carpet collection that mimics walked-on surfaces found in nature (left). Working with lauckgroup, Shaw has also created flux systems program (right), which incorporates architectural imagery in floor coverings. Color shadings, pattern repeats, and pile heights play with rhythms and depths. Shaw Tile, Dalton, Ga. www.shawtile.com **CIRCLE 256**



255



256



257

Floating ceilings

Infusions accent canopy ceilings let clients play with shape, texture, color, light, size, and height to create distinctive spaces. Standard components keep the custom looks affordable and easy to install. Armstrong Ceiling Systems, Lancaster, Pa. www.armstrong.com

CIRCLE 257

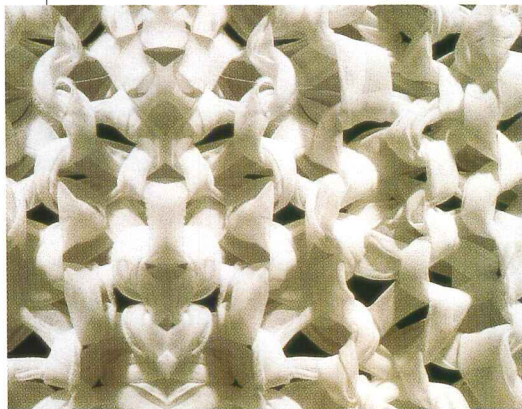
Walls go 3D

Touch wall coverings use surprising materials and layers to create a 3D effect. Photographic prints of wool felt, translucent fabrics, as well as fur and hair, are reproduced on printed vinyl. Wolf-Gordon, Long Island City, N.Y. www.wolf-gordon.com

CIRCLE 258

A playful take on tiles

Pun brings sophisticated fun to the kitchen and bath with these chic, high-gloss tiles. Special order or standard words like *mirror* and *soap* stand out in high relief on a range of bright colors, including aquamarine, orange, and blue. Ascot, New York City. www.ascot.it **CIRCLE 259**



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259



Ascot's Pun tiles have wonderful colors, and the embossed words are creative and playful. —MARGARET CASTILLO, AIA



Finishes

Prefinished panels • Ceiling systems • Tile • Wall coverings • Carpet

New Age aluminum panels

Curved or corrugated Millennium panels work with lighting techniques to create dramatic interiors. Cost-effective modular sizes provide quality acoustics and come in a variety of colors and finishes. Gordon, Bossier City, La. www.gordongrid.com

CIRCLE 260

Classic wainscoting from Italy

Ceramiche Grazia's Boiserie Series remains true to classic bead-board wainscoting. The matte glazed-ceramic wall tiles work well in areas where moisture can be a problem. Hastings Tile & Il Bagno Collection, Freeport, N.Y. www.hastingsstilebath.com

CIRCLE 261

Handmade glass mosaics

Zen Weave, the latest in the Erin Adams mosaic line, combines color and texture through tiny rectangular glass pieces. Ann Sacks, Portland. www.annsacks.com CIRCLE 262

Supersize ceiling panels

Celebration metal ceiling panels are now available in a larger 2' to 6' size. The easy-to-install aluminum or steel panels come in a range of perforation patterns. USG, Chicago. www.usg.com CIRCLE 263

3D oval tiles

Developed in 1960, these 3D stoneware tiles are only now available in production. Suitable for interiors and exteriors, the tiles lend traditionally flat surfaces an architectural element. Heath Ceramics, Sausalito, Calif. www.heathceramics.com CIRCLE 264

Metallic glazes for tiles

Eight new glazes mimic pewters, bronzes, coppers, and iridescents on the Diamond Plate pattern tiles from the Patternology collection. Pratt and Larson Ceramics, Portland. www.prattandlarsen.com

CIRCLE 265

Formaldehyde-free fiberboard

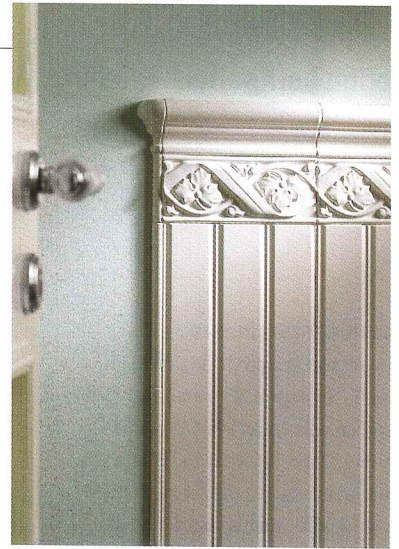
Made from wheat straw, Woodstalk fiberboard is a green alternative for use in cabinets and underlayment. Dow BioProducts, Manitoba, Canada. www.dow.com/bioprod CIRCLE 266

High-tech steel tiles

Fusing stainless steel to porcelain, these durable tiles come in a variety of textures and sizes. Crossville Porcelain Stone/USA, Crossville, Tenn. www.crossville-ceramics.com CIRCLE 267



260



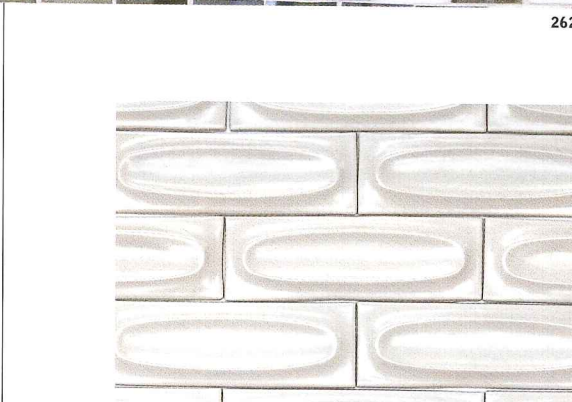
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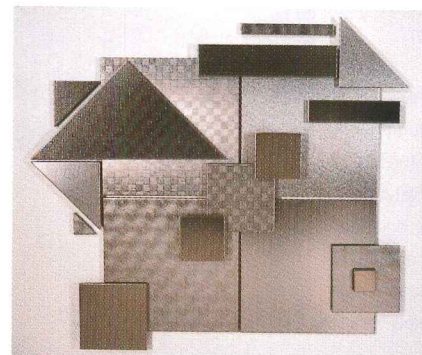
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266



267

Specialties & Equipment

Toilet & bath accessories • Theater & stage equipment • Projection screens • Residential appliances • Shower doors/enclosures • Television accessories



Excel Dryer's Xlerator hand dryer is clever and green.

—JOAN BLUMENFELD, AIA

Smarter kitchen appliances

The new, fully digital EEB 9800 and 6800 series ovens (left) will automatically select a program from a variety of cooking options, compute the finish time, and alert you when your meal is ready. Also from Kuppertsbusch, the Profi-Cook Center (right) adjusts the cooking surface to the pan size for maximum energy efficiency and shuts itself down when the pan is removed. Kuppertsbusch, Tampa, Fla.

www.kuppertsbuschusa.com **CIRCLE 268**



Pint-size professional

Fivestar claims that its 24" range offers the same professional cooking capabilities as its larger counterparts, along with a smaller footprint for urban living and small spaces. Fivestar, Cleveland, Tenn.

www.fivestarrange.com **CIRCLE 269**



Automated theater rigging

Vortek is an ADA-compliant, floor-to-ceiling system that uses intuitive touch screens and menus to allow a professional or student crew to control the entire technical operation of a show from a single position. Hoffend & Sons, Victor, N.Y.

www.hoffend.net **CIRCLE 270**



271

Walk-through masterpiece

FogScreen is a new method for forming a high-quality, walk-through, dry-fog display. The technology projects images onto a laminar, nonturbulent airflow, creating a thin fog wall that can be integrated into buildings. FogScreen, Seinäjoki, Finland.

www.fogscreen.com **CIRCLE 271**

A duo of venting options

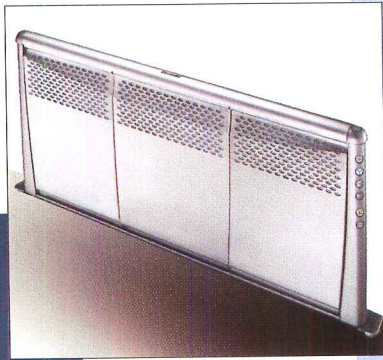
The Cubist-inspired AH 590 island hood from Gaggenau (left) can be controlled via a single ergonomic control panel. Thermador's Universal Cook 'n' Vent (UCV) downdraft ventilation system (right) rises a full 15" when in use, standing 50 to 80 percent taller than similar competitive units. BSH Home Appliances, Huntington Beach, Calif.

www.gaggenau-usa.com

www.thermador.com **CIRCLE 272**



270



272

Specialties & Equipment

Toilet & bath accessories • Theater & stage equipment • Projection screens • Residential appliances • Shower doors/enclosures • Television accessories

From wet to dry in 15 seconds

The Xlerator dries hands in 10 to 15 seconds and uses 80 percent less energy than other hand dryers. Xlerator represents a 90 percent cost savings compared to paper towels. Excel Dryer, East Longmeadow, Mass. www.exceldryer.com **CIRCLE 273**

Cleaner shower design

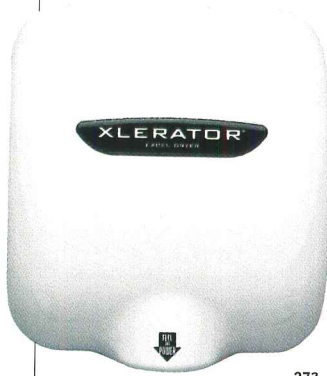
With minimal steel construction, the Finesse Frameless Hinge shower door offers a wide-open appearance and a concealed piano hinge that runs the entire length of the jamb to ensure a smooth, stable operation. Sterling, Kohler, Wis.

www.sterlingplumbing.com **CIRCLE 274**

Disappearing flat-screen TVs

Able to support most 10" to 20" screens, the FSD Series Under-Cabinet Swing-Down Mount (shown here in a kitchen application) rotates 220 degrees and tilts 15 degrees to support a broad range of viewing angles for flat-panel televisions. Chief Manufacturing, Savage, Minn.

www.chiefmfg.com **CIRCLE 275**

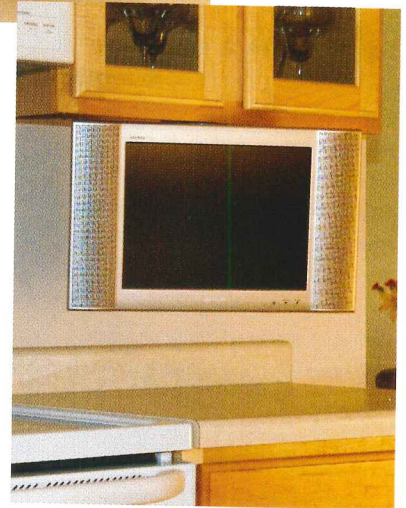


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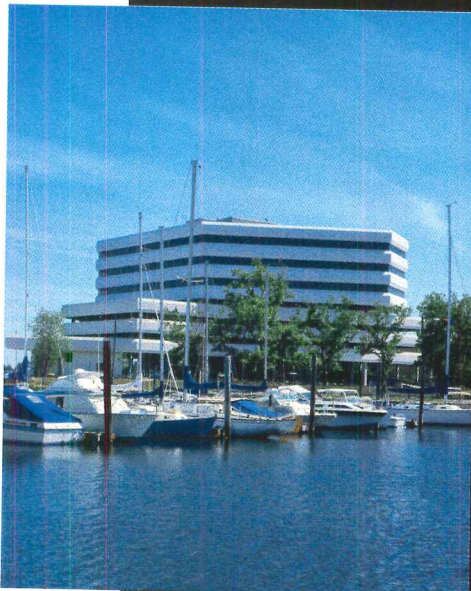


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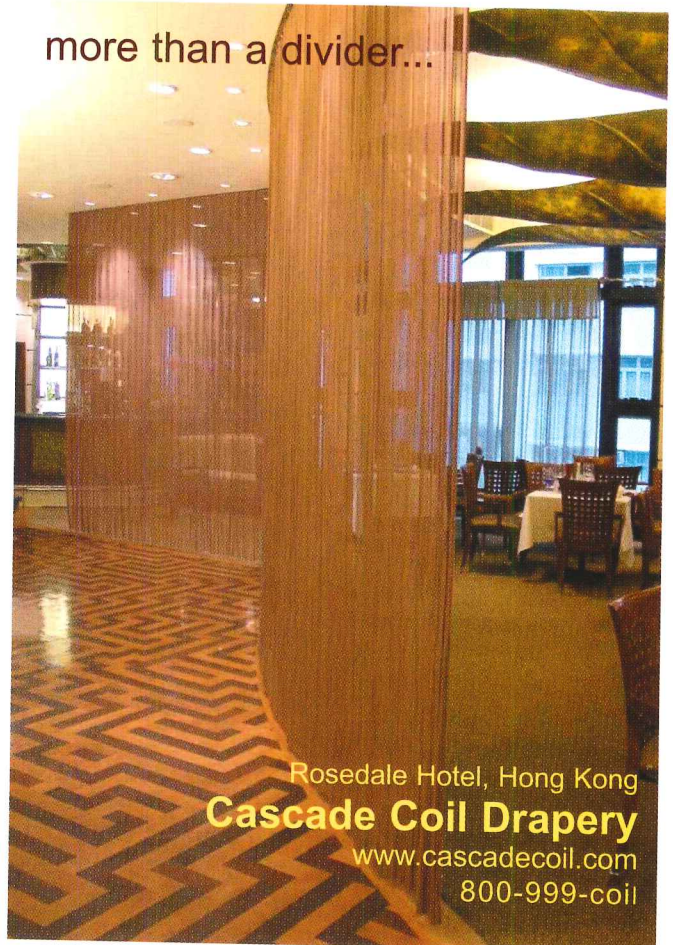
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Furnishings

Fabrics • Hotel and motel furniture • Office furniture • Multiple seating

Environmentally friendly fabric

The Environmental Impact Collection of colorful seating and panel fabrics offers nine products that exceed Association of Contact Textiles standards for quality and performance. The sustainable manufacturing processes used in the production of the textiles reduce energy use, greenhouse gas emissions, waste sent to landfills, and process-water consumption. Steelcase, Grand Rapids.

www.steelcase.com **CIRCLE 276**

Modern lounging

Ile by Piero Lissoni is a series of sofas featuring lightweight bases and spacious, streamlined cushions. By rearranging the cushions, the sofa can morph into a bed or a platform. Modern Living, Los Angeles. www.modernliving.com

CIRCLE 277

A tabletop office

Assembled from modular surfaces, Joyn is a work platform supported by a central beam and trestle legs and defined by lightweight, fabric-covered lateral screens. Integrated below the central beam is a large channel into which all electrical and communications wiring can be placed. Vitra, New York City.

www.vitra.com **CIRCLE 278**

Leader of the pack

The in-a-bind collection of textiles is influenced by utilitarian packaging materials. Patterns include Ace, inspired by the texture of ace bandages, and Corrugated, which reflects the rough-and-ready texture of corrugated cardboard. Designtex Group, New York City. www.thedesigntexgroup.com

CIRCLE 279

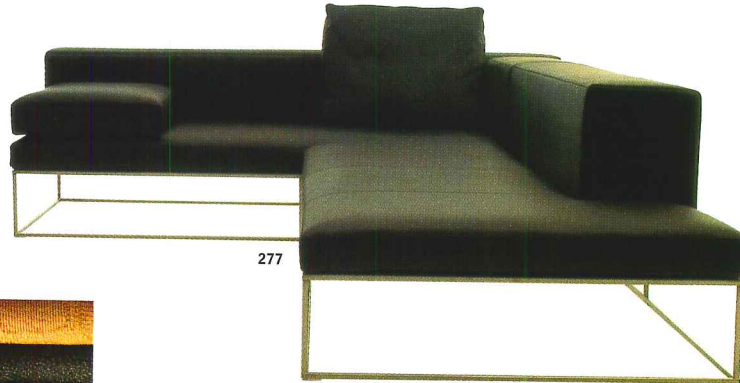
Prêt-à-porter

The Hurry Up! Table, designed by Giancarlo Piretti, can be easily set up, moved, and nested. Able to accommodate spur-of-the-moment location changes, the table is ideal for training, multipurpose, and conference areas. KI, Green Bay, Wis. www.ki.com **CIRCLE 280**

Steelcase's Environmental Collection could have a huge impact, given the millions of yards of fabric used on workstation panels. —*JOAN BLUMENFELD, AIA*



276



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281

Tied up

Paola Lenti's Rope Outdoor Collection features the washable, mold-resistant Rope O4 fabric along with a satin-finished, stainless-steel structure with galvanized steel detailing. Modern Living, Los Angeles. www.modernliving.com

CIRCLE 281

Unconventional textiles

Made from Carnegie's Xorel yarns and high-performance polyester, Loofah is a multipurpose textile suited to vertical applications. Its appearance has been achieved through knitting machines, not conventional looms. Carnegie, Rockville Centre, N.Y. www.carnegiefabrics.com

CIRCLE 282

High profile

The Terrace 2.6 is an attractive workspace solution if both space and budget are at a premium. The streamlined 2.6" profile offers flexibility and is equipped with efficient power and data access. Allsteel, Muscatine, Iowa. www.allsteeloffice.com **CIRCLE 283**



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Conference table

Running under the center of the Avid conference table is an easily accessible racking system that stores video, sound, and other equipment. Nucraft Furniture Company, Comstock Park, Mich. www.nucraft.com **CIRCLE 284**

The sound of silence

Herman Miller's Quiet Technology emits a patented, direct-field sound spectrum that matches the frequencies of the human voice, making speech beyond a 12' to 16' radius unintelligible. Herman Miller, Zeeland, Mich. www.hermanmiller.com **CIRCLE 285**

Light as air

The Aero Bench Series reflects the early years of aeronautics through its use of lightweight and strong materials and two leg units resembling the cross structures on antique biplanes. Davis Furniture Industries, High Point, N.C. www.davisfurniture.com **CIRCLE 286**



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Glass canopy system

This economical glass canopy system is made of corrosion-resistant stainless steel that guarantees a long life and weather protection. The frameless awning is designed to receive heat-strengthened or laminated safety glass. Taco Metals, Miami, Fla. www.tacometals.com **CIRCLE 287**

Cable-free elevator

Gen2 is the first elevator to use flat, coated-steel belts instead of heavy woven-steel cables to lift the elevator car. The Gen2 system requires a machine that is only one quarter the size of conventional systems, eliminating the need for a separate machine room. Otis Elevator Company, Farmington, Conn. www.otis.com **CIRCLE 288**

Energy-efficient elevator

The Schindler 400A traction elevator system eliminates the need for a machine room and unsightly roof penetration. It uses advanced permanent magnet drives for a clean, oil-free operation, and runs on 40 percent less power than traditional drives. Schindler Elevator Corporation, Morristown, N.J. www.us.schindler.com **CIRCLE 289**

Comprehensive noise control

Engineered for use in walls and ceilings, the Resilient Sound Isolation Clip can be attached to a wood, steel, concrete, or concrete masonry unit and is approved for classification in more than 140 UL Fire Resistive Design Assemblies. PAC International, Aloha, Ore. www.pac-intl.com **CIRCLE 290**

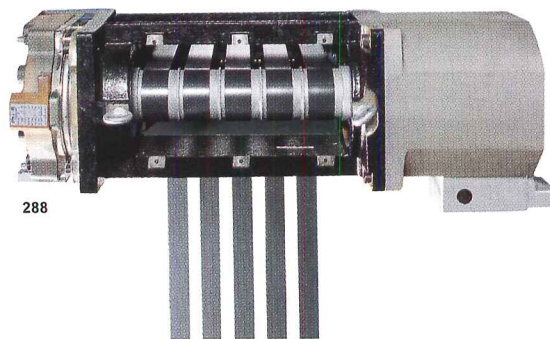
Acoustic panels

Curveline's custom-curved metal panels provide economical "two in one" performance: They can function simultaneously as a roof deck and as an acoustic ceiling. Project designers may now use domes and arches where flat ceilings were previously required while still achieving the desired acoustic characteristics. Curveline, Ontario, Calif. www.met-tile.com/curveline **CIRCLE 291**

PAC's sound-isolation clip seems to be an effective alternative to conventional resilient metal clips. We'll propose this for our next acoustically sensitive project. —MICHAEL J. FAHY, AIA



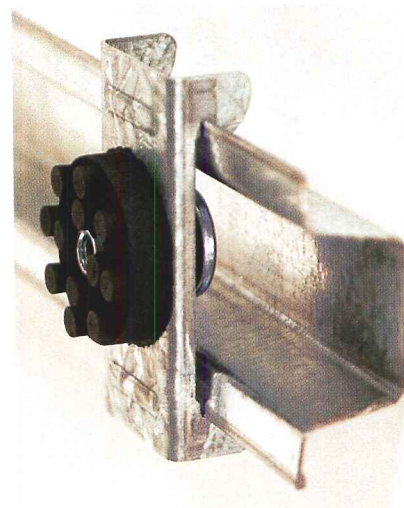
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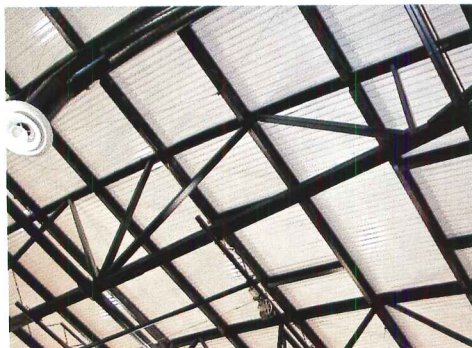
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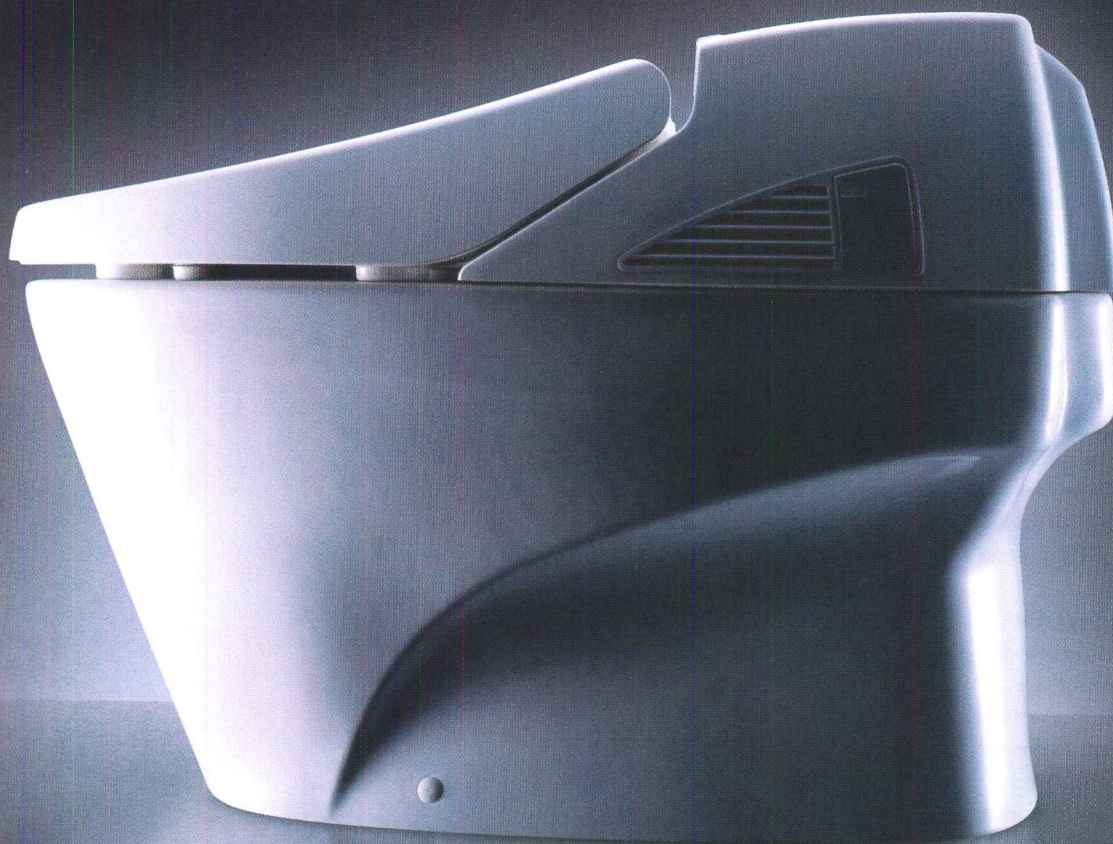
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Mechanical

Plumbing fixtures • Radiant-heating systems • Ductwork • Ceiling fans



Toto's Ecopower would appear to solve annoying maintenance issues. —MICHAEL J. FAHY, AIA

Completely clean design

The Evolution Oval Shower features a clear, tempered-glass enclosure; a quartz-based floor; and an array of luxuries, including body jets, dual-adjustable seats, and a stereo system. Hastings Tile & Il Bagno Collection, New York City.

www.hastingstilebath.com **CIRCLE 292**

Shower wand

The Zen shower system from Fantini Rubinetti is a 67" multifunction shower bar that features an integral mixer, wand-like hand shower, and height-adjustable cylinder showerhead. Hastings Tile & Il Bagno Collection, New York City.

www.hastingstilebath.com **CIRCLE 293**

Wooden or glass sinks

The Structure sink is constructed of a stainless-steel framework and solid-surface stainless-steel or wengé-wood countertops. The basin sinks are available in mahogany or clear, thick glass.

Aquaware, North Haven, Conn.
www.aquawareamerica.com

CIRCLE 294

Have a second glance

The Glance collection of solid brass faucets, tub fillers, bath and shower valves and accessories features smooth, curving shapes. Jado, Scottsdale, Ariz.

www.jadousa.com **CIRCLE 295**

Bathing vessel

Designed by Italian architect Matteo Thun, Rapsel's LaVasca Mini free-standing tub is manufactured in Cristalplant, a nonporous mineral-based material noted for its durability and velvety white surface. Hastings Tile & Il Bagno Collection, New York City.

www.hastingstilebath.com **CIRCLE 296**

Copper tub

The Japanese Copper Soaker Bath is available as an undermount, self-rimming or self-standing bath fashioned from raw copper. Diamond Spas, Broomfield, Colo.

www.diamondspas.com **CIRCLE 297**



292



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Mechanical

Plumbing fixtures • Radiant-heating systems • Ductwork • Ceiling fans

One-stop duct board

The lightweight, EnduraGold fiberglass duct board combines thermal and acoustic properties with airtight transmission and fungal-growth resistance. Owens Corning, Toledo, Ohio. www.owenscorning.com **CIRCLE 298**

Northern light

Functioning equally well as a fan and ceiling light, Aurora incorporates a 40-watt, T5 circline lamp positioned in a translucent diffuser. The Modern Fan, Ashland, Ore. www.modernfan.com

CIRCLE 299

ADA-compliant, high-design

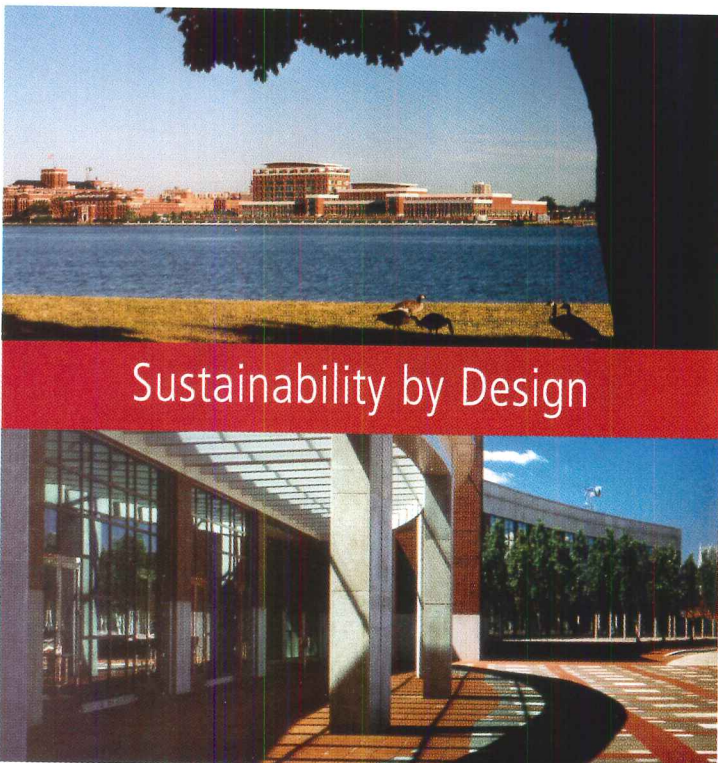
Designed for the private or public sector, the ADA-compliant H70 Architec series lav measures 22½" x 20½". Duravit USA, Duluth, Ga. www.duravit.com **CIRCLE 300**

Jewels of the bathroom

Marc Newson's collection for Porcher includes a pedestal lav, bidet, and freestanding 6' tub. The faucets reflect the influence of Newson's early training as a silversmith and jewelry designer. Porcher, Phoenix. www.porcher-us.com **CIRCLE 301**



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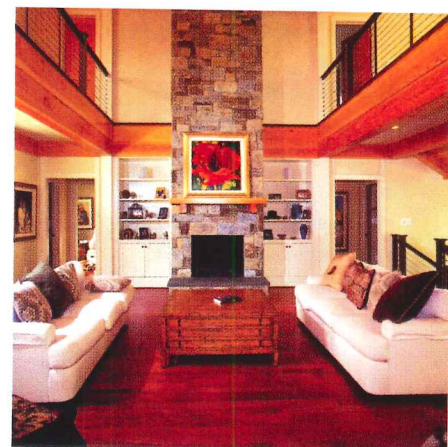


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Mechanical

Plumbing fixtures • Radiant-heating systems • Ductwork • Ceiling fans

Cooling heater

WatterSaver is the first heat-pump water heater designed as a drop-in replacement for a standard electric water heater. The 50-gallon unit extracts heat from indoor air to heat water using about half the energy of an electric-resistance water heater. ECR International, Dunkirk, N.Y. www.ecrinternational.com **CIRCLE 302**

No more battery replacements

For a description of Toto's Ecopower faucet, see page 163. **CIRCLE 203**

Wet surface lav

Paradox is a two-piece, wet-surface lavatory that emphasizes the flowing movement of water, while a hidden channel directs water to a hidden drain. Kohler, Kohler, Wis. www.kohler.com **CIRCLE 303**

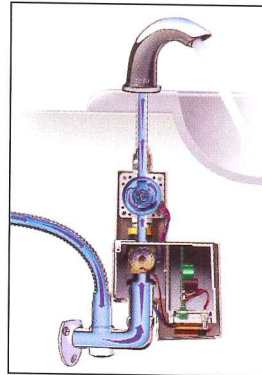
Radiant-heating system

The Quik Trak wood-panel system is an aluminum heat-transfer sheet attached to 1/2" thick wood panels. The system can be installed over an existing concrete slab or plywood substrate. Uponor Wirsbo, Apple Valley, Minn. www.wirsbo.com **CIRCLE 304**



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Electrical

Interior & exterior luminaires • Lamps • Ballasts • Fiber-optic lighting • Wiring devices

The Stealth step light is an effective use of LEDs. It is amazing technology for such a tiny object.

—JOANNE LINDSLEY, FIALD



Energy-saving lamp

According to the manufacturer, a 12-watt NeoballZ compact fluorescent lamp has the light-output equivalent of a 60-watt incandescent house lamp, offers 10 times the lamp life, and saves energy costs by 80 percent. THHC Lighting, City of Industry, Calif. www.xelogen.com **CIRCLE 305**

Resin shade system

The David system includes different fixtures featuring Knoll's Imago resin material that encapsulates fabrics from the Knoll collection. The resin is cut by digital routers while the lamps' metal structure is laser cut. Resolute, Seattle. www.resoluteonline.com **CIRCLE 306**

Floating LEDs

Orgatech's new Lightstar LED indirect luminaires give the illusion of rows of LEDs floating in space with no visible power source. While the two dimmable, 54-watt T5HO lamps with wide-distribution reflectors provide primary illumination, the 80 blue or white LEDs mounted in twin, laminated clear-tempered glass panels are powered by an invisible low-voltage power supply. Orgatech Omegalux, Azusa, Calif. www.orgatechomegalux.com **CIRCLE 307**

Beacon for public spaces

Designed for use in parks, pedestrian malls, and corporate campuses, Millennio is the world's first pole-mounted LED area lighting fixture, according to the manufacturer. Two parallel extruded aluminum arms that each house 450 LEDs create a Minimalist design reminiscent of a tuning fork. A precision lens controls colored and white LEDs to create a warm white illumination without glare. Hess America, Shelby, N.C. www.hessamerica.com **CIRCLE 308**

Light bench

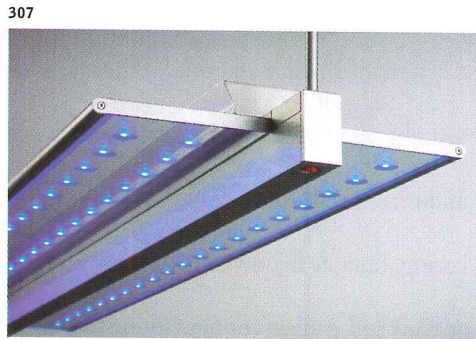
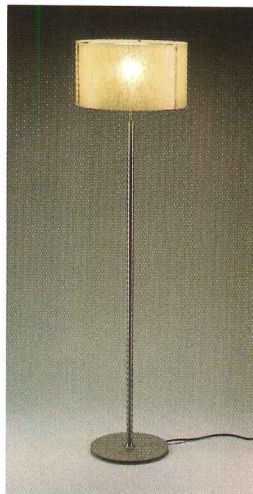
Among German lighting designer Ingo Maurer's newest designs this year was a limited-production LED Bench. The molded-glass bench contains 288 white LEDs emitting light on both sides. Ingo Maurer, New York City. www.ingo-maurer.com **CIRCLE 309**



305



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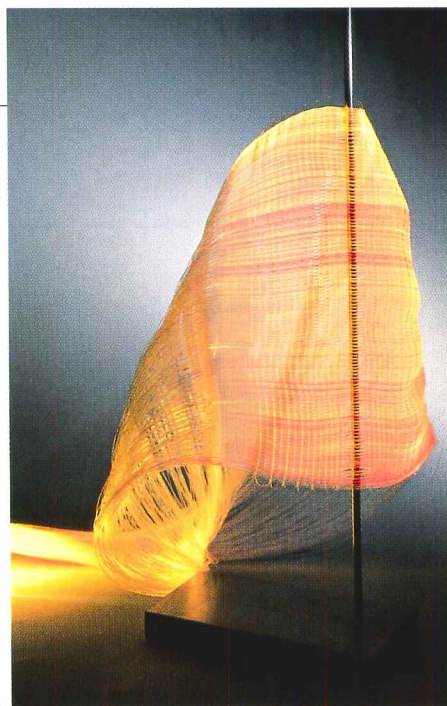
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Wash of color

The Destiny Colorwash is a color-changing luminaire that provides a wash effect for accentuating and modeling architectural structures. The light offers a well-defined rectangular projection and a choice of either vertical or horizontal wash optics. TIR Systems, Vancouver, British Columbia. www.tirsys.com **CIRCLE 310**

Fiber-optic lamp

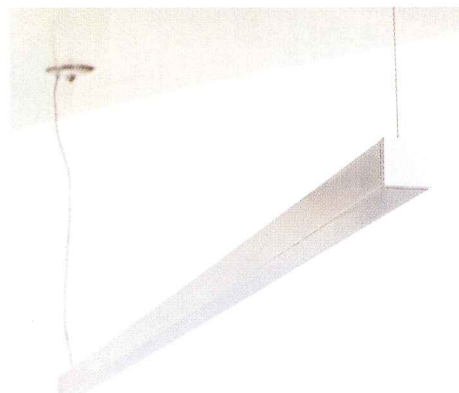
Textile designer Suzanne Tick, in collaboration with industrial designer Harry Allen, has created a series of lamps constructed of handwoven fiber-optic yarns. 212/598-0611. Suzanne Tick Design + Consulting, New York City. **CIRCLE 311**



312

360-degree rotation

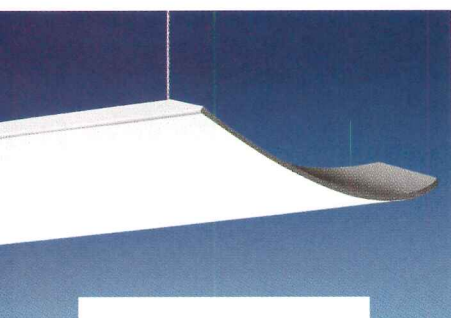
The tiny yet powerful MR8 Cambria 200 tungsten-halogen accent fixture is ideal for applications with limited mounting area, or for accenting smaller architectural or landscape details. It features an adjustable side-mounted swivel stem that provides a minimum of 340-degree tilt and 360-degree rotation. Lumière, Peachtree City, Ga. www.cooperlighting.com **CIRCLE 312**



313

Rail uplight

Thin as a rail, this indirect lighting pendant uses T5 fluorescent technology housed in a slender 1.75" square channel, suspended by .05" aerial cables. Lightspace, a division of Boyd Lighting, San Francisco. www.lightspacebyboyd.com **CIRCLE 313**



314

Responsive lighting system

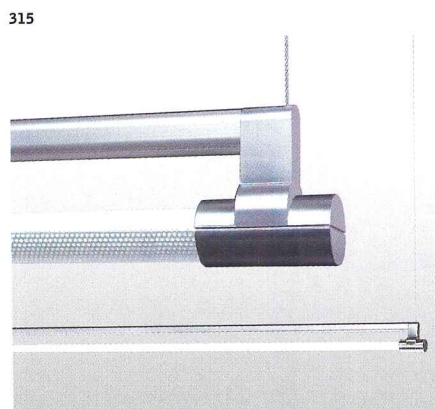
A new Integral Daylight and Occupancy Sensor, added to the Ethos line of indirect office lighting, offers users complete control of light output without touching a switch. Zumtobel Staff Lighting, Highland, N.Y. www.zumtobelstaffusa.com

CIRCLE 314

T5 luminaire family

The Spina line of T5 luminaires is available in 2', 3', and 4' configurations as pendant or surface-mount fixtures. Perforated lamp shields maintain a minimal profile. Delray Lighting, North Hollywood, Calif.

www.delraylighting.com **CIRCLE 315**



315

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Bumps of light

Bega's new small-scale luminaires are 4 $\frac{3}{4}$ " in diameter and spread illumination across paved areas to delineate ramps, walkways, and entrances. Using low-voltage, 20-watt lamps, the lights project 1 $\frac{3}{8}$ " above grade and can withstand heavy loads. Bega/US, Carpinteria, Calif. www.bega-us.com

CIRCLE 316

Cable pathway system

The UL-classified EZ-Path cable pathway is a simple solution for cables and wires penetrating fire-rated walls. Its self-enclosed firestopping automatically adjusts to the cable load. Cabling moves, adds, or changes are achieved without removing and reinstalling firestopping. Specified Technologies, Somerville, N.J. www.stfirestop.com

CIRCLE 317

Low voltage, long life

THHC Lighting has launched the newest line of the low-voltage Xelogen family, the 120V series. Filled with low-pressured Xelogen glass, the lamps have 5,000 hours of life. THHC Lighting, City of Industry, Calif. www.xelogen.com

CIRCLE 318



316



317



318

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The window on the left
was built in the 1930s.
The one on the right, last week.
Or was that vice versa?

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AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION SERIES

Weather Shield Windows & Doors



Impact-Resistant Systems: Security in a Tiffany Setting
A New Generation of Windows and Doors is Taking the Coast by Storm.

It has been a decade. Still, we are talking about Hurricane Andrew. Andrew, upgraded last month by federal researchers from a Class 4 to a Class 5 storm, was the costliest natural disaster in U.S. history. In the past century, only two other hurricanes of similar magnitude have struck the U.S. mainland: Camille in 1969, the strongest storm that hit the Florida Keys in 1935.

Andrew peaked winds of 165 mph and came within 20 miles of a direct strike on downtown Miami. It was directly responsible for \$26.3 billion in damage. More than 133,000 single-family homes were destroyed or damaged; 161,000 people were left homeless.

Subsequent analysis yielded the observation that up to a quarter of the losses attributed to Andrew were attributable to construction that failed to meet codes, poor enforcement of codes, and deficiencies in the codes themselves.

In the 16 years since Andrew, building codes in Florida, Texas, the Carolinas and other coastal states have undergone significant overhauls, many of these focused on vulnerable window openings.

Windows and doors were universally found to be the weakest building link, and these failures have been shown to lead to a domino effect that ends in catastrophic losses during major storms.

The highest priority amendment for all retrofits and new construction, according to code officials from Florida to New York, are impact-resistant windows and doors.

This continuing education section is intended to familiarize readers with the new code demands and details of a new generation of impact-resistant glass products with which to meet the new codes.

Florida Led the Change
Florida recently implemented the nation's first enforceable building code. The most dramatic change: the new Florida Uniform Building Code requires approved impact resistant glazing in windows and doors (or other protection devices). Just a few months later, the Falls Church, Va.-based International Code Council, a body created in 1994 by officials of Building Officials and Code Officials International, Inc. (BOCA), International Conference of Building Officials (ICBO), and the Southern Building Code Congress International (SBCCI), developers of the three model codes used throughout the U.S., issued a similar mandate: windows and doors would be required to be assembled using impact resistant glazing or shutter systems to lessen the hurricane threat.

Fourteen Texas counties also have adopted the stricter codes, and they are expected to be implemented statewide by the end of the year.

The strengthened codes are intended to improve construction techniques in order to prevent losses during natural disasters.

Advertising supplement provided by Weather Shield Windows & Doors

Learning Objectives
At the end of this article you will be able to:
• Understand the codes that apply to hurricane and other severe weather regions.
• Identify the features and benefits of a window system compared to shutters.
• Know how to correctly select and specify impact-resistant window & door systems.

Questions
1. Analysis of Hurricane Andrew yielded that up to how much of the losses were attributable to inadequate construction codes.
A. 1/4
B. 1/3
C. 1/2
D. 3/4

2. To qualify, what sea storm is to be the weakest building link in a hurricane?
A. Windows and doors
B. Roof structure
C. Exterior walls
D. A large percentage of hurricane damage is out from the wind itself, but from
A. lightning rate

3. Does an opening of only _____ penetrate on the windward side of a structure will allow full penetration of the incident, creating uplift pressure on the roof and lateral pressure against interior walls.
A. 1/4
B. 1/8
C. 1/2
D. 1/3

4. The new impact-resistant laminated consists a _____ of _____ installed between two sheets of at minimum 1/4 in. annealed glass.
A. a. Polycarbonate
b. Polyethylene
c. Polystyrene
d. Polyethylene

5. The shutter frame must be included in the testing of a product to be certified as an impact resistant window door system.
A. True
B. False

6. Code approved window systems can be about _____% less expensive than windows with accordion shutters.
A. 12
B. 17
C. 27
D. 32

7. Category 4 hurricanes can cause "extensive" damage with winds of:
A. 111 - 139 mph
B. 139 - 155 mph
C. Greater than 155 mph

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*Program requirements and a complete list of courses can be found on archrecord.construction.com.

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• Understand the codes that apply to hurricane and other severe weather regions.
• Identify the features and benefits of a window system compared to shutters.
• Know how to correctly select and specify impact-resistant window & door systems.

Instructions
Refer to the learning objectives above. Complete the questions below. Circle the self-report form on page 274. Follow the reporting instructions, answer the test questions and submit the form. Or use the Continuing Education self-report form on Record's website—archrecord.construction.com—to receive one AIA/ACES Learning Unit including one hour of health safety welfare credit.

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1. Analysis of Hurricane Andrew yielded that up to how much of the losses were attributable to inadequate construction codes.
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C. 1/2
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A. 12
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D. 32

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A. 111 - 139 mph
B. 139 - 155 mph
C. Greater than 155 mph

AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION

Program Title: **Both New and Improved Advances in Seismic Technologies Promise Safer Buildings*** (SR02, page 185)

ANSI/CEC Credit: This article will earn you one AIA/ACES CE hour of health, safety, and welfare credit. Total CE credit: September 2004.

Directions: Select one answer for each question in the exam and completely circle appropriate letter. A maximum score of 75% is required to earn credit.

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For questions about your credits call 877-876-8093.

Built-in infrared dimmer

Eco-10 IR, a fluorescent ballast with a built-in infrared dimmer, offers personal control of overhead lighting through the use of a handheld IR transmitter. Lutron Electronics, Coopersburg, Pa. www.lutron.com **CIRCLE 319**



319

Flush-mount collar

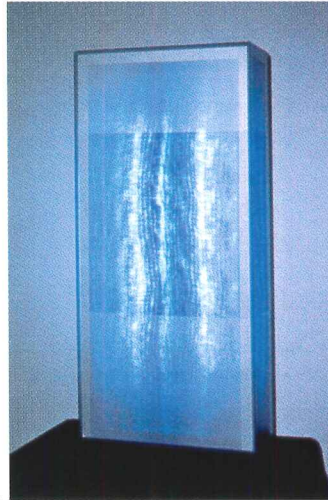
The Iris Flush Mount Collar allows any standard Iris housing to be installed flush with the finished ceiling. Iris Lighting Systems, Peachtree City, Ga. www.cooperlighting.com **CIRCLE 320**



320

Illuminated building material

The Fractal Light Structure merges art with glass and lighting technology to create an illuminated building material that can be fabricated into lamps, furniture, or walls of light. Cesar Color, Phoenix. www.cesarcolor.com **CIRCLE 321**



321

Stealthy luminaire

Stealth is a compact, 2.75" square recessed step and path light designed for either LED, Xenon, or fiber-optic sources. Lucifer Lighting, San Antonio. www.luciferlighting.com **CIRCLE 322**



322

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**AIA/ARCHITECTURAL RECORD
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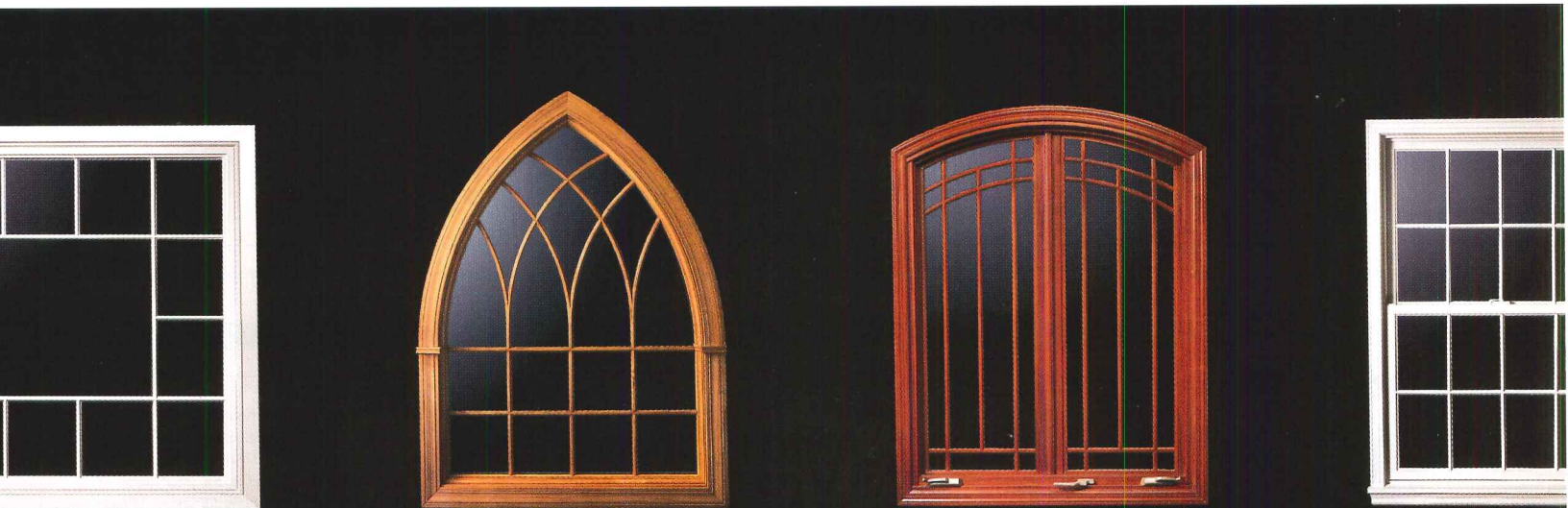
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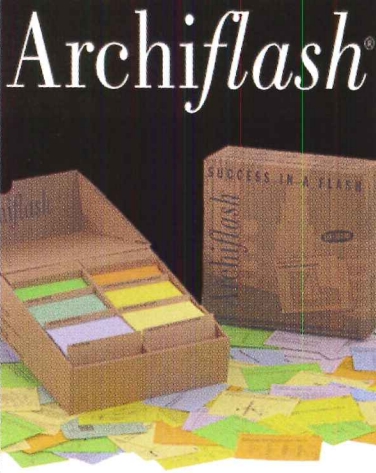



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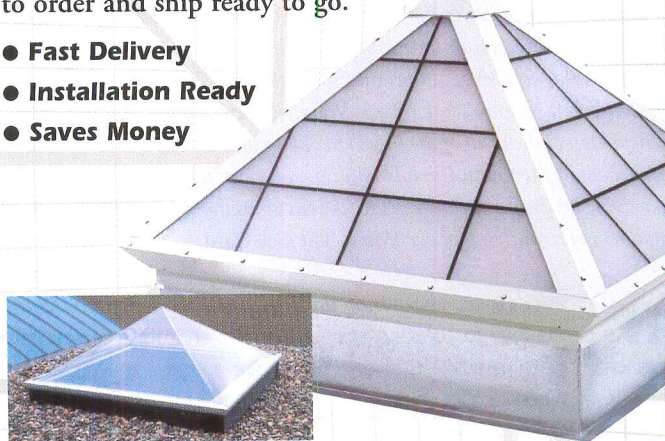
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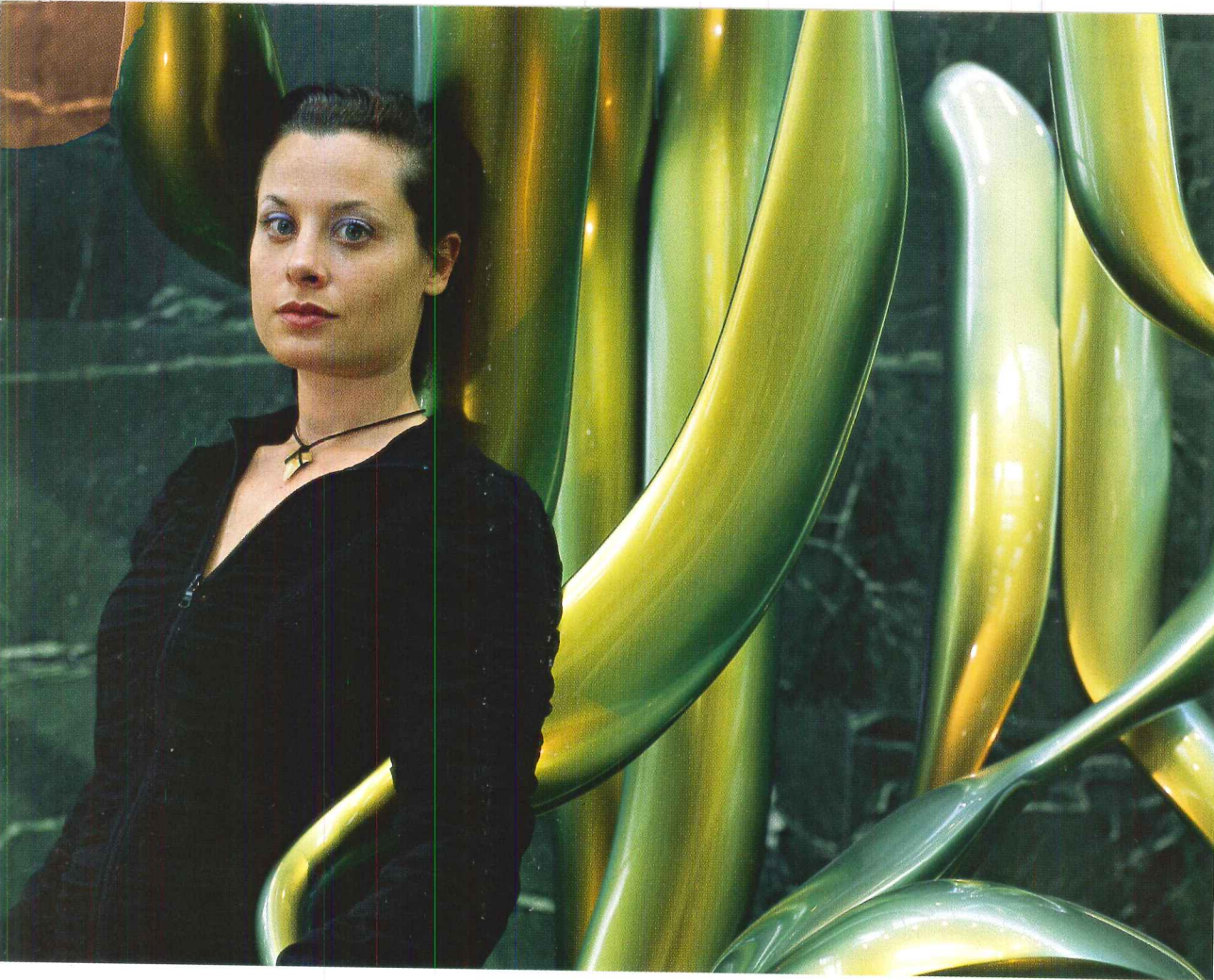


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Mara Haseltine: A sculptor who looks inside to find her muse

Interviewed by Ingrid Whitehead

Sometimes it's the small things that count. At least, that's what Mara Haseltine found when she began translating the most minute human substances, subcellular structures, into large-scale sculptural installations set in verdant landscapes. The Brooklyn-based sculptor's latest work, *Waltz of the Polypeptides*, features a 110-foot depiction of the birth of the BLYS (Beta Lymphocyte Stimulator) protein. The mixed-media installation is rendered in metal, glass, and 7-pound foam, and set into a living landscape of plants. Haseltine envisions the work as the first completed component of a much larger earthwork, *The Cell Garden*.

Q: Can you describe your vision for *The Cell Garden*? *The Cell Garden* is a playful way to combine science and art and engage peoples' self-awareness of how incredible their own bodies are and how they function on a cellular level. When visitors venture within the membrane of *The Cell Garden*, they will be taking an internal journey. People have a visceral reaction to the forms when they see them as sculptures; these are not just random shapes. My goal is to create a visually beautiful and exciting work that is a universal gesture. The work is cross-gender, cross-cultural, and while a three-year-old can enjoy it on a purely formal level, so can the most sophisticated biochemist. I also plan on using recycled materials and renewable energy sources to create *The Cell Garden*. I am currently looking for the perfect site, hopefully somewhere here in New York.

You've collaborated and consulted with artists, engineers, scientists, and high-tech fabricators such as CTEK to create your works. Is a lot of your work based on technology?

The thing I don't like about computers is that they have a genuine lack of dirt. I like to combine the most ancient techniques with cutting-edge technology. The techniques I used to create *Waltz* would not be possible without recent developments in bioinformatics, which enables scientists to see and analyze the tiniest submolecular forms. Mixing these innovative techniques with landscaping, agriculture, and sustainability will be what makes *The Cell Garden* so unique.

Who, or what work, inspires you? My greatest inspiration comes from Mother Nature. I am very influenced by the beauty of Zen gardens; I love the mix of nature and architecture in the temple gardens, especially in Kyoto. I also look to artists and architects that have created grand gestures, like James Turrell's site-specific installation at the Roden Crater, Niki de Saint Phalles's *Tarot Garden* in Tuscany, Cai Guo-Qiang's *Projects for Extraterrestrials*, Nicholas Grimshaw's *Eden* project in Cornwall, KieranTimberlake, Zaha Hadid, so many others! Architects bring a whole palette of materials and possibilities to a vision—there are always physical limitations that require problem-solving in the real world.

Photographed by Jeremiah Jones at the Human Genome Sciences Building in Rockville, Maryland. Learn more about Mara Haseltine at calamara.com.



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