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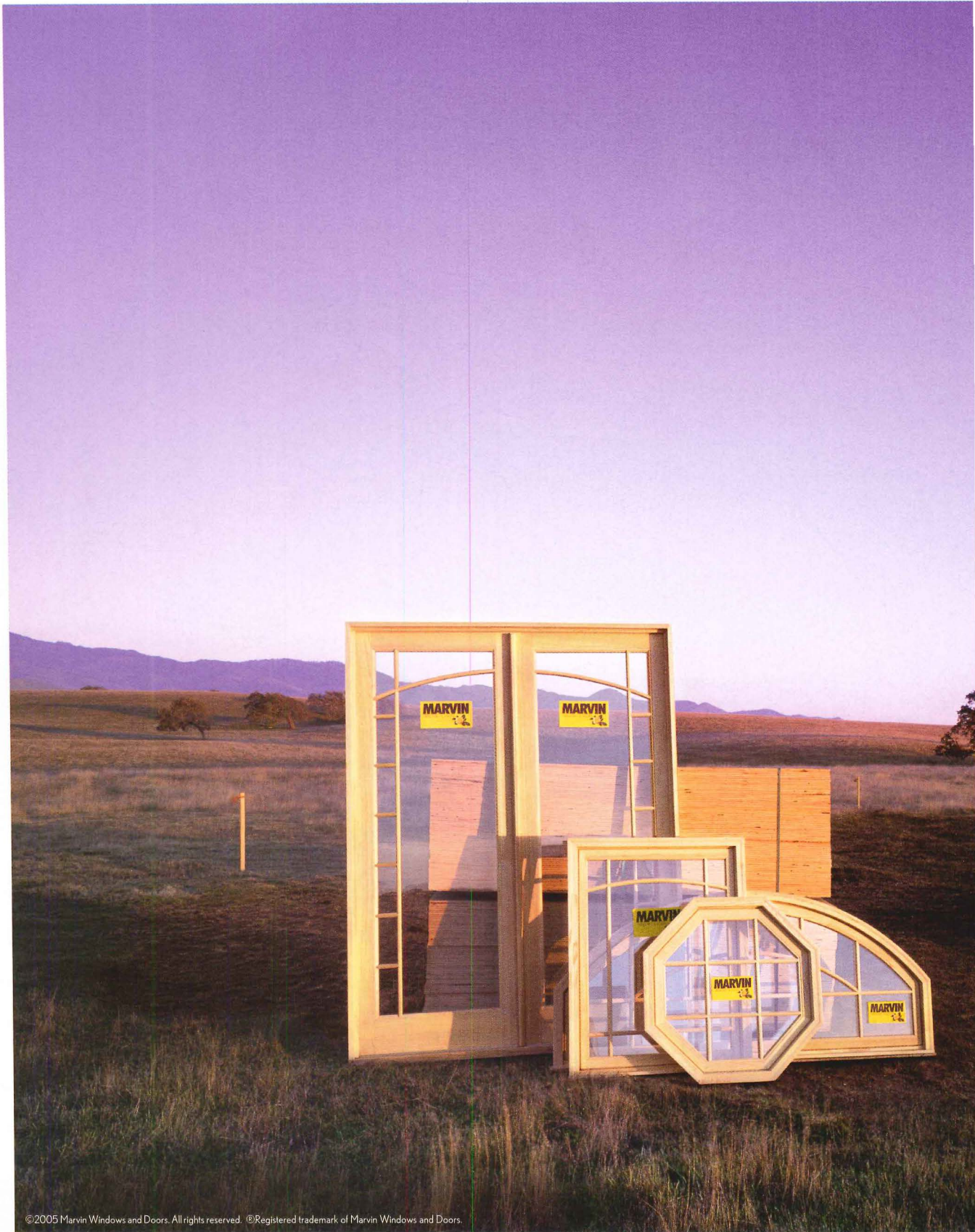
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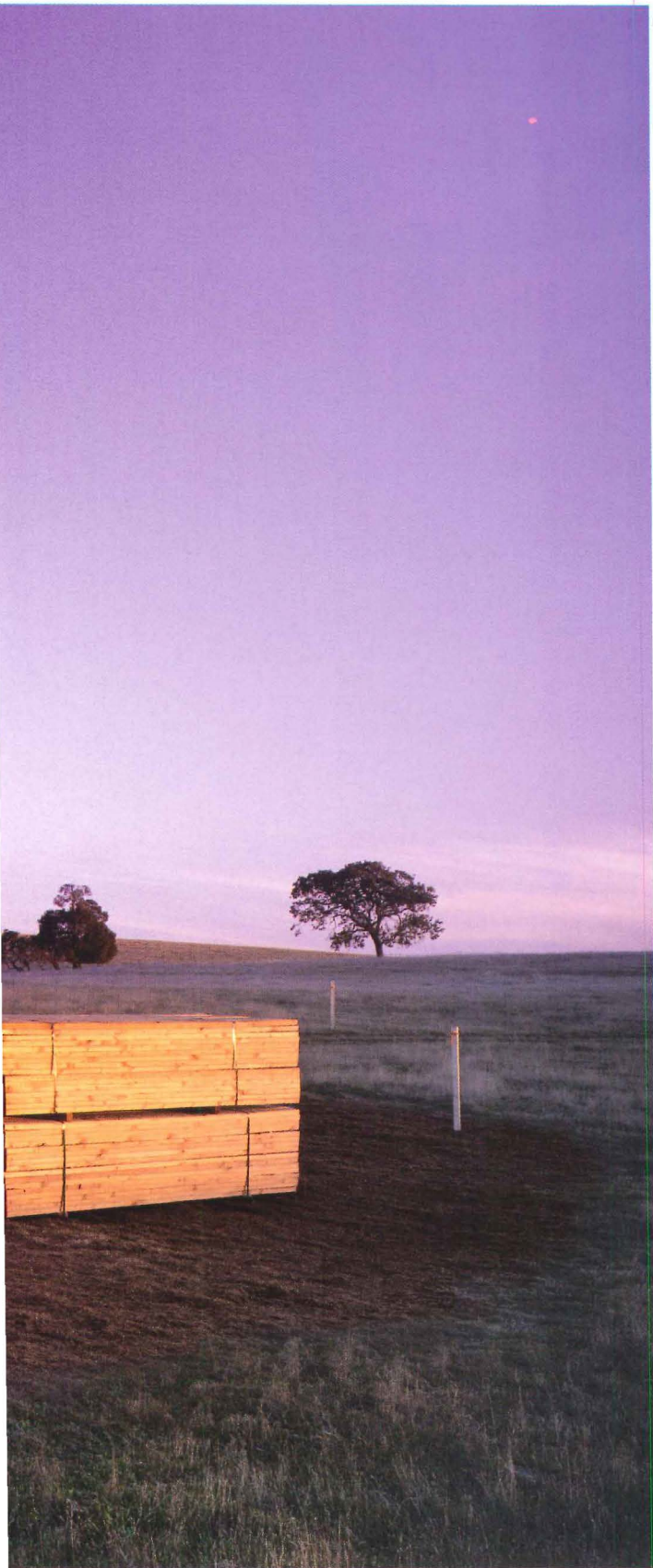
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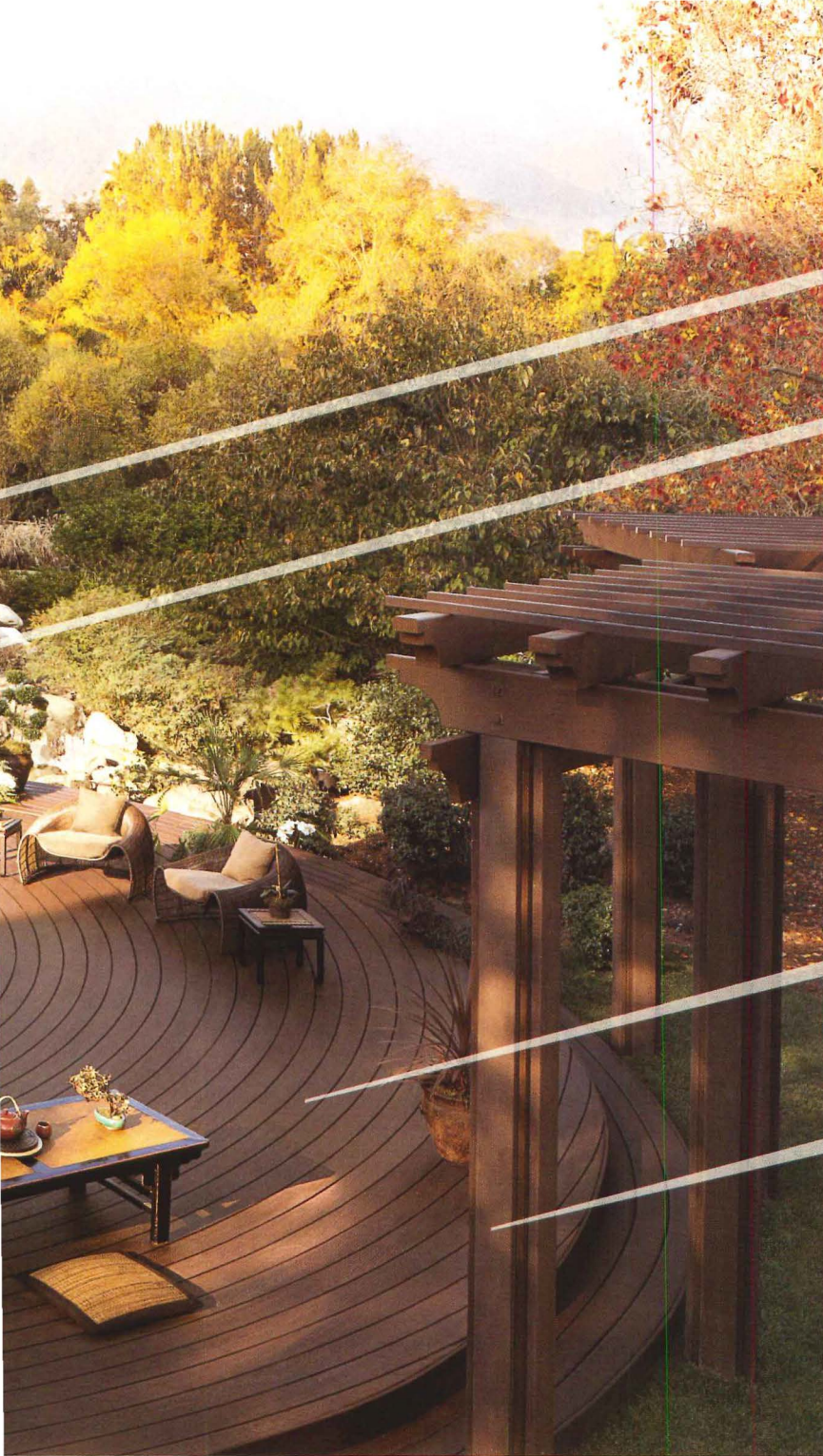
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On the Cover: Lotus House, by Kengo Kuma. Photograph by Daici Ano
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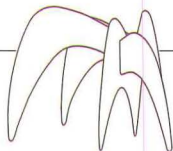
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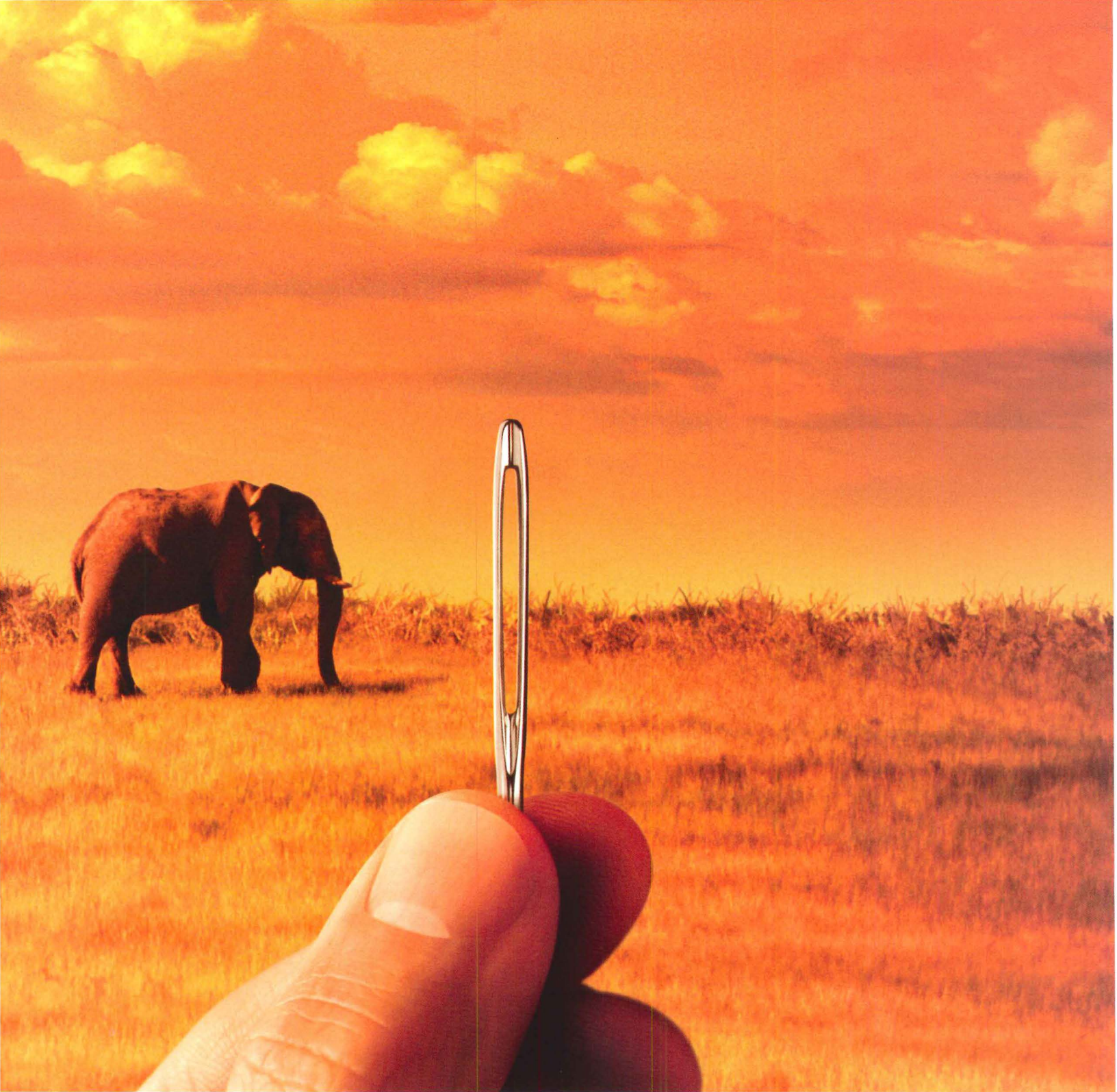
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In This Issue:

Pages 163-167 **Getting on Board with Building Information Modeling**
Using 3-D modeling to integrate the design and construction process

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LEARNING OBJECTIVES:

- Apply Building Information Modeling (BIM) to a building project.
- Understand the major benefits of BIM
- Recognize how BIM enables an integrated project team to deliver a project that is completed faster, is less expensive, of higher quality, and safer than those developed with traditional delivery systems.
- Learn how collaborating with the structural steel industry can provide design professionals with valuable information and best practices when applying BIM to projects.

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Building Types Study—Record Houses

Throughout *Record Houses 2006*, each project reveals strong links to its particular place. In the eight featured dwellings, culled from four continents, the connection may be primarily through culture, climate, landscape—or a combination of influences.

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Cincinnati architect Terry Boling crafts solid structures out of carefully considered materials with the help of his students.



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Project Portfolio

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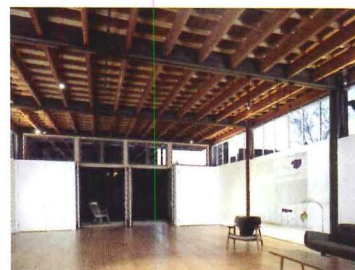


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Residential

From a carriage house 120 years ago to having a jet turbine crash into its roof in the 1960s to the home for a Hollywood screenwriter, this Brooklyn building has been through much change. Now architect Philippe Baumann transforms it into an airy loft that brings the outside in.

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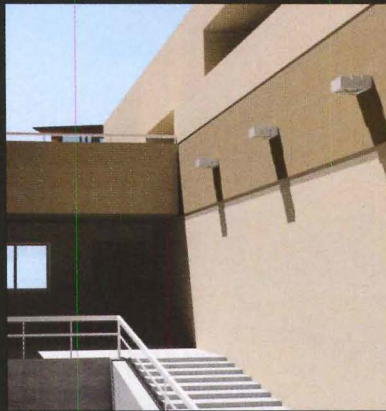
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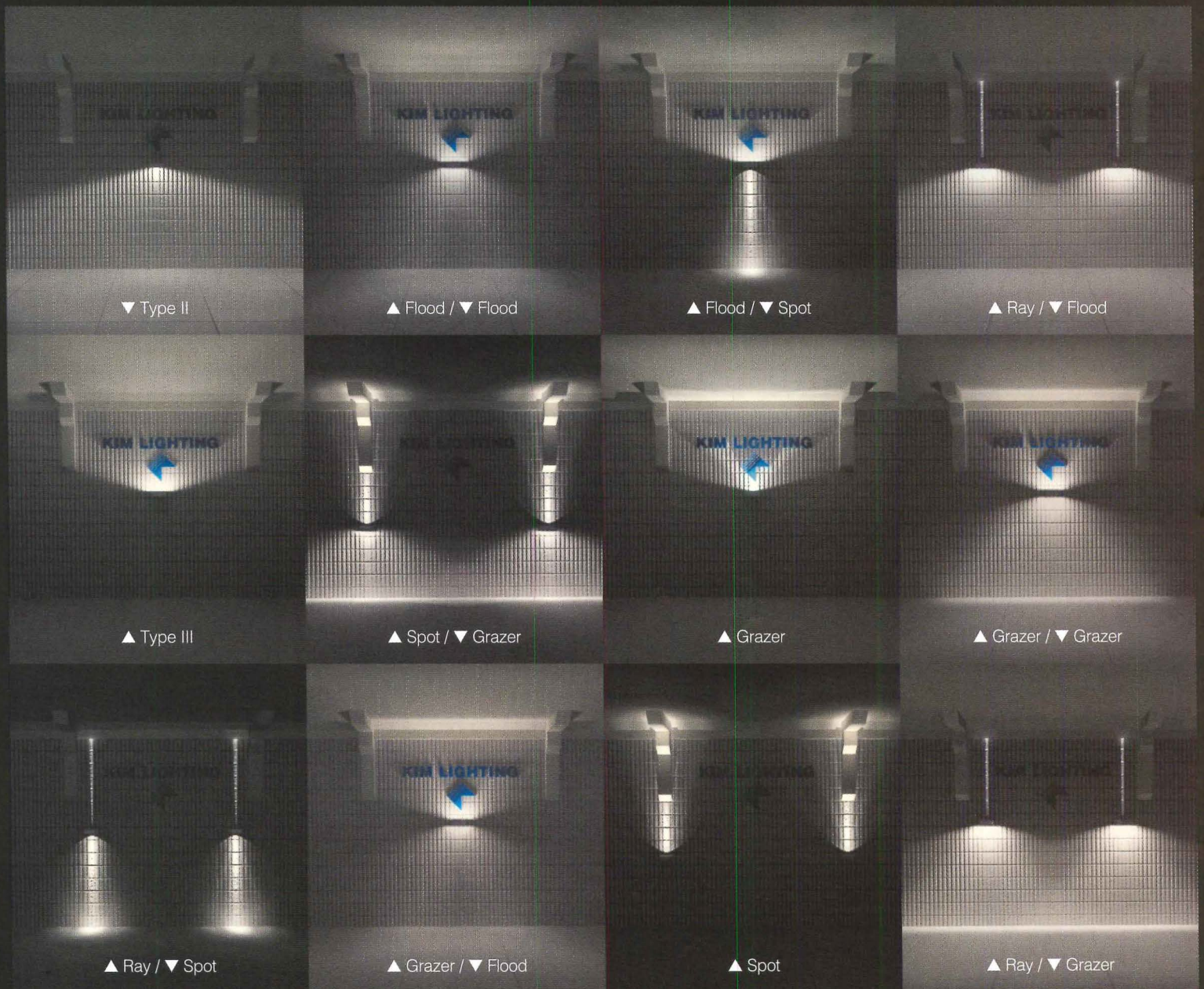
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Editorial

By Robert Ivy, FAIA

The conversation with my fellow traveler was breezing along as two frequent fliers compared notes on the American home. Here we were, separated by geography (north/south), work (public versus private sector), yet experiences with our own houses bore striking similarities, including the removal of trees recently downed in harsh weather. Where, we speculated, did nature present only a constant, benign face? The answer: England! Then with one sentence, the universe shifted. "Of course, I would never live there," he observed. "They don't allow handguns, and I couldn't protect my home."

Like a lightning strike, his observation divided us: We clearly saw the world in distinctly different ways. He sallied into the need for protection of hearth and family in a troubled world, describing how his own house lay nestled in four defensible acres of trees; I, by contrast, lived in Jane Jacobs land writ large, an urban oasis of brownstones and pruned street trees rendered defensible by congregate living. What particularly struck me, on reflection, was how I had managed to proceed through a lifetime of architectural involvement so far removed from the worldview articulated by the armed homeowner.

Architects often accept the pieties we have been taught, the lessons that we absorb and discuss, as larger truth. If only the rest of the country would simply wake up and stop sprawl. Plan better cities. Preserve open spaces. Build more environmentally responsible structures. Any fool (read, the public) can see how self-interest is despoiling the land; developers, greed, and blithe unconcern of homeowners form an unholy trinity, from this shared perspective, fed by low interest rates and tax laws that encourage the building of the single-family home. While we architects are quick to know the better answer, we might take time to understand the motivation of the people we hope to convince. How well do we actually understand, for instance, the American need for autonomy? Clearly, the homebuilding boom of recent years reflects deep-seated desires. Better understanding of the motives leading to the suburbanization of America can allow us to acknowledge and address, if not agree with, the results. An informed architecture, and planning, can only improve our design.

The need forcefully articulated by my fellow traveler was for security. His position, while extreme to these New York ears and smacking of a Michael Moore parody, historically extends to the founding of the United States, when individual settlers faced the perils of an expansive wilderness and

ultimately forged the democratic system we currently enjoy. The philosophical underpinnings that place the citizen at the helm of his or her own destiny stretched throughout the nineteenth century to include a litany of virtues encapsulated in the title of Emerson's well-known essay "Self-Reliance." Wright and other architects mixed morality with design, with repercussions that extend into this new century.

Today, the currents of global change and the challenges to domestic order are creating undercurrents of fear that erupt in unexpected places. Movies such as *Safe Room* and *Hostage*, which serve as a sort of dreamlike id to our more rational daytime lives, portray the American house as a fortress, assaulted by crime, powerless in the face of inept authorities. In the case of those imaginary tales, neither the architect-designed houses out in the landscape nor those in the city, protected by electronic systems, fortified by vaults and television cameras, could save the protagonist. The individual homeowner, and heroic strangers, are the best defense.

Architects are sometimes accused of being out of touch with widespread needs, including security. In this issue, *Record Houses* again reflects the deep-seated desire for dwellings with a symbiotic relationship to the out of doors that is transparent and in harmony with nature. At the same time, the eight residences presented in these pages and on the Web will never address all of the fundamental questions accompanying our overarching desire to live within the countryside. The traveler might ask, can these remote, leafy bowers offer a sense of security on dark New England nights? What neighbor might you call if the lights went out? Architects are rarely motivated by fear. Enconced as we are in lofts, or within the hum of the urban village, an unexpected conversation with a stranger suggests that we ponder the qualities of the ideal home and whether we architects are in touch with our clients. While I'll not soon change my own position on the role of firearms as the best source of security, nevertheless I wonder, how well do we know what clients really want?

Letters

Tradition on location

The Red Location Museum designed by Noero Wolff Architects in New Brighton, South Africa [Record, March 2006, page 99], is a good example of incorporating traditions in a structure. It was refreshing to read that local building materials and labor were implemented. The corrugated-iron sheeting and concrete block give the structure an earthy feeling and fits in with the environment. The concept of "memory boxes" helps define the era of apartheid. It is impressive that the architects took the time to include the residents and their customs in the overall scheme.

The end of apartheid, however, has by no means erased racism. Hopefully, buildings such as The Red Location Museum will raise

awareness for future generations about the effects of racism. It is ironic that the residents of New Brighton were forbidden in the past to visit cultural institutions unless as employees, and now this museum has been built in their own backyard—dedicated to each and every South African.

—*Adrienne Batson-Cooper, APA, Assoc. AIA
Brooklyn*

A real rebuilding plan

Sorkin's February Critique on the Congress for the New Urbanism's (CNU) work for the Mississippi Gulf coast didn't quite go far enough [page 47]. The CNU espouses "higher density" building and "smart growth," yet is effectively down-zoning some of the cities that have adopted their

zoning philosophies. The CNU Charter states that neighborhoods should have densities of "8, 10, even 50 units/acre." "New" urbanism must encompass people who live at densities of 100, 200, even 300 units/acre and must, at the least, make an effort to promote zero or low-energy cities.

The CNU is trapped by the "formula," controlling every element down to the minute detail. "New Urbanism" should include what writer and activist Jane Jacobs calls "the strange": unpredictable uses and peculiar scenes that are essential to flourishing urban places. The trick is how to ensure "the strange" in zoning theory. It may be not to "fix" everything, but to leave a variable allowing unpredictable differences to occur. The CNU charter

rejects "placeless sprawl," yet advocates sameness in the neo-traditional, "seamless" architecture that somehow always requires a porch, regardless of context. Porches are good in some places, not good in others. Real neighborhoods develop over time, are diverse, and cannot be replicated.

Plans for the rebuilding and planning of the Gulf Coast must include real diversity, real densities, and real sustainability, currently lacking in the CNU dogma.

—*Angie Brooks
Pugh + Scarpa
Santa Monica*

The state of criticism

Globalization and the Web are not, as Nancy Levinson maintains in her March 2006 Critique [page 63],



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Letters

entirely responsible for the shallowness of contemporary architectural criticism. The best critics of the third quarter of the 20th century operated from a personal conviction about the rightness and beauty of well-crafted buildings. Allan Temko envisioned a technological architecture and cityscape, while Peter Blake lovingly wrote about the moral authority of Modernism (especially Le Corbusier's) while acknowledging its limitations. Criticism's miasma today is primarily due to the absence of the critics' moral conviction about design, not the bewildering array of ideas and forms now found on the Internet.

—James A. Gresham, FAIA
Tucson

Lost spirit

I was disheartened to read the feature on the Rural Studio after Samuel Mockbee [March 2006,

page 76]. On the one hand, it is great to see the work continue after Mockbee's death. On the other hand, the design language has dramatically been altered.

I applaud Andrew Freear's continued efforts to follow in Mockbee's larger-than-life shoes and his success in mainstreaming the studio work. However, stating the opinion that the architect was perceived as a person who "the locals all thought was loony" seems inappropriate and disrespectful to the studio's founder.

Architecturally, there has been a shift from a study of vernacular form to a refined universalistic architecture that is mainstream Modern. In the article, Andrea Oppenheimer Dean describes the work since Mockbee's departure as "sophisticated" compared to the earlier work—yet the new work appears to lack the spirit of context and place that he and his

students so assuredly conveyed in the architecture.

—Doug Sonsalla
West Fairlee, Vt.

Risk assessment

The interview with Supreme Court Justice Stephen Breyer ["The Importance of Openness in an Era of Security," January 2006, page 80] was interesting for a number of reasons. It is exciting to hear a client describe how one can feel one's spirit rise upon walking into a well-designed building. And I share Breyer's views on risk assessment when he states: "Not all risks can be avoided. There are many tiny risks that are not worth eliminating. You cannot cure tiny risks at a large cost or the country will soon be bankrupt." However, I am not sure I am with him when he opines that architects should try to be involved with making security decisions. It's not that I disagree with his position—I'm just not certain that my insurance will cover the risk.

—Tom Usher, AIA
Kansas City, Mo.

Making landmarks

It was a great pleasure reading the Archrecord2 piece "Thom Faulders: Finding Depth in Surfaces" [February 2006, page 43]. It is a special delight to read about innovative designers who integrate thoughtful concepts with sophisticated technology and make efficient and artistic structures. When such designs become finished structures, they create environmental landmarks that are a pleasure to admire and inhabit. Faulders's AirSpace multifamily housing unit in Tokyo will certainly join this league.

—Stefanie Leontiadis
Enfield, Conn.

Corrections

In a March News Brief about Daniel Libeskind working in Gulfport, Mississippi [page 32], a reference to the town Unawatuna, in Sri Lanka, was misspelled as Atawatuna.

Send letters to rivy@mcgraw-hill.com.



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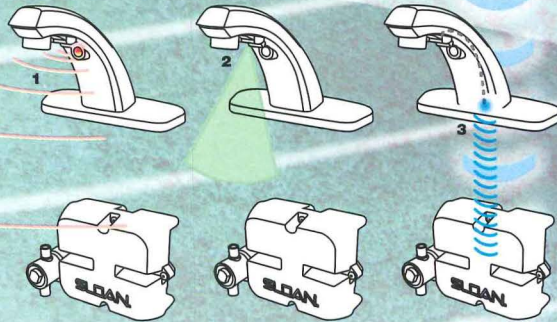
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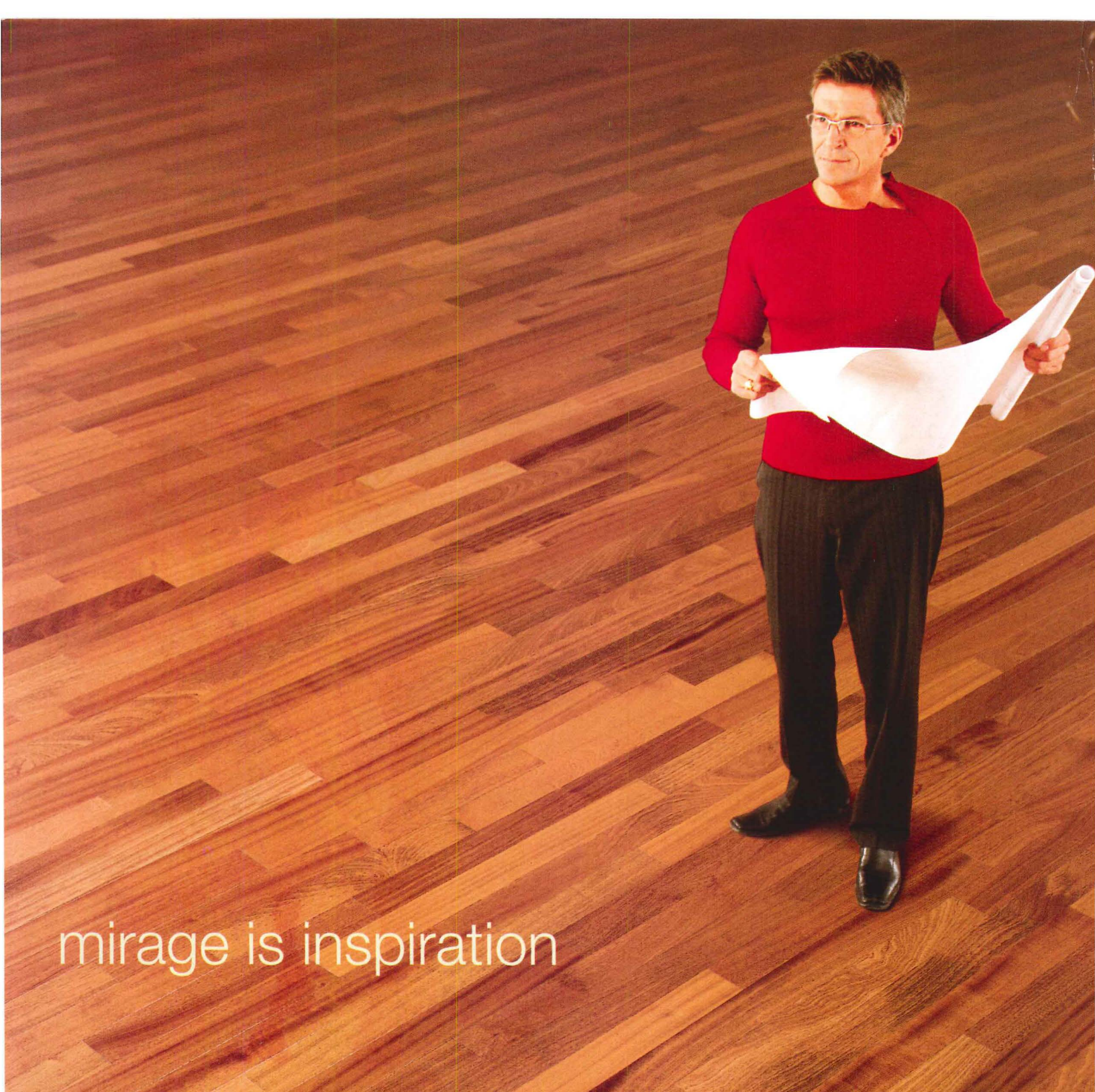


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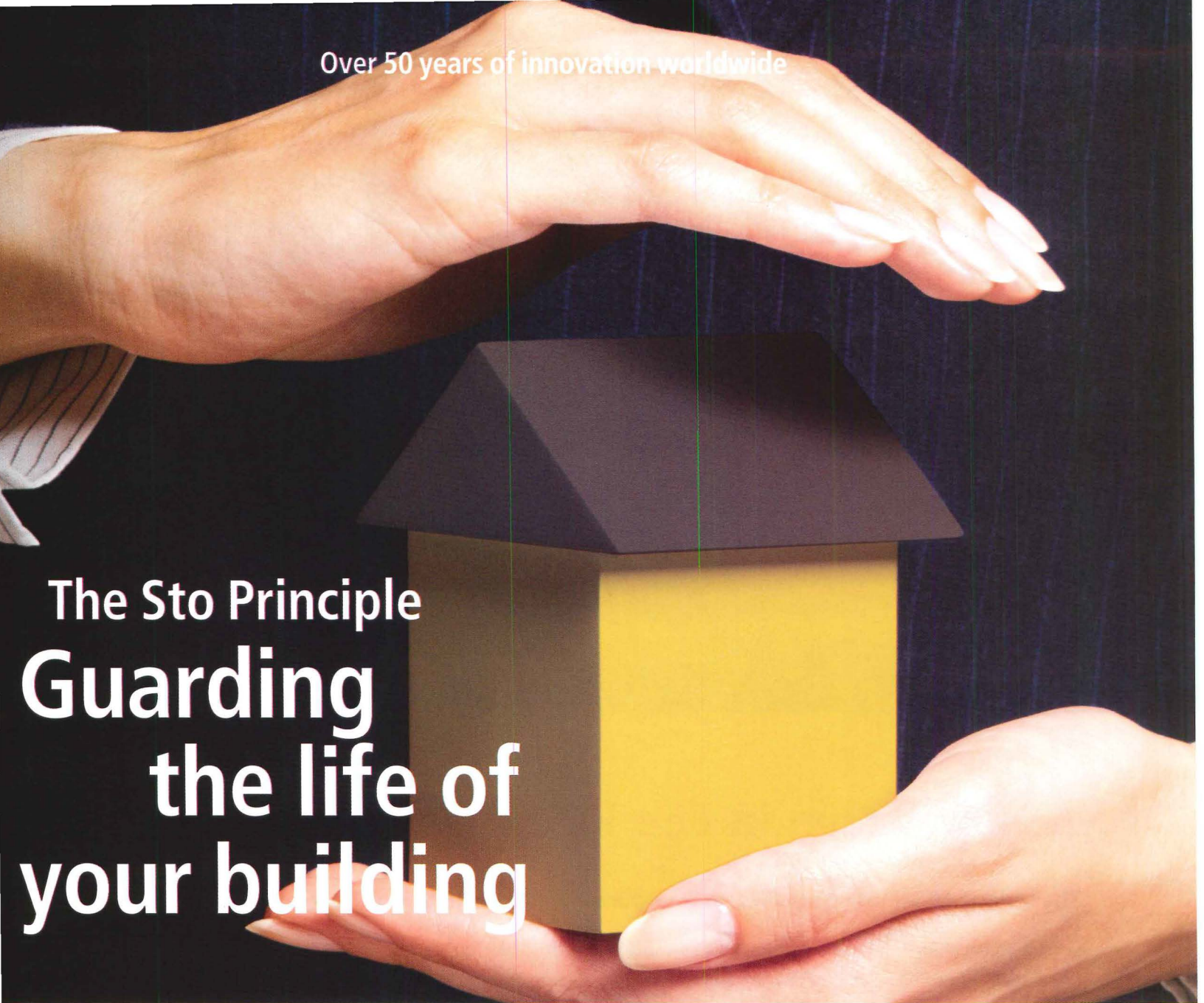


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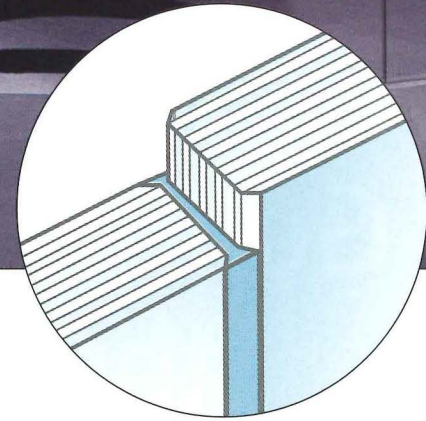
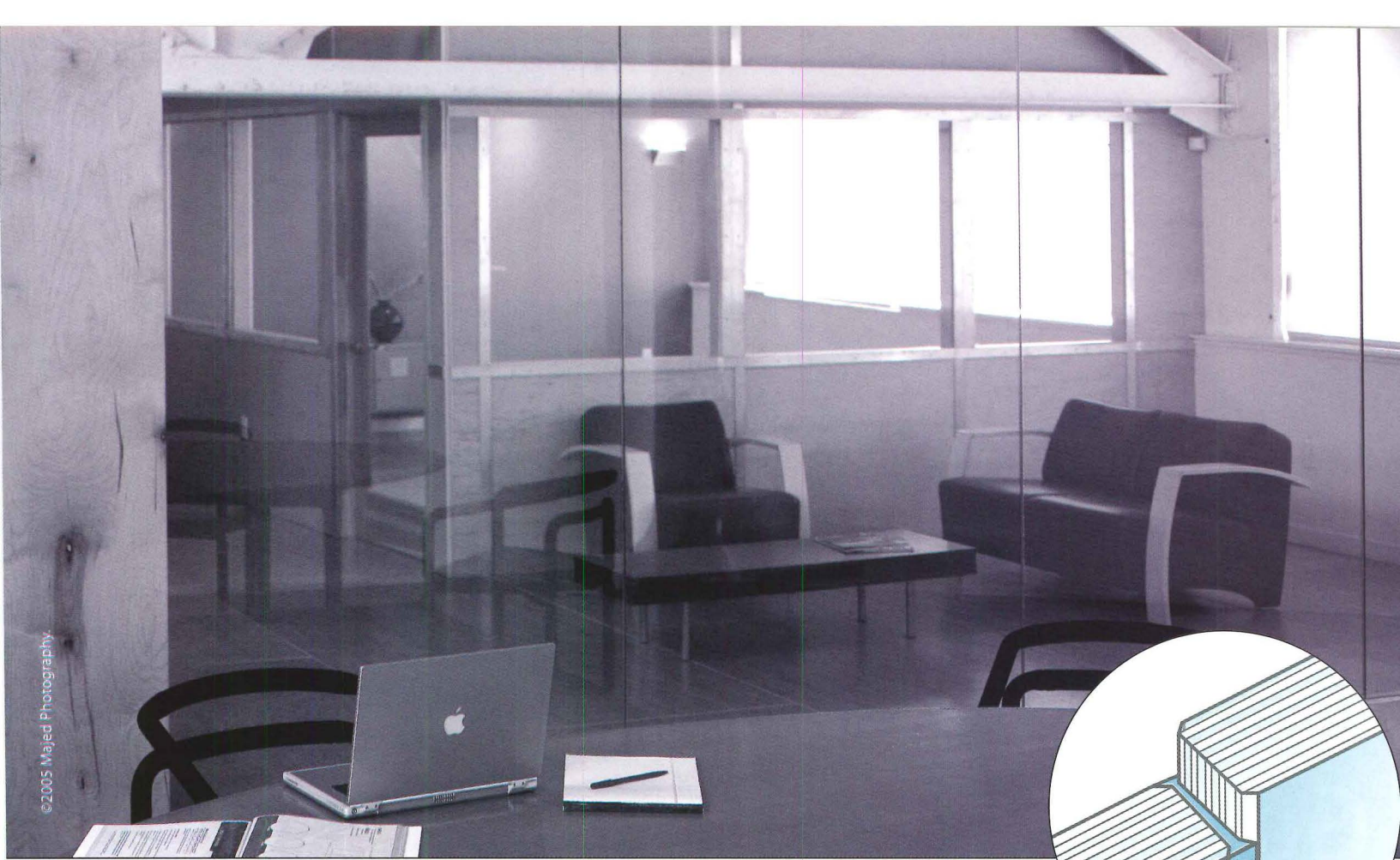
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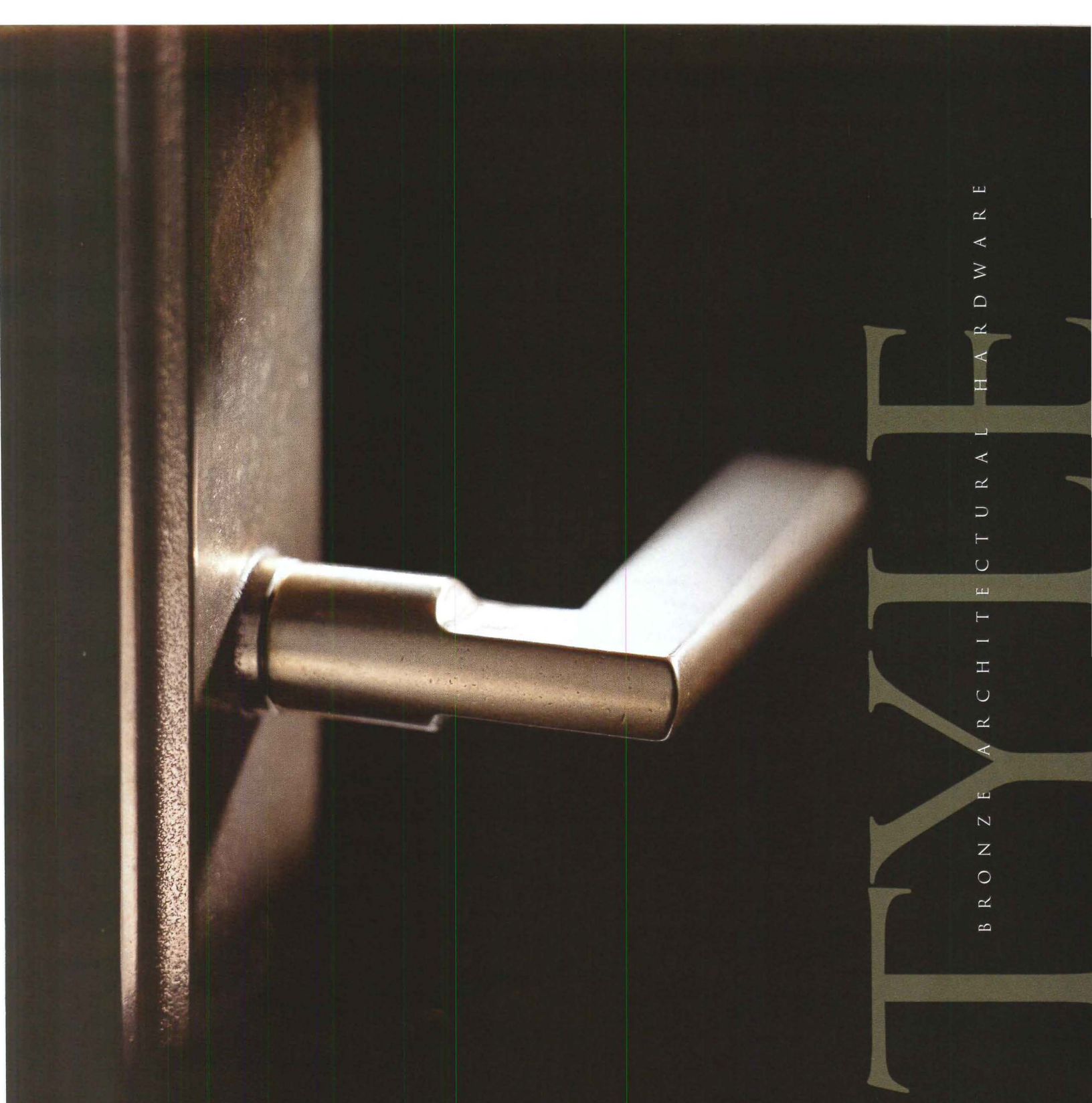
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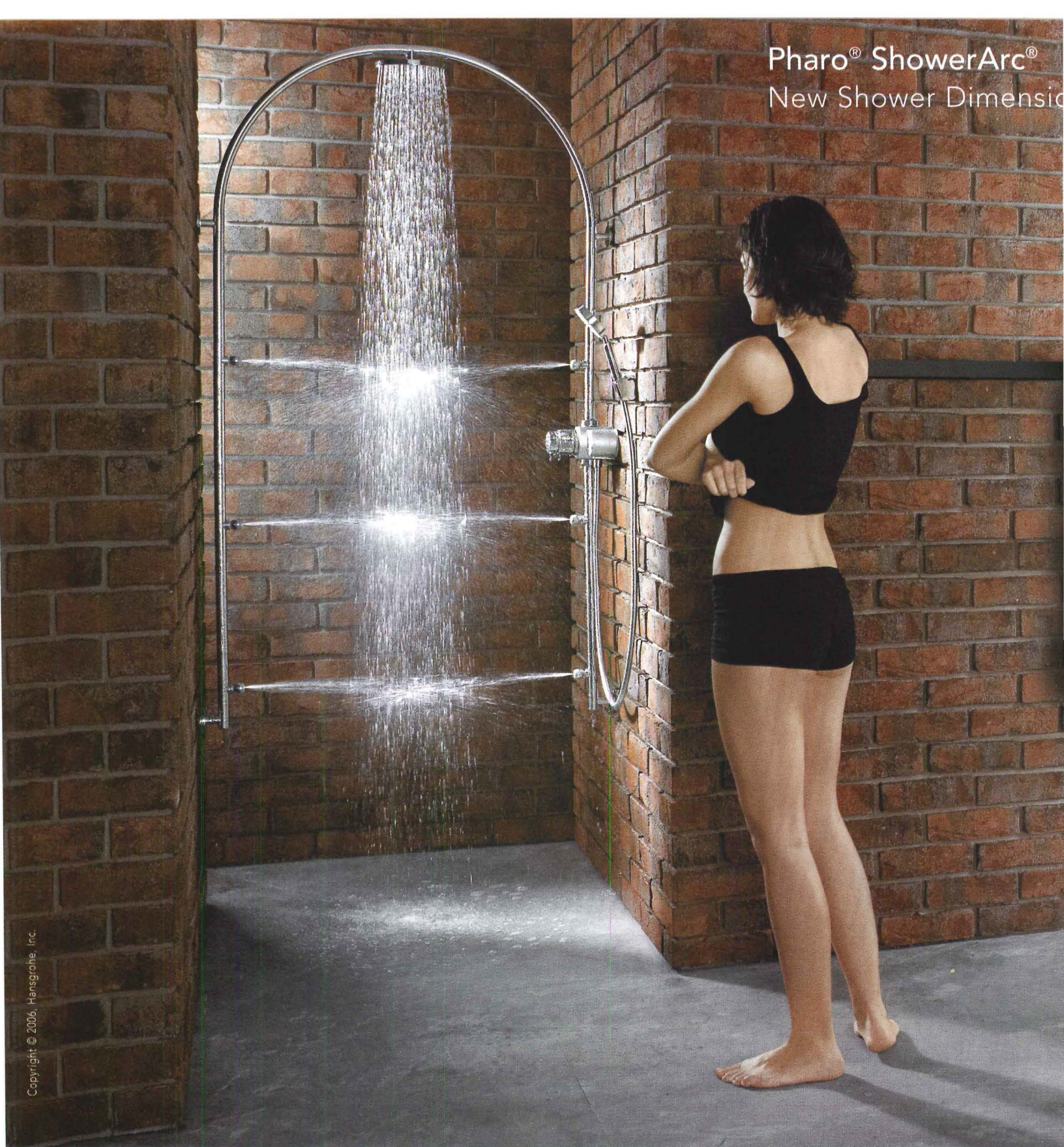
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PHARO
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- p.34 Gulf Coast rebuilding update
- p.38 Gehry designing first Las Vegas project
- p.43 Calatrava's Dallas Bridge soon under way
- p.44 Rudolph's Riverview High threatened

Despite controversy, Rogers will keep Javits commission

In early March, British architect Richard Rogers's recently released design for the expansion of the Jacob K. Javits Convention Center in New York was still receiving positive reviews. But it was quickly overshadowed by a firestorm over the hosting of a meeting of a group called Architects and Planners for Justice in Palestine (APJP) in Rogers's office on February 2. The group, which includes Charles Jencks, Michael Sorkin, Rogers's partner Abe Hayeem, and others, is considering a boycott of contractors and suppliers working on the security wall and settlements in Israel's occupied territories. APJP may also call for Israeli architects to be expelled from the International Union of Architects. The boycott would be similar to one imposed on South Africa during Apartheid.



An interior rendering of the Javits.

Though similar boycotts, such as one against Israeli academics, have already been initiated in Europe, the position is seen as radical in New York. New York Assembly Speaker Sheldon Silver, following a series of articles in *The New York Sun*, called for Rogers to be dropped from the

Javits project, and possibly from the redevelopment of Manhattan's East River riverfront and the expansion of Silvercup Studios in Queens (story below). In letters sent to New York Governor George Pataki and Empire State Development Corporation (ESDC) chairman Charles Gargano, Silver underscored the late Senator Javits's support of Israel and claimed Rogers's association with the project "undermines the deep-rooted friendship and strong economic partnership between New York and Israel." State Comptroller Alan Hevesi was also sharply critical of Rogers.

In a statement released on March 6, Rogers quickly dissociated himself from the group, saying, "I am not a member of Architects and Planners for Justice in Palestine, nor have I ever been.... I abhor boy-

cotts of any kind—of Israel or any other place. It is not a way to achieve peace, and I will not be party to any group or movement that advocates a boycott." The statement appeared to satisfy ESDC's Gargano, who, in a statement dated March 9, told Rogers, "Now it's time to get back to work."

Some prominent architects like Daniel Libeskind have backed Rogers, while others, such as Moshe Safdie, have expressed concern. The Anti-Defamation League (ADL), however, was satisfied with Rogers's clarification of his relationship with APJP. "You don't protest a boycott by initiating another boycott," says Abraham H Foxman, national policy director for the ADL. "Architects should build!" he says. "We should move on." *Alan G. Brake*

Silvercup Studios towers would revive Queens skyline

New York City's borough of Queens isn't known for cutting-edge architecture. But its lackluster skyline is now facing a dramatic transformation with a \$1 billion, mixed-use development designed by Richard Rogers for the Queens-based television and film production company Silvercup Studios. Plans call for two residential towers, approximately 600 and 500 feet tall, as well as a 526-foot-tall commercial building. The new buildings are to be constructed along the East River on a 6-acre site next to the Queensborough Bridge. The 2.2-million-square-foot project includes 1,000 units of residential housing, office and retail space, a riverfront esplanade, and a cultural facility, along with eight new soundstages.

The design of the Silvercup Studios towers, with their distinc-

tive exoskeletons and exposed diagonal cross bracing, reflects Rogers's penchant for displaying buildings' structural and mechanical systems. Silvercup Studios' president, Stuart Suna, who trained as an architect, says that the development's design is partially inspired by the structure of the Queensborough Bridge itself, which is reflected on the buildings' bracing and proportions. The manner in which the massing of the three towers slopes down complements the bridge's catenary curves, he says. The Silvercup project also includes the restoration of the landmark 1892 New York Architectural Terra Cotta Company building, situated on the site.

Silvercup Studios' chief executive, Alan Suna, who co-owns the facility with his brother Stuart, says

that the recent controversy over Rogers's reported association with the U.K.-based group Architects and Planners for Justice in Palestine (story above) shouldn't impact the architects' involvement with the Queens project.

The new development will be located six blocks west of Silvercup Studios' main production complex, which is the largest full-service film and television production facility in the Northeast. Stuart Suna says that his intention is to create a 24-hour-a-day live, work, and leisure facility similar to the Time Warner Center in Manhattan.

The studio expansion is coming at a time when New York City's film and television industry is bur-



A rendering of the Silvercup towers.

geoning, thanks in part to new city and state tax credits and other financial incentives. More than 250 films were shot in New York in 2005, compared to 202 in 2004, and the number of location shooting days in the city rose 35 percent. Currently, the city's production industry employs 100,000 New Yorkers and contributes \$5 billion to the local economy. *Alex Ulam*

SPECIAL HURRICANE REPORT

Louisiana planning begins; designers in region express sharp divisions

While New Orleans's redevelopment plans have seized the spotlight in Louisiana, Governor Kathleen Blanco and her 26-member Louisiana Recovery Authority (LRA) have named their own "dream team" of state planners, which started work in February. The team includes Calthorpe Associates, Urban Design Associates (UDA), and Duany Plater-Zyberk (DPZ).

DPZ, known for promoting mostly traditional New Urbanist planning, also led a major charrette in Mississippi last fall. The firm is leading design charrettes in towns

outside of New Orleans. Designers and residents shared ideas, sketched, and even drew up resolutions, forming plans that Adrés Duany says have already been formally adopted by some municipalities.

Participants proposed creating walkable neighborhoods, ensuring housing diversity, maintaining "community character" (including antebellum and Victorian architecture), conserving open land, and using "smart codes," which unify zoning, design standards, road types, and other elements. Outside design, charrette members advised forming community development corporations to buy land for redevelopment, creating new industries, and even moving most residents in one town, Erath, to higher ground.

Some critics have complained about the participation of the Congress for New Urbanism (CNU), which Duany helped found, in both Mississippi and Louisiana. In RECORD's March issue, critic Michael Sorkin called the CNU's methods "undemocratic," and labeled the group's historicist style "smiley-face architecture." Duany commented that such critiques

are often based on lack of understanding. "It's a caricature. They still say New Urbanism is about picket fences," says Duany, who says he proposed some Modern-styled houses at one of the recent charrettes, albeit to a poor response.

A different plan for New Orleans

New Orleans Mayor C. Ray Nagin's Bring New Orleans Back Commission's (BNOBC) building committee issued its first planning



A rendering from a DPZ charrette in Lake Charles, Louisiana, envisioned a canal, and traditional architecture, near the town's Ryan Street.

report in January [RECORD, February 2006, page 26] after a lengthy investigation by Philadelphia-based architects and planners Wallace Roberts & Todd (WRT). The plan, still in development, incorporated environmental assessments of the region and pointed out prime rebuilding opportunities. Lacking rigid design guidelines, the report focused on a "neighborhood-center model" organized around central green spaces and main streets. The BNOBC will conduct subsequent planning workshops in several New Orleans neighborhoods.

Because its promised FEMA funding recently fell through, the BNOBC planning effort is now being funded largely by the LRA and its non-profit LRA Support Organization. But BNOBC's Reed Kroloff insists that the state's planning team will not play a role in New Orleans, despite Duany's expressed desire to take part. "We have a plan here that will work. We don't need anybody else coming in to be a part of it," he says. Kroloff says he agrees with many CNU planning ideas, like walkable downtowns and public transportation. But he dislikes the CNU's pattern books, which he says are too proscribed, and too often reference the past. "We can learn from the past to create a new vernacular. New Orleans has done that all along," he says.

Vanguard schemes reveal more divergence

Kroloff moved to further support contemporary architecture in the region when he recently cohosted a rebuilding exhibition, called *Newer*

Orleans: A Shared Space, at the Netherlands Architecture Institute (NAI) in Rotterdam. It featured plans by U.S. and Dutch firms.

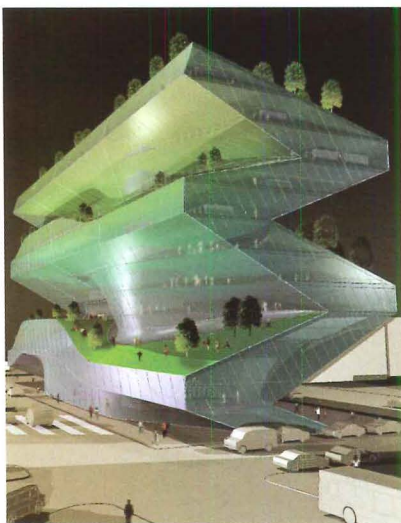
MVRDV proposed a community center built into the side of a newly constructed hill; UN Studio designed a zigzagging structure (left) housing a media library, city offices, and a large auditorium; Morphosis proposed a smaller New Orleans with a more intensified downtown; and Hargreaves Associates drew up flood infrastructure connected to the community via parks and bridges.

NAI director Aaron Betsky, who cohosted the exhibition, hopes the plans will produce symbols to encourage people to return to the city and inspire new thinking in the region. Several Gulf Coast legislators and designers, he says, have traveled to the Netherlands to discuss infrastructure and architecture.

Betsky disagrees with Duany's past assertions that architecture has to be what people in the region ask for.

"The question is not giving people what they want. It's giving people more than they want. Giving them something to believe in. If you give people what they know—McDonald's architecture—you're producing a Wal-Mart version of urbanism. Creating a mythical path that never existed will not make it an attractive place to live."

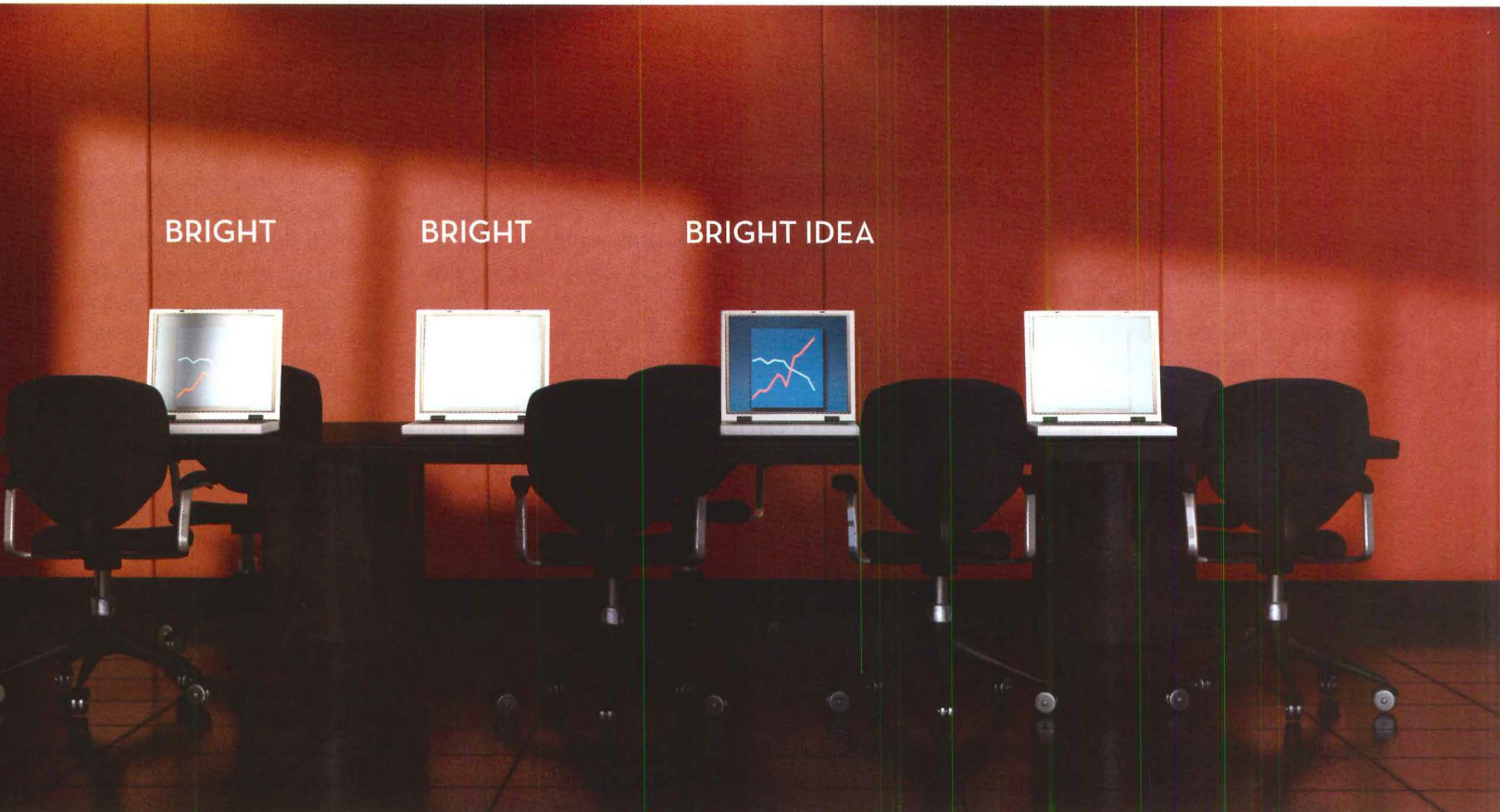
Duany, in turn, is critical of such "detached" schemes: "They don't meet with residents. Their thoughts have to do only with aesthetic concerns." He adds, "This is not a canvas for vanguard ideas. This is a social situation with



UN Studio's zigzagging community hub, at a New Orleans-themed show in Rotterdam.

and parishes throughout the state, helping them create model development plans. UDA, with information from those charrettes, will assemble "pattern books," featuring architectural designs that can be used by homeowners and businesses as they rebuild. Calthorpe is helping develop a regional-planning vision. Regional plans are expected to be completed by the end of the year.

Four of DPZ's weeklong charrettes were held in February, and another began on March 7 in Arabi,



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SPECIAL HURRICANE REPORT

(continued from previous page)
tremendous opportunities.”

Kroloff says the event was not a planning exercise, but was meant “to inspire architects and show that there

are contemporary solutions for New Orleans.”

Is there common ground?

Despite aesthetic and procedural

differences, most designers working in the region say they share common ground in sound planning principles. But whether the sides will come together is in question. Kroloff, who admires the CNU’s ability to implement its ideals in large-scale planning projects, calls the bickering “foolish,” and says “we don’t have time for it.” Duany agrees, but insists that his group has to be invited to be part of the

“elite” discourse.

Meanwhile, WRT principal John Beckman suggests that architectural debates might be premature. “The most pressing needs in New Orleans remain citywide—and neighborhood-specific—analyses and planning. I believe the results of this work are more critical to the short- and long-term sustainability of the city than specific architectural designs.” *Sam Lubell*

Demolition begins in New Orleans, as designers and preservationists fight to limit its scope



Demolition in the Lower Ninth Ward.

Building demolition in New Orleans has begun. On March 6, the U.S. Army Corps of Engineers began tearing down 125 homes in the city, identified as a “risk to public health and safety.” These were slated to be destroyed by the end of March, says John Fogarty, an engineer tasked with debris removal and demolition for the corps.

Structures in the first wave of demolition are located in public rights of way, and most are in the Lower Ninth Ward neighborhood, Fogarty says.

Malana Joseph, a spokesperson for Mayor C. Ray Nagin, says that initially, 5,500 homes were red-tagged. Demolition was stalled by a January civil suit filed by residents. A federal court ruling allowed the city to proceed, using strict notification guidelines. But the delay won enough time for preservationists and city officials to reevaluate structures. They have since cut the list in half.

“In the early days, there were rumors that 50,000 homes were going to be demolished,” says Kevin Mercadel, program officer for the New Orleans office of the National Trust for Historic Preservation. Fears were justified, since initial assessments,

conducted under FEMA debris-removal contracts, were fairly chaotic. Mercadel says that with the glut of subcontractors involved in building assessment it became difficult to determine who tagged properties, and what criteria they used. He adds that many inspectors lacked construction expertise.

Fearing that historic structures might be quickly destroyed, the New Orleans Preservation Resource Center (PRC) partnered with the National Trust to organize volunteer architects and structural engineers to reevaluate properties. Mike Centineo, director of the city’s Office of Safety and Permits, inspected 5,500 red-tagged buildings and reduced the citywide number to 1,900, says Mercadel, whose team has identified 369 red-tagged build-

ings in historic districts. Of those, 199 can be saved, he adds.

Many of the city’s red-tagged structures were in poor condition prior to Katrina, plagued by termite damage, rot, or faulty construction, Mercadel says. Much of that is easily repaired. The home of jazz musician Kidd Skidmore, in Holy Cross, had been marked for demolition because the front wall was separated from the structure. “It’s a simple repair that requires jacking it up, repairing the wall, and reattaching it,” says Mercadel.

Demolition is moving slowly, so preservationists should have time to save more structures. For now, tear-downs are on hold until the owners of the next 2,100 identified structures can be notified, the Army Corps’ Fogarty says. *Angelle Bergeron*

Designers hope Katrina Cottages will replace FEMA trailers

In her effort to provide an alternative to the ubiquitous FEMA trailers that have been dispersed after Hurricane Katrina, a New York architect has developed a new model for affordable housing: It is called the Katrina Cottage.

“My goal is to take back the word ‘affordable,’” says Marianne Cusato, principal of Marianne Cusato Associates. Her design for the cottage (right), first unveiled at the Mississippi Renewal Forum last fall and showcased at the International Builders’ Show in Orlando in January, has become a symbol of hope for thousands of Gulf Coast residents whose homes were destroyed.

Cusato’s cottage is a 300-square-foot structure that can be constructed faster than a FEMA trailer for less than \$35,000. (FEMA trailers cost an estimated \$60,000 to \$100,000 each.) The traditional-style house is built with fiber-cement siding and a crimped metal roof. The cottage is a more attractive alternative to the sterile FEMA trailers, and can ultimately be incorporated into long-term plans as guest houses or studios. Cusato’s cottage is one of several models that came out of the forum, but because it was actually constructed, it became a tangible object that sparked much interest.

Architect Andrés Duany, who helped lead the Mississippi forum, originally called for a possible alternative to FEMA trailers. Whether the cottages will become a reality depends on the federal government’s support. Mississippi Governor Haley Barbour has testified before Congress on the structures’ behalf.

At a recent Louisiana Recovery Authority charrette in Arabi, Louisiana, a team of architects (many of whom took part in the Mississippi forum) developed a distinctly Louisiana-style cottage model that is about twice the size of Cusato’s version. That team is now developing model parks in Mississippi and Louisiana that will feature 17 Katrina Cottage designs and a builders’ square where manufacturers of cottage components can display their wares.

Meanwhile, the worldwide construction industry seems to have taken note of the cottages. Cusato recently received a request for a prototype model to be built in Ghana, Africa. *A.B.*



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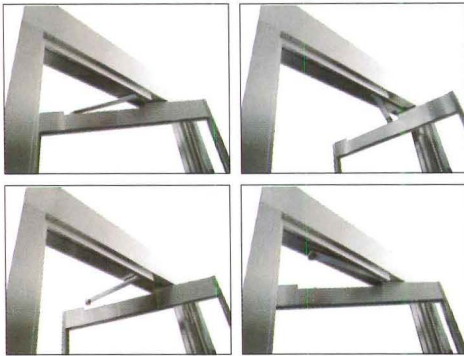


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Record News



Gehry designing first Las Vegas building

Frank Gehry is the newest act to play Las Vegas. On February 11, the 76-year-old architect unveiled his first Vegas building: the \$60 million Lou Ruvo Alzheimer's Institute, located downtown. The 2-acre complex will be built on land deeded to the institute by the city as part of its 61-acre Union Park development.

The five-story, 55,000-square-foot building will feature clinical, research, and outpatient exam rooms for Alzheimer's and other brain-disease victims. Additional plans include a 9,000-square-foot banquet hall, flanked by a Wolfgang Puck café and

The complex will be both ordered and chaotic.

catering kitchen on one side, and an interactive "Museum of the Mind" on the other.

The building's banquet hall will be covered by a wildly curvy, undulating metal-and-glass trellis reaching up to 75 feet, while the main entrance will be made of stacked building blocks separated by glass-enclosed spaces. The contrast suggests the dual functions of the brain, simultaneously ordered and chaotic, structured and imaginative.

"This is something that will separate us from any other place on the face of the earth," says Mayor Oscar Goodman, using typical Las Vegas-style hyperbole.

The project will be funded by the Las Vegas-based nonprofit Keep Memory Alive Foundation for brain-disease research. The foundation was founded by Larry Ruvo, Nevada's senior managing director for Southern Wine and Spirits. The new building is named after Ruvo's father, who died of Alzheimer's.

Gehry characterized the project as "the mouse that roars" due to its modest yet assertive presence next to neighboring high-rise developments. Construction is expected to begin August 4, with completion in 2008. *Tony Illia*

Foster redeveloping Russian island

In February, officials in St. Petersburg, Russia, announced the selection of Foster and Partners to lead a redevelopment of New Holland Island, located in the city's historic center.

New Holland is a 19-acre artificial island, formed between the Moika River and the Admiralteisky and Kryukov canals, near the famed Mariinsky Theater. Five buildings on the island are listed on UNESCO's World Heritage Register. Built in the first half of the 18th century to serve as a naval base, it came under increased military control and remained a closed zone throughout the Soviet period. In December 2004, the military turned the area over to municipal authorities.

Foster's conversion plan (right) will integrate the site's disparate elements around a roofed amphitheater enclosing a pond. A gleaming cupola will top the star-shaped structure, which will function as a year-round facility for aquatic events and open-air performances. The arena will be complemented by a 2,000-seat concert hall, three hotels, a two-tier parking lot, gallery space, and retail and office spaces. Foster, chosen via a city-sponsored competition, enlisted St. Petersburg architectural firm Studio-44 as consultants for the venture. The team's projected design costs came to \$320 million, with an anticipated completion date of 2010.

The plan aims to create a flexible cultural quarter to bolster a languishing part of the city. Perhaps Foster's most forceful intervention entails the addition of eight bridges across the canals surrounding the island. A single bridge exists today. Some are worried that diminishing the introverted quality of the island risks undercutting the aura that is inseparable from its landmark architecture. The recent developments will complement French architect Dominique Perrault's expansion of the Mariinsky [RECORD, August 2003, page 36]. Although the cultural complex will continue to be state-run, the city stipulated that the developer, Moscow-based Shalva Chigirinsky, must invest at least \$300 million. *Paul Abelsky*



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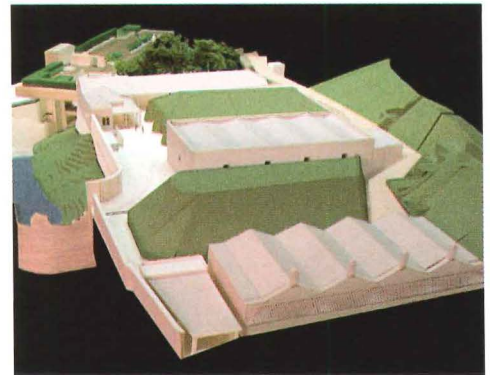
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Record News

Asia Society unveils ambitious new projects

In late February, Asia Society, a New York-based group that works to strengthen ties between people in Asia and the United States, shared plans to aggressively expand its presence with more than \$100 million in new building projects and new programming. New buildings are being constructed in Hong Kong and Houston, and the society is also opening a center this spring in Mumbai, India.

The \$52 million center in Hong Kong was awarded to architects Tod Williams Billie Tsien via a competition in 2001. The project has since been delayed, largely due to lease negotiations, says Billie Tsien, but is expected to be completed by 2008. Located in the city's Central district, the new, 20,000-square-foot project will include a café, a conference center, a gift shop, and an exhibition space. It will take the form of a small glass-and-granite box cantilevering over a small ravine filled with giant banyan trees. A lush roof garden will contain a reflecting pool. The project



A model of Asia Society's Hong Kong project.

will also include renovation of two mid-19th-century munitions buildings and a lab building that will be turned into a theater, a museum, and offices.

The \$40 million, 35,000-square-foot Houston project by Yoshio Taniguchi [RECORD, January 2005, page 34], set to open in 2010, is still in preschematic design. But new models show that it will likely include a long, rectilinear building with large, flat overhangs, overlooking a rectangular pool and two gardens. It will include a 300-seat theater, a café, meeting rooms, classrooms, and offices.

Asia Society already has centers in Houston, Los Angeles, San Francisco, Washington, D.C., Hong Kong, Manila, Melbourne, and Shanghai. But the new projects, say organization officials, will help cement its reputation and better organize operations that had been either scattered or too small. S.L.



A model of Taniguchi's Houston building.

Architecture critic Allan Temko dies

Allan Temko, the Pulitzer Prize-winning architecture critic for the *San Francisco Chronicle* died on January 25 in Orinda, California. The cause of death was heart failure. He was 81.

Temko was never lukewarm in his views. He eagerly waded into development fights, championing distinctive architecture that respected the street and the skyline. Temko wrote in *No Way to Build a Ballpark*, a 1993 collection of his essays: "Every fight has its own rationale, but I never doubted that each, in its own way, was striving for excellence, or at least something better than mediocrity."

When Temko joined the *Chronicle* in 1961 he was 37, and had already lived a colorful life that included naval service in the Pacific during World War II, and a friendship with writer and Columbia classmate Jack Kerouac. He appears in Kerouac's *On the Road* as writer Roland Major.

As a critic, Temko conveyed the essence of buildings like Kevin Roche's Oakland Museum (1969), with its "undeniable sense of the expansion of life, and the enlargement of human possibilities." But he's best remembered for his crusades for a more civil landscape. In the 1960s, he helped force a redesign of the San Mateo Bridge south of San Francisco. In later years, he urged the removal of the Embarcadero Freeway, achieved in 1991 with the assistance the Loma Prieta Earthquake.

Another target of his scorn was Postmodernism, at least in its commercial '80s heyday. He scorned a local design review climate where "anti-modern planners compel unlettered modernists to mimic mediocre historic models and half-baked classical notions of their own."

Temko received the Pulitzer Prize for criticism in 1990. He retired in 1993, but continued to write for several publications. *John King*

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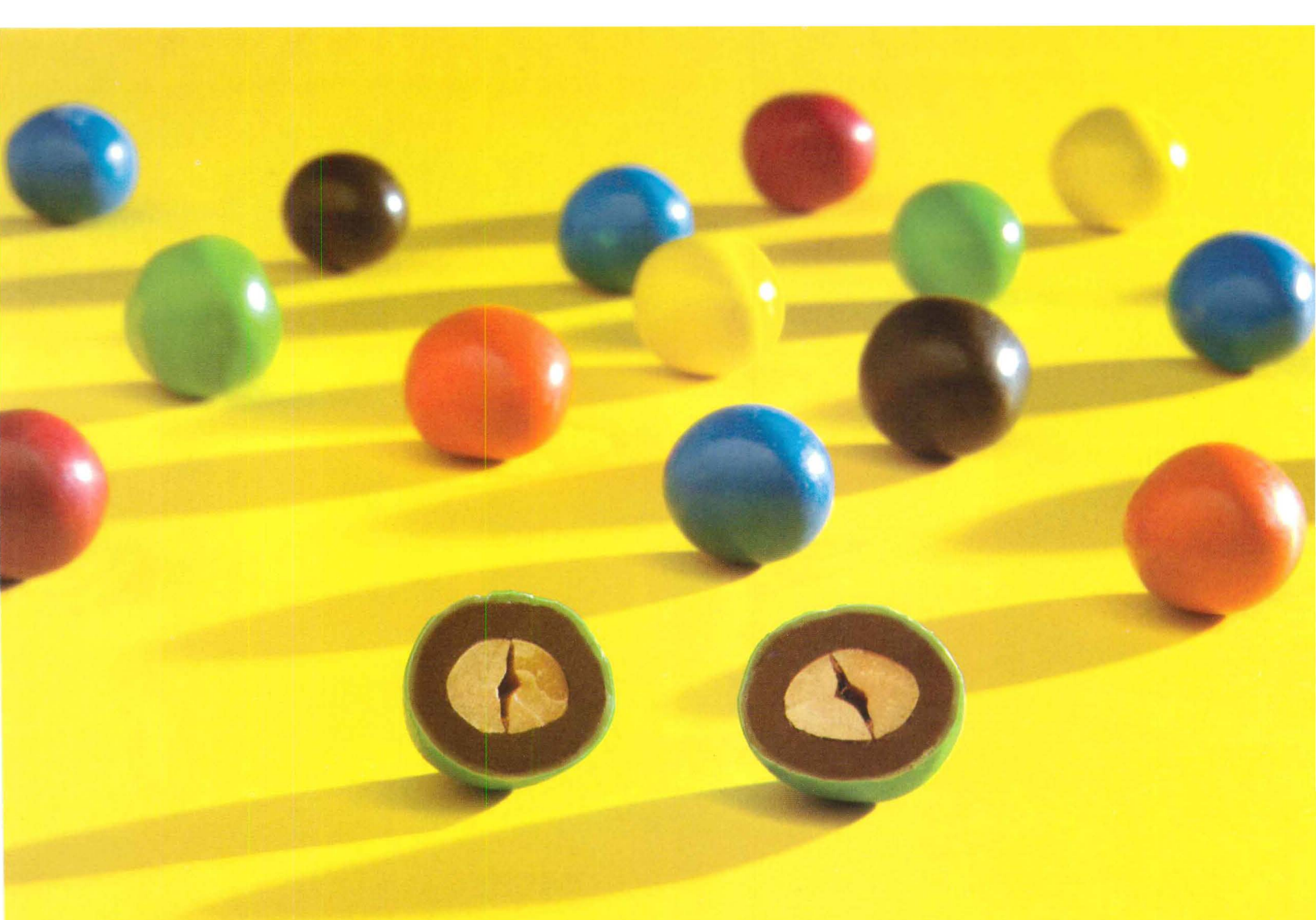
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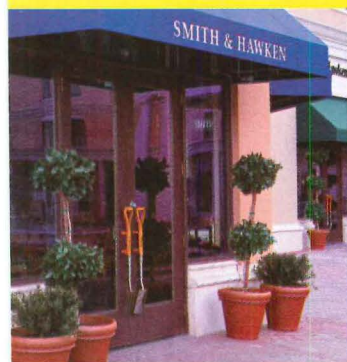
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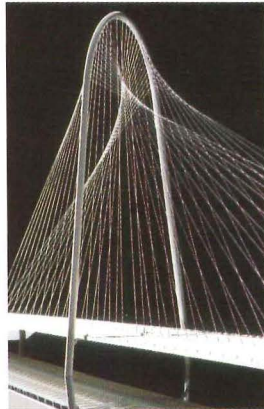
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Calatrava's first Dallas bridge beginning construction

Whether a city needs a new image or merely a stylish tweak, a Santiago Calatrava-designed bridge could be just the ticket. Dallas is hoping so, anyway, because in 10 years it will have three of them, all spanning the meandering Trinity River on the western edge of downtown.

Aware that the Trinity is both its greatest natural asset and its biggest missed opportunity, city officials hired Calatrava to design a signature bridge, extending Woodall Rodgers Freeway into west Dallas. It will be called the Margaret Hunt



The arched bridge would span Dallas's Trinity River.

bridge will feature a 300-foot-high parabolic arch reminiscent of Eero Saarinen's Gateway Arch in St. Louis, from which cables will descend in a grand spidery web.

Dallas Mayor Laura Miller, perhaps swept up in the moment, predicted the bridge would become "the Eiffel Tower of Dallas."

Calatrava is also designing a 12-lane, \$145 million bridge for Interstate 30, and a companion piece for Interstate 35 nearby, both also on the western edge of downtown. The first is funded and is scheduled to open in 2010, the

Hill Bridge, named for a noted Dallas philanthropist.

The \$57 million span, funded by federal, state, and private contributions, is set to begin construction this spring, though the exact date is has not been determined. It will open in 2008. The new

second probably five years later.

"Fifteen million people come to Dallas every year," said the architect. "These bridges will be the new civic gateways that create the image of the city." *David Dillon*

Dispute threatens Jerusalem's Museum of Tolerance

A dispute over moving Muslim graves in Jerusalem to make way for Frank Gehry, FAIA's \$200 million Museum of Tolerance (model, below) threatens to delay, or possibly end, construction on the project.

After graves were discovered on the site during early phases of construction, two Muslim groups—Karamah, a human rights organization, and the Al-Aqsa Company for the Development of the Properties of the Islamic Trust—demanded that all work be banned at the site. The museum is to be located at the foot of downtown Jerusalem's Hillel Street.

In March, Israel's High Court of Justice granted a 30-day temporary injunction against work at the site and has referred the parties in the dispute to mediation.

Rescue excavations of the graves by the Israel Antiquities Authority would last several months, according to the authority's lawyer, Yoram Bar-Sela. Such delays occur often in Israel's capital, because "all of Jerusalem is one big archaeological site," says Osnat Goaz, spokeswoman for the authority.

An underground parking garage and ground-level parking lot, built in the 1960s, previously

occupied much of the museum site. The site is part of an old Muslim cemetery, which has not been used for burial for decades. A larger part of the cemetery lies under an adjacent park.



The Los Angeles-based Simon Wiesenthal Center, which is building the museum, claims it did not know about the graves before planning construction. Spokesperson Charles Levine says that the city and the Israel Lands Administration assured the organization that no problems existed with the site.

The museum was originally to have been located far from the city center, in northeastern Jerusalem. One reason for moving it was the hope by then-mayor Ehud Olmert, who is currently the acting prime minister of Israel, that a Gehry-designed building would revitalize the downtown. The project, to be built of stone in keeping with a Jerusalem ordinance, as well as glass and titanium, will include cultural and conference centers. *Esther Hecht*



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Record News

Rudolph's Riverview High School threatened

In February, Florida's Sarasota County School Board announced plans to demolish its Riverview High School. The open, Modernist structure of concrete and glass-on-steel frame was designed by Paul Rudolph in 1958. *Sarasota School of Architecture* author John Howey, FAIA, says the building was one of the best of the local movement's blend of Modernist forms and climate sensitivity.

According to the school board, Riverview can no longer be maintained, partly because of changes made to the building over time. Chuck Collins, director of construction for the school board, says that the reworked air-conditioning system is out of date, that pipes and wires block daylight, and that the building is too small to hold the school's 3,000 students.

Security is difficult given Rudolph's open design, and officials want to be able to accommodate larger common areas and new technology spaces.

Martie Lieberman, board secretary for the Sarasota Architectural Foundation, is astonished at the effects of so-called school improvements: "They never consulted anybody about integrity."

Howey, a foundation member, says the group is considering forming a nonprofit that would help fund a rehabilitation of the school. The school district is preparing to construct a new building, designed by local firm BMK Architects, next to the Rudolph structure. The latter would be demolished upon completion of the new building in 2008, and replaced with a parking lot. *David Sokol*



Riverview High School when built, in 1958 (left), and as it stands now (right).

Behnisch building for new Harvard campus

In February, Harvard University tapped Stuttgart-based Behnisch Architekten to design a 500,000-square-foot science complex and stem-cell-research facility. The project will be the first new construction at the university's expansion in the Allston section of Boston. Allston is directly across the Charles River from Harvard's main campus.

According to Behnisch partner Stefan Behnisch, the initial plan calls for a mix of several buildings with a similar scale to the existing Allston neighborhood. The layout of the complex will follow the example of Harvard Yard, with its open corners and varied groupings. The materials will reflect Harvard's eclectic campus,

which in addition to its signature red brick, utilizes wood, concrete, glass, and steel. The design will also meet or exceed Harvard's sustainability standards, which roughly correspond to a LEED Silver rating.

Harvard, which owns about 350 acres in Allston, announced its expansion in 2004. The plans call for developing about 200 acres for classrooms, residential buildings, cultural facilities, labs, and other uses. Planners Cooper Robertson, architect Frank Gehry, and landscape designer Laurie Olin have been commissioned to help plan the new campus and urban framework. Groundbreaking for the new science complex is slated for next year. *Ted Smalley Bowen*



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Chad Oppenheim: Miami's man of the hour

The name Chad Oppenheim is synonymous with Miami's condominium boom. The 34-year-old architect, who founded Oppenheim Architecture & Design in 1999, has completed 18 projects, including residential high-rises like Ten Museum Park, 3 Midtown Miami, and Ilona. His newest projects include one of the tallest towers in Miami and a condo unlike any in the city.

Set to break ground in 2007, Cube condominium, in Miami's design district, is structured in modules to allow residents to configure dwellings both vertically and laterally. The \$30 million project features 112 residences and street-level retail. In partnership with Richard Meier, FAIA, and the sons of I.M. Pei, FAIA, Oppenheim is also designing a pair of towers rising from a multilevel platform in Downtown Miami. Dubbed Lynx, each tower features three facades and blends offices, retail, condos, and hotel rooms. The \$300 million, 70-story project is set to break ground in mid-2007.

So what makes Oppenheim such a hot commodity in the area? According to local architecture critics, it's a combination of talent, marketing savvy, and excellent timing—Miami has recently experienced an unprecedented boom in condominium building, although the housing market here is just beginning to cool.

The old Miami School, points out Adam Druzen, director of architecture at Florida International University, was a blend of high-end luxury living and cookie-cutter developments.

Oppenheim's buildings transform this aesthetic from static boxes to dynamic, light-filled spaces with active rooftops, elevated swimming pools, and lush gardens. It's a combination of edginess and hedonistic comfort that's appealing to the pleasure-oriented generation here.

"I want to prove you can create sensual architecture that works from a business standpoint," says the architect. J.F. Lejeune, a professor at the University of Miami's School of Architecture, says Oppenheim has

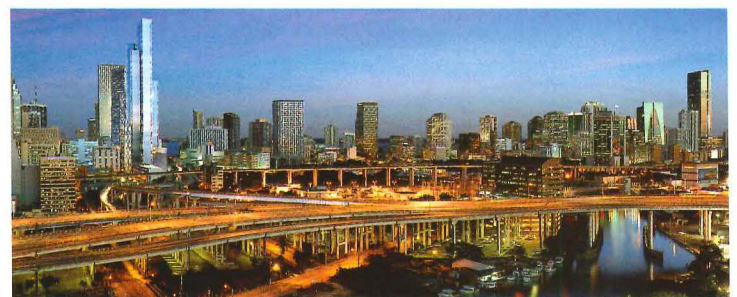


Cube residences (above) will cantilever off the building. Lynx's towers (below) will soar.

"helped put the role of the architect front and center in Miami."

Oppenheim, a native New Yorker, is now setting his sights beyond residences, and beyond Miami. He is designing his first gallery space for the city's Emmanuel Perrotin Gallery; a renovation of an existing 1959 Miami Modern showroom. He had also been commissioned to design a \$1 billion hotel/condo for The Hard Rock Hotel & Casinos in Las Vegas, but that project was recently shelved for budgetary reasons.

Jennifer LeClaire



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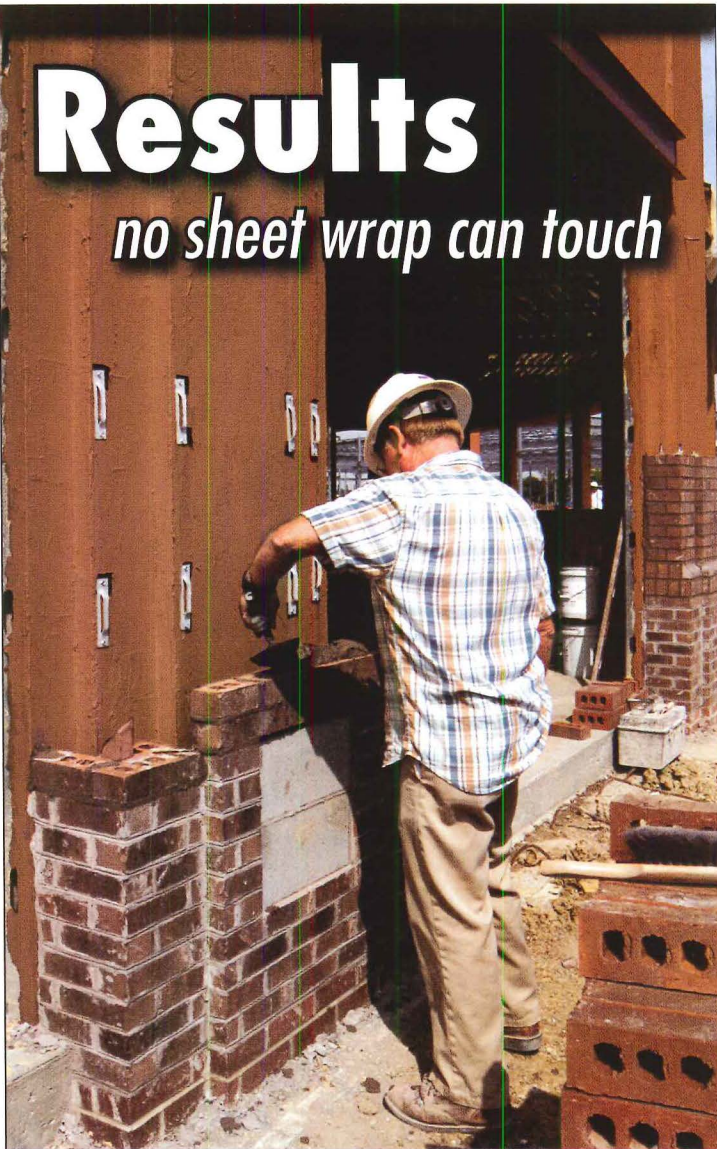


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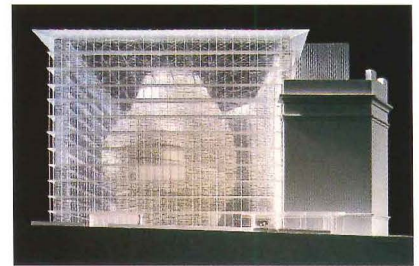
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Record News On the Boards

New meeting space being designed for E.U.

A design has been selected for a new meeting space for the European Union in Brussels. The building, called the Residence Palace, will supplement the adjacent 1927 Palace Complex, designed by architect Michel Polak, which now serves as E.U. Council headquarters.



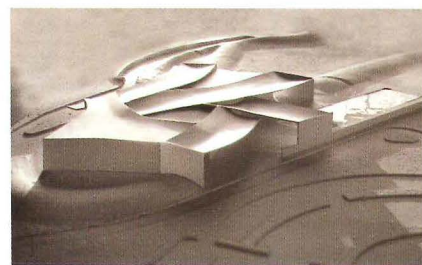
The winning competition entry was submitted by the architecture firm Samyn and Partners of Brussels, engineering firms Studio Valle Progettazioni of Rome, and U.K.-based Buro Happold.

The 645,000-square-foot building will include a press briefing room, a large, 250-seat conference room, 28 translation booths, and a dining room. Samyn and Partners principal Philippe Samyn describes the steel-and-concrete-frame structure as a "lantern," due to its glowing, glass-box appearance, created by facade layers of both translucent and transparent glass. The programmatic area will occupy a bulbous, multistoried cylinder in the center of the box, and a lighting scheme will change the

color of the glowing lantern at night.

Sunlight will enter the private meeting hall through skylights in the center of its ceiling. This hall will be enclosed by a double-skinned facade, whose outer skin will be made of oak-frame windows alluding to the 25 countries in the union. This will gesture toward the "incredible cultural patchwork" of Europe, says Samyn, and will allow the architect to champion environmental protection to the council members. The windows will also provide an acoustic barrier from street noise, and another layer of thermal insulation.

The Belgian government is paying about \$240 million for the project, which is scheduled for completion in June 2013. Sarah Cox



prominent "green roof" are stressed-skin structures made of carbon fiber strands with a resin matrix. They contain a layer of sedum, a plant mixture that contains several species suitable for green roofs, on their exteriors.

Swooping green roof highlights new Holl design

The Herning Center of the Arts in Jutland, Denmark, has announced that Steven Holl Architects will design its new center. The 72,000-square-foot building will incorporate the institution's art museum, and house its MidWest Ensemble for chamber music and its Socle du Monde biennale exhibition.

The roof's swooping planes, which allow natural light into the building, were devised to create lively

landforms for the otherwise flat landscape of the region.

To further connect the roof to the groundscape, the architects plan to allow it to be occupied in places. A geothermally sourced HVAC system and recycling of graywater add to the green theme. The project is estimated to cost \$19 million, and is scheduled for completion in 2007. S.C.

The curving panels of Holl's



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News Briefs

Foster's canopy scrapped in Hong Kong Norman Foster's giant glass canopy for the Hong Kong government's \$5 billion West Kowloon Cultural Complex (WKCC) [RECORD, March 2005, page 30] has been scrapped. The roof, the centerpiece of the complex, was first proposed in 1999 and has been mired in controversy ever since. It failed to win public support and interest from the three short-listed developers.

Foster's 390-foot-high, undulating glass roof was to cover at least 55 percent of the complex's 100-acre site, and was estimated to cost more than \$500 million. It was criticized in a recent public review as "expensive and environmentally unfriendly." The public also raised concerns about putting all of the project's arts facilities, including four major museums, under one roof, and awarding the whole site to a single developer to build all at once. The WKCC was also to include theaters, and other performance venues, such as an amphitheater and open piazzas.

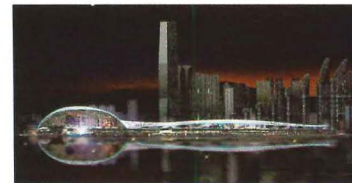
The government responded by revising its requirements last October, so that the winning developer could only build on half the site and was required to pay \$3.87 billion up front. This caused all three developers to withdraw in mid-February. The government has since insisted the project will go forward eventually and will review these issues by September 2006.

Shirley Chang

Tent city in Central Park

The living conditions endured by the world's refugees are difficult to comprehend. *A Refugee Camp in the Heart of the City*, an upcoming exhibition created by Doctors Without Borders, aims to change that. The installation will feature an 8,000-square-foot tent city placed in New York's Central and Prospect Parks next September.

Elements will include a shelter



A rendering of the undulating roof.

area with small fabric tents, as well as makeshift structures made of metal and wood. The exhibition will also include examples of a medical clinic (with medical supplies), a structure where water and food are supplied, and temporary latrines.

Doctors Without Borders specializes in emergency medical treatment, but also provides emergency shelter when necessary. According to a 2005 survey by the U.S. Committee for Refugees and Immigrants, over 33 million people are now living in refugee camps.

The exhibition was created in France 10 years ago and has visited 10 countries, making an initial trip to New York in 2000. Next fall the show will also be placed in parks in Atlanta and Nashville. S.L.

Viñoly and Kimmel Center settle suit

Lawyers from Philadelphia's Kimmel Center for the Performing Arts and New York-based Rafael Viñoly Architects (RVA) have reached an out-of-



The planned exhibition installation.

court settlement of the Kimmel's lawsuit filed last November against RVA. The suit alleged that the firm negligently executed its responsibilities

during the design and construction of the concert hall, sending project costs over budget by more than \$23 million. In a jointly issued statement dated March 3, neither admitted liability or fault. The terms of the settlement are confidential. RVA declined comment, and Kimmel representatives did not return phone calls.

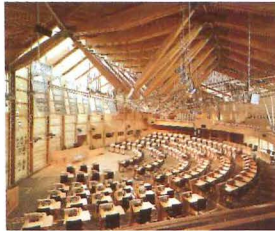
Joseph Dennis Kelly

Scottish Parliament roof failure investigated

The Scottish Parliament debating chamber closed on March 2, when a 12-foot-long roof strut slipped from its metal housing and swung over the heads of elected officials. The semicircular chamber, which seats the 129 members of the Scottish Parliament, was evacuated.

Arup, the project's structural engineering firm, was called in to inspect the 221-pound beam and a fractured bolt. Materials testing firm Stanger Materials Science will analyze the bolt and laminated-oak beam. During the inspection, parliamentary debates will be held at The Hub, a former religious assembly hall that dates back to the 19th century.

The late Spanish architect Enric Miralles and U.K. firm RMJM designed the \$745 million building, which opened in late 2004, three years later than planned. Last year, the building was awarded the Royal Institute of British Architects (RIBA) Stirling Prize. *Robert Such*



The Parliament debating hall.

construction on the project.

The Lower Manhattan Development Corporation, which is overseeing the design and appointed the 13-member panel that chose it, has said that the memorial and museum will have 15 exits, including emergency stairwells. The memorial is scheduled to open in 2009. *S.L.*

Finalists to master plan Pittsburgh Cultural District

The nonprofit Pittsburgh Cultural Trust has announced four finalist teams to master plan the city's new Cultural District Riverfront Development. The development consists of a 6-acre site located in Pittsburgh's Cultural District, a 14-square-block area downtown near the Allegheny River. The district is home to five major theaters, as well as restaurants, galleries, and other amenities.

The four finalist teams include the following firms: Koning Eizenberg Architecture; MVRDV; Behnisch, Behnisch & Partner; and Steven Holl Architects.

The winning plan may include residential, retail, restaurants, plazas and parks, public arts projects, performance spaces, and improved access to the riverfront. The trust will announce the selected team this summer. *Jennifer Lucchino*

ENDNOTES

- The Skidmore, Owings & Merrill (SOM) Foundation has established the 50,000 SOM Prize, which will be awarded to a promising student in Architecture, Urban Design, and Design.
- New York's Van Alen Institute named Adi Shamir, a former dean at the California College of the Arts, its executive director.
- In January, Terrence E. O'Neal, AIA, became the first African-American to serve as president of the American Institute of Architects New York State.

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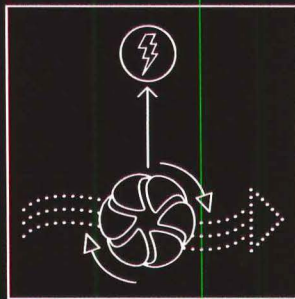
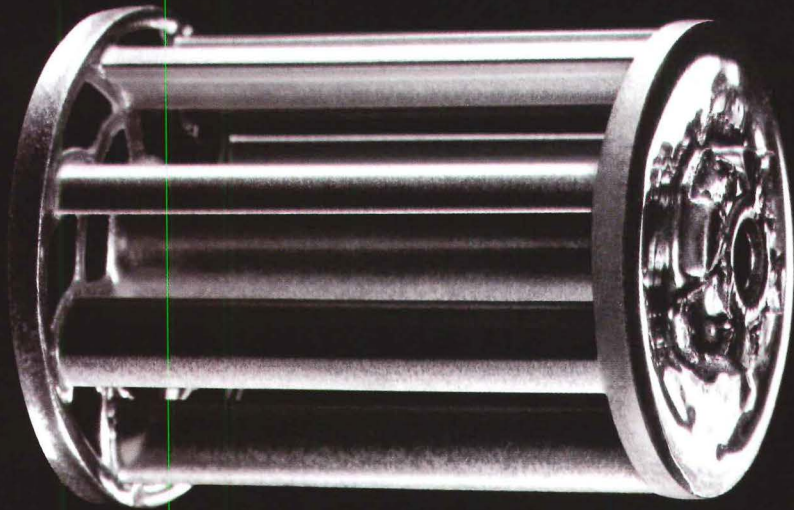
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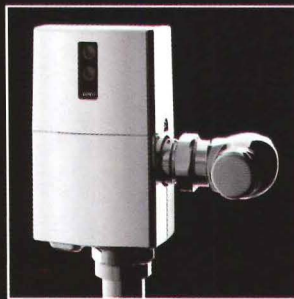
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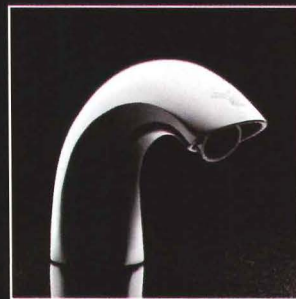
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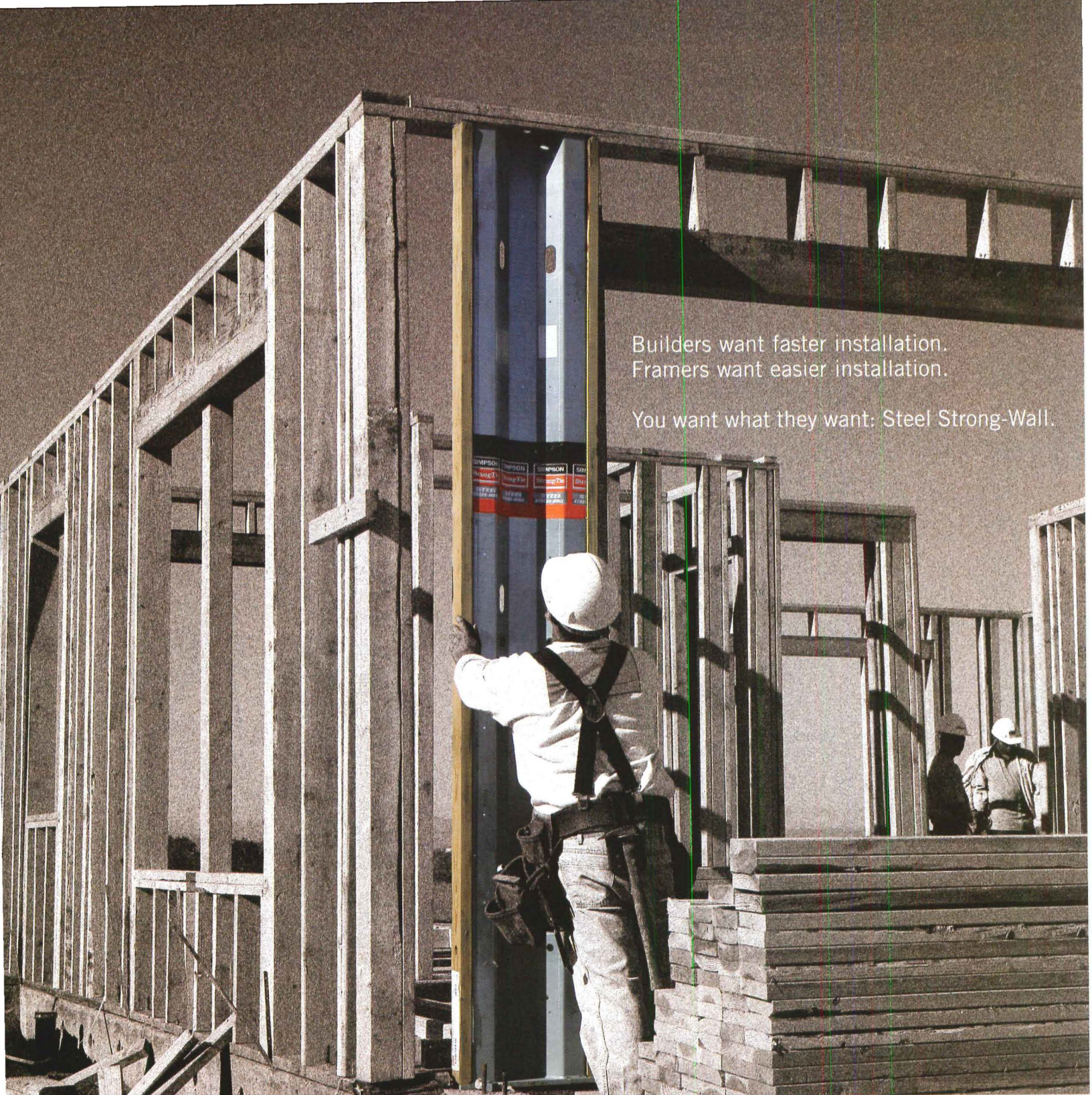


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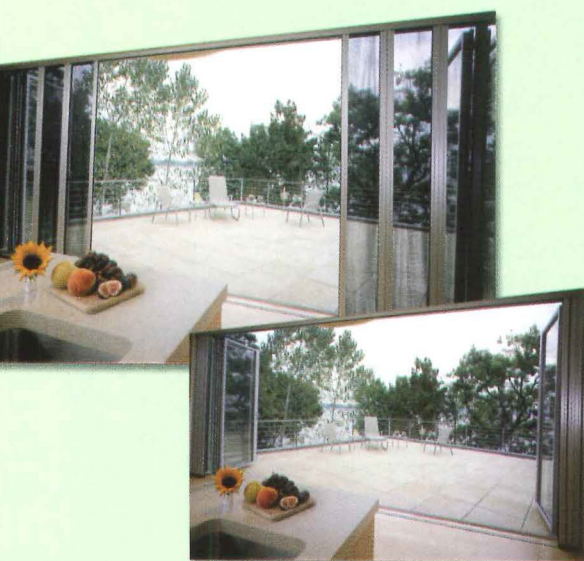
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For and about the emerging architect

archrecord2

DEPARTMENTS

Architects play a role in both the creation and the destruction of buildings, and this month archrecord2 features one architect who has found a mission in artfully documenting abandoned state mental institutions before this dying building type gets destroyed. While Chris Payne stays just ahead of the wrecking ball, Terry Boling considers individual properties of materials. Visit **Design, Work, and Live** at www.archrecord.com/archrecord2/ for more work by these talented individuals and others.

Design

Terry Boling: Making a mark in the Midwest



For Cincinnati-based architect and teacher Terry Boling, AIA, the proof of good architecture lies in creating a project full of material connections—a regional approach focusing on an organic design process that explores and exploits the unique properties of each material used. And, while Boling is a sole practitioner, he doesn't accomplish this experimentation alone. As a full-time professor at the University of Cincinnati's School of Architecture and Interior Design, Boling works closely with a group of students and ex-students. "U.C. has a unique co-op program where students are required to work in the real world for 10 weeks during the semester," says Boling. "That program gives me the opportunity to hire students I've been working with in class, and the students then have the ability to put their learning to use."

"The mark of the maker" is a term Boling says he continues to try to define and make evident in his work, through fabrication of furniture, surfaces, and finishes on-site. Boling admits that working this way doesn't produce quick results, but credits his clients with having the patience to let the process take its course. "We're usually working with shoestring budgets," says Boling, "and what we design isn't paper architecture. Luckily, our clients have been understanding of the process. The restraints have worked in our favor. And Cincinnati is at an exciting place right now. It's a time of rich growth for the city, and a good time to be practicing architecture here."

Boling teaches a class about critical regionalism, and his work reflects his thoughts on the topic. "I'm often exploring what it means to be a Midwesterner," he says. "What kinds of materials and techniques can we find that are specific to the Midwest? What does it mean to be working as an architect in Cincinnati?"

Part of that regional approach for Boling is an ethically responsible architecture. "It's right in the middle of everything," he says. "Landfills are mostly composed of construction materials, so it's obvious that we should use leftovers." For one project, a nonprofit facility called Venice Pizza that trains people to work in restaurants, Boling and a group of graduate students actually had a



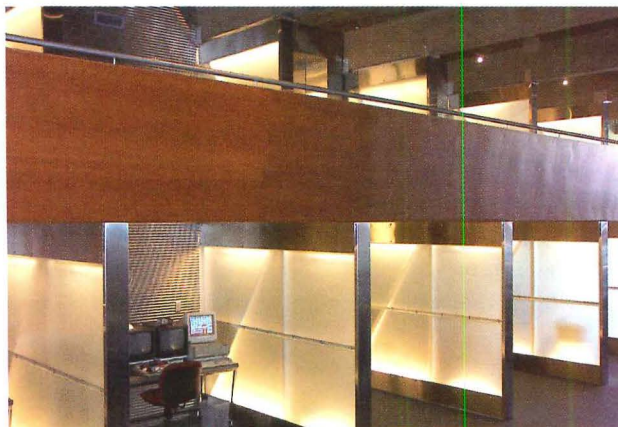
Nicholson Kitchen, Cincinnati, 2005

The kitchen is part of an ongoing renovation of a mid-20th-century home. A floating island with base lighting and hand-cast-concrete countertops occupies the center of the room, while custom sliding-aluminum-plate pantry and closet doors line the perimeter.



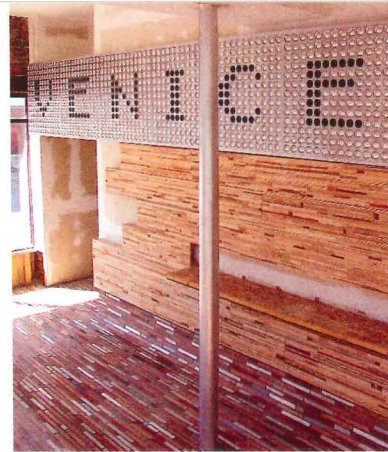
Media Bridges, Cincinnati, 2003

Offices for a nonprofit that offers digital media education and training, the project consists of 8,000 square feet on two floors of a historic building in the Over-the-Rhine area of Cincinnati. Translucent walls and colored concrete contrast with the existing rough brick.





Wyoming Loft Addition, Cincinnati, 2006
Renovation to a Cincinnati-suburban bungalow comprising a bedroom and bath connected to the main floor by a new light-well and stair. A ground-floor addition contains living, dining, kitchen, and support spaces.



Venice Pizza, Cincinnati, 2004
Scrap wood, copper pipes, and cut beer bottles were just some of the materials University of Cincinnati students, under the direction of Terry Boling, used to create surfaces and signage for a new pizza restaurant and training facility for a nonprofit organization, located in an existing vacant storefront.

zero budget, which forced them to explore the space between thinking and making. "They got on the phone and found everything they could get their hands on—tile from a company's excess, crushed beer bottles that the students made into mosaics, leftover wood from construction sites," Boling explains. "Our discussions revolved around questions of homogeneity and heterogeneity, quilt and mosaic, and even culinary formulations that addressed the idea of leftovers, such as pizza, meat loaf, and soup. It soon became evident that each material treatment would need to have a relationship to the next, both procedurally and aesthetically, for the project to be successful as a collection of components."

The result exemplifies Boling's love of textures and visually decadent yet formally clean structures. "We tend to undervalue beauty," he says. "There's just not enough beauty in the world." For Boling's part, he plans to add more beauty locally, and branch out from there. "I would love to jump scales and broaden my firm's possibilities," he says. "But only if I can keep bringing personalization—a mark of humanity—to every project." *Ingrid Spencer*

For more photos and projects by Terry Boling and his students, go to archrecord.com/archrecord2/.

Work

Christopher Payne: Documenting before their demise

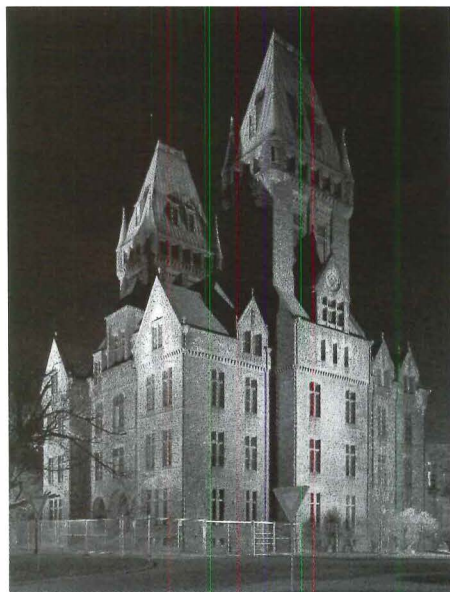
For New York City-based architect and photographer Christopher Payne (right), the only thing depressing about spending days at a time alone with his large-format camera photographing abandoned and decrepit state psychiatric hospitals is that they'll soon be gone. Often majestic in scale and built on self-sustaining farms where patients took part in working the land, dozens of these hospitals once had a purpose that, according to Payne, was much less creepy than movies and TV would have us believe. "These buildings were designed with optimism," says Payne, "with craftsmanship, with the idea that the state had a responsibility to help people with mental illness. To see these landmarks demolished ... it doesn't make sense. Greed is behind it, and a lack of vision."

looking at his startling images, some in black and white, some in color, it's easy to see that Payne is a preservationist at heart, despite the fact that he hates the term. "What bums me is the general apathy and feeling of helplessness in the architectural community," he says. "Most young architects are only interested in what's new and hot. To be concerned with preserving the past risks being labeled a square." Payne admits that others may have a more objective take on the topic, but because he is driven to document, he feels quite in the middle of it. "No matter what quality my photos are," he says, "they are no replacement for what's lost."

Payne's passion for photographing obscure building types began when, in 1997, he started taking pictures of New York's substations—the power stations that ran the New York subway systems until the 1980s, when they became obsolete.

His photos, along with histories and plans, became a book in 2002 (*New York's Forgotten Substations: The Power Behind the Subway*, Princeton Architectural Press). His photos of hospitals will also become a book, complete with plans. Payne has a knack for getting into these dying building types, without artifice. "I tell the truth," he says, "and the officials in charge often feel the same way I do. These buildings are icons of a welfare state—institutions created to protect and take care of people. They're like castles, and I'm just one step ahead of the wrecking ball." *I.S.*

For more, visit archrecord.com/archrecord2/ or www.chrispaynephoto.com/.



Chris Payne's photos capture the faded majesty of the Buffalo State Hospital (above left and right), designed in the late 1800s by H.H. Richardson, with associate architect Stanford White. The building's fate is still uncertain.



DIVIDE AND CONQUER

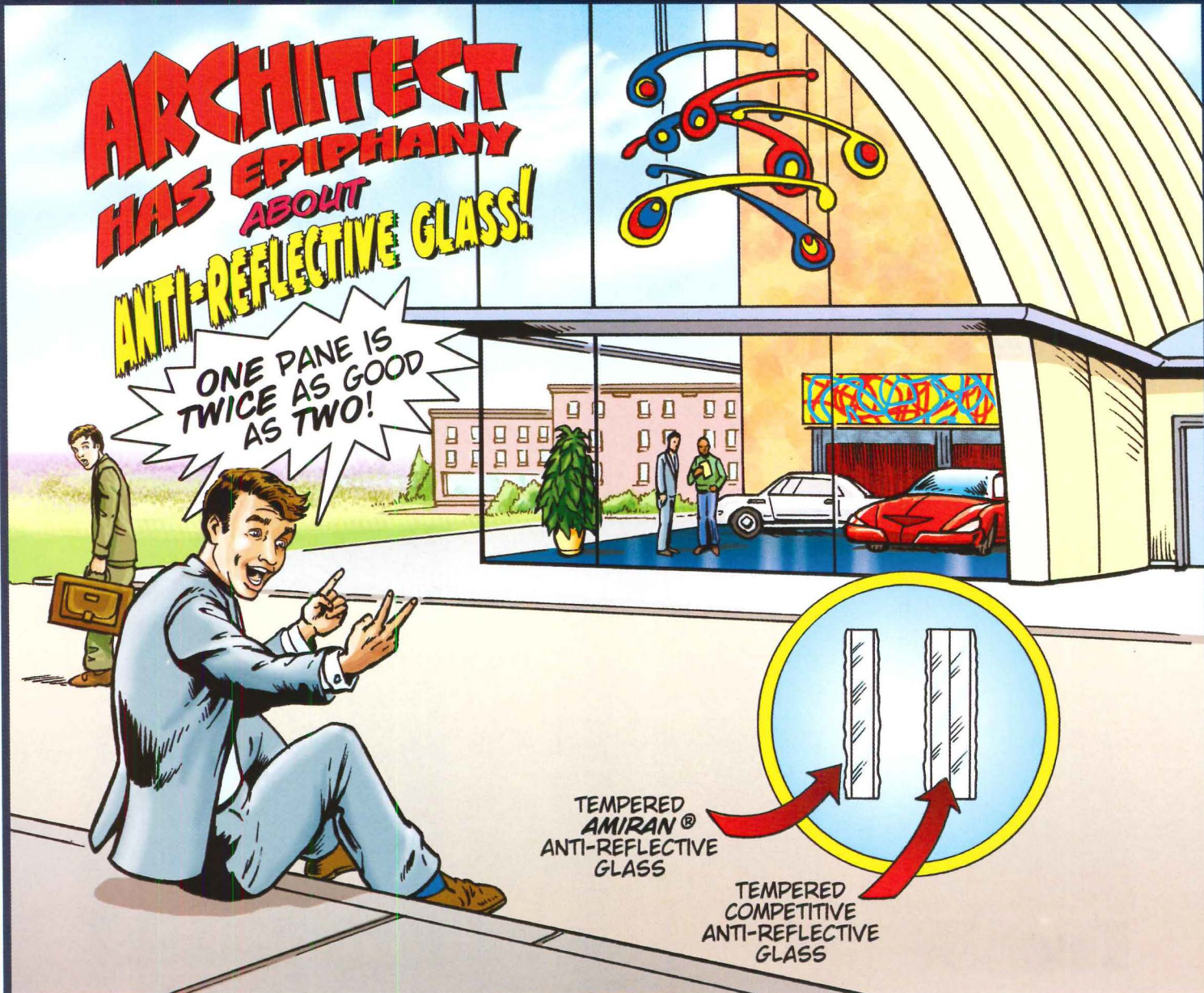
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Phantom pain: A neighborhood lives on after its destruction

Critique

By Robert Campbell, FAIA

DEPARTMENTS

In 1962, in the Boston neighborhood called the West End, wrecking crews demolished the final buildings. It was a carpet-bomb act of urban renewal, an amputation by the city of its own flesh.

The 12,000 residents, nearly all of them low-income, were ruthlessly kicked out of their homes and scattered to the winds. Promises were made that they would be able to come back. But few could afford the new elevator apartments.

Two well-known writings came out of the experience, *The Urban Villagers*, by Herbert Gans, a book about the neighborhood's good qualities, and "Grieving for a Lost Home," by Marc Fried, an essay on the psychology of the West End exiles.

What fewer people know, and what I find deeply moving, is the fact that today, 44 years later, the former residents still think of themselves as a community. Every Tuesday, anywhere from 20 to 60 former West Enders meet at the Meadow Glen Mall in the suburbs to talk about their old lives in the neighborhood. For many years, they produced a citizen-access TV interview show. They have made 70 hours of video oral histories. They have just started a museum on an edge of the old neighborhood (it became a middle-class enclave of mid-rises, which looks like a displaced fragment of Miami Beach).

They still maintain, through voluntary contributions, a quarterly

Contributing editor Robert Campbell is the Pulitzer Prize-winning architecture critic for The Boston Globe.

newspaper, the *West Ender*. Besides news items, the *West Ender* publishes a dozen or so snapshots and 40 or 50 letters in every issue, almost all of them recollections of the old days. *Forty-four years later*. It's a story that I believe may be unique in American history.

What would make a neighborhood, viewed at the time as a slum and labeled as "blighted," become so resonant in the memory of its people?

The West End was a community of mostly second-generation immigrant families. The largest groups were Italian, Irish, Jewish, and Polish, but there were others. It occupied a downtown site along the Charles River.

When federal urban-renewal money became available, city officials and developers looked lustfully at the site. The razing process was brutal. If you owned a building, the day the city took it by eminent domain was the day your tenants started paying their rent to the city, rather than to you, and on that same day you too had to begin paying rent. Owners were supposed to get a fair purchase price, but legalities often dragged out to the point where many took almost nothing.

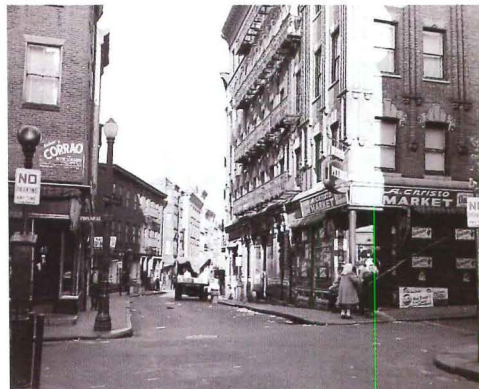
A policeman, who regularly patrolled the neighborhood, filmed the demolitions over the months it took to complete them. A video of

the film runs at the new West End Museum. The images are difficult to believe. Cranes swung heavy balls into the brick walls of what had been, sometimes until weeks or days before, people's homes. I don't know where the bricks went, but the wood from the demolition was burned in big bonfires scattered around the site. Fire and smoke, emptiness and despair: The images are those of a war zone. "They made us into refugees," says one

he experienced his first kiss. Nobody wants to lose the house in which she first became aware of the world.

When they watch the video, the former West Enders are satisfying a hunger for that kind of memory palace. "That's Dutchie," one says, pointing to a cop on the screen who, long ago, patrolled the West End. They talk about other cops: Casey, McCarthy. Obsessively, they identify buildings and sites to one another.

They also try to rebuild the



The dense, intricate nature of the West End (above left) was lost to urban renewal (above right).

West Ender today.

Again, though, what's the source of the power that makes this neighborhood live on in so many minds? I'd like to suggest at least four: memory, sensuality, intricacy, and location.

Memory. Towns and their architecture, as many have noted, embody memory. A city is a memory palace, a place where the streets and buildings function as visual cues, reminding us of our own past and the past of our predecessors. We all have private landmarks. Nobody wishes the obliteration of the corner where

memory palace. Before it was demolished, the West End contained 21 street corners named for soldiers who died in World War II. The corners were called the "hero squares." At each, a plaque was placed on a building wall; for instance, "Angelo Chester Square," with a gold star above the name. When the neighborhood was wiped out, the plaques came down. West Enders never stopped lobbying for their return. This year, the city finally agreed to erect a new memorial to the soldiers of the West End.

Frank Lavine, 81, puts the case

Critique

pretty clearly. "Those guys gave their lives in the military for what was supposed to be democracy, and there was nothing democratic about the razing of the West End," he says.

The story of the squares is not uncommon. In Tampa, Florida, after World War I, the city created Memorial Boulevard. A sapling tree, carrying a bronze plaque, was planted for each dead soldier. Eventually, as the tree grew, the plaque would disappear inside it. Each tree would be a living memorial to a soldier. A generation later, Tampa widened Memorial Boulevard and cut down all the trees. In 1963, the street was renamed Kennedy Boulevard—not in honor of loved members of a community, but for someone known through the media.

Sensuality. A letter in a recent issue of the *West Ender* contained the following paragraph:

"I used to buy nickel pickles at

Klayman's deli and had to sneak around the back of the Blackstone School to eat them since my mother thought a whole pickle would turn my blood to vinegar ... I used to love the smell of Cutler's Linoleum store ... There was also the tailor shop on the corner of Eaton and No. Russell Streets, Minne White's on Green Street, Gallo's Bakery on Leverett for the Italian bread, Godfried's Bakery for sweets when company came."

The smell of linoleum? The whiff of a tailor shop? These are the Proustian *madeleines* of the West End. The letter reminds us that sensory experience has largely disappeared from our lives, as we limit ourselves more and more to purely visual experiences (or with a headset, aural) that come to us largely from artificial media. You can formulate it as a law: "With every advance in technology, there is a correspon-

ding decrease in sensuality." A good example is transportation. On a horse, you experience rain and sun and wind, you smell the country or the city, you feel your body bouncing in the saddle. On a train, the world shrinks to a visual film strip running endlessly past the windows. On an airplane, the film shrinks further to a mere image on a screen. Maybe in our future spaceships we won't even experience gravity. One of the things that fuels the grieving for the West End is the memory, perhaps half conscious, of a world that was not sensorially deprived.

I'll have to be briefer on my other two qualities.

Intricacy: The West End was dense, and the space between any two things was small. You were always pushed close up to things, whether people or buildings. I think that is one reason why the neighborhood imprinted itself so deeply on the perceptions of its residents.

And *location:* the West End "slum" enjoyed a spectacular location, close to the Charles River and

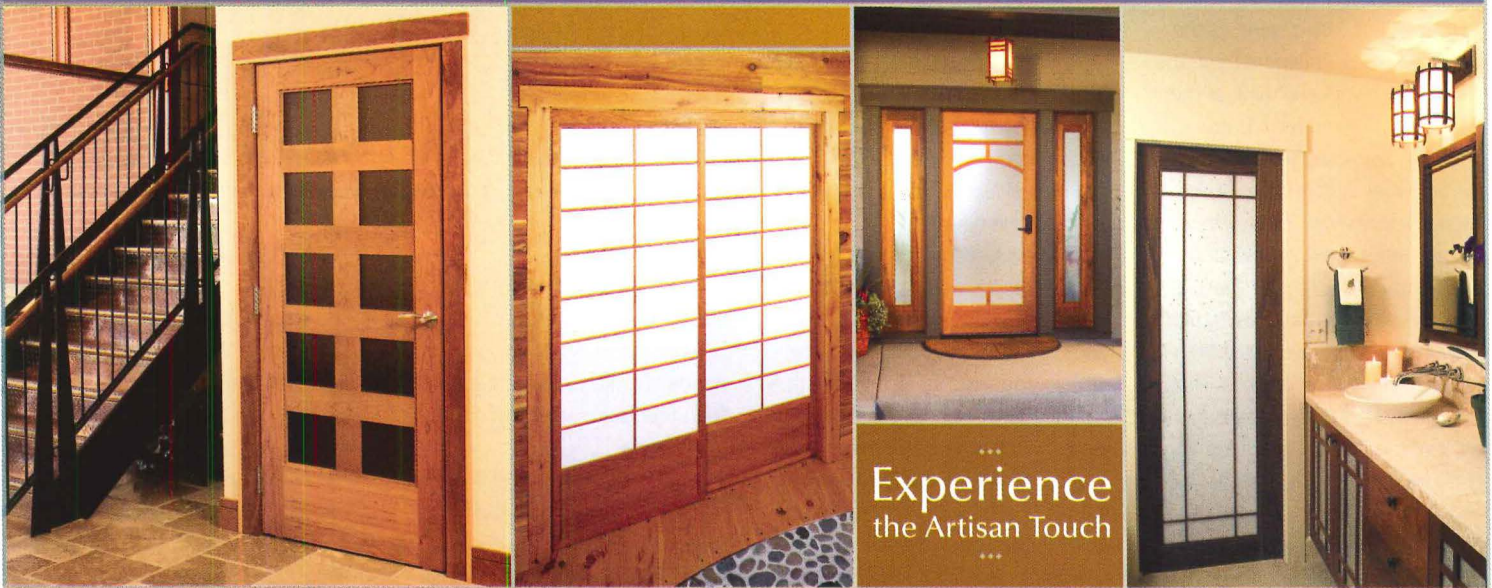
its parks and (then) beaches, close to railroads and subways, close to Boston Common and, just beyond it, the city's main shopping district. When you ask people in a low-income neighborhood what they'd like, they tend to name things they don't have: let's say big-screen TVs and basketball hoops and automobiles. What they often ignore is what they already have, which may be a magnificent location, close to public transit and other amenities—not to mention a low rent and warm neighbors. It is because they are exiles that today's West Enders are so keenly aware of the virtues of what they once had.

Today, if it had survived, the West End would long ago have unslummed itself, to use a term from Jane Jacobs. It would now be gentrified. Former cold-water flats might be million-dollar condos. That is another kind of problem. But at least the West End's physical fabric would survive, continuing to embody memory, sensuality (some, anyway), intricacy, and location. ■



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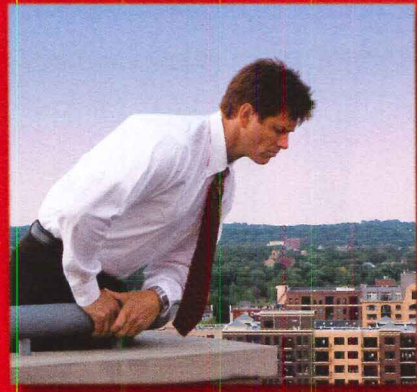


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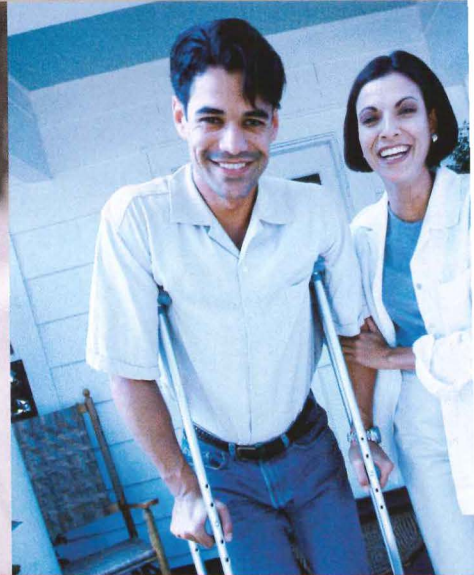
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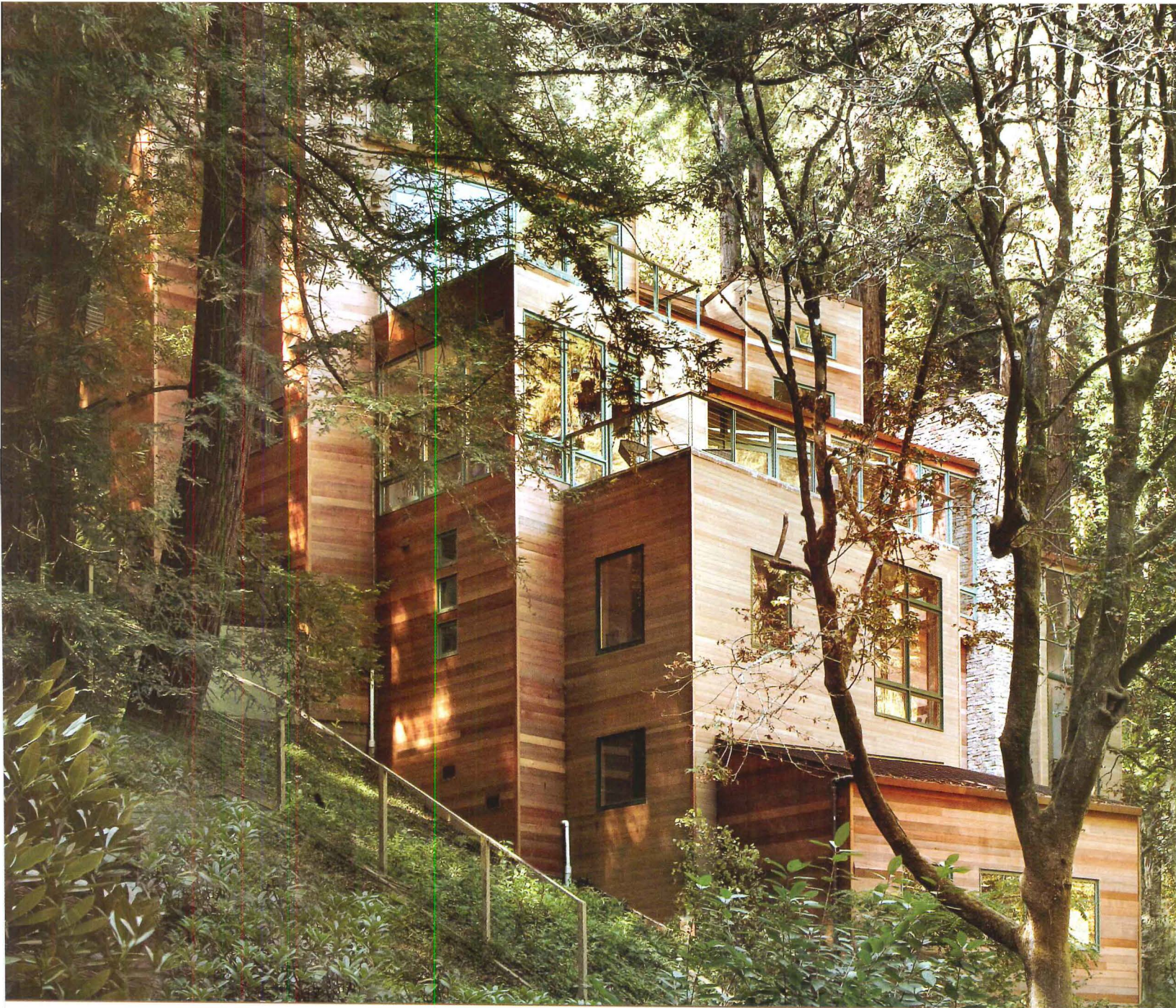


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House tours: reading up on residences from around the world

Books

Modern Japanese House, by Naomi Pollock. New York and London: Phaidon, 2005, 228 pages, \$75.

In this handsome, engaging book, Naomi Pollock does more than just present a group of knockout modern houses in Japan. A special correspondent for ARCHITECTURAL RECORD and a long-time resident of Tokyo, Pollock places the houses and Japanese residential architecture in context—historical, cultural, and social. So, instead of merely going “wow” at a bunch of inventive, elegant, and eye-catching designs, the reader learns where the ideas behind the houses come from. The author discusses the Japanese notion of context in her thoughtful introduction, explaining how it differs from that in the United States or Europe. In Japanese cities such as Tokyo and Osaka, houses often last only about 20 years. So the immediate physical context for any new building is constantly changing and therefore exerts very little influence on design. More important are the cultural and social contexts within which the Japanese live, even as lifestyles and mores change in a country with an aging population and a plummeting birthrate.

Pollock underscores these larger issues by organizing the 25 houses in this book by the way they're lived in and used, rather than their style or location. The five chapters look at the tiny house, the indoor-outdoor house, the multigenerational house, the work-and-play house, and the vaca-

tion house. Each chapter begins with an essay examining the key issues and trends architects are addressing in the houses that follow. Readers learn, for example, how the traditional *chanoma*—a multipurpose space at the heart of Japanese homes—has become the combined kitchen-dining-living room found in many contemporary designs. Or how the traditional rural house known as *minka* and urban merchants' houses called *machiya* have influenced mod-

ern Japanese architects' approach to indoor-outdoor relationships.

The architects presented in the book fall mostly in the emergent generation of practitioners, designers in their 30s and 40s who have established their reputations only in the past decade or so. So Tadao Ando and Toyo Ito aren't included, but Kazuyo Sejima, Jun Aoki, Shigeru Ban, Hitoshi Abe, Taka and Yui Tezuka, Kengo Kuma, and Shuhei Endo are. Stylistically, the selection favors the crisp, clean Modernism of houses like Sejima's tiny House in a Plum Grove and the formal inventiveness of Ban's Shutter House for a Photographer. But you won't find examples from quirky practitioners such as Terunobu Fujimori, who creates neoprimitive houses that have grasses growing from the roof, and walls made of wattle and clay.

Many of the architects shown in this book are starting to do work outside of Japan and are contributing to a globalization of architecture. “Houses, however, remain particular to place,” writes Pollock. “Unique microcosms molded by local customs and social mores, the houses of one country are still distinct from those of another.” *Modern Japanese House* does an excellent job presenting and explaining designs from a country famous for being distinct. Clifford A. Pearson

Japan Houses, by Marcia Iwatate and Geeta K. Mehta. North Clarendon, Vt.: Tuttle Publishing, 2005, 240 pages, \$50.

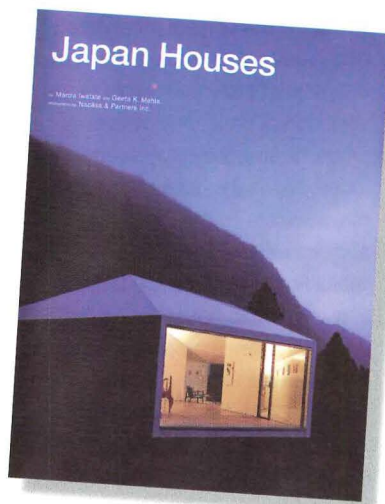
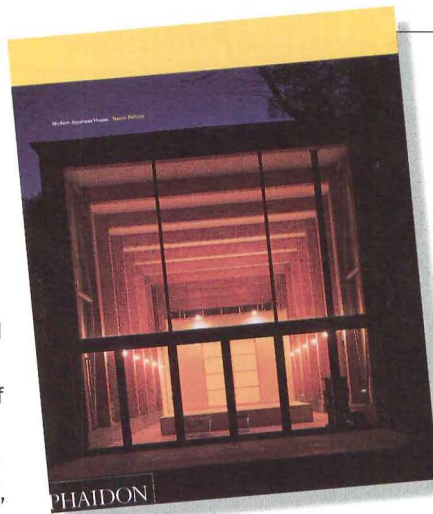
Like Naomi Pollock's book (review above), *Japan Houses* offers a collection of beautiful modern houses from the past 10 years, all given the glamorous, art-book treatment. The 26 houses look great.

Although the two books cover the same ground geographically and stylistically, only one house—Zig/Zag by Nobuaki Furuya's firm NASCA—finds its way into both. This lack of overlapping material points to the remarkable depth of architectural talent working in Japan today.

While *Japan Houses* provides a visual feast with gorgeous photography by Nacása & Partners, it doesn't deliver the depth of understanding or analysis that Pollock offers her readers. The introduction by Mehta relies too much on generalities, such as, “A home is, above all, an opportunity for deepening our living experience,” and too little on particulars that support such statements. The authors don't provide any thematic framework, so the houses follow one after another in no particular order.

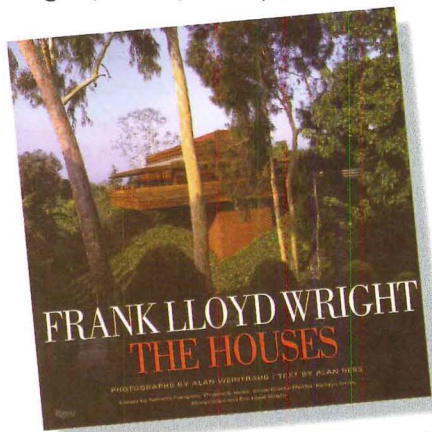
The quality of the houses, though, is uniformly high, with examples by Manabu Chiba, Jun Aoki, Taka and Yui Tezuka, Makoto Tanijiri, and Makoto Shin Watanabe & Yoko Kinoshita. The book also provides a useful index of the architects, including contact information, selected projects, and short biographies. C.A.P.

Frank Lloyd Wright: The Houses, by Alan Hess, with Kenneth Frampton, Thomas S. Hines, Bruce Brooks Pfeiffer, Alan Weintraub (photographer). New York: Rizzoli, 540 pages, \$75.



Books

If all the books written by and about Frank Lloyd Wright were placed end to end, they would reach from here to, well, Taliesin. Among them are biographies (by Ada Louise Huxtable, Meryle Secrest, Brendan Gill, Wright's daughter Lovanna, and his wife Olgivanna); treatises on Wright's design and theories (by Vincent Scully, Peter Blake, and Henry-Russell Hitchcock); collections of his writings and drawings; and books about his early years, the Japan years, the lost years, the lost buildings—not to mention books about his interiors, furniture, stained glass, screens, and fireplaces.



Enter Rizzoli, with a new doorstop of a book called *The Houses*. It is outstanding, carried largely on the merits of Alan Weintraub's color photographs and a level of reproduction that does them justice. In most of the exterior shots, long shadows emphasize the architecture's ground-embracing forms, just as Wright intended. Yet, it is the quality of lighting in the interior photos that is most impressive. Supplemental light sources are nowhere apparent, yet the dark areas retain sufficient information to avoid photo black, as they call it in the printing trade. Plans of 20 representative houses, reproduced on four pages at the back of the book, are astonishing in complexity and variety. Those pages are followed by a list of houses dating from 1889 to 1961, many of the entries accompanied by thumbnail photos that explicate

Wright's creative proficiency.

Alan Hess's explanatory essays frame the work in meaningful eras and categories. Essays by familiar names, including Kenneth Frampton, Thomas S. Hines, Bruce Brooks Pfeiffer, and Wright's great-grandson Eric Lloyd Wright, are mostly just about right. *Allen Freeman*

Florida Modern: Residential Architecture 1945–1970, by Jan Hochstim, New York: Rizzoli, 272 pages, \$55.

Florida's fragile, elegant early Modern architecture has been comparatively uncelebrated, even in a period of intense interest in the decades immediately following World War II. The notable exception was, of course, Paul Rudolph, who lived in Sarasota in 1940 and 1941 and returned after the war to produce works of enormous delicacy and delight before leaving in 1958 to become dean of architecture at Yale. The Sarasota School (as it came to be called) eclipsed inquiries into other postwar architecture in Florida.

Jan Hochstim's *Florida Modern*, with a fine selection of contemporary photographs by Steven Brooke, goes far to redress the oversight. Hochstim, a professor at the University of Miami School of Architecture, notes that the postwar Florida house did not necessarily "reflect the prewar European concern for social significance and functionality," but rather, it was based on a fierce desire to experiment with materials and forms responsive to a hot and unyielding climate. Thus came houses with deep, overhanging flat roofs, louvered windows, and cross ventilation. Before air-conditioning became the norm, houses were wrapped around courtyards or ensconced within a larger screened enclosure, as in Igor Polevitsky's 1949 Birdcage House.

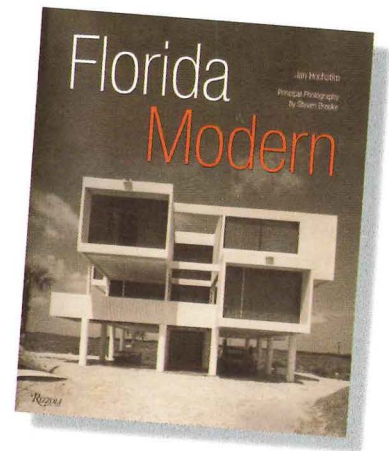
These houses are finally getting their due. Many that survived have owners committed to preserving them. Hochstim has documented almost 100 houses in his statewide study, which is enhanced by informative text and an appealing design, itself an ode to the graphics of the era. *Beth Dunlop*

Modern American Houses: Fifty Years of Design In Architectural Record, edited by Clifford Pearson. New York: Harry N. Abrams, 2005, 296 pages, \$50.

Modern American Houses is an honest book. Neither a museum exhibition catalog freighted with bold (and potentially overreaching) polemics, nor a drool-inducing, fruit-bowl-laden fancy-house extravaganza, it turns a selection of projects from 50 years of this magazine's annual *Record Houses* issue into a reflection on the evolution of residential architecture.

As in an old high school yearbook, among these houses are some funny haircuts and some staggering beauties. But original photography and project texts and an acknowledgment of historical tastes in the selection of projects (however embarrassing they may seem today) allows the book to reveal the magazine's surprising trepidations and enthusiasms over the past 50 years. For example, about Ulrich Franzen's 1956 house for his family in Westchester, the editors wrote, "We must admit that occasionally we are startled by its daring." Today it would be totally at home in the pages of *Design Within Reach*. Conversely, Allan Greenberg's 1986 Mt. Vernon-inspired farmhouse in Connecticut gets an enthusiastic pass in its project text by Paul Goldberger, if only because its Andy Warhol portrait of Marilyn Monroe above the mantel "prevents this house from becoming cloyingly 'Colonial!'"

But in all the projects, and in the short decade-by-decade essays, a consistent theme emerges. There are undoubtedly some blips, but *Modern American Houses* makes the clear argument that the story of

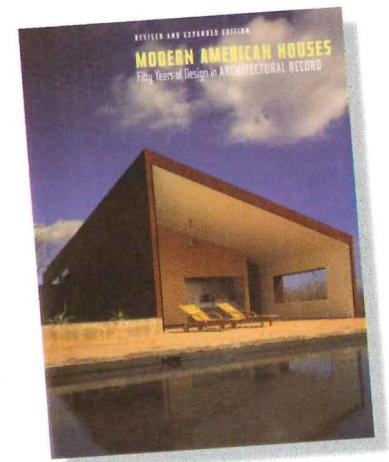


residential architecture since WW II describes the triumph of Modernism. *Andrew Blum*

Art/Invention/House, by Michael Webb. New York: Rizzoli, 2005, 320 pages, \$75.

Drive through almost any affluent suburb and you may conclude that most rich people aspire to be Donald Trump. Architectural journalist Michael Webb here provides an antidote for such gloom, showing 40 new and recent houses by good and great architects.

Each of the houses—most in North America and Europe, plus scatterings in Australia, Japan,



Mexico, and Brazil, and one each in Ecuador and China—seems rooted in one or more of Modernism's strains. Charles Gwathmey's white house in Marin County, though tailored to suit a precipitous slope, looks as Corbusier-rational as the one Gwathmey designed for his parents 40 years ago on Long Island. Also in Marin, Arizonan Will Bruder shows his understanding of



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Books

Bay Area Modernists Maybeck and Esherick (Webb's observation). And out from London, Graham Phillips, Norman Foster's managing director, convincingly displays white Miesian Minimalism in a Wrightian pinwheel plan.

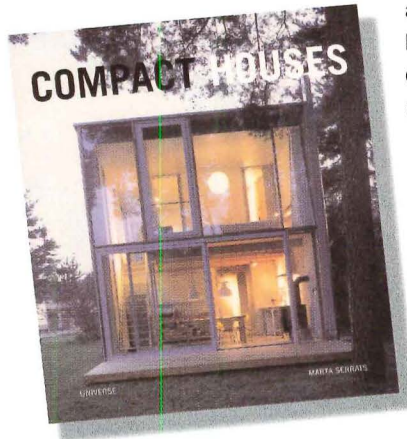
Webb shows that industrial materials are still hard at work on a domestic scale, even on larger budgets, as in New South Wales, where Glenn Murcutt's 80th house, at 6,000 square feet, is as robust as his much smaller ones from the 1980s. Similarly, audaciously concocted plans remain alive, as in Brookline, Massachusetts, where Atlantans Mack Scogin and Merrill Elam slammed together conflicting ideas with seemingly cohesive results.

Webb shows a steady eye and a clear head for writing. Each house gets a graceful little essay of relevant facts. The book design is low-key and

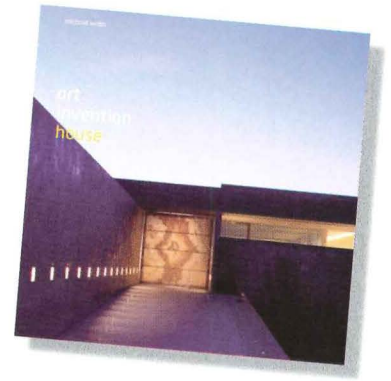
reader friendly, including plans and occasional conceptual sketches. Some of the photos are pushed a little beyond their digital capacity, but that's a minor drawback in a very good book. *A.F.*

Compact Houses: Architecture for the Environment, by *Cristina Del Valle*. New York: Universe Publishing, 2005, 420 pages, \$29.95.

As the size of new homes bursts the boundaries of good sense and sensi-



tivity, this study offers 50-plus compact houses, their small spaces designed efficiently and with flair. Ingenious solutions that make spaces look larger and include furniture doing double duty—seats containing storage space, closets hidden in wide walls—are particularly valuable in cities where land is scarce and costly. Hence many of the book's urban houses are in Japan. In Tokyo, for example, the 720-square-foot Slit House by C Matsuba/Tele-Design combines traditional and contemporary materials and has roll-up and folding exterior bamboo screens over translucent cladding, providing visual interest and privacy. Still smaller is Hiroaki Ohtani's 355-square-foot Layer House in Kobe, built of widely separated horizontal boards admitting diffuse light. But in Vienna, for example, there's Thaler, Thaler Arkitekten's Haus P, a 1,076-square-foot residence with an interior patio that brings light and a feeling of space into each room. Del Valle points out that in



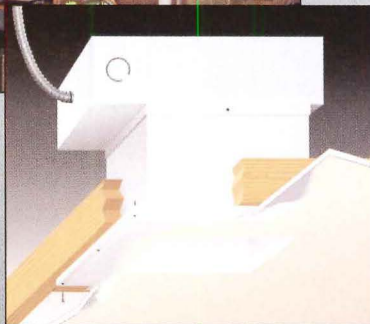
nonurban situations, smallness often yields unconventional solutions, as with Cooperativa Uro1.org's mass-produced, inexpensive M7 prototype in Valparaiso, Chile, and Hans-Peter Lang's residence for Claudia Bruckner in Rankweil, Austria, that maximizes space by varying ceiling heights and surface levels within a single area. The book also showcases additions, cottages, and houses that can be opened to expand into the landscape. The text is short, the pictures descriptive, and the book an appropriately compact 8 by 8 inches square.

Andrea Oppenheimer Dean

When a hole in your ceiling is *a good thing.*



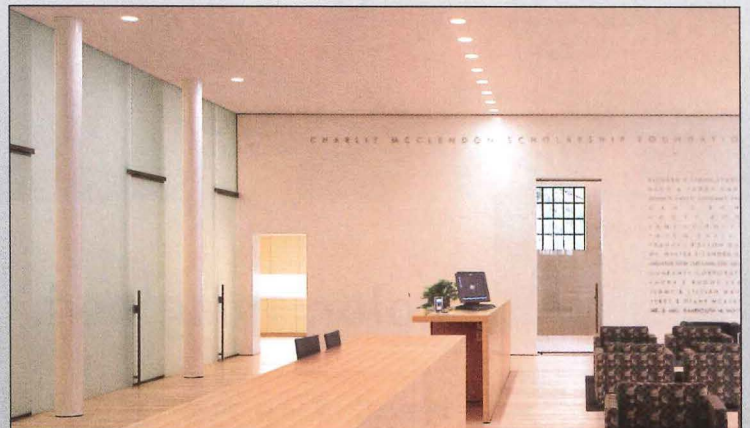
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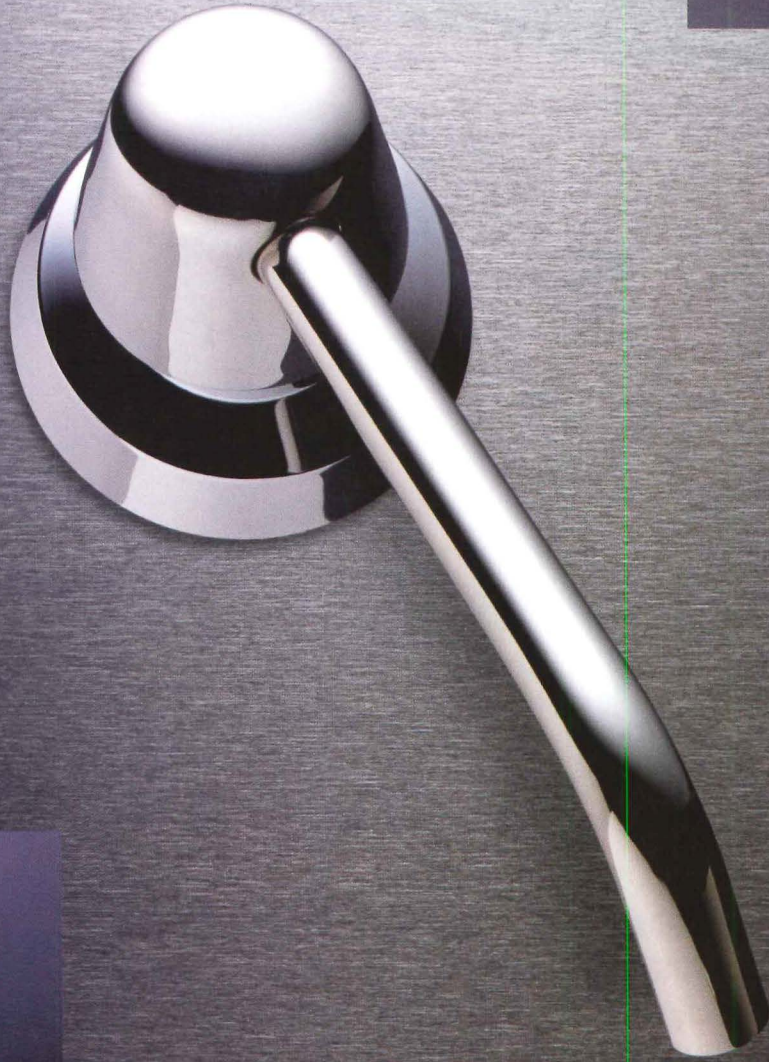
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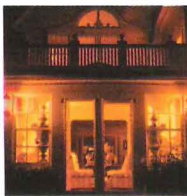
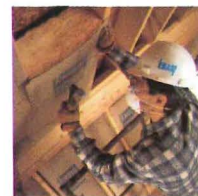
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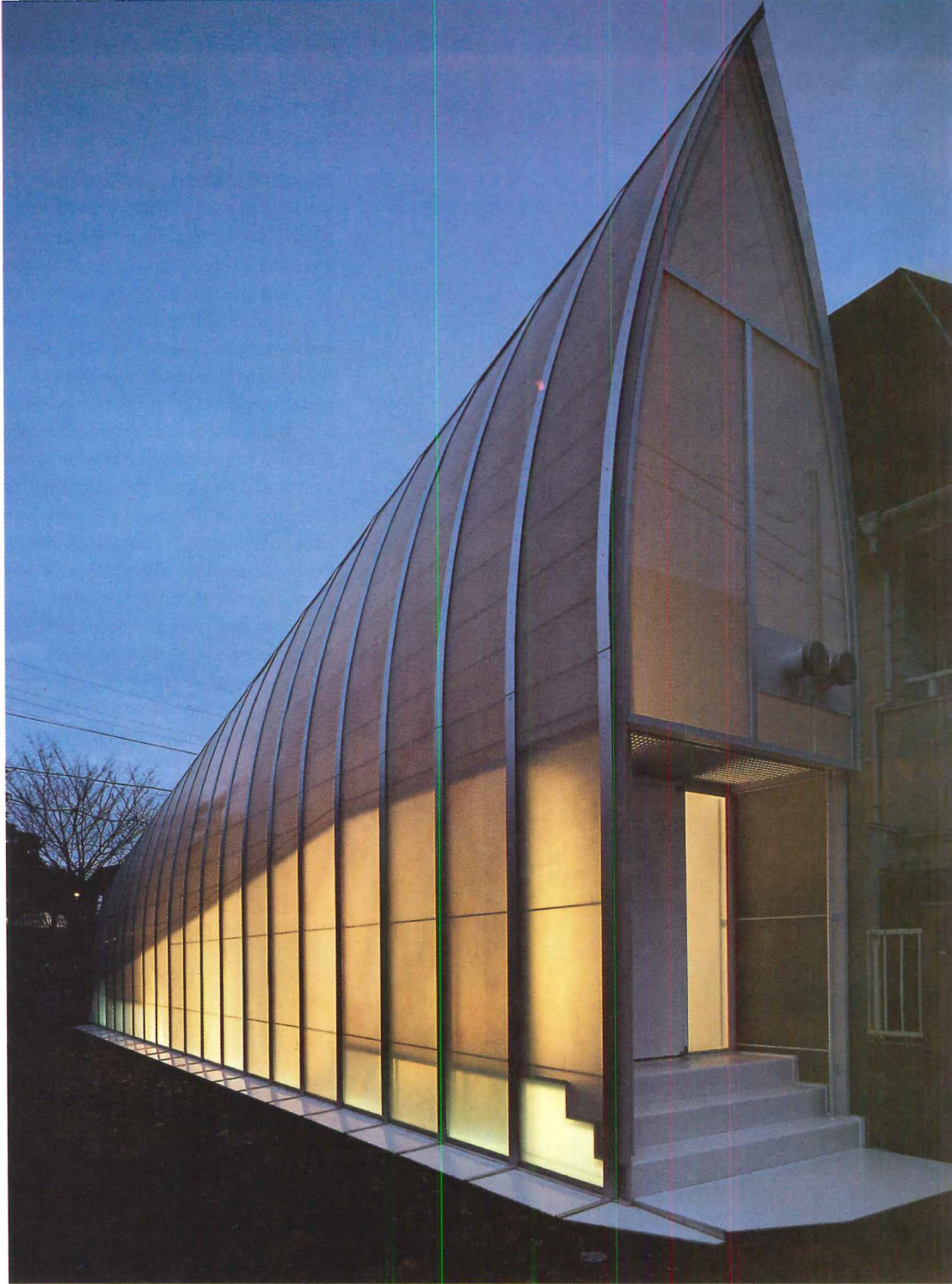
Snapshot



By Naomi Pollock

In Tokyo, where property values are among the world's most exorbitant, zealous homeowners build on just about anything. But the sliver of land in suburban Tokyo proposed by a 30-something couple for their future dream house gave pause even to avant-garde architects Yasuhiro Yamashita and Masahiro Ikeda. "My first reaction was that they ought to ask for a price reduction," says Yamashita, chuckling. His second reaction was Lucky Drops: a 98-foot-long, tapered tube of space, defined by a taut, reinforced-fiberglass skin and a skeleton of 20 pointed steel arches.

Since Gothic arches evoke cathedral architecture, these pointed forms give Lucky Drops a whiff of grandeur, especially where the tallest arch soars to 20 feet and frames the front door. But just beyond the threshold, that impression quickly vanishes. The view from the entry foyer, set on a metal-mesh platform, extends all the way to the other end of the 237-square-foot dwelling. In this single, continuous space, the living area, kitchen, and glass-enclosed bathroom line up submarine style. Setting the floor level about 4 feet below grade enabled the designers



Neo-Gothic arches soar over a mere sliver of a site

Snapshot



to insert a loftlike sleeping area overhead. It leads into a long storage space that slopes down to the back door, where the house narrows to a mere 3 feet across. The upper level's metal-mesh floor lets light, air, and sound filter through while also acting as a flat brace to stabilize the structural ribs.

Besides capitalizing on the site's length, Yamashita and Ikeda made the most of its width. Dropping the floor level enabled them to circumvent the bilateral, 1.5-foot setback requirements, which do not apply to construction below grade.

The house's most astonishing space-saving device is its 0.12-inch-thick, milky white exterior wrapper, which includes a layer of translucent fiber insulation. Like shoji screens, the fiberglass membrane diffuses daylight, allowing soft rays to bathe the interior. This luminous quality comes at the cost of views, but provides a good trade-off since the neighbor's home stands only a few feet away.

In most American cities, such a tiny strip of land would have had little value. But the words *lucky drops* are the English equivalent of the Japanese for "saving the best for last"—and, as the name of this house attests, even leftover bits can become catalysts for invention. ■



The taut fiberglass skin glows from within at night (previous page, right). Lucky Drops contrasts strikingly with its far more conventional neighbors (previous page, left). The tube of space narrows to only 3 feet across at back (far left). Inside, the house presents a single, continuous space (left).

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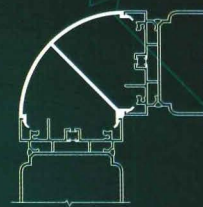
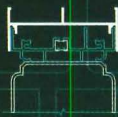
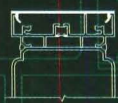
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90-degree corner caps were used to connect four acrylic block panels together to form decorative, lit towers. The panels were mounted to the base and top piece with flat caps.



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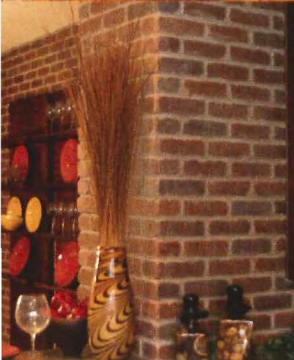
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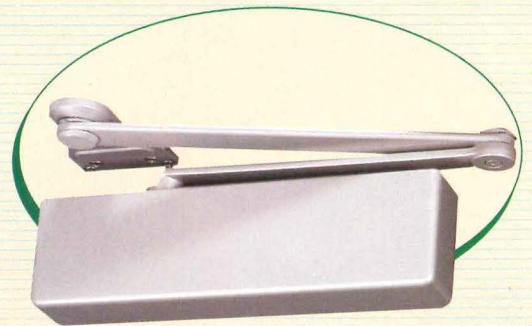
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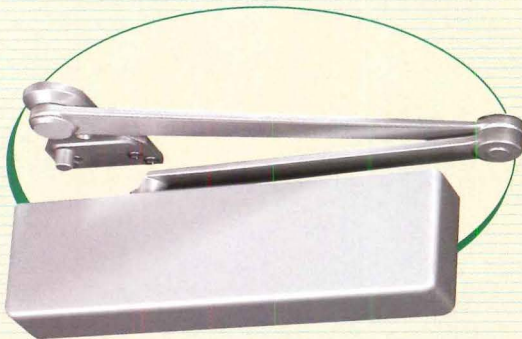
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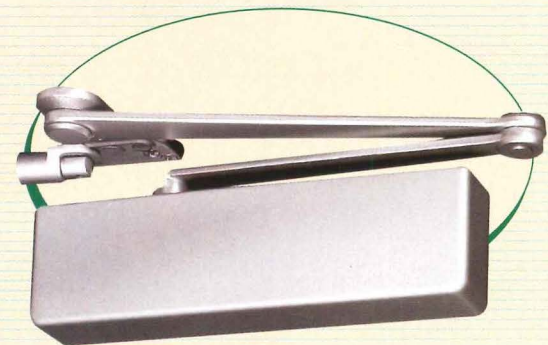
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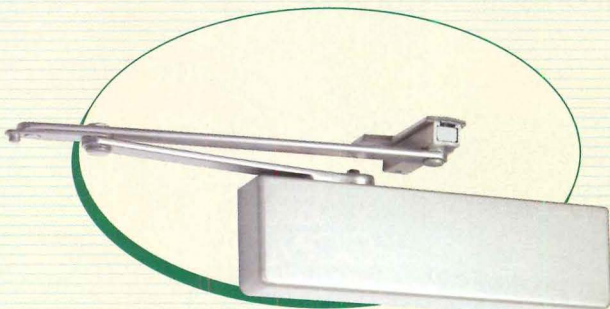
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Record Houses

2006

Cascading down a steep slope—with a rush of terraces, concrete volumes, and a pool of water that spouts over the edge—Casa Tóló could be nowhere else. Here, in Vila Real, Portugal, architect Álvaro Leite Siza Vieira has fit a house to the unique contours of its precipitous topography.

Throughout Record Houses 2006, each project reveals strong links to its particular place. In the eight featured dwellings, culled from four continents, the connection may be primarily through culture, climate, landscape—or a combination of influences.

At Javier Artadi's Las Arenas Beach House, on the starkly arid coast of Peru, pure, crisp, white concrete forms stand in the sharp sunlight—opening the architecture literally and figuratively to outdoor

living in this warm climate. Meanwhile, Olson Sundberg Kundig Allen's Stilt Cabin, a treehouse-like hideaway of raw steel and plywood, rises like a sapling—completely at home against Washington's Cascade Range.

In the countryside near Tokyo, Kengo Kuma's Lotus House, with its improbable checkerboard screen of thin travertine panels, captures the delicate float-

ing quality of lotus flowers on a pond. This unusual house could exist only in Japan. Though Maya Lin's Box House, set in the Colorado Rockies, also has a sheer outer screen, it abstracts nature differently, echoing the dappled light that filters through surrounding aspens. At the same time, its windows frame a spiraling array of views out to the peaks.

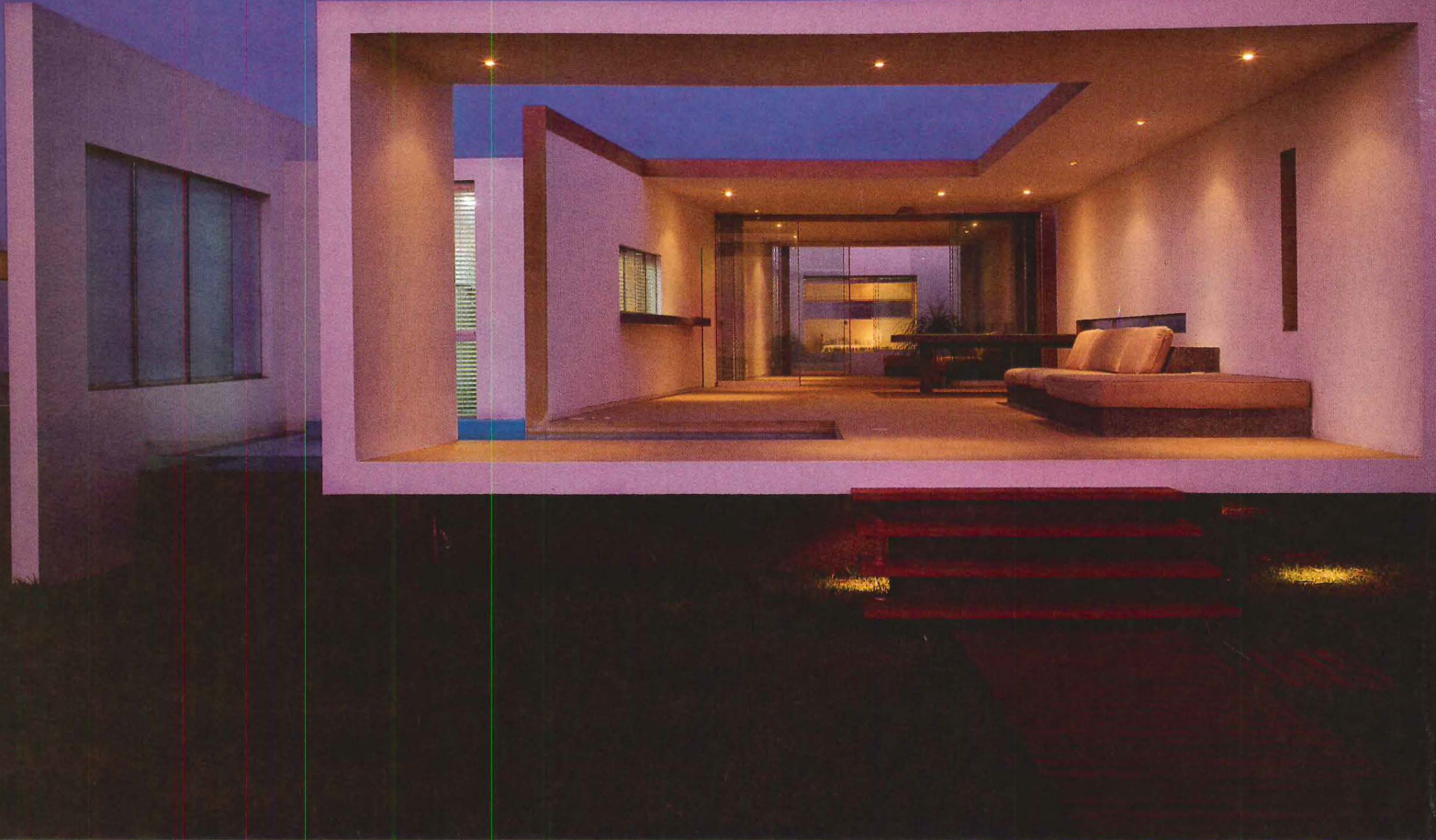
Responding to an existing "village green" on the site of New England House, Office dA reinterprets—and inventively transcends—the local vernacular. In another farm-related setting, a vast stretch of dairyland in rural Wisconsin, Wendell Burnette's Field House looks as quiet and comfortable as the metal farm structures dotting this landscape. A modest and inobtrusive insertion, Burnette's elegantly simple, aluminum-clad box ultimately reveals a level of subtle refinement. And finally, Studio Blank's Xeros Residence, in Phoenix, addresses its desert climate with intentional ambiguities between indoors and out. Formally, the building's rusted "veil" has a strong Modernist character while also evoking the old farm equipment weathering along local roadsides.

The sense of place has a powerful presence in each of these houses—be it in Portugal or Peru, the Pacific Northwest or Japan, Colorado or New England, Wisconsin's dairy country or Arizona's desert. Through this rich and varied collection, we invite you to embark with us on a little world tour. ■

1. Artadi Arquitectos
2. Olson Sundberg Kundig Allen
3. Kengo Kuma
4. Maya Lin Studio
5. Office dA
6. Wendell Burnette
7. Álvaro Leite Siza Vieira
8. Blank Studio



The clean-edged concrete box opens up to the west, facing the Pacific (this page, top, and opposite). Las Arenas is a gated beach community (below).



On the arid coast of Peru,
Javier Artadi gives
the Modernist white box
a crisp new edge in
**LAS ARENAS
BEACH HOUSE**





By Raul A. Barreneche

Rain almost never falls on the Peruvian coast just south of Lima, the northernmost stretch of one of the driest spots on earth: the Atacama Desert. In this arid landscape, barren mountains and sandy cliffs hover above the Pacific. Beneath a vast, glaring sky, the startlingly empty, alien terrain—with not so much as a cactus on the ground—makes anything built here look like a brusque intrusion. Still, gated communities crowd this inhospitable coast, as *Limeños* buy up dusty plots to build weekend escapes at the beach. In one such development, Las Arenas, 60 miles south of the capital, architect Javier Artadi has created a house of pure, Minimal, almost simplistic forms—carved-out, white concrete boxes—that belie a complex attitude toward the setting.

By cantilevering the white boxes over a dark gray terrazzo plinth, Artadi detaches the single-story house from the ground plane, letting the forms float visually. At the same time, he brings the beach inside metaphorically, with sand-colored concrete floors. “The idea was to reinvent the beach architecturally,” suggests Artadi, an amateur surfer. Opening the house to

outdoor living, he “folded” planes of concrete to demarcate roofs, walls, and floors, subtly joggling the whitewashed surfaces to define shady outdoor rooms, expose a partially cantilevered pool to the sun, and strategically frame views of the broad Pacific panorama. The house becomes an open-ended container that captures sky and horizon within a single volume.

Artadi, a professor at the Peruvian University of Applied Sciences and a principal of the seven-person firm of Artadi Arquitectos, both in Lima, designed the 2,300-square-foot house for a city-dwelling couple and their three children. The property—a flat, 2,400-square-foot, artificially grassy parcel—came with design restrictions, stipulating that the facades could not be concrete, only of wood or other “soft” materials. That didn’t stop the architect from breaking the rules. “Luckily, I knew the board members,” jokes Artadi. In reality, Las Arenas’s governing body—akin to a co-op board—granted a variance to his design, which, the architect suggests, “sets

Project: *Las Arenas Beach House, Peru*

Architect: *Artadi Arquitectos—Javier Artadi, principal; Oscar Luyo,*

project manager; Ivan Navas

Engineers: *Jorge Indacochea, Rigoberto Mayorga, Angel Dall’Orto*

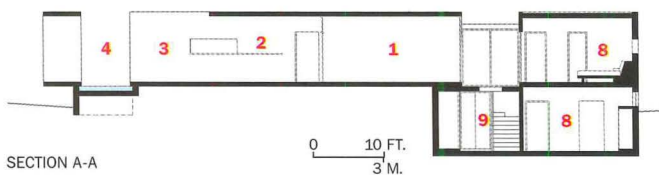
Contributing editor Raul Barreneche’s next book is *Pacific Modern* (Rizzoli, 2006).

The pool is very much part of the overall composition, which deftly plays planes and volumes, solids and voids against one another, as it frames views out (this page).

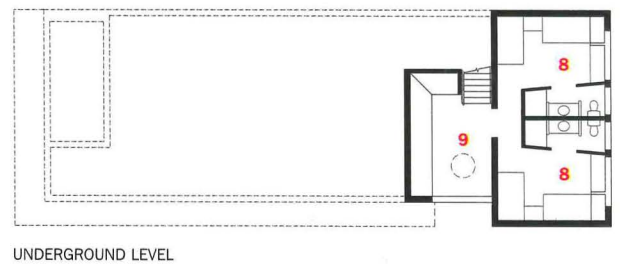
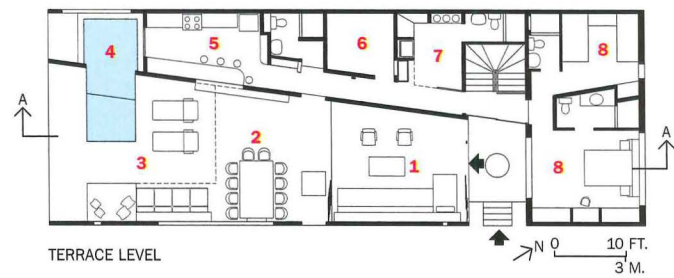




In this exceptionally balanced, Modernist vignette, the tiny pool reads, in daylight, almost as a shiny, blue plane, and the sky above as a folded swatch.



1. Living
2. Dining
3. Terrace
4. Pool
5. Kitchen
6. Storage
7. Laundry
8. Bedroom
9. Den





The white volumes, cantilevered over a dark plinth, appear to float (opposite, top). The entry patio cleaves the box into two (opposite, bottom). Facing west, the terrace frames sunset vistas (this page).

a precedent for other possibilities for the community.”

The directors may have been swayed by the house’s visual lightness, especially the svelte concrete frame that defines the oceanfront facade. This form, a clean-edged rectangular tube, wraps a combined pool deck and outdoor living/dining area. Inside, the slightly more formal living room has sliding glass doors that can screen off the space or open it to the spatial flow. Artadi allotted half of the ground floor to the communal zone, but limited the size of sleeping areas. “At the beach,” he points out, “you tend to wake up with the sun and go to bed late after socializing, so you spend little time in the bedroom.” To encourage informal lounging and dining throughout the day, he built concrete benches along the living/dining area’s south wall, with oversize cushions and a terrazzo-covered concrete dining table.

A skewed corridor separates the communal areas from the kitchen and servants’ quarters, which extend along the house’s north flank. The skew creates a forced perspective, amplifying the sense of space and heightening views out. The master suite and guest bedroom anchor the house’s east end, where a partially excavated basement adds two children’s bedrooms and a den. Sunlight reaches the lower level through a large circular disk or skylight, set into the entry patio, which Artadi notched into the house’s south side, cleaving the master bedroom from the living area.

Despite its formal complexity, the house demonstrates considerable economic restraint. Construction came to just \$60,000, thanks to low-cost, high-quality workmanship with a straightforward palette of poured-in-place concrete, terrazzo, spray-on concrete floors, and little else.

In a developing country like Peru, such a commission takes on significance beyond the notion of house as design laboratory. “Here, there’s still a sense that we can build the future through modern architecture,” Artadi says. The power of this little building transcends the optimism of aggressive Modernism in arid Third World environs. Formally, the design’s quiet sophistication and finesse go beyond the modest construction. Playing with the white box, Modernism’s sacrosanct archetype, Artadi subtly folds and cuts into the volume, at times emphasizing its planar quality, and at others its solid geometry. In places, a simple edge and bent plane deftly imply a larger volume. The eloquent language of solid and void, mass and space speaks to a thoughtful Modernism—at home anywhere in the world. ■

Sources

Paint: *Sherwin Williams*

Lighting: *Light Line*

Tiles: *Celima*

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



The Stilt Cabin opens to views on all sides, as the roof tips up to form a clerestory that catches both low winter sun and views of the peaks lining the valley.

In Washington State, Olson Sundberg Kundig Allen sets its tiny **STILT CABIN** amid the Methow Valley's four-season splendor

James S. Russell, AIA

In the Methow Valley, which fissures deeply into the eastern slopes of Washington State's Cascade Mountains, a couple of weather-beaten utility buildings, a barn—steep-roofed to shed snow—and a plain farmhouse mark the 50-acre setting for Stilt Cabin. From the North Cascades Highway, the drive winds through a layer of white-skinned aspens, then a dark thicket of pine and fir, followed by a veil of scaly cottonwoods covered with wire-brush branches. It finally opens to a frontal view of the two-story pavilion, poised on thin columns, like a gangly wading bird, alert to any disturbance.

Stilt Cabin was designed to survey its surroundings. On its two habitable levels, half of each elevation is glass; unpainted steel clads the rest. The ground floor encloses only storage, a laundry room, and mechanicals because the house rises on a 50-year floodplain. A welded and bolted frame of wide-flange sections holds the whole structure together. Through the glass, the diagonal of the stair is visible, along with the planes of bleached plywood that enclose the kitchen on the uppermost level, and sleeping and bath areas below it.

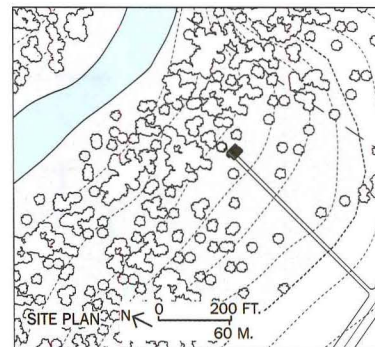
Together, the two upper levels enclose a mere 700 square feet of livable space. It's a getaway that perfectly suits Michal Friedrich, a Seattle dentist. "In Poland, where I grew up, I lived with my two sisters and my parents in a 60-square-meter [645-square-foot] apartment," he explains. "So a small house is okay with me." He also speaks of his home country's tradition of dachas—summer cottages in the woods, typically half the size of Stilt Cabin—that are shared by entire families. In such close quarters, "you'd better like each other," he cautions.

"I wanted something tiny, only a bedroom or two, a bath, a small toilet room, and a real fireplace, so I can hear the wood crackle," says Friedrich. Before commissioning the cabin, he was drawn to Chicken Point, a house Tom Kundig, FAIA, of Seattle-based Olson Sundberg Kundig Allen,

Project: *Stilt Cabin, Mazama, Washington*
Architect: *Olson Sundberg Kundig Allen—Tom Kundig, FAIA, Ellen Cecil, Debbie Kennedy*

Engineers: *Monte Clark Engineering (structural); Turner Exhibits (shutter engineer)*

General contractor: *Tim Tanner*



PHOTOGRAPHY: © BENJAMIN BENSCHNEIDER, EXCEPT AS NOTED

PROJECTS

Planes of glass open on all four sides to views (plans, below), capturing the ever-varying light, as well as the seasonal changes (right). Operable steel-plate panels slide into place to close up the cabin entirely (bottom right).



had designed. There, a huge, upward-pivoting, glass-and-metal garage-style door brings a serene water view virtually inside the living room.

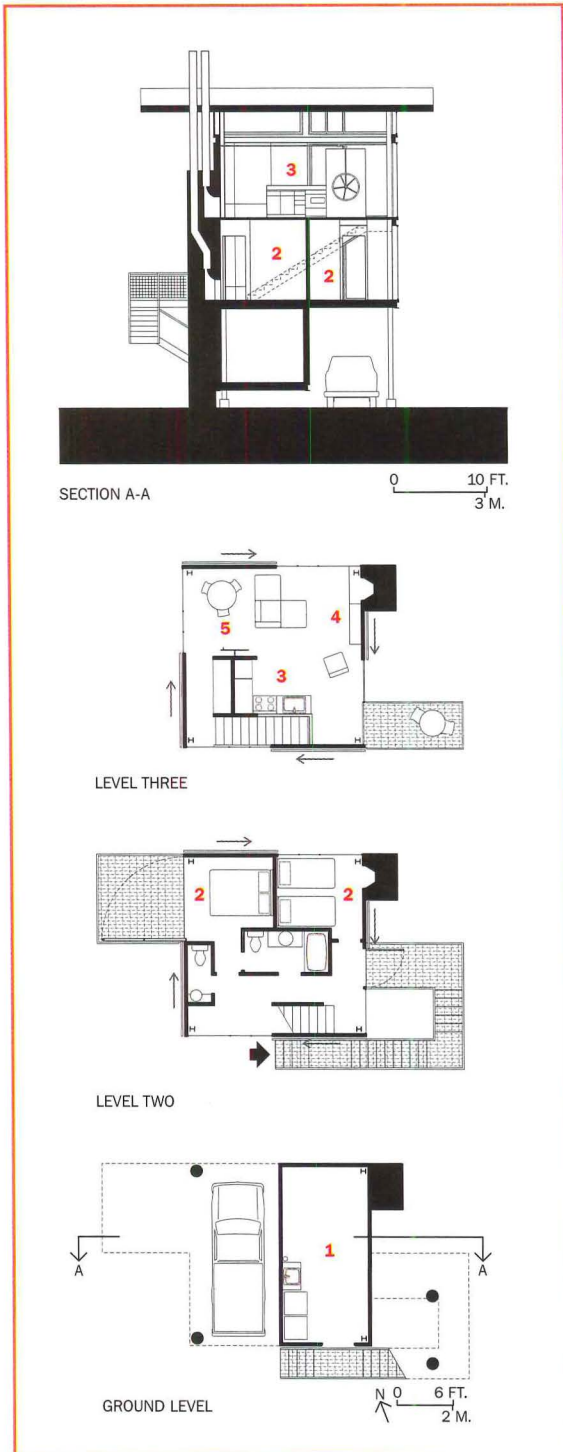
In contrast to the claustrophobic lushness west of the mountains, the high desert valley permits “a little box of a house in a big landscape,” says Kundig, who spent much of his childhood in similarly dry, pine-dotted Spokane. Friedrich and Kundig paced the property, deciding to tuck the house at the downriver edge of the acreage, amid islands of cottonwood trees that appear to scud across a meadow.

Catching views of peaks and the low winter sun, Stilt Cabin’s flat roof tips up to form a clerestory. A balcony projecting westward from the bedroom aims at Goat Peak, at the head of the valley. Within earshot, the river runs by, a short distance north of the cabin.

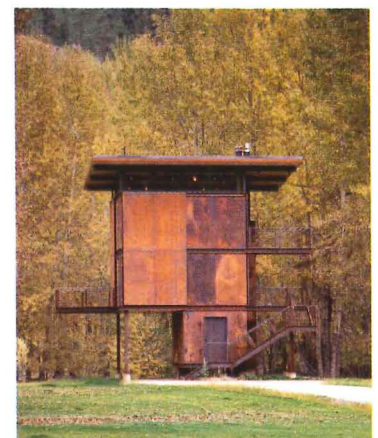
“In European houses, shutters are common,” Friedrich says. He wanted Kundig to design something similar, so that “I could leave the house and not worry about it.” He had been impressed by the elaborate hand-operated device that Kundig had designed to control the glass door at Chicken Point. For Stilt Cabin, the architect created massive shoji screens of heavy-gauge steel panels, operated all at once through a gear-and-cable apparatus. Fully closed, the steel surfaces, gently pre-rusted by a salt spray, armor the house against weather and wildfire. (In the dry valley air, the panels won’t rust out.)

The tight plan squeezes the two bedrooms to the size of monastic cells, with tiny wardrobes instead of closets—which suits Friedrich fine. “To him, the house is a launching pad for outdoor activities,” Kundig explains. A skier, hiker, runner, and practitioner of martial arts, Friedrich has even laid out a soccer field on a former horse pasture. Near the river, he has installed a hot tub with its own outdoor shower, and is converting the old farmhouse to lodge his steady stream of guests.

“I edited [the cabin] down to the basics, wood and metal,” says Kundig, summing up his design approach. “The landscape seen from



1. Storage, laundry, and mechanicals
2. Bedroom
3. Kitchen
4. Living
5. Dining

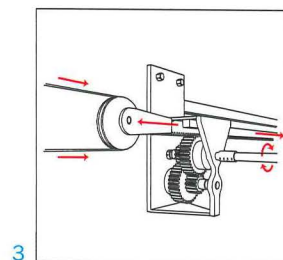
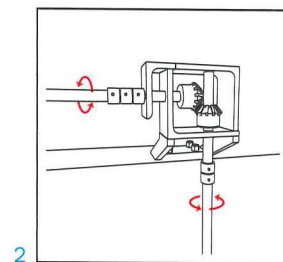
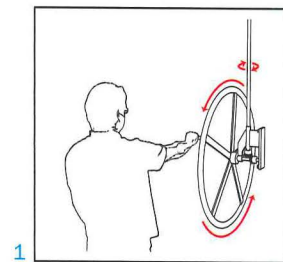
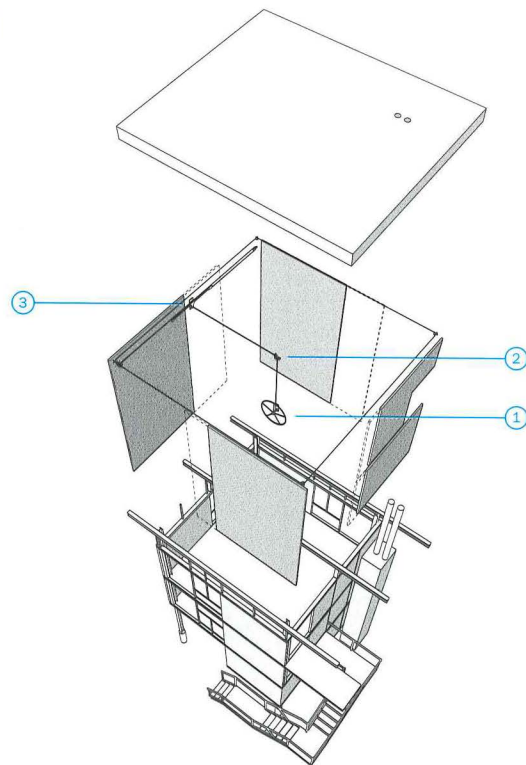


The south-facing entrance side reveals the diagonal of the stair inside, along with the planes of bleached plywood that enclose the kitchen on the uppermost level and the sleeping and bath areas below it.





The welded and bolted unpainted-steel frame remains visible throughout the structure, from the middle-level entrance (left) to the top-level kitchen/living area (bottom left and opposite, top). The entrance door and a massive pivoting door at the master bedroom (opposite, bottom) were fabricated from steel. A large wheel operates all four, shoji-like protective panels at once through a gear-and-cable apparatus (right).





within is more important than how the building is seen from the landscape," he adds. The cabin's modesty provides a tonic antidote to the growing size and self-conscious woodsiness of the log-cabin mansions going up in the woods all around.

Perched high, the small house offers vantage points that make the visitor perpetually aware of the surroundings. On a recent late-winter evening, a light snowfall ended as clouds cleared away, revealing the setting sun blushing the nearby peaks. The next morning, a cloudless dawn lit snow-mantled panoramas in every direction. Slices of sunlight moving through the kitchen and living room tracked the hours of the day. Each spring, the cottonwoods leaf out in green flip-sided with silver. In summer, the deep blue of the river cuts through the meadows of sagebrush and pale straw. Fall brings a wash of gold. "Seeing the house all year round in different light," Friedrich offers, "I love it more and more." ■

Sources

Metal roofing: AEP Span
Steel framing: Farwest Ironwork
Aluminum windows: Milgard
Doors: CECO (steel entrance door); custom by contractor (plywood); Fleetwood (sliding glass)

Interior plywood: Weyerhaeuser
Furnishings: Cassina; Leaf Chair; Knoll; Chista; Poltrona

For more information on this project, go to Projects at

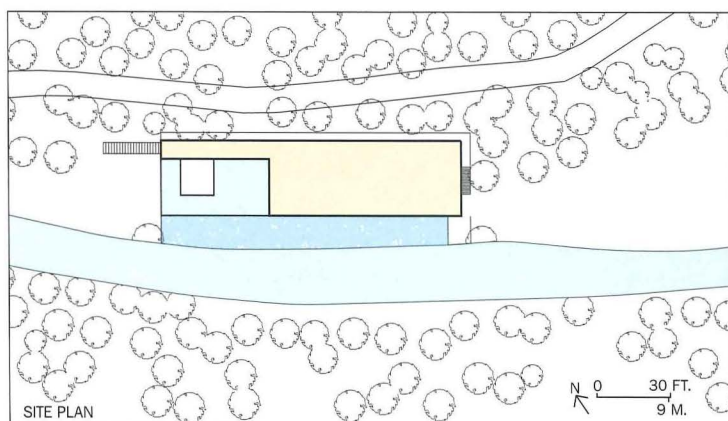
www.archrecord.com.



The lotus pond, on the house's south side, is man-made but adopts the naturalistic *suhama* style of traditional Japanese gardens.

Kengo Kuma turns stone into gossamer, wrapping the **LOTUS HOUSE**, near Tokyo, in a checkerboard of wafer-thin travertine

The stair behind the garage (below right) leads up to a deck. Kuma juxtaposes three levels of water: the



reflecting pool, on the second floor deck; a lotus pond, at grade; and the existing river, with its banks a precipitous 10 feet below the house.

By Naomi Pollock, AIA

A checkerboard wrapper of thin travertine panels alternating with rectangular openings forms a delicate screen that partially veils Lotus House, a 5,737-square-foot weekend home, some 40 miles west of Tokyo. With this unusual exterior wall, architect Kengo Kuma has explored what he calls “nonmonumental and transparent ways of building with stone.” He says he also intended the wafer-thin checkerboard as a challenge to the traditional Western precept that stone should play a load-bearing role (or, at least, appear weighty). Even before designing Lotus House, Kuma had a well-honed reputation for working closely with artisans and contractors to investigate the unexpected possibilities of natural and man-made materials. And while this project hardly represents his first experiment with stone, it is by far his most daring.

Here, the client’s love of travertine, imported from Italy, prompted the initial material choice. Kuma also took inspiration from the Japanese tendency to blur boundaries between inside and out, but he

RECORD’s Tokyo-based correspondent Naomi Pollock is the author of *Modern Japanese House* (Phaidon, 2005).

soon inverted expectation by proposing “an architecture of holes.” In fact, he envisioned the entire house—beyond the patterned, semipermeable wall—as a composition of solids and voids.

While Japanese regulations “count any space under a roof as interior [whether fully enclosed or not], people don’t typically use these semi-open areas much,” observes the architect. But for Kuma, such voids are “one of the best parts of traditional Japanese architecture,” prompting him to weave them into his work and exploit their potential whenever possible.

At Lotus House, he did so with a vast terrace inserted between the linear structure’s two main volumes. A wood-beamed roof, soaring 20 feet above the ground, crowns this outdoor room. One flanking volume contains the garage, kitchen, and two bedrooms, and above them, a reflecting pool, sauna, steam room, and suite of indoor and outdoor tubs. The other block houses a double-height, glass-enclosed living room with

Project: Lotus House, near Tokyo
Architect: Kengo Kuma and Associates—Kengo Kuma, principal; Yuki Ikeguchi, project architect

Engineers: OAK Structural Design Office; P.T. Morimura & Associates
Landscape: Takashi Shirai and Associates



an alcove for an 8th-century statue of Buddha, behind a sliding wall. The living area spills onto the court—a perfect party space—which, in turn, opens dramatically onto a man-made pond, where lotuses bloom a few months of the year. Beyond this is an unspoiled forest.

Sited on the client's 8-acre parcel of undeveloped land—a rarity so near to Tokyo—Lotus House stands in a tree-studded, secluded valley with a small river running through it. Because of the hilly terrain, the logical spot for the house was near the river, where the client, a businessman

“SOMETIMES CLIENTS GIVE ME THE CHANCE TO REINVENT MYSELF,” SAYS KUMA OF THE LOTUS HOUSE DESIGN.

with a keen interest in traditional Japanese art and religion, had already planted a collection of buildings: a 30-year-old wood teahouse by architect Togo Murano, a 19th-century wood farmhouse, and an early-20th-century stucco storehouse. (Elsewhere on the grounds, the owner had rebuilt a timber Buddhist temple for private meditation; a wooden Balinese sleeping cottage; and a massive, thatch-roofed Edo Period gate, relocated from a nearby town and now marking one of the property's two entrances.)

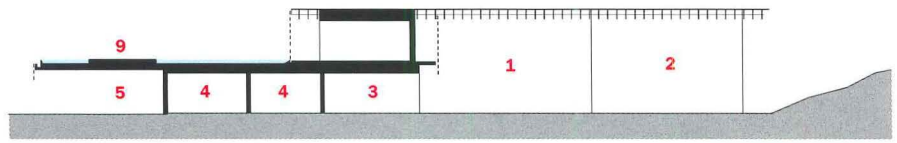
For Kuma, the major challenge was how to relate his design not to

the existing buildings (which are not even visible from Lotus House), but to the river, with its banks a precipitous 10 feet below the house. In earlier works, the architect had incorporated ponds, pools, and even the Pacific Ocean. Here, he responded to the site by juxtaposing water with water. His elongated lotus pond parallels the river while directly abutting the building, conceptually bridging the gap between the natural and the man-made. Whereas the river remains almost invisible from inside the house, the lotus pond provides the visual backdrop for every room.

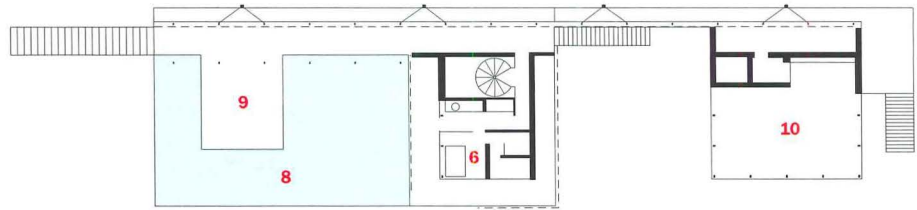
The man-made pond, with loosely defined edges and only a thin membrane separating it from the soil, adopts the naturalistic *suhama* style, found in traditional gardens throughout Japan. By contrast, the house's upper-level reflecting pool, lined in granite with mitred corners and crisp edges, is far more akin to Kuma's previous work. The subtle lotus pond marks a new direction for him, spurred by the owner's preference for water that is “not too controlled,” says the architect, joking that “sometimes clients give me the chance to reinvent myself.”

In other ways, Kuma's earlier projects referenced Japan's architectural history. And like traditional Japanese villas, Lotus House has neither a dominant facade nor a direct relationship to the street. Though the structure stands near the property's edge—within the sight lines of homes along a narrow public road, just up the slope—the property's two gated entrances

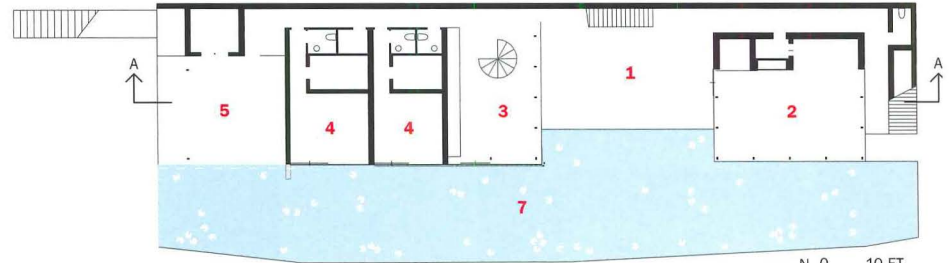
1. Courtyard
2. Living
3. Kitchen/dining
4. Bedroom
5. Garage
6. Soaking tub
7. Lotus pond
8. Reflecting pool
9. Deck
10. Open to below



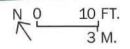
SECTION A-A



SECOND FLOOR



FIRST FLOOR



A checkerboard screen of thin travertine panels, alternating with open rectangles, wraps the house's two main volumes, flanking a covered courtyard (this page and opposite).



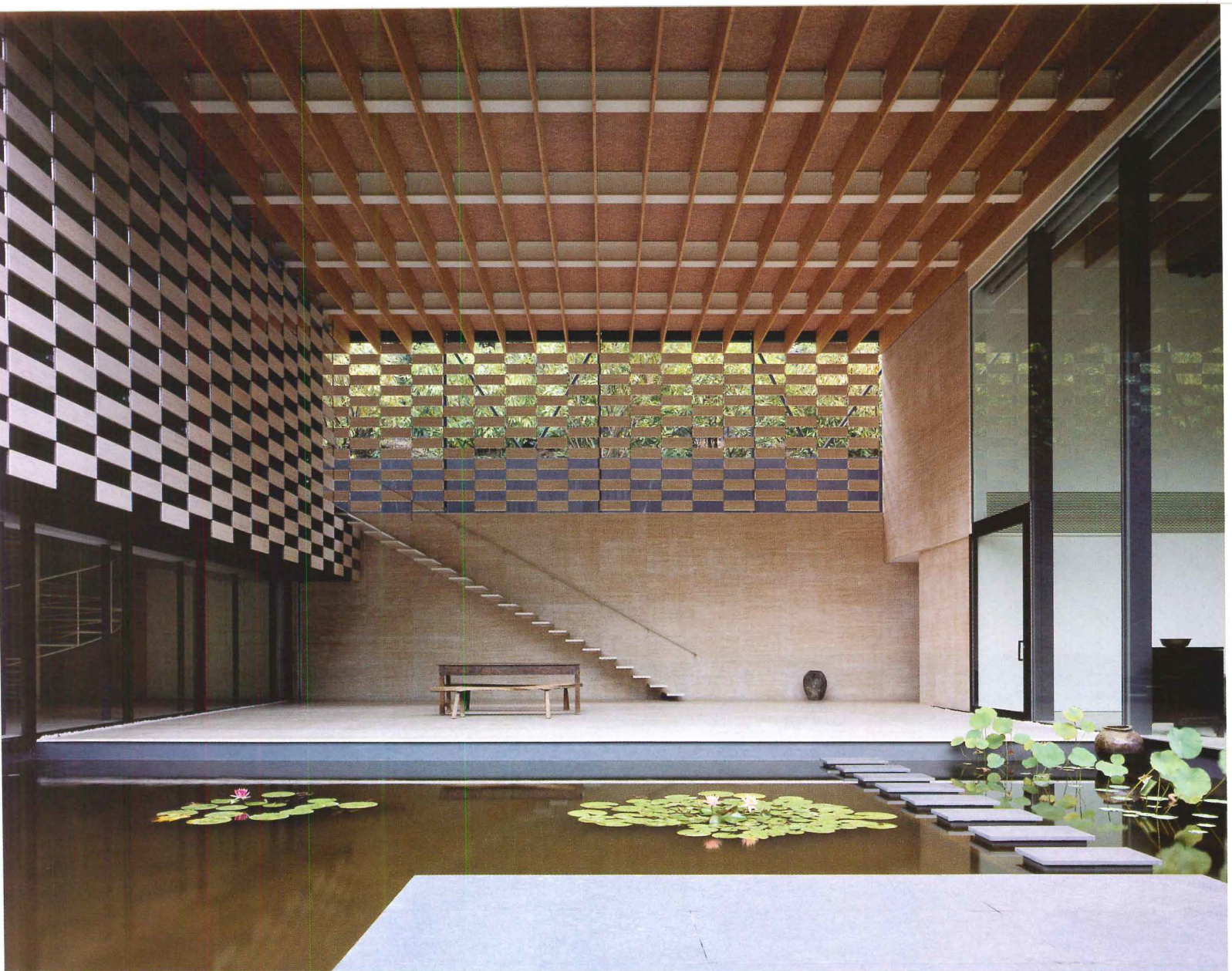


Like the visually light screen and the lotuses themselves, the stairs appear to float (above). Within the enclosed dining/kitchen area, a delicate spiral stair (in background above) rises to the upper floor. There, indoor and outdoor tubs mirror each other, as reflections of the checkerboard shine across the water (right).



Stepping stones (below) echo the checkerboard rectangles. The glass-enclosed living area (right and below) has no travertine "veil," leaving the room entirely open visually to the landscape. The spacious, sheltered courtyard provides a tranquil and scenic venue for dining alfresco (below).





remove it from the quasi-rural surroundings, dotted with modest houses.

While floor-to-ceiling glazing and multiple entrances link Lotus House inextricably to the landscape, the building politely turns its back on its neighbors. Mediating between the home and its setting, the checkerboard veils parts of the front, sides, and almost the entire back of the painted-concrete building. Though the travertine wrapper filters, without completely eliminating, views in and out of the house, sliding glass walls open every major room to the lotus pond. When the window walls glide aside, the pool's shimmering surface practically joins with the wood floors of the airy, casual bedrooms, where watery reflections ripple across plain white walls. By contrast, the travertine-floored, double-height living room, encased in fixed glass on three sides, is formal, imposing, and more removed from the water (in that case, the pond). There, the adjacent covered terrace softens the room's hard surfaces. Though also grand in size, the cavernous, semi-outdoor terrace is defined by its intricate checkerboard rear wall that allows gentle breezes to flow through the house.

Unlike more conventional stone walls, this wrapper has no structural capacity. Its 1-inch-thick travertine plates, 8-by-24 inches each, neither touch the ground nor relate proportionally to the reinforced-concrete house's spacing of wood beams and steel columns. The checkerboard's independent structure holds each panel in place with a

complicated grid of bolted, ¼-inch-thick, stainless-steel flat bars, suspended from the roof beams. Steel columns, 9 feet apart, stabilize the hanging screen. Of course, these heavy-metal underpinnings remain hidden from view, behind the visually floating screen that sways slightly in the breeze and hovers mysteriously 3 inches above the floor.

An architectural oxymoron, the travertine seems to defy gravity. Instead of relegating stone to heavy lifting or superficial veneer, Lotus House's checkerboard reinterprets Japan's traditional see-through screening devices. With many earlier buildings, Kuma had achieved such delicacy through surface-mounted, exterior wood slats. But in this project, thinly sliced stone, secured in a stainless-steel web, yields a similar result. While such apparent lightness, ironically, took heroic effort, Lotus House ultimately reveals Kuma's exceptional sense of delicacy and proportion—and his ability to create entirely unexpected results. ■

Sources

Windows and doors: *Tostem*

Furniture: *Extra Cappellini; Moroso*

The courtyard's timber roof soars 20 feet above the ground. Suited to entertaining, this central space invites guests to flow over from the living and dining areas.

For more information on this project, go to Projects at

www.archrecord.com.



The glass-enclosed living room, with its wall of seemingly delicate bookcases, becomes a sanctuary with views out to the forest.

Mountains ring the site, up on a mesa, 9,921 feet high. Groves of aspens surround the house. The second-floor deck spans between the main box (contain-

ing the living/dining area, kitchen, master suite, and study) and the smaller volume (housing the garage, guest quarters, and exercise room).



Inspired by Asian puzzle toys, **Maya Lin** crafts the kinetic **BOX HOUSE**, opening it quietly to high peaks in the Colorado Rockies



Hinged, slatted screens, with a rack-and-pinion system of hidden gears, open out from the south and west elevations. The shutters lock into place.



Asian puzzle boxes with secret sliding and pivoting panels first inspired Maya Lin's architecture in the Norton Apartment in New York [RECORD, September 1999, page 132]. There, multiple planes folded open or closed, transforming the interior into a pied à terre for one, a home for a family with children, or a space for an elegant soirée. More recently, when Lin received a commission for a house in the Colorado Rockies, the idea of a box toy sparked her imagination once again, but this time, with a full building, she decided to take the notion further.

Drawn to the work of Donald Judd, she was intrigued by the idea of very simple cubes or boxes strewn in the landscape. But as she came to understand the particulars of both the setting and the clients, her Minimalist volumes evolved in site-specific ways, informing the inner and outer workings of this kinetic puzzle—leading to boxes within boxes and a relationship with the surroundings that ranges from quiet to expansive.

"At first glance, my architecture appears reserved—unlike my sculptural pieces, which are more gestural and clearly about the landscape—but the Box House may be deceptively simple," suggests Lin. "As you gradually discover, it's also quite playful."

This tendency toward outward reserve was hardly a problem for the Colorado clients, a couple in their 50s who were already knowledgeable patrons of architecture. Because their primary home, in another state, acts as a magnet for architecture aficionados, they envisioned their mountain retreat as a private place, where they could simply enjoy hiking and bird-watching. So they carefully sited Box House on hundreds of acres, which they generously deeded to a conservation easement. This arrangement will preserve—and protect in perpetuity—much of the wild beauty bordering an increasingly popular ski area. Besides Lin's Box House, the only other structure that can ever rise on the land is a future caretaker's cottage.

The architect then positioned the house so it can't be spotted from any other property. Instead of perching the building majestically on the highest point, she placed it on a lower mesa (9,921 feet high), ringed by mountains, affording panoramic views of the surrounding peaks. A private road (an old rancher's route, already in place) leads the way, with 2 miles of switchbacks, up to the house. "The idea was to create a modest and discreet structure—and then reduce it even further, minimizing your first perception of it," says Lin. Initially, you see only the narrow end of the building's long, rectangular form. Then, as you draw closer, the full composition begins to emerge: two teak-clad boxes, totaling 6,760 square feet on two stories, joined by a second-floor deck. One volume contains the kitchen and main living/dining area beneath the master bedroom and study; the other houses the garage, at grade, rising to the home gym and sole guest room.

Eventually, as this former ranch land becomes reforested, aspens will hide much of the garage component. Already, supple young trees veil the site, giving the impression that the boxes were dropped into an existing forest. The flickering, shadowy light, cast among the aspens, inspired Lin to create large, slatted, operable shutters across broad areas of the elevation and leave open slits between the deck planks. Sunlight filtering through these layers abstractly evokes dappled rays in the forest.

You enter the house from under the central deck, metaphorically a shadowy glade. Then, as Lin puts it, "you float up, spiraling toward the



When the large shutters open, glazed areas of the facades become fully revealed (opposite). Light filtering through the slats abstractly mimics rays passing through the surrounding aspens (this page).



1. Main volume
2. Deck
3. Garage/guest quarters/exercise room

Project: Box House, Colorado
Designer: Maya Lin Studio—Maya Lin, principal; Carl Muelheisen, Corrie Rosen, project managers; Selin Maner, Patri Vientrivi, Josh Uhl, project team
Associate architect: William Bialosky

Engineers: Robert Silman Associates (structural); Burggraaf Associates (mechanical)
Consultants: Edwina von Gal (landscape); Tillett Lighting Design
Interior designer: Alan Tanksley

Lin considered making the central deck a drawbridge, but ultimately decided to leave it fixed (right). Entry is from under this platform, into the main house, to the left, and the guest quarters (below two), to the right and up a flight of stairs

(opposite). The split between the house's two volumes and the single sapling sprouting up through a hole in the deck (right and opposite) suggest landscape flowing through the building. The tree also recalls Le Corbusier's Heidi Weber Pavilion.



light and views,” which she reveals fully from the top platform, on the third story, over the guest and exercise rooms. For this upward journey, the architect borrowed a classic strategy from Japanese houses, designing each window to frame a specific view out, expanding the interior visually into the landscape. The hinged exterior shutters can either shade the large windows, or swing open to reveal the vistas.

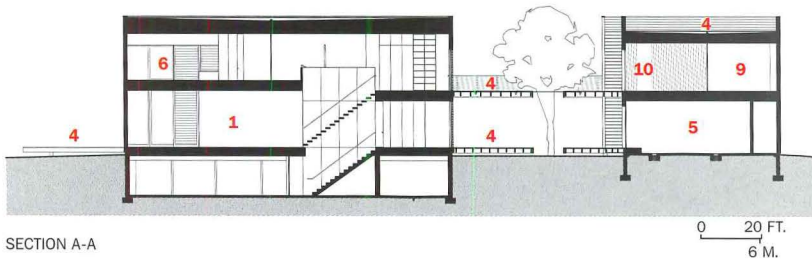
Lin considered giving this house of moving parts a drawbridge between the two volumes, but ultimately decided “that was getting too hokey.” Instead, her team focused on making the visually delicate shutters strong and stable enough to permit maintenance workers to climb on them and to prevent any rattling in the wind. “The time we spent making the 140-foot-long gunshot exterior absolutely flat and plumb was pretty dramatic,” recalls the contractor, Paul Ricks, of Fortenberry Construction. “Pulling off such a pure and seemingly simple design required a high level of perfection.”

Crafted, even on the exterior, like a piece of fine cabinetry, the house has minimum tolerances of $\frac{1}{16}$ of an inch—though Ricks suggests the finesse typically approaches $\frac{1}{32}$. As Samuel Aarons, who masterminded the hardware detailing, recalls, “Every latch had to be perfect and disappearing. We had to invent on a daily basis—with over 100,000 precision holes for the louvers alone. We deployed a lot of aeronautical technology, including aircraft aluminum, for lightness with strength and rigidity.” To lock the shutters in place, he devised a rack-and-pinion system of hidden gears. Rather than flaunt the mechanisms and technology, Lin chose to give them a quiet presence, or in places, even render them invisible.

On the interior, the game of kinetic boxes within boxes proceeds with an assortment of moving panels, including Dutch, pivoting, hinged,

On the second floor a fixed screen, with two layers of slats, forms a facade for the guest quarters (opposite three, and this page at right). In the evening, the single tree rising through the deck is illuminated from below.

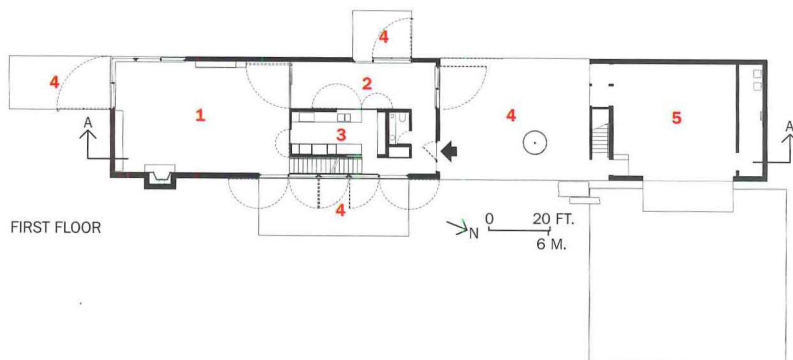




SECTION A-A



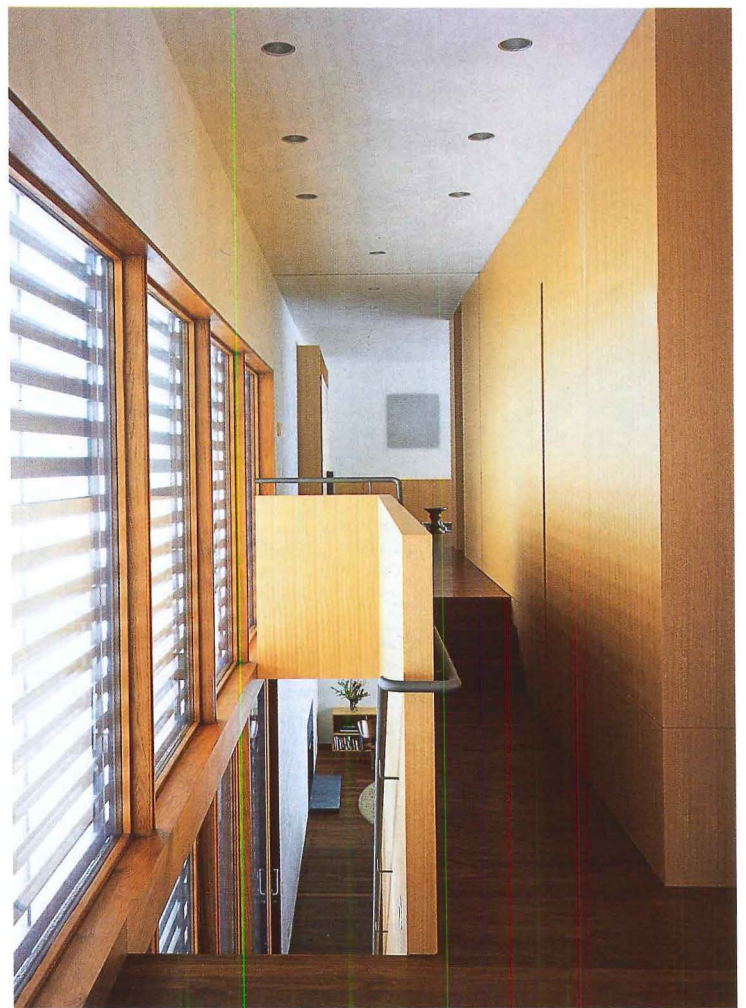
SECOND FLOOR



FIRST FLOOR

1. Living
2. Dining
3. Kitchen
4. Exterior deck
5. Garage
6. Master bedroom
7. Closet
8. Bathroom
9. Guest room
10. Exercise room

On the ground floor, the eucalyptus-clad inner box, with Dutch doors, houses the kitchen. A big pivoted panel can also close off the entry foyer (above). Cantilevered steps, visually afloat, lead to the second floor (opposite, bottom). On the upper level (opposite, top right), the eucalyptus-paneled box encases the master dressing area and two bathrooms. A long view from the study takes in the master bath, with its floor of greenish Pietra de Cardoza, and a corner of the master bedroom, with its views out to the mountains (opposite, top left).



and pocketing doors. Lin wanted to define and continually redefine the spaces, she says, “without a single stud wall.” In the main part of the house, the inner box contains the kitchen, rising like a tower to enclose the master dressing room and bathrooms above. In the guest wing, the inner volume houses an exercise room and bath. While the exterior shell is of teak, framed in wood and steel and lined in hand-troweled plaster, the inner boxes are of pale eucalyptus, playing against the floors’ dark afromosia. (All the wood, Lin stresses, was sustainably harvested.) Between the main inner box and the slatted facade, a run of cantilevered steps (wood over steel flanges) seems to float, pulled away from the flanking surfaces. The system of moving parts relies visually and, to some extent, functionally on the precise alignment of reveals, seams, and figured wood grain, as well as the articulation of separate parts. The multiple panels provide myriad configurations, including a study with a desk that folds down like a Murphy bed and a kitchen that opens partially with a bar counter or closes up completely into a neatly packed box.

Well crafted inside and out, the nesting volumes utter not so much as a creak. The house maintains a quiet presence among the aspens, but if you peel back its layers and open its boxes to the sun’s rays, the whole ensemble becomes animated—and really begins to speak. ■

Sources

Lighting: Nulux; Louis Poulsen; Edison Price; Bega; Iris; BK Lighting; Hekowa
Glass: Sevasa USA
Plumbing fixtures: Dornbracht; Lefroy Brooks; Duravit; WetStyle;

Speakman; Blanco America

Appliances: Sub-Zero; Bosch; Fischer & Paykell; Miele; Gaggenau
 For more information on this project, go to Projects at www.archrecord.com.

The house's north facade incorporates mullions and floor slabs into a jazzy composition reminiscent of Mondrian and Mies. Rubber wraps the chimney at the north-west corner.





With the **NEW** **ENGLAND HOUSE**, clad in black rubber and cedar, **Office dA** reinvents the cube

By Fred Bernstein

Twenty-five years have passed since the Rubik's Cube was a marketing meteor, but as a metaphor, it still has force for Monica Ponce de Leon. Each year, at Harvard's Graduate School of Design (GSD), she teaches a studio named for the maddening puzzle, which offers an important lesson: When a volume's exterior is truly linked to its interior, getting the outside right may require tireless manipulation of the inside.

Ponce de Leon and Nader Tehrani, her GSD colleague and partner in the Boston firm Office dA, have created a house that demonstrates that challenge. The typical American approach to home design, in which each new space adds a new volume, held no appeal for them. "This house," says Ponce de Leon, "is the opposite of sprawl." That, and the desire to get the two-bedroom, 2,600-square-foot interior up high enough to give the owners treetop views, resulted in a nearly cubic building.

But there is nothing simple about this cube, which twists and turns in plan and section in an almost dizzying profusion of material and formal explorations. Tehrani and Ponce de Leon, who have been working together since they partnered on their GSD thesis in 1991, consider their projects built essays. In this case, the clients, a young couple, set the bar high: Collectors of contemporary art, they imagined their land as a place

Fred Bernstein contributes to The New York Times and many design publications.

Project: *New England House*

Architect: *Office dA—Monica Ponce de Leon, Nader Tehrani, principals; Hamad Al-Sultan, Tali Buchler, Albert Garcia, AIA, Kristen Giannattasio, Lisa Huang, Elise, Shelley, design team*

Interior designer: *Manuel de Santaren*

Engineers: *Bill Bishop (structural); Foresight Land Services (civil); Sun Engineers (mechanical); Johnson Engineering (plumbing); Race Mountain Tree Services (landscape)*

In contrast to the windowed north facade with the rubber-clad chimney at its west end, the east elevation has cedar siding, a material chosen to evoke the architectural vernacular of local farms.



for site-specific artworks, of which the Office dA building, a weekend house, would be the first.

On the site, extending over more than 30 acres in western New England, half a dozen old farm structures already stood around an oval “village green.” Tehrani and Ponce de Leon wanted the house to mine—as well as undermine—local building traditions. For the east elevation, which visitors see from the driveway, and the south facade, which they pass on their way to the front door, the architects chose shiplap and board-and-batten siding, materials that, Tehrani suggests, “emerge from the language of the farm.” The more private north and west facades, however, were free to speak languages of the architects’ own invention.

Of course, even the two “contextual” facades are full of surprises. The three-story building’s east side, deftly camouflaging a trio of garage doors, is largely opaque, but with a bulge (containing the interior stairway) that looks as if a seismic shift had created it. The south facade’s horizontal siding turns a corner onto this vertically clad east elevation—one of several instances when the house’s architectural effects overlap. At the upper level, the south elevation bends loosely around the three parts

THE OWNERS IMAGINED THEIR LAND AS A PLACE FOR SITE-SPECIFIC ARTWORKS — STARTING WITH THE HOUSE BY OFFICE dA.

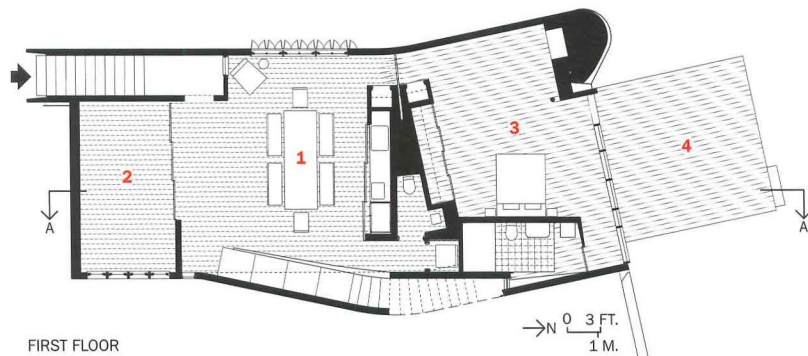
of a bathroom—the bathtub, sink, and toilet—perhaps in homage to the idea that form could simply follow function.

On the north side, where the view out is the most private—directly into the woods—the architects created a window system that combines mullions and exposed floor slabs in a jazzy composition reminiscent of both Mondrian and Mies.

The west elevation, sheathed in black-rubber roofing, isn’t reminiscent of much at all. In more typical applications of this rubber, says Tehrani, “you’d just heat it up and glue it together; the seams end up where they end up.” But he and Ponce de Leon investigated ways to extract precision from a material that is synonymous with imprecision. To create tailored openings for vertical slit windows, the fabricators, using digitally produced templates, cut the sheets, stretched them over metal struts, and folded the material back onto itself before securing it with rivets.

Inside, too, Office dA avoided domestic clichés. Much of the

1. Kitchen/dining
2. Playroom
3. Master bedroom
4. Porch
5. Bedroom
6. Living room
7. Fireplace

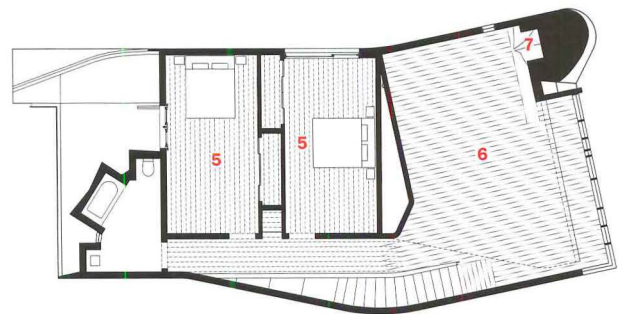


FIRST FLOOR



Windows resembling gills (top and above) bring daylight into the dining area. Entry is via

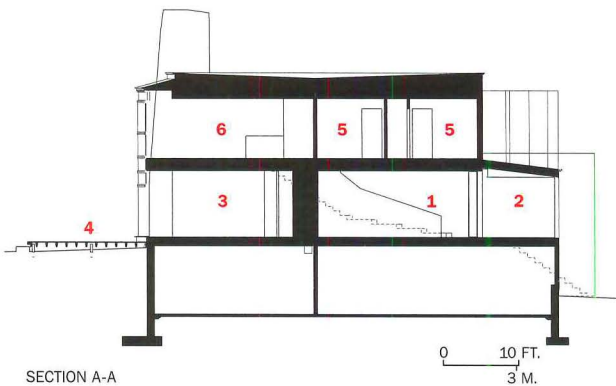
an outdoor stair rising between the cedar south facade and rubber west one (above).



SECOND FLOOR




The east facade (above and right) camouflages garage doors. The bulge contains a clerestory-lit interior stair. Where the south facade's horizontal cladding turns a corner (above), it overlaps the east elevation's vertical siding.



1. Kitchen/dining
2. Playroom
3. Master bedroom
4. Porch
5. Bedroom
6. Living room

Ascending from the second to the third level, the stair follows a dramatic curve, with its walls tilting inward, "carving away headroom as you no longer need it," says Ponce de Leon.





Mahogany lines the curving stair wall, and walnut covers the floors. The steps hang from structural wooden posts, which become mullions as they pass through the clerestory.

In its proportions and overlap of vertical and horizontal patterns, the mahogany fireplace surround (below and right) suggests a microcosm of the house's southeast corner. The living room's synco-pated composition of fixed and operable windows (right) faces north, into the woods. Manuel de Santaren and Carolina Tress-Balsbaugh collaborated on the interior design.



ground floor is relegated to the garage, but the architects didn't permit anything as simple as a door from there to, say, a mudroom. The entry is via an outdoor stairway, where the cedar south facade and rubber west one peel apart, creating a slit that suggests a journey to the center of the earth. The walls bracketing the stairs tilt in, "carving away headroom as you no longer need it," says Ponce de Leon, explaining one of the moves that show the careful tailoring of plan and section. Making additional references to the facades, many of the interior elements (some created in collaboration with Boston designers Manuel de Santaren and Carolina Tress-Balsbaugh) seem to bring exterior components inside. A mahogany fireplace surround, for example, suggests, in its composition and overlap of vertical and horizontal patterns, a microcosm of the house's southeast corner. Inflected by the exterior cladding, some of the windows look through horizontal wood slats, while others are pinched by bands of rubber.

And the stairway, which leads from the second to the third floor, includes treads and risers that are rarely uniform. That's because this flight bows out from the east facade, mimicking the curves of the village green and placing the stair, as the architects say, "conceptually outside the building." With nothing supporting the steps from underneath, these elements hang from wooden posts, which double as mullions where they pass through clerestory windows. It is a structural tour-de-force.

Not a tour the architects are likely to take a second time. And now that they know how to whip rubber into shape, Tehrani and Ponce de Leon (whose current projects include an apartment building in Boston) have no immediate plans to attempt it again. After all, they have new puzzles to solve. Rubik—himself a professor of architecture—would approve. ■



Sources

Curtain wall: Duratherm

Rubber cladding: Firestone

Windows: Marvin; Duratherm; Lou Boxer (custom)

Paints and stains: Benjamin Moore

Lighting controls: Lutron

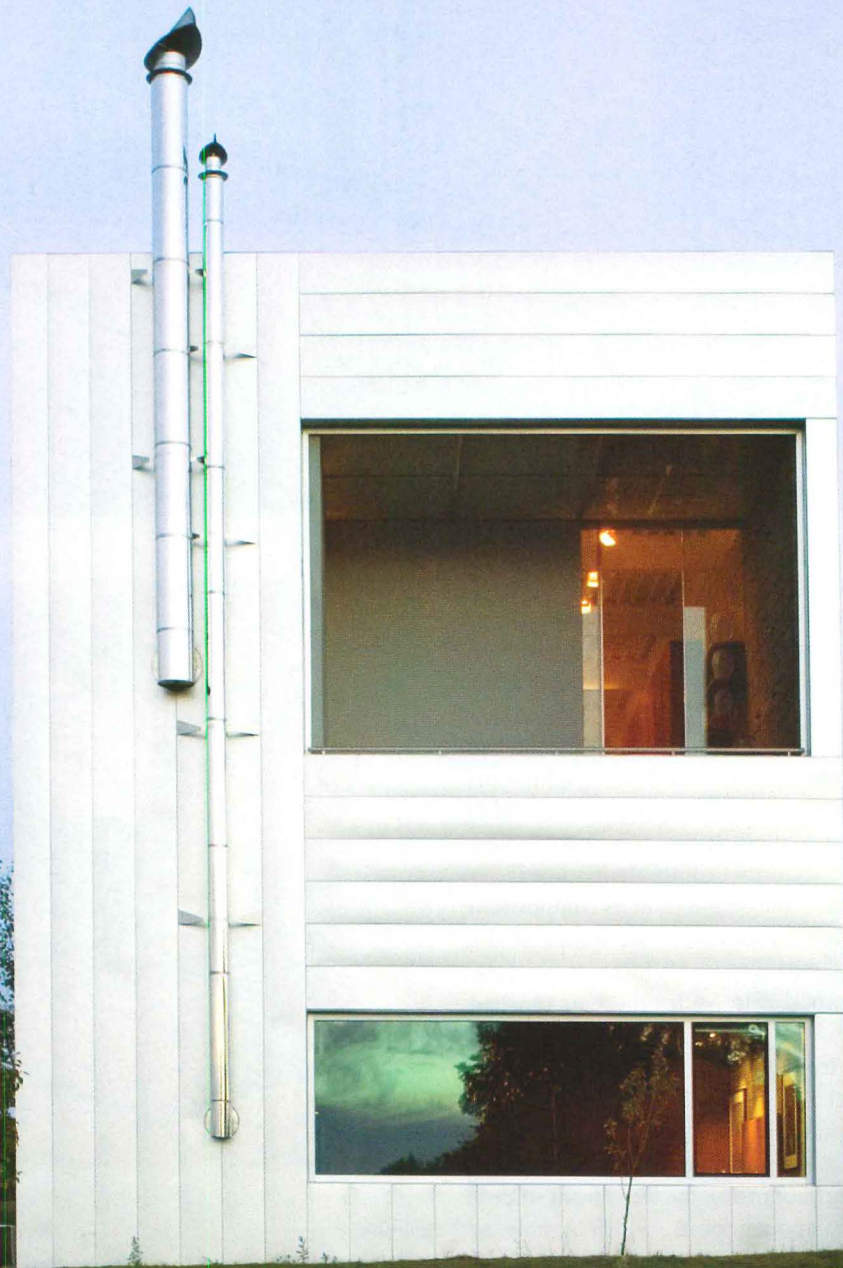
Tile: Dal-Tile; American Stone;

Discover Tile

Hardware: Baldwin; Rocky Mountain; Richard Wilcox

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

On the east elevation, the interior opens to the field. A screened porch off the kitchen provides a protected outdoor area. A ground-floor window faces toward a distant dairy farm (this page).



Taking cues from Wisconsin dairy barns, Wendell Burnette shapes the **FIELD HOUSE's** simple, silvery form

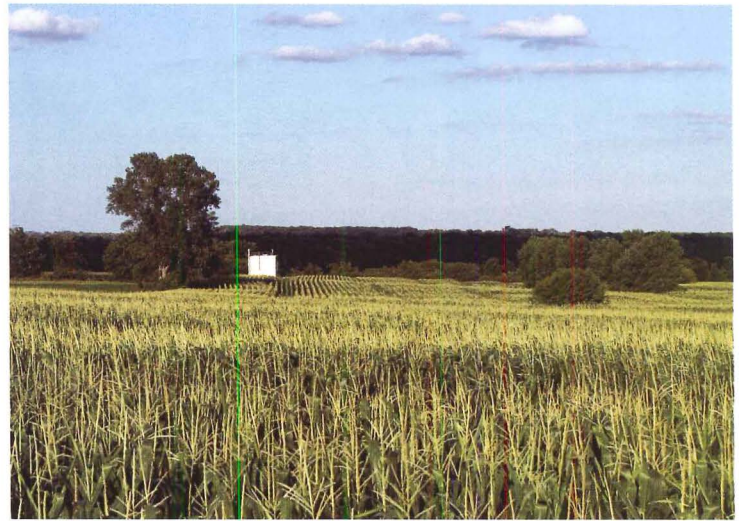
By Jane F. Kolleeny

Siting his house amid the large dairy barns, grain silos, and humble homesteads that speckle the rural landscape of tiny Ellerton, Wisconsin, Dr. Robert Geller did not want the neighbors viewing him as intrusive, building a colossal mansion. But, as he told his architect, Wendell Burnette, AIA, he definitely wanted a Modernist home. The result: a 5,000-square-foot, zinc-galvanized-aluminum box, inspired by the farm structures on the surrounding fields, which extend like checkerboards across the vast, predominantly flat landscape. The spare, elongated exterior of this building, called Field House, reinterprets the utilitarian aesthetic of the agrarian terrain, complementing rather than overshadowing its neighbors. Beyond the house's apparent simplicity, however, a refinement in detail and overall composition gradually reveal themselves.

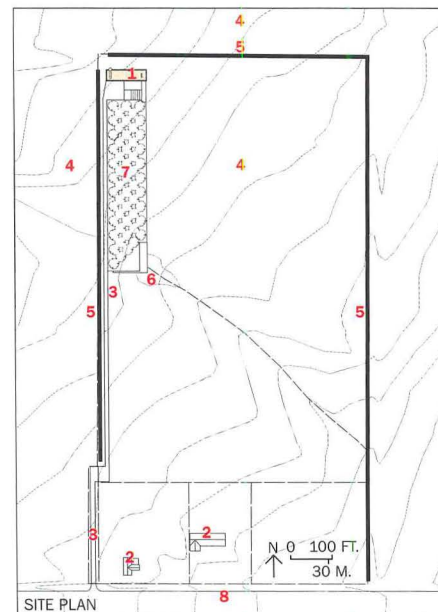
In this part of eastern Wisconsin, the landscape changes vividly with the seasons. During the spring, verdant fields of rotating crops sprout up, providing fodder for cattle in their growing season. In winter, those same fields turn into a frigid, white expanse. The client, an oncologist, asked for a peaceful retreat that could provide solace from his high-stress job. At the outset of the project, he wrote a brief, succinctly outlining his desire for a home attuned to the "land, sky, and seasons." Interpreting this directive, Burnette says he envisioned a house that would "allow a dialogue with the changing light and times of year—a place that would not be overtly expressive, but instead, recede into the landscape."

Turning the building away from the harsh winter winds and opening it to the southerly sun, Burnette positioned Field House on the northwest corner of a 16-acre crop field, which a local farmer leases and tends. Reached by the owner's straight, ¼-mile-long access road and nestled up to existing rows of trees along the property's edge, the building offers both privacy and spacious views. While discreet windows to the north (the house's back) and the east frame vistas of far-off dairies, the south elevation opens more expansively toward the field, the sky, and distant farms.

From afar, the structure appears as a simple, silvery rectangle. More closely examined, its long south facade reveals 16-inch-wide panels of



For the exterior, the architect chose an off-the-shelf industrial siding system for its durability and low maintenance. When viewed from the main road, the aluminum box shimmers in the sunlight (above).



Project: Field House, Ellerton, Wisconsin

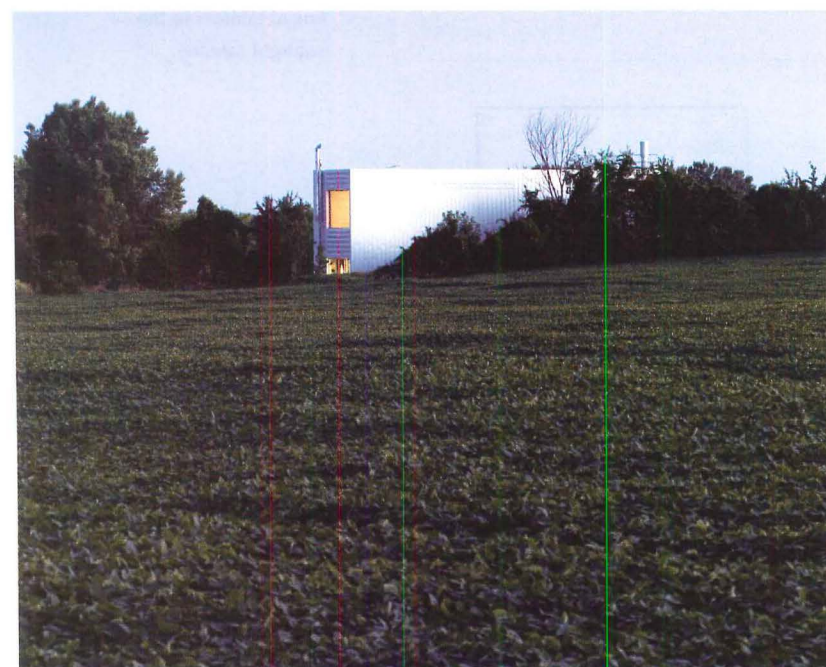
Architect: Wendell Burnette Architects—Wendell Burnette, AIA, Scott Roeder, Matthew Trzebiatowski, AIA, Joe Herzog, design team

Engineers: Rudow + Berry (structural); Thelen Engineering (mechanical); Harwood Engineering (electrical); Point of Beginning (civil)

Consultants: Michael Boucher Landscape Architects (landscape)



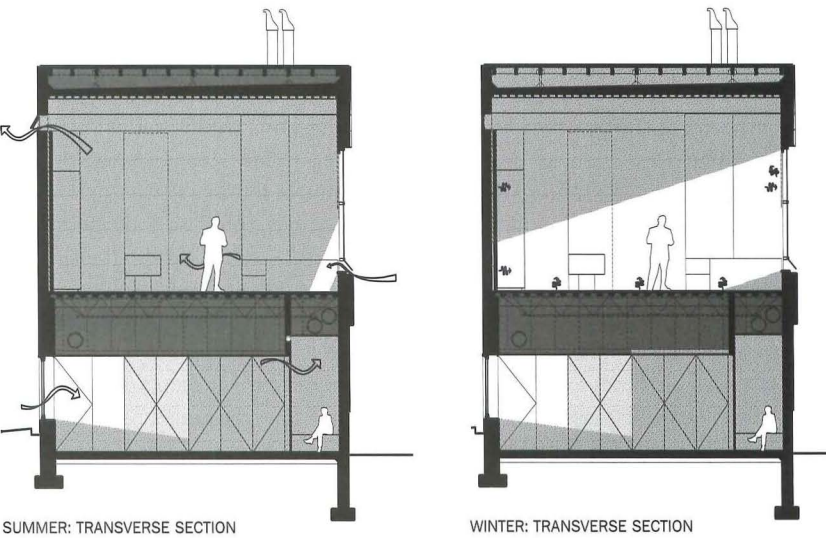
The front, or south, facade features bands of aluminum siding against an expansive panoramic window and a garage door of laminated glass (top). The house nestles into the northwest corner of a crop field (bottom).



metal cladding in parallel bands, reinforced by an aquamarine-tinted panoramic window that extends horizontally across this entire front elevation on the second floor. Geller says low clouds reflect so perfectly in this window that he sometimes feels as if he is driving into the sky when approaching from the access road. The banding continues at grade, where, at this elevation's west end, oversize sliding doors of laminated glass provide access to the garage and a pottery studio and where, at the main entrance to the east, a sliding plane of cedar panels continues the barn-door theme.

Inside, the long entry hall is dark and cavelike, its walls clad in raw steel, with doors that open inconspicuously to guest quarters, as well as laundry and media rooms, all at grade. Upstairs, in the living/dining/kitchen area, 16-foot-high ceilings, floor-to-ceiling glazing, and a loftlike open plan welcome abundant light and the imposing presence of the field outside.

Everywhere, but especially in the main living area, it becomes evident that the owner and architect have fused their visions to create a space where architectural details play counterpoint to the client's art and furniture collections. The interior's clean, simple lines and unadorned materials—black-stained, poured-in-placed concrete floors, black-walnut kitchen cabinets with stainless-steel countertops, exposed concrete block, and white interior walls—set the stage for the bright accents of Geller's colorful art objects. It's as if a New York City loft had found its way serendipitously onto

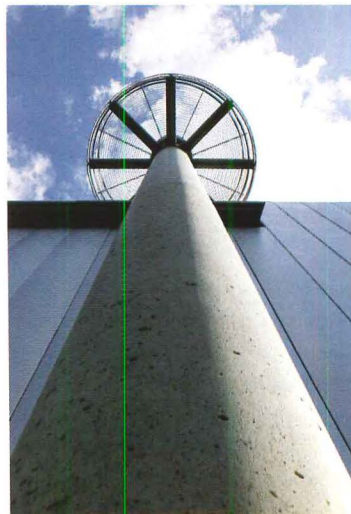


In warm weather, hot air exhausts through vents near the second-floor ceiling, and fresh air enters at grade

(above left). In winter, the masonry absorbs the day's heat and radiates it to the interior at night (above right).

At the entrance, a bronze sculpture by Peter Voulkos, called *Big Ed*, greets the visitor (above). From the study, a silo ladder leads up to the rooftop's cedar deck (below right), which floats

above the actual roofing, protecting it from moisture. A telescope on the deck offers access to the night sky. Chimneys with rotating cowls at the top vent the fireplaces (above at right and below left).

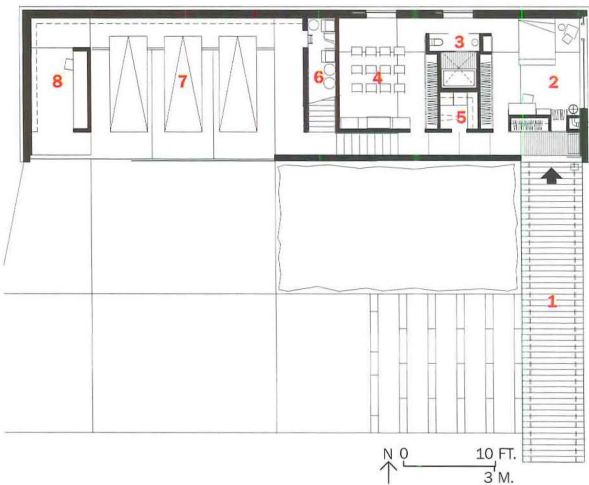




The stairway up to the second floor turns sharply right from the ground-floor entrance hallway (far left). The living/dining/kitchen area displays ceramics, abstract paintings, and a collection of tea services (near left).



UPPER FLOOR



LOWER FLOOR

- | | | |
|---------------|-------------------|---------------------------|
| 1. Front deck | 5. Laundry | 9. Screened porch |
| 2. Bedroom | 6. Mechanical | 10. Firepit |
| 3. Bath | 7. Garage | 11. Living/dining/kitchen |
| 4. Media room | 8. Pottery studio | 12. Office |

this rural terrain, displaying sophistication within a self-effacing form. But the interior still references this landscape, especially the black floors, which the architect says he chose “to match the black earth of Wisconsin.”

A corridor lined with walnut shelving for art, books, and artifacts runs along the back of the house, providing access to the exercise room, master suite, and study, all oriented to the front of the building. Glimpses through the doorways out to the fields punctuate this hall, further connecting the interiors with the landscape, both spatially and visually.

Outside, a protected wetlands area cuts through the field where, in warm weather, a stream flows lazily, indigenous wildflowers bloom, and pheasant, fox, deer, and opossum make a home. Here, between the wetlands and the house, the owner and architect found a place to plant an apple orchard. “It will, of course, mature over time,” says Burnette, “creating an alley for the entry drive, effectively extending the house’s threshold, so that the building and the field are revealed more slowly.”

Field House’s spare forms pay tribute to the farms, the sky, the prairie, and each season’s distinctive mood. The rotating crops—corn, soy, or sometimes oats—sown by the farmer, retexture the land throughout the year. The evolving field defines and redefines the house, becoming the most important marker of change. ■

Sources

- Exterior cladding:** Morin
(Galvalume-Plus)
Glass curtain wall: Kawneer
Aluminum windows: Kawneer;
ClearLine
Wood doors: Discher Architectural

- Woodwork/Miron Construction**
Sliding doors: Omni Glass/Miron
Construction

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

Low-lying Mies van der Rohe leather furniture defines the comfortable living area. Tucked into a corner of this room, a sunken space, with built-in seating on three sides and a hearth on the fourth, provides a place for intimate gatherings (right).





To the east (this page) and the north (opposite three), the house presents itself as a solid object with few openings. The terraces and stairs negotiate a 33-degree slope and connect access roads at the top and bottom of the site.

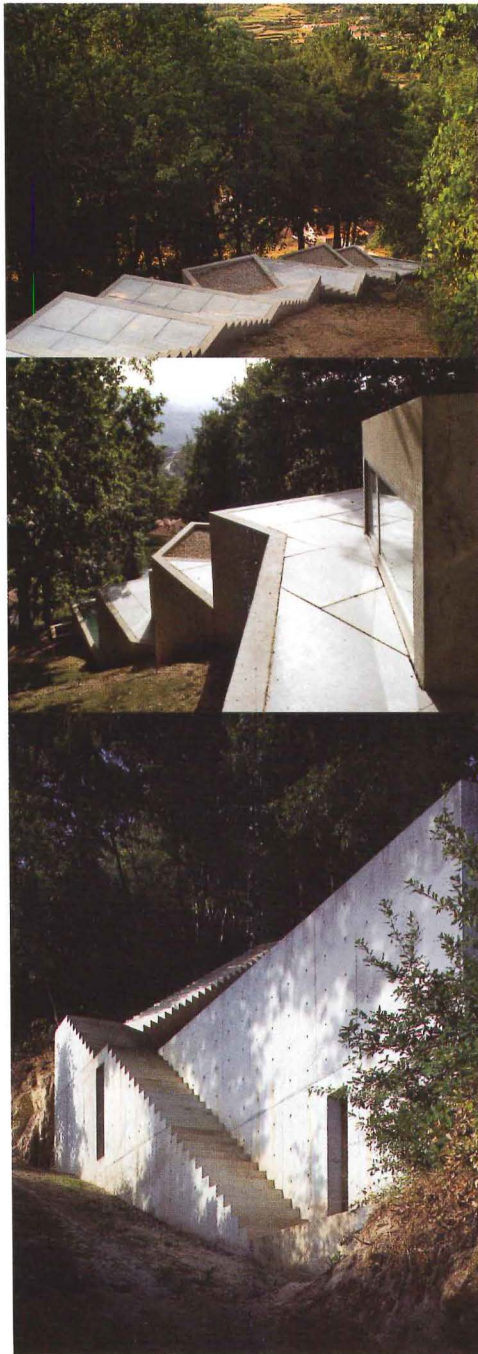
In northern Portugal, Alvaro Leite Siza Vieira cascades **CASA TOLO** down a steep slope through terraced gardens

By Clifford A. Pearson

From certain vantage points, it looks like a relic from an ancient civilization, maybe an exposed portion of a stepped pyramid or some kind of Mayan monument. Partially buried in a steep hillside in the rural Vila Real district of northern Portugal, the Casa Tóló presents itself as a Jimmy Stewart kind of character: self-effacing at first, but then increasingly bold. Instead of a front facade, it offers merely a concrete deck, jutting out over the edge of a 33-degree slope with a view of mountains in the distance. To learn more, you must descend a set of stairs recessed in the deck, an act of faith since so little of the architecture has been revealed so far. As you move forward, you realize the house is a path, both literally and figuratively, taking you on a walk through the woods and unfolding in section as much as in plan.

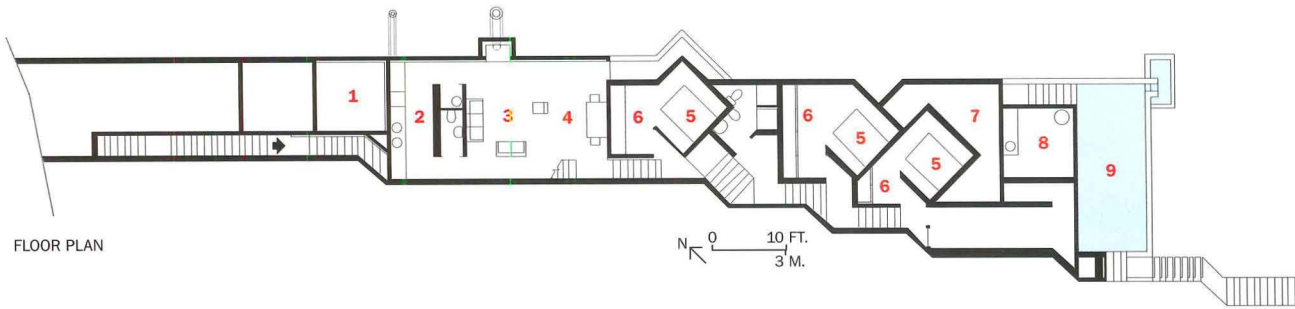
Neither a Modern box nor a series of pavilions, Casa Tóló tumbles down the hill, a concrete cascade that seems more like pavement than domicile. Designed by Álvaro Leite Siza Vieira, son of the Pritzker Prize-winning architect from Porto, the house serves as the weekend retreat for the architect's cousin, his wife, and two children. With a difficult plot of land and a very tight budget (just \$150,000 for construction and another \$3,000 for landscaping), the client offered the architect little but constraints. Siza turned these limitations into assets by highlighting instead of hiding them. For example, the long, steep, ¼-acre site, he says, made a narrow, stepped plan "practically inevitable." But how many architects would take the concept of stairs so literally?

Siza, who set up his own small firm in 1992, shortly after graduating from architecture school, traveled in the United States that same year and again in 1997. "I saw a lot of Frank Lloyd Wright's buildings and some of Louis Kahn's," he recalls. "I loved the way both of them manipulated scale and light." Like some of the early Wright houses in Oak Park, Illinois, Casa Tóló lives bigger than its size—just 1,950 square feet. By establishing integral connections between indoors and out, and orchestrating daylight to animate interiors (instead of flooding them), Siza boosted the impact of this small house. He designed the roofs as a series of gardens, which turns these spaces into outdoor rooms. A swimming pool occupies the lowest terrace, while other levels offer areas for

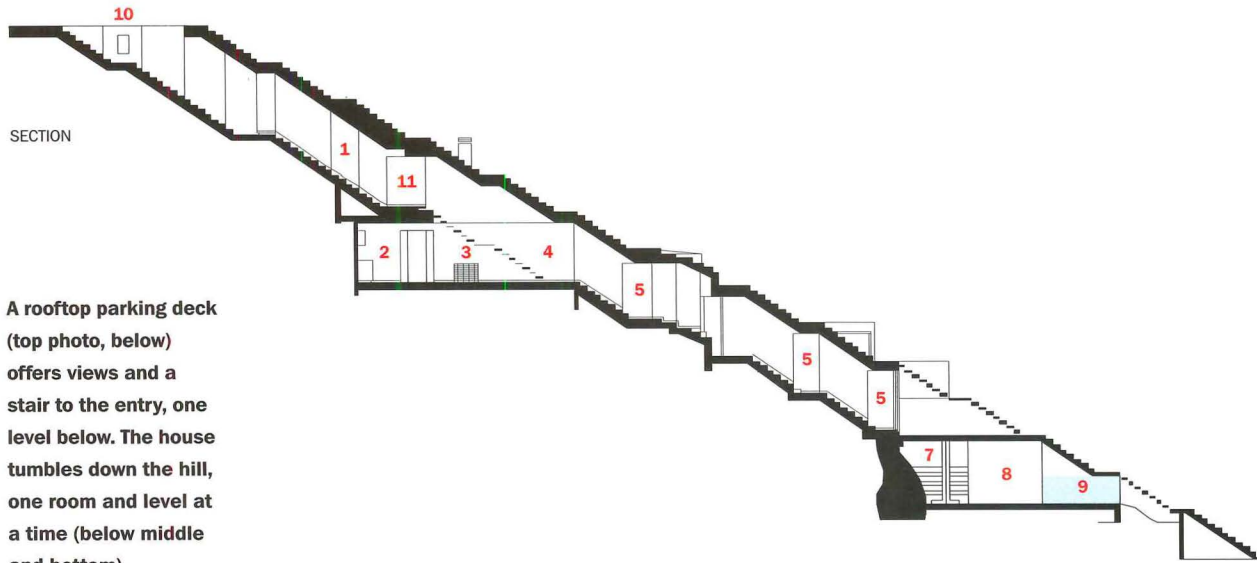


Project: Casa Tóló, Lugar das
Carvalhinhas, Alvite, Portugal
Architect: Álvaro Leite Siza Vieira
Architect

Engineer: GOP/Gabinete de
Organização e Projectos
General contractor: Oscar



FLOOR PLAN



A rooftop parking deck (top photo, below) offers views and a stair to the entry, one level below. The house tumbles down the hill, one room and level at a time (below middle and bottom).

1. Office
2. Kitchen
3. Living
4. Dining
5. Bedroom
6. Dressing
7. Laundry
8. Mechanical
9. Swimming pool
10. Parking
11. Entry hall

sitting, sunning, and even outdoor showering.

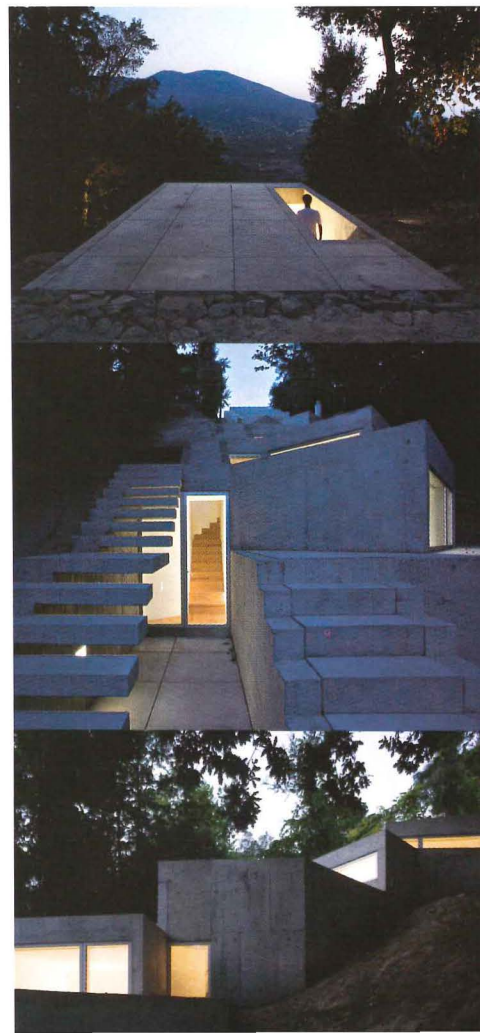
The architect pushed the house into the hillside to save money during construction and reduce expenses for heating and cooling later on. A simple, poured-concrete structure, it was easy to build. Precast-concrete pavers, each 3.3 feet square, clad the roofs, adding an extra layer of protection from the elements.

While it's immediately clear the house is all about stairs, you can't always see where they're headed. Most people arrive from the north, parking their cars on the house's uppermost roof. (A rustic footpath runs along the south edge of the site.) To get inside, you must descend the recessed stairs in the parking deck, going a full flight before arriving at the front door. Once inside, you encounter a long run of stairs, but later only fragments. "When I was young, I loved looking at drawings by Escher and Piranesi," recalls Siza. With Casa Tólo, he says, he wanted to make games

WHILE IT'S IMMEDIATELY CLEAR THE HOUSE IS ALL ABOUT STAIRS, YOU CAN'T ALWAYS SEE WHERE THEY'RE HEADED.

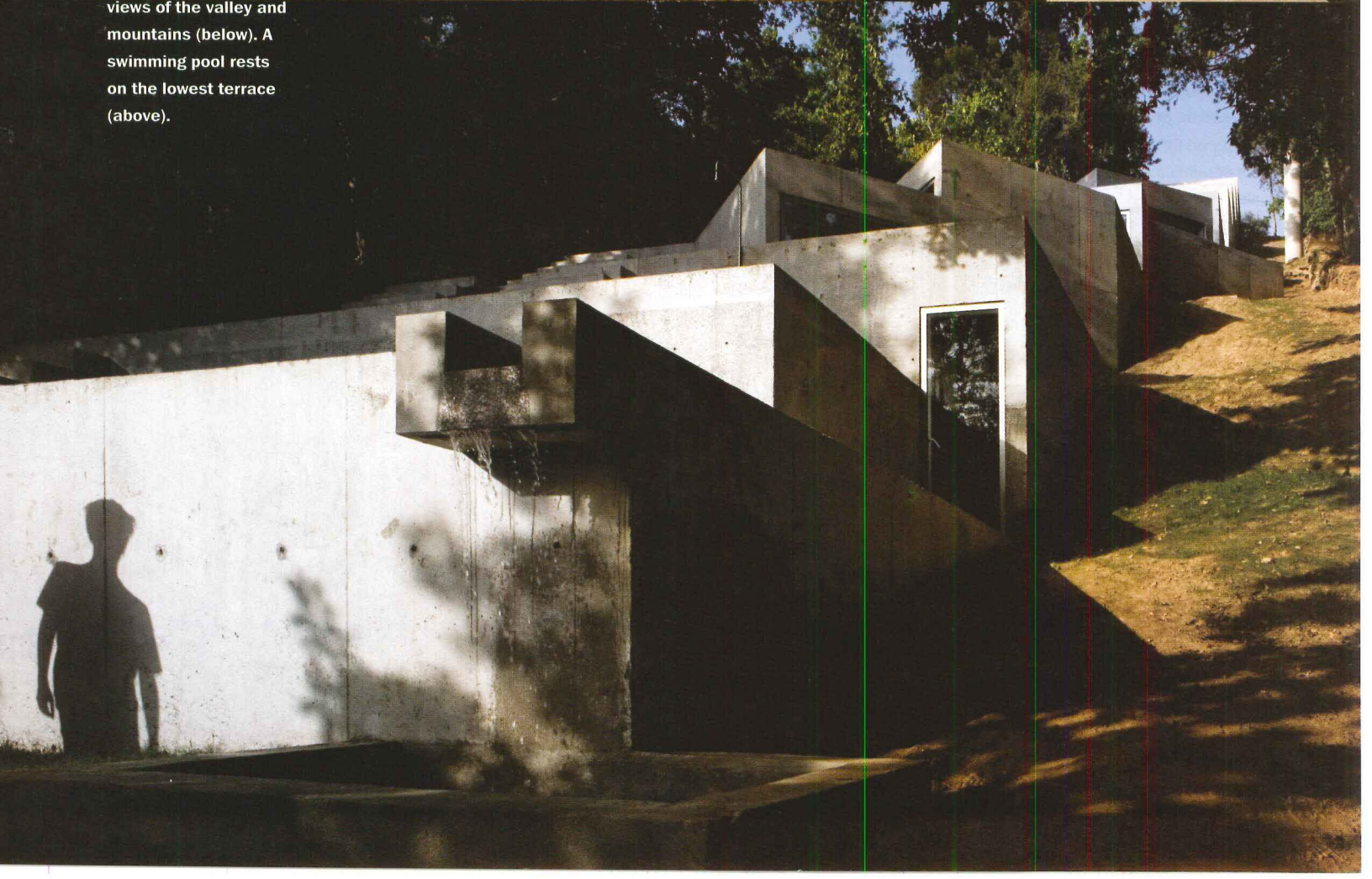
of the stairs, creating ambiguity about what's going up and what's going down. Taking advantage of the sloped site, the architect placed each major function on its own level, starting with an office at the top, then dropping down to the living/dining/kitchen area, a bedroom, a second bedroom, a third bedroom, and finally a laundry and mechanical room. Each level enjoys its own outdoor space on the roof of the room below.

Siza's use of light reinforces his games with stairs. In the living room, he brings in daylight from a high transom whose source is obscure, giving the space a touch of mystery. In the bedrooms—three individual cubes turned 45 degrees from the main stair axis—his strategy is more

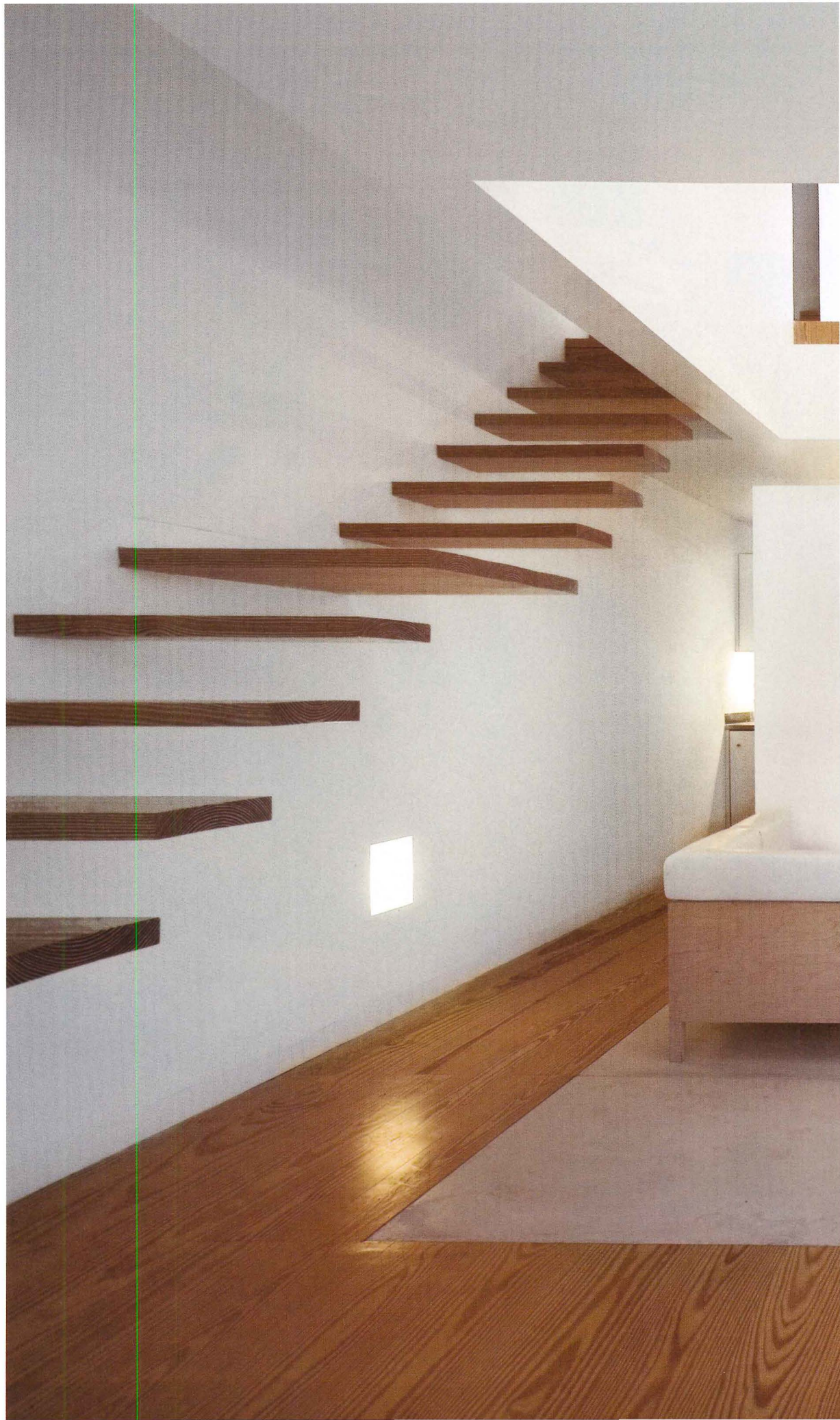


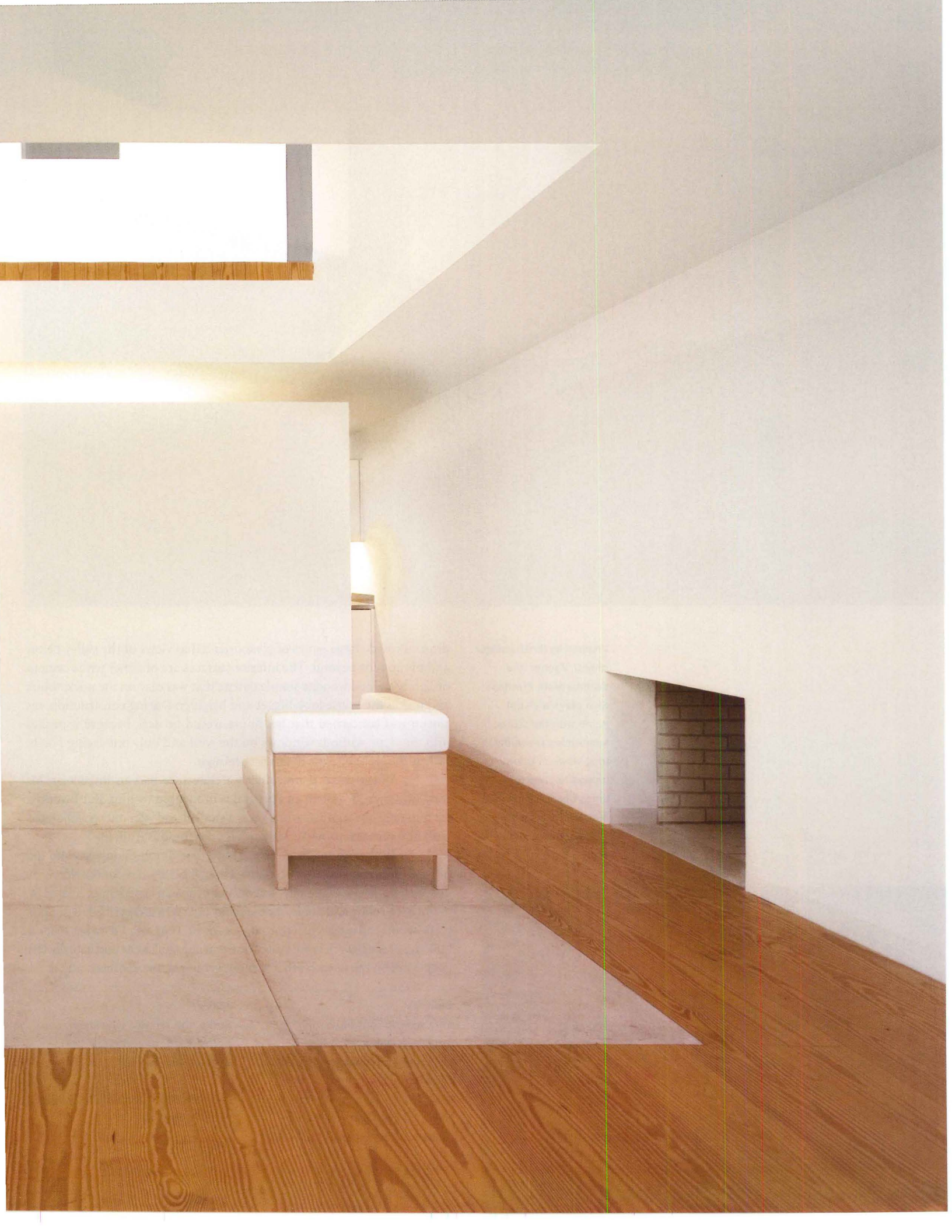


Bedrooms occupy cubes rotated off the main axis to capture views of the valley and mountains (below). A swimming pool rests on the lowest terrace (above).



In the living room, a large, north-facing transom window, bringing in suffused light, and a set of railless, wood stairs, cantilevered from one wall, give the space a floating quality. Siza designed the sofas himself to complement the house's simple materials and the other spare furnishings.







Inspired by the drawings of M.C. Escher and Giambattista Piranesi, Siza plays a visual game with the stairs, sometimes revealing long views of them (opposite), and other times obscuring where they lead (above and below), creating an aura of mystery.

direct: Provide large panes of glass oriented to views of the valley below and mountains beyond. The interior surfaces are of either white cement or lightly stained wood, a simple palette that was easy on the pocketbook and makes the house look bigger and brighter. During construction, his cousin was concerned that the house would be dark because it pushes into the slope without windows on the west and only one facing north. But, as the architect sees it, less was enough.

When asked if his father's architecture had an impact on his own, Siza says, "Everyone in Portugal is influenced by him. But I worked for him only one summer when I was a student and later only collaborated with him on a few projects. My work is autonomous from his."

With no front facade and a form that almost disappears into the hillside, Casa Tóló defies expectations. Though hardly ideal for the elderly or disabled, the house offers a lively sequence of spatial experiences created by the play of solids and voids, indoors and out. When described, it sounds preposterous, an intellectual conceit. But Álvaro Leite Siza Vieira has made a building of stairs work as a house—one that engages its site and actually lets people live on top of each other without getting in one another's way. ■

Sources

Elastomeric roofing: *Sotecnisol*

Aluminum windows: *Velfac*

Locksets and hinges: *Carvalho e Baptista*

Pulls: *Designed by Álvaro Leite Siza Vieira for Carvalho e Baptista*

Sofas: *Custom by Álvaro Leite Siza*

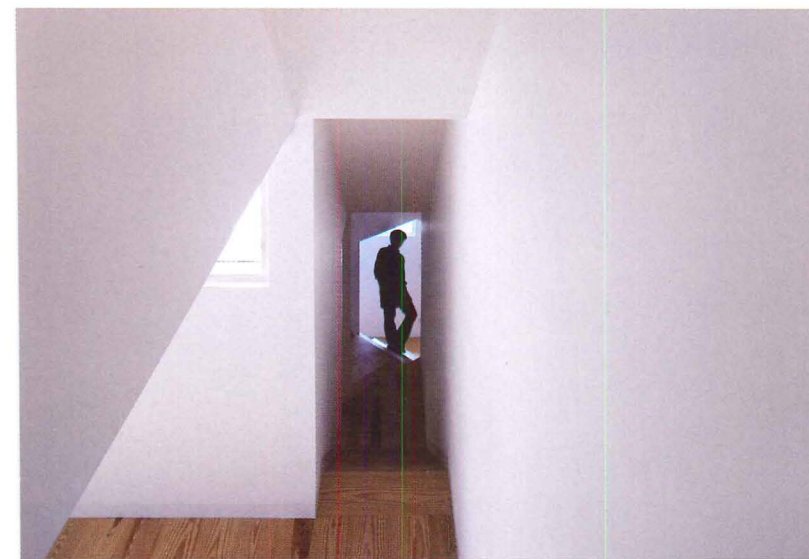
Vieira

Sinks and toilets: *Valadares*

Refrigerator and kitchen appliances: *Siemens*

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www.archrecord.com.







Wide strips of rusted steel-wire mesh fall like curtains over the east facade (this page and opposite, right), shielding it from the sun's glare. Rusted corrugated steel (opposite, left) clads walls elsewhere along the exterior.

Wrapping XEROS RESIDENCE in a veil of rusted steel, Blank Studio borrows hues from the desert landscape



By Suzanne Stephens

I wanted to wrap one material around the entire house—as sort of an architectural lingerie,” explains Matthew Trzebiatowski, AIA, about the rusted wire mesh and corrugated steel swathing the exterior of his Xeros Residence in Phoenix, Arizona. In designing—under the name Blank Studio—the one-bedroom, 2,200-square-foot home for his wife, Lisa, and himself, Trzebiatowski, an architect in the office of Wendell Burnette (page 92), seized on a lacy, if gritty, mesh to enclose open sitting areas and screen the glazed walls. Elsewhere along the exterior, sturdy corrugated-steel panels, oxidized to a ruddy hue, gird the structure. “The impulse was primarily aesthetic,” Trzebiatowski says, noting, however, that the wire mesh both cuts the sun’s glare and affords privacy, while the corrugated steel—with insulation—affords warmth when temperatures drop. Trzebiatowski also used steel for the structural frame. He considers a totally steel house a “kind of holistic notion that works well with the parched and rocky landscape. Most of my decisions are about being in this place,” he says. Because of the desert climate, he named the house Xeros, the Greek word for dry. (Fortunately, the lack of moisture here has kept the rusting process from going too far.)

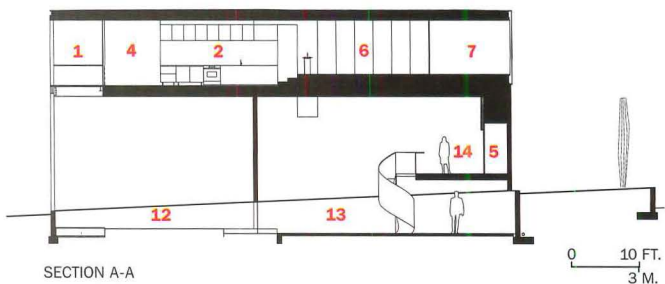
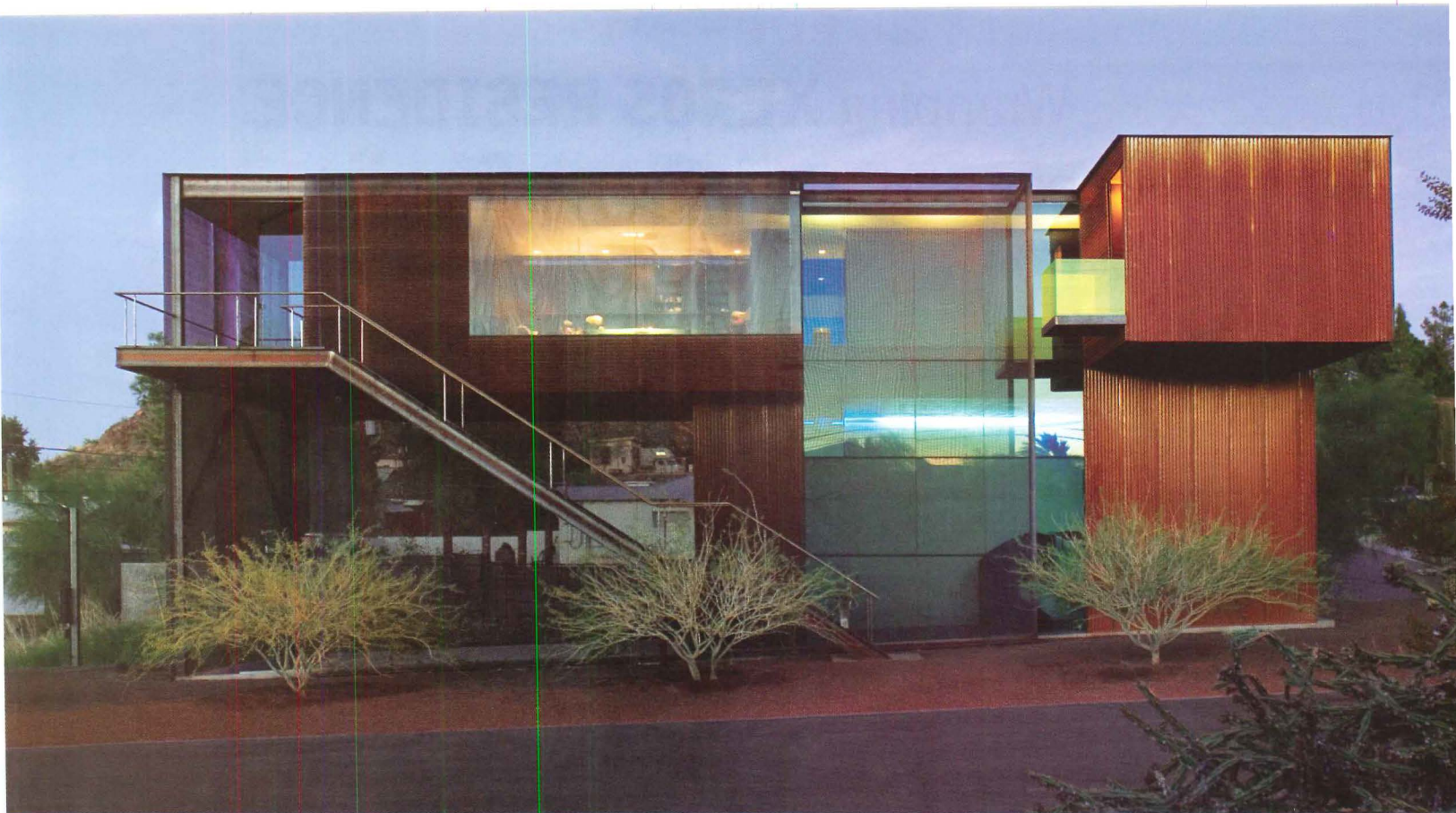
The neighborhood where the Trzebiatowskis found a rectangular, ½-acre corner lot (recently expanded to ¼ acre) lies on Phoenix’s outskirts, where the city’s flat, gridded streets come to a screeching halt at the

foothills of the North Phoenix Mountain Preserve. The existing, unprepossessing, shoe-box-shaped house had to go: Like many in this catchment of undistinguished, one-story ranches and bungalows, it dated to the 1950s and needed extensive renovation. With musicians, architects, and artists moving into this precinct, it is not surprising that these newer, more bohemian neighbors didn’t complain to the local design review board that the 30-foot-high, rusty-steel house would, without exceeding the zoning height limit, loom up over this enclave’s stuccoed walls and tiled roofs.

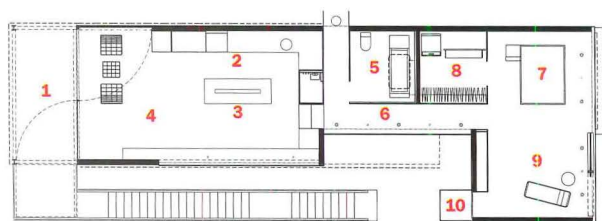
From various angles, the Xeros Residence looks like a treehouse or a huge periscope—or both, combined. Within a narrow site, measuring only 50 by 250 feet, Trzebiatowski could not spread out horizontally, nor did he and his wife relish looking directly into the next-door neighbors’ houses or yards. So on the upper level, he oriented the 30-by-16-foot living/dining/kitchen area to the south, toward the valley where the rest of

Project: Xeros Residence, Phoenix (structural); Kunka Engineering (mechanical and plumbing), Tony Woo Engineering (electrical)
Architect: Blank Studio—Matthew G. Trzebiatowski, AIA, principal
Owner: Matthew and Lisa Trzebiatowski
Engineers: Brickey Design Associates
Consultants: Debra Burnette Landscape Design (landscape)

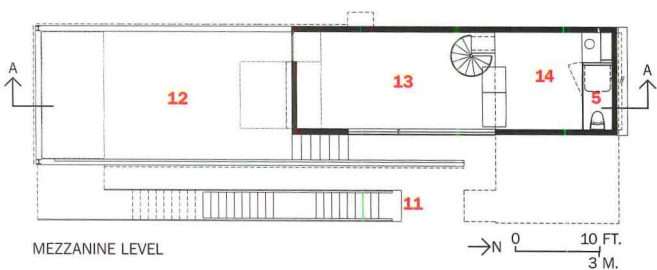
PROJECTS



SECTION A-A



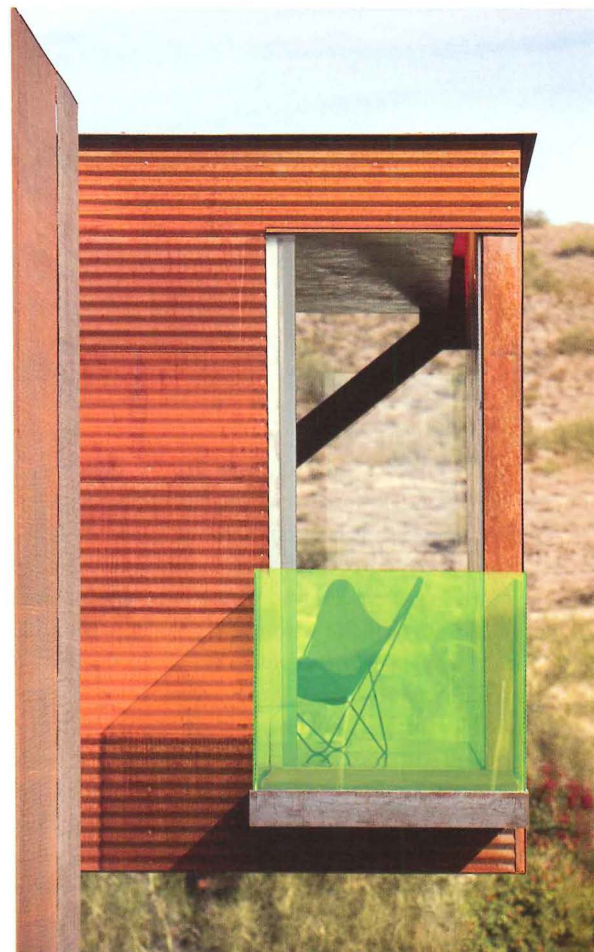
UPPER FLOOR



MEZZANINE LEVEL

On the east facade, behind Palo Brea trees, an exterior steel stair leads up to the main living quarters. Another run continues down to the studio and open patio, nestled slightly below grade. A yellow, laminated-glass balcony projects from the sleeping wing (right).

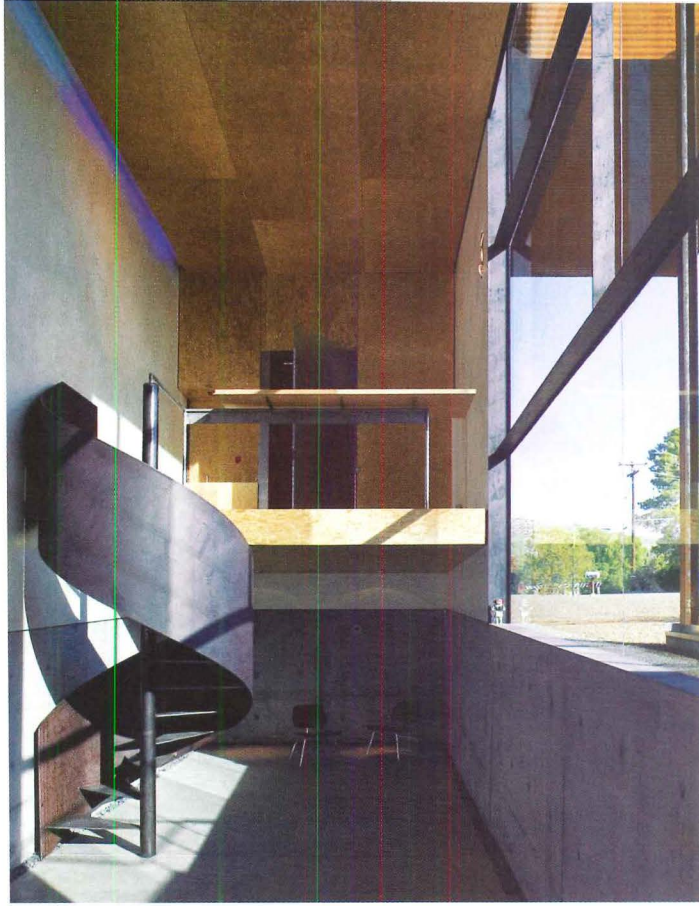
1. Entry terrace
2. Kitchen
3. Dining
4. Sitting/living
5. Bathroom
6. Gallery
7. Sleeping
8. Storage closet
9. Media center
10. Balcony
11. Access to residence
12. Exterior courtyard
13. Studio
14. Library



Phoenix sprawls, and the bedroom to the north, facing the unpopulated mountains. The 24-foot-long bedroom wing cantilevers 12 feet to the east from the house's 12-foot-wide base to include a home media center. The base, containing a library and studio, is partially enclosed by sloping concrete foundation walls, and depressed slightly below grade along the hill's 5-degree incline. To the south, the studio opens onto an enclosed outdoor patio and, beyond that, a 14-inch-deep pool.

With so much of the house in steel, the construction job sounds reasonably quick and easy. Nevertheless, five steel contractors were involved in executing everything from handrails for the open-riser entry stair, which snakes up the east exterior facade, to the structural frame. Some of the crew built four steel moment frames on-site, on the ground, then tilted them up and installed them in the poured-concrete foundations. Some workers filled out the structure with steel members, while others enclosed the perimeter walls with steel studs and 20-gauge corrugated-steel sheets. After that, they hung 4-foot-wide strips of woven wire mesh, used typically for sifting rocks on quarry conveyor belts, to shade the various glazed and open portions of the east, south, and west facades. As a final touch, they tied the strips together with wire. Within six months, the silvery raw steel had oxidized to the color of the earth.

But the house isn't all steel: The mezzanine, first floor, and roof are composed of a prefab TJI (wood-and-steel truss joist) system, and plum-chocolate-colored Latvian plywood surfaces the floor, cabinets, counters, and benches of the upper living quarters. Trzebiatowski sheathed the walls upstairs and downstairs in gypsum board, which he then plastered, and finally waxed for a smooth, luminescent white sheen.



The studio (above), embedded in a concrete base, vaults to a 20-foot height. Its mezzanine walls and ceiling are surfaced in oriented strand board. A coiling steel stair to the mezzanine overlooks the outdoor patio (left).



Latvian plywood surfaces the floor and walls in the sleeping and cooking quarters (top and above), as well as the kitchen benches. In the bedroom, a glass

wall appears to slip past the floor deck and ceiling plane, while a light trough illuminates the end wall, made of gypsum board troweled with wax and plaster.

Flashes of color intermittently spark the rusty exterior, as in the bright yellow, laminated-glass balcony projecting from the master suite, or the blue, laminated-glass antechamber for the bathroom sink, which pops out of the west facade.

The interior's juxtapositions of lustrously brittle, white walls and the silky smooth, dark plywood planes bring to mind Mies van der Rohe's predilection for luxurious woods and marbles in his houses, although Trzebiatowski follows a more economic route. But if Mies's spirit seems to hover over certain finishes, or the prim lightness of a rectilinear plan, Le Corbusier lurks in some of the volumetric spatial effects. For example, the narrow, 20-foot-high studio, with a mezzanine at its north end, recalls the proportions of his *Esprit Nouveau* pavilion for the 1925 Exposition des Arts Décoratifs in Paris. A coiled stair to the studio mezzanine also belongs to Le Corbusier's signature *batterie de cuisine*, albeit rendered in steel rather than concrete.

Trzebiatowski is not alone in his penchant for rusting steel. Sometimes it seems the Sun Belt is gradually turning into an architectural "Rust Belt," as more and more young architects from Texas to California become enamored of the material's weathered tones and rough surfaces. But as Xeros Residence demonstrates, oxidized steel can not only elegantly and acerbically wrap a lean, rectilinear structure, but, through its rusty tinge on diaphanous and corrugated textures, it can also bring a fresh dimension to classic Modernist principles. ■

Sources

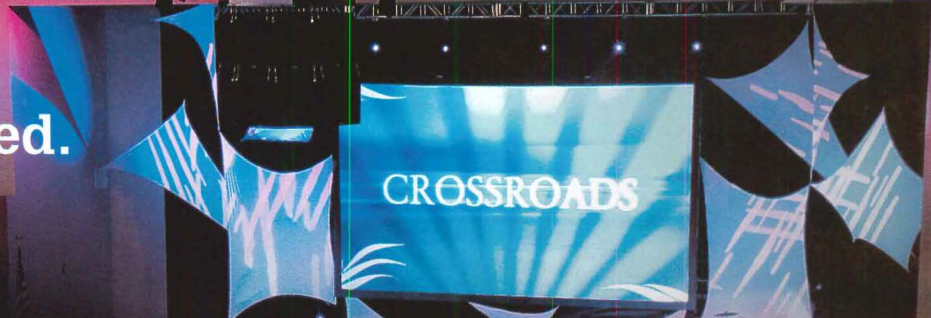
Lighting: *Lithonia* (fluorescent in colored gel sleeves); *Deltalight*, *Erco* (downlights); *Nightscaping* (exterior)
Plumbing fixtures: *Duravit* (tub, toilet); *Kohler* (bathroom sink, shower)

Appliances: *True* (refrigerator); *Jen-Aire* (dishwasher, stove/oven)

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



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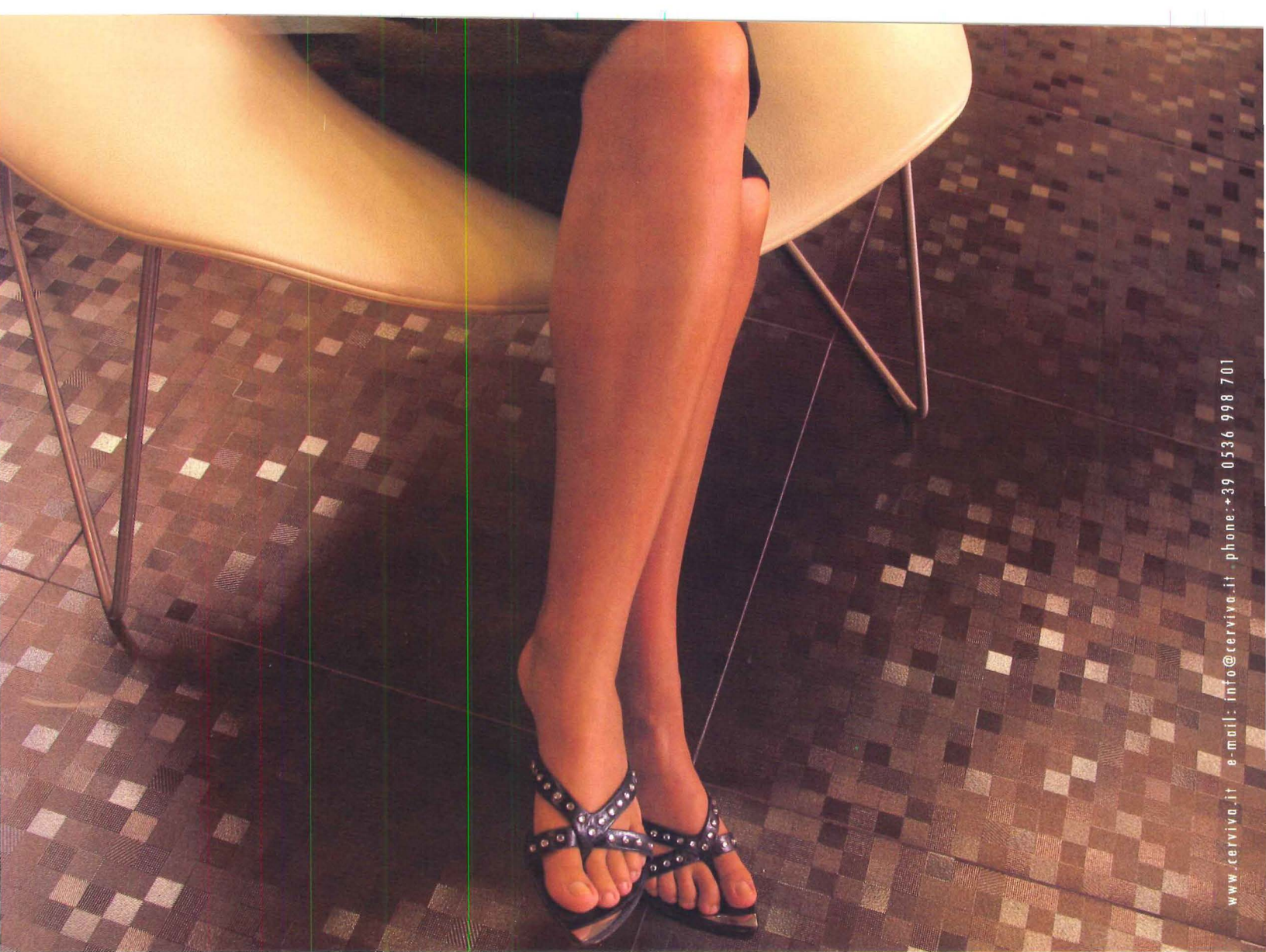
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AR Past and Present



My, how you've grown

Richard Meier's Hoffman House, in East Hampton, New York, published in ARCHITECTURAL RECORD in May 1969 (below), has undergone two additions by Stamberg Aferiat Architecture. Two new wings extend west and east (plan, above) and the living space was expanded on the northern side (above).

Adding to a Richard Meier House may have been too daunting for most firms, but not Stamberg Aferiat, a firm that has also expanded houses designed by Charles Gwathmey and Hugh Hardy. When Meier, too busy for the project, personally recommended Paul Aferiat, who had worked for him in the 1970s, and his partner Peter Stamberg, the architects were eager for the challenge.

Anita Hoffman, the original client for the 2,000-square-foot East Hampton home, which ARCHITECTURAL RECORD published in 1969, found, after a quarter century living in the house, that the tight geometry was too constraining to house guests. Hoffman wanted a summer retreat for her visiting children, now married with children of their own. So the architects added a bedroom suite for her in 1994, extending the house to the west, and turned three small bedrooms into two larger ones, bringing the total area of the residence to 3,000 square feet. But after the project was completed and the family began flocking to it, Hoffman found it necessary to request another expansion in 2000. Stamberg Aferiat then added 2,000 square feet of space, building an eastern wing with three bedrooms, and expanding the combined kitchen and family room.

For both additions, the architects kept Meier's intentions in mind. "This house was about that very tight, strict geometry and the idea of a pair of rectangles rotated on one another," explains Aferiat. "It was a closed system" that required one type of architectural language, whereas for additions to other houses, the firm tends to create collages. To establish a hierarchy, the architects kept the rooflines of the added wings lower than those of the original house. Meier gave the project a tremendous compliment, claiming that in many ways, "the project is more successful because of the way that it is anchored to the site now." Sarah Cox



PHOTOGRAPHY: © PAUL WARCHOL (TOP); EZRA STOLLER/ESTO (BOTTOM)

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|-------|-----|---|
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| 182 | 87 | Sun Valley Bronze svbronze.com |
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| 61 | 47 | S Thermador thermador.com |
| 197 | 102 | Timely timelyframes.com |
| 52 | 40 | Toto USA Inc totousa.com |
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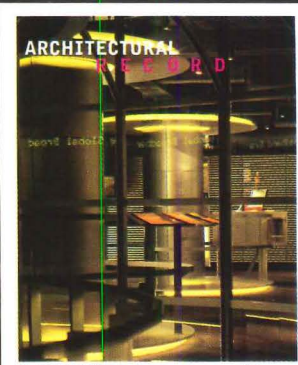
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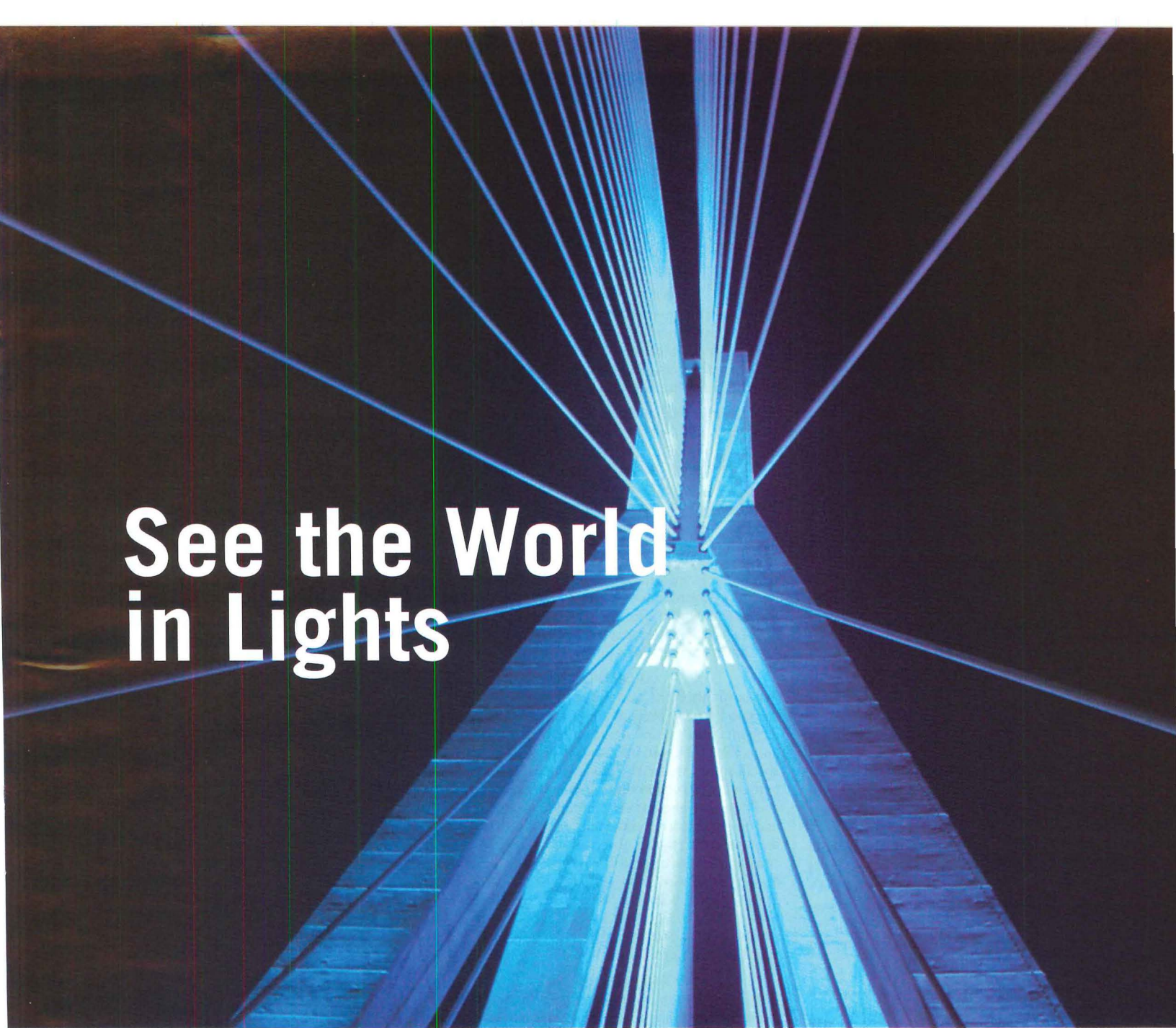
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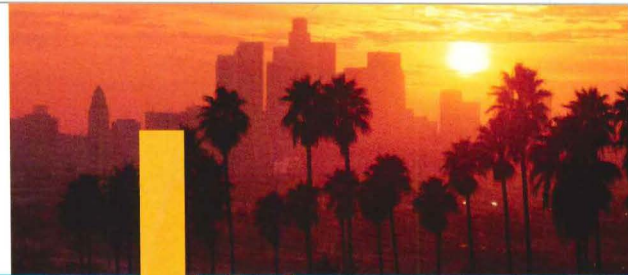
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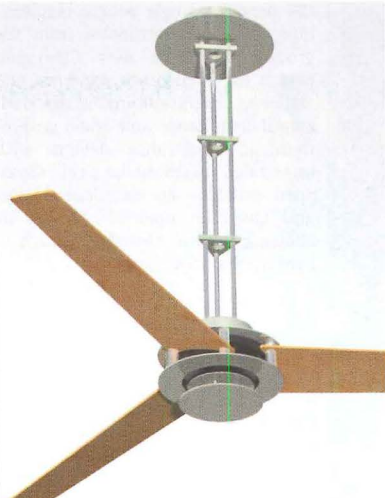


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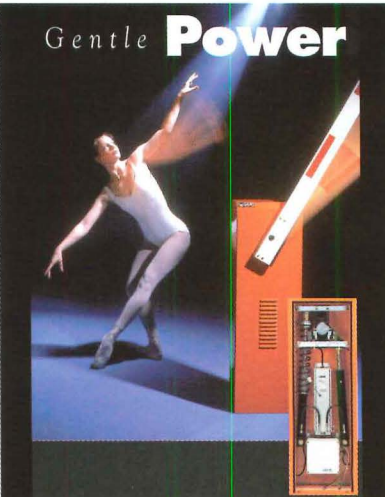


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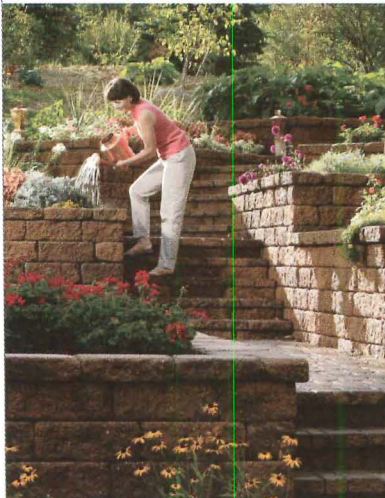


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Neo-Metro's most innovative design is the perfect complement to the new console table units for the Ebb™ Basin. The console table, a metal table with striking rectangular lines, seamlessly accommodates the one-piece basin marked by its flawless 16-gage stainless steel construction, beautiful sloped surface and cleverly concealed drain, and an illuminating console resin completes a stunning picture of modern form and function. Fax number 626-937-4725

800-591-9050 or 626-855-4854
www.neo-metro.com

| Circle Reader Service #184

Green Waterfalls

Harmonic Environments, Inc.



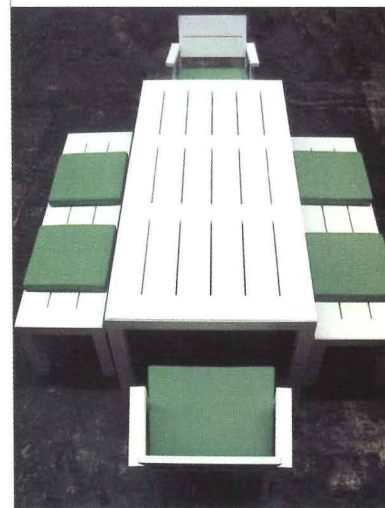
Harmonic Environments is the only waterfall manufacturer to offer ZonePure™ water purification systems with every waterfall, making their products uniquely suited for healthcare, hospitality, offices, or anywhere clean and healthy water features are desired. Each custom waterfall can be created using environmentally friendly materials.

800-497-3529
www.HarmonicEnvironments.com

| Circle Reader Service #182

Environmentally Conscious Outdoor Furniture

Modern Outdoor



Modern Outdoor offers three complete lines of high-style, clean-lined environmentally conscious outdoor furniture. The Modern Outdoor Collections are commercial grade products designed for use in all manner of public spaces—restaurants, hospitality, parks, resorts, hotels—yet have an aesthetic that is perfect for a residential client's backyard setting. Their products now come in ipe or poly-board, stainless steel or powder-coated steel, and a natural composite material. They offer net pricing to qualified members of the trade. View the entire collection online.

818-785-0171
www.modernoutdoor.com

| Circle Reader Service #185

Free Pattern Rotating Carpet Tiles

Binvetec

One Tile, No Limits



FreePATTERN
ROTATING CARPET TILES™

Presenting "Cocoon," and the Free Pattern Rotating Carpet Tiles™ collection. The only carpet tile floor covering specifically designed to allow a multitude of patterns to be created or no pattern at all. By grouping a few tiles, then repeating the group on the floor, a unique pattern emerges. Change the group and likewise the pattern changes. By contrast, by installing the tiles with random rotations, a pattern-free floor covering can be achieved. With TractionBac™ non-adhesive installation system, the floor design can be changed at any time. Suitable for all commercial interior environments. Email binvetec@sbcglobal.net

www.binvetec.com

| Circle Reader Service #174

Crystallized Glass Ceramic Architectural Panels

Technical Glass Products



Neopariés® and Neopariés® LT are lighter yet stronger than granite. Commonly used for cladding interior and exterior walls, flooring, and counter or tabletops, they are virtually impermeable and not subject to freeze-thaw damage, penetration by rust, mortar or other staining substances. Contact Technical Glass Products at (888) 397-3473 or www.tgp-america.com.

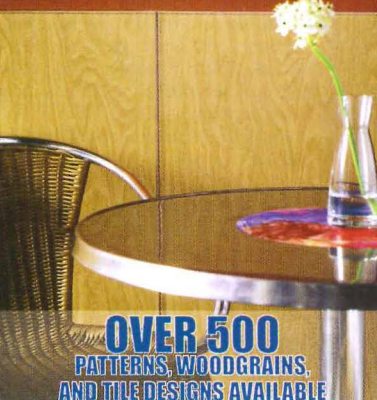
888-397-3473
www.tgpamerica.com

| Circle Reader Service #177

Decorative Wall Panels

Crane Composites/Kemlite Company

frpDesign Solutions



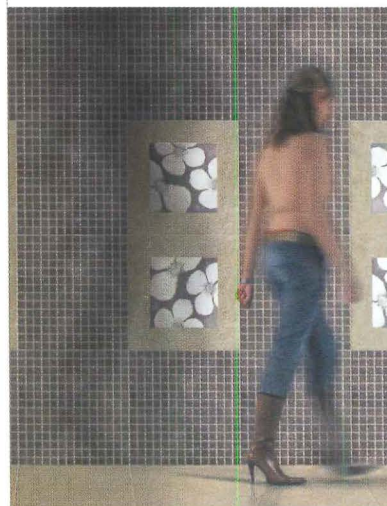
frpDesign Solutions is a family of decorative wall panels that provides an alternative to traditional wall coverings such as ceramic tile, wood paneling or vinyl wall coverings. Offering both functionality and design, products in the frpDesign Solutions line are made of a moisture-resistant frp panel with a decorative finish that includes myriad colors, patterns, and woodgrains, as well as a tile-look panel. Available with over 500 choices, frpDesign Solutions is easy to install and maintain. For more information, visit Kemlite on the web.

888-332-6377
www.frpdesignsolutions.com

| Circle Reader Service #175

Porcelain Wall Tiles

Viva Ceramica



Even though they had introduced Central Station at Cersaie 2005 as a color through porcelain floor tile series, it was easy to convert it to a wall covering. It's just so adaptable with its suggestions of metal and its decorative squares and circles in crackle glaze. And both the big diameter and the 30cm square are ideal for minimalist mosaic decors in bathrooms or on walls in public areas.

www.cerviva.it

| Circle Reader Service #178

Decorative Metal Ceilings

Gage Corporation, Inc.



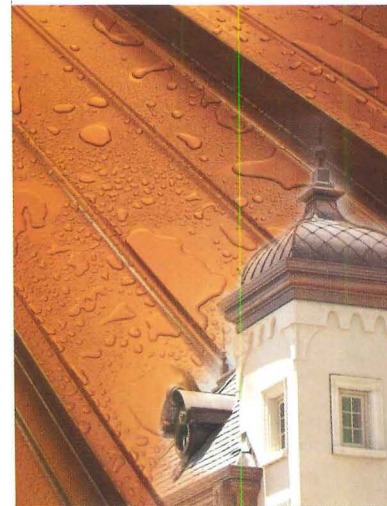
The Gage Corporation International has been designing and manufacturing decorative metal ceilings since 1989. Gage ceilings feature more than 50% post-consumer recycled material and are visually rich, functional, and versatile as a design medium. Custom collaboration is encouraged. Email gage@centrytel.net

800-786-4243
www.gageceilings.com
HD Booth #3809

| Circle Reader Service #176

Architectural Sheetmetal Products

CopperCraft



CopperCraft creates meticulously formed dormers, spires, cupolas and other specialty sheet metal products using copper and other quality metals. Their Old World craftsmen will work with your ideas to develop custom pieces for most any project. Their parent company, Fabral, manufactures high quality architectural metal roofing and cladding systems.

800-486-2723
www.coppercraft.com

| Circle Reader Service #179

Hurricane-Resistant Glass

Oldcastle Glass



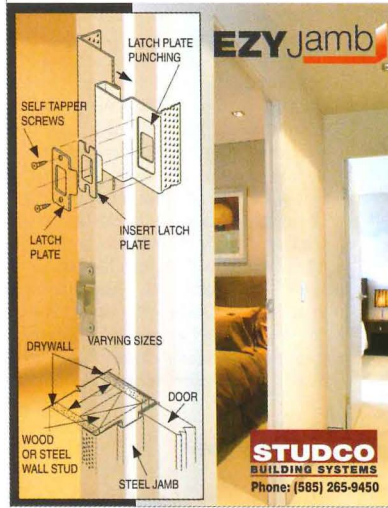
Featured on the Ritz-Carlton Club®, St. Thomas, StormGlass™—an Oldcastle Glass® exclusive—was chosen after other products failed. In independent testing, StormGlass™ met test requirements for large glass sizes of up to 50-sq.-ft. That means the freedom to design larger glazed openings while meeting the most stringent codes for hurricane resistance. StormGlass™ employs the industry's most advanced interlayer technology (the thinnest in the hurricane-resistant glazing market). The benefit? The highest level of protection without compromising the optical quality of the glass.

www.oldcastleglass.com

| Circle Reader Service #168

Trimless Doorframe

Studco Building Systems



Studco's EZY-Jamb product is a split-type jamb manufactured from cold rolled steel to produce a strong and secure assembly. EZY-Jamb comes with perforated sides for flush jointing which produces a contemporary flush finish door jamb with clean lines and inconspicuous detail. The jamb comes in two sections that fit neatly together and provides adjustability in wall thickness. Not only has the installer's dream been realized, but the architect's dream has started.

585-265-9450

STUDCO
BUILDING SYSTEMS
Phone: (585) 265-9450

| Circle Reader Service #171

Retractable Roof Enclosures & Skylights

OpenAire Inc.

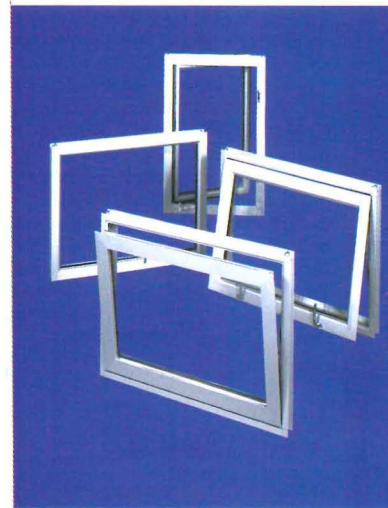


Custom-designed retractable roof structures and operable skylights capable of spanning up to 140-ft. At the touch of a button, motorized panels retract to open up to 50% or more of the roof area. OpenAire can span up to 140-ft. and do custom designs (domes, barrel vaults, biparting, etc.) using its exclusive maintenance-free, thermally broken aluminum framing. These enclosures and operable skylights are perfect for indoor water-parks, pools, atria, and anywhere that you want to bring the outside in.

800-267-4877
www.openaire.com

| Circle Reader Service #169

Door & Window Systems



From the ISO 9001 certified manufacturer, Crystal® Window & Door Systems ThermoBlok™ Series aluminum windows feature robust frame designs, up to AAMA AW85, Intercept® glass spacers, thermal break technology, optional Low E coatings, and an architectural palette of powder coated colors and specialty finishes. The company is an AIA affiliate member. Fax number 718-460-4594 Email marketing@crystalwindows.com

800-472-9988, x3222
www.crystalwindows.com

| Circle Reader Service #172

Fire Resistance is Cool

Pilkington North America - Fire Protection Glass



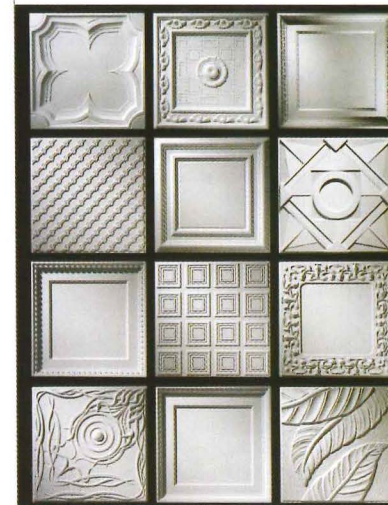
Pilkington Pyrostop™ is available with many options including opaque films, colored interlayers, surface designs and lightly sandblasted. Pilkington Pyrostop™ can also be combined with any of the Pilkington products to meet your design needs. For more information contact Technical Glass Products or see www.pilkington.com/fire or www.fire-glass.com.

800-426-0279
www.fireglass.com

| Circle Reader Service #170

Ornamental Plaster Ceiling Tiles

Above View Mfg., By Tiles, Inc.



Above View ornamental plaster ceiling tiles are fabricated from a non-toxic, non-combustible, proprietary composition. They drop into any standard 15/16-in. T-Bar grid system. There are more than 50 standard designs, custom design work, and 1,300 custom colors and faux finishes available upon request.

414-744-7118
www.aboveview.com

| Circle Reader Service #173

Slate Composite Shingles

Lamarite® by TAMKO®



Lamarite Slate Composite Shingles by TAMKO offer all the beauty of slate without the high cost and performance issues. Lamarite shingles are made from innovative composite materials that are robust, fire-resistant, and enduring. The shingles are available in four classic colors in 5-, 7- and 12-in. widths and offered with a 50-year limited warranty.

800-641-4691
www.tamko.com

| Circle Reader Service #162

Translucent, Clear Etched Glass

Goldray Industries



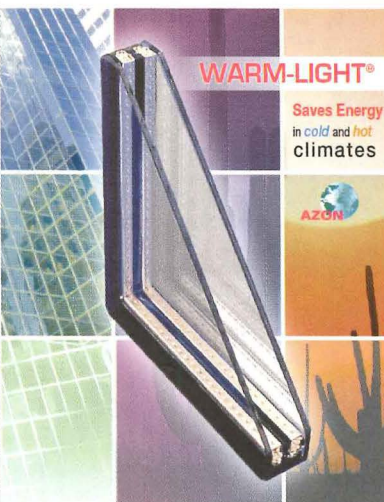
Satin Etch is a translucent clear glass with a light diffusing surface which provides privacy while still allowing high light transmission. The surface is both easy to clean and stain resistant. Satin Etch is ideal for applications such as room dividers, balustrades, light diffusing panels, shower enclosures and glass flooring systems. This product can also be decorated with custom graphics viewable from both sides. Visit the Goldray Industries web site.

800-640-3709
www.goldrayindustries.com

| Circle Reader Service #165

Extreme Performance Commercial Insulated Glass

AZON USA Inc.



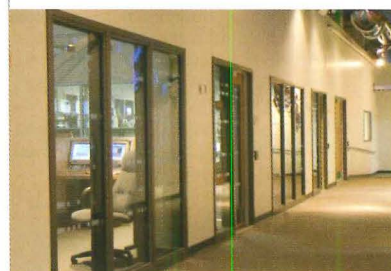
Warm-Light® spacer from Azon creates a warm-edge glass unit that reduces thermal conductivity in any climatic condition. The result is a dramatic reduction in condensation on the glass surface in cool climates and less heat transfer in warm climates, as well as lower utility costs and a more comfortable interior environment. The polyurethane core in Warm-Light spacer is 100 times less conductive than stainless steel or conventional aluminum spacer. Also enables design flexibility for a variety of building types, window sizes and styles, with standard and custom colors.

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Krieger Specialty Products Co.



For over 70 years, Krieger has been custom manufacturing acoustical, blast, bullet, security, radio frequency shielding, thermal shielding, stainless steel, and other special purpose doors and windows. Their custom designed and manufactured doors and windows are utilized by leading architects in premier installations such as the Kodak Theater, Disney Concert Hall, Hollywood Bowl, Max Fisher Performing Center, Boeing Integration Center, The Getty Museum, L.A. Zoo, Basketball Hall of Fame, the Pentagon, and various other buildings throughout the world.

www.kriegerproducts.com

| Circle Reader Service #166

Versatile Windows

Fenevations, LLC



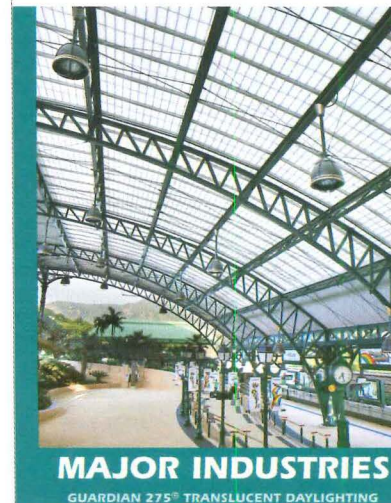
Fenevations manufactures MegaWood, Infinity Bronze, and SteelView windows. Megawood offers fine hardwoods with furniture-grade finishes, combined with heavy gauge bronze or hand welded, aluminum extruded exteriors. Infinity Bronze is a unique thermally broken solid bronze system offering beauty, style and traditional sightlines. SteelView offers stainless steel beauty for contemporary designs.

908-688-5710
www.fenevations.com
AIA Booth #2937

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Major Industries, Inc.



When your daylighting project demands something special, the TransCURVE™ translucent building panel system provides exceptional performance, with the added benefit of a striking, unique appearance. TransCURVE™ glazing panels feature a visually attractive aluminum grid core in several popular patterns, giving panels a refined look while maintaining exceptional strength. TransCURVE™ also features a premium architectural-grade FRP exterior skin that blocks damaging UV rays while transmitting the beauty of natural light.

715-842-4616
www.majorskylights.com

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Melton Classics provides the design professional with the most comprehensive selection of quality architectural products in the industry, including architectural columns, balustrades, mouldings, cornices, and a wide array of architectural elements. Architectural columns are available plain or fluted, load-bearing or column covers, round or square in fiberglass, fiberglass/marble composite, synthetic stone, cast stone, GFRC, and wood for paint or stain. Melton Classics offers maintenance-free balustrade products ideal for any application.

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www.meltonclassics.com

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Handrail Design, Inc.



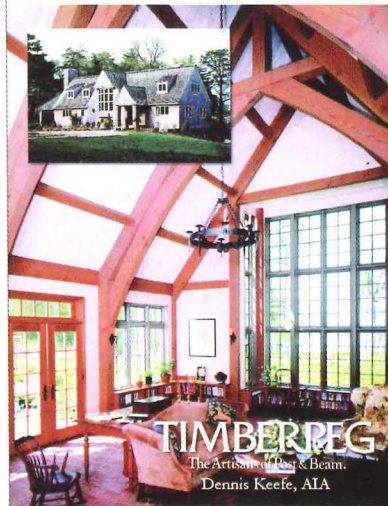
CIRCUM™ stainless railing system: Manufactured of corrosion-resistant stainless steel, CIRCUM is ideal for interior or exterior applications in commercial and residential facilities. Infill panels available in, but not limited to, perforated stainless steel, tempered glass, and stainless steel rods. Handrails in wood/stainless, stainless, or colored nylon. Curved rails and custom designs are available. HDI Railing Systems. Email info@hdirailings.com

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800-636-2424
www.timberpeg.com

| Circle Reader Service #160

Wood Mouldings

Architectural Products by Outwater, LLC



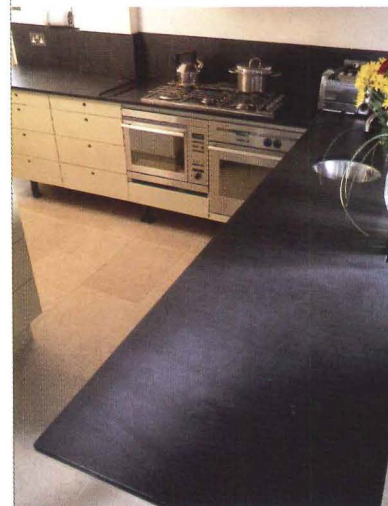
Outwater introduces Wood Plus, a new line of decorative mouldings that afford the look, quality and elegance of the finest plaster and wood mouldings at the cost of inexpensive, unfinished pine mouldings. Comprising a premium grade, solid wooden core, Wood Plus is fused with a durable, smooth polymer bonding that can be painted, glazed or faux finished without priming. Offered in a variety of designs ranging from simple to highly ornate, Wood Plus will augment the beauty and refinement of any room. Sold in 9-ft. lengths, quite simply, there is no minus to Wood Plus!

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Special-Lite, Inc.

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Thin Stone Cladding Systems

Stone Truss Systems, Inc.



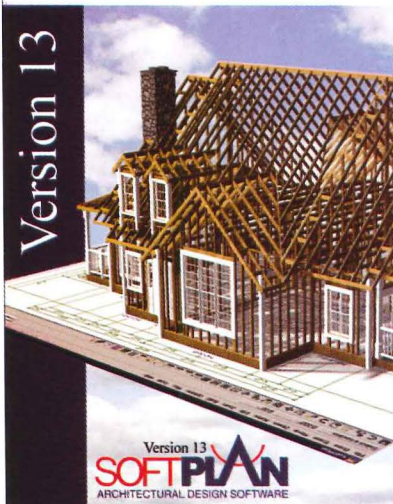
Thin lightweight natural stone wall cladding by THIN STONE SYSTEMS, LLC offers economical solutions for new construction and renovation, for both exterior and interior. Reinforced by a special patented process, the thin veneer panels of natural granite, marble, or limestone are applied to a structural framing system of extruded aluminum. Weighing only 6-lb. psf, the wall system provides many advantages including speed and simplicity of installation.

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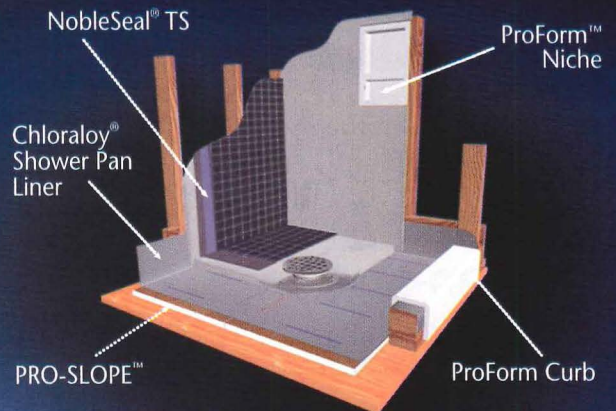
For applications and further information, visit www.rvatr.com

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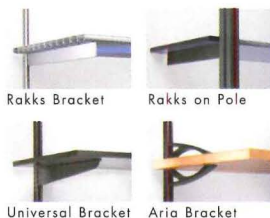
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Program title: **"Getting on Board with Building Information Modeling," (04/06, page 163)**

046SPONA

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Program title: "Robo Buildings: Pursuing the Interactive Envelope," Architectural Record (04/06, page 149).

046EDIT1

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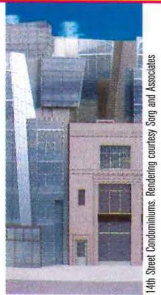
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Lectures

Symposium

April 6

Women in Architecture: Three Tracks to Success
Suman Sorg, FAIA;
Joan Goody, FAIA;
and Carol Ross
Barney, FAIA



14th Street Condominiums. Rendering courtesy Sorg and Associates

Spotlight on Design

April 3

The SWA Group
Kevin Shanley, ASLA, president of
SWA Group

April 26

Steve Martino, FASLA, landscape
architect

April 28

Rem Koolhaas, architect

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Exhibitions

Julius Shulman,
Modernity and
the Metropolis

through July 30

Jewish
Washington:
Scrapbook of
an American
Community

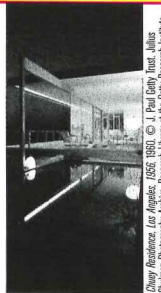
through July 4

Cityscapes Revealed:
Highlights from the Collection

long-term exhibition

Washington: Symbol & City

long-term exhibition



Cherry Residence, Los Angeles, 1955. 1950. © J. Paul Getty Trust, Julius Shulman Photograph Archive. Research Library at the Getty Research Institute

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Dates & Events

Campus Planning

Deadline: June 9, 2006

New England architects and planners are invited to submit college and university projects completed throughout the world, and architects and planners throughout the world are invited to submit New England projects. For more information, visit www.architects.org/awards.

Unbuilt Architecture

Deadline: June 26, 2006

Architects, architectural educators, and architecture students throughout the world are invited to submit real or theoretical projects. Visit www.architects.org/awards.

The 2006 VIP Awards

Deadline: July 1, 2006

Since 2000, Vetter Windows & Doors has recognized projects that preserve and respect the time-honored tradition of quality custom building and master craftsmanship through the Vetter Inspired Project Awards (VIP). The VIP Awards is a national design competition open to any architect, custom builder, or remodeler in the United States that has used Vetter products. Call 800/838-8372 or visit www.vetterwindows.com.

Honor Awards for Design Excellence

Deadline: July 6, 2006

The annual Boston Society of Architects (BSA) honor awards program invites submissions of projects of any type anywhere in the world designed by Massachusetts architects and also invites architects throughout the world to submit projects built in Massachusetts. For more information, visit www.architects.org/awards.

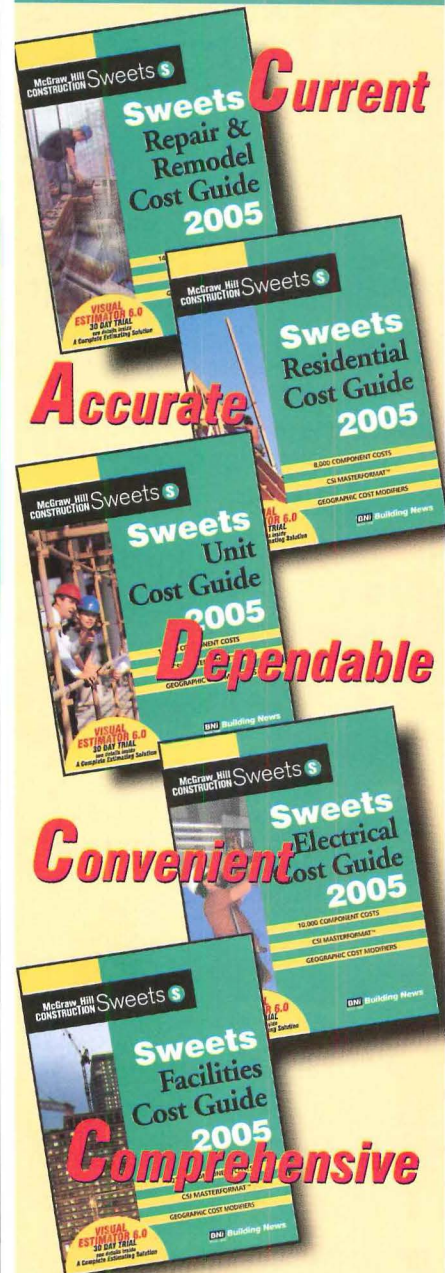
Juried Photo Exhibits at Build Boston

Deadline: August 1, 2006

All New England architects, landscape architects, and interior designers who are members of the AIA, ASID, ASLA, or IIDA are eligible. For more information, visit www.architects.org/awards.

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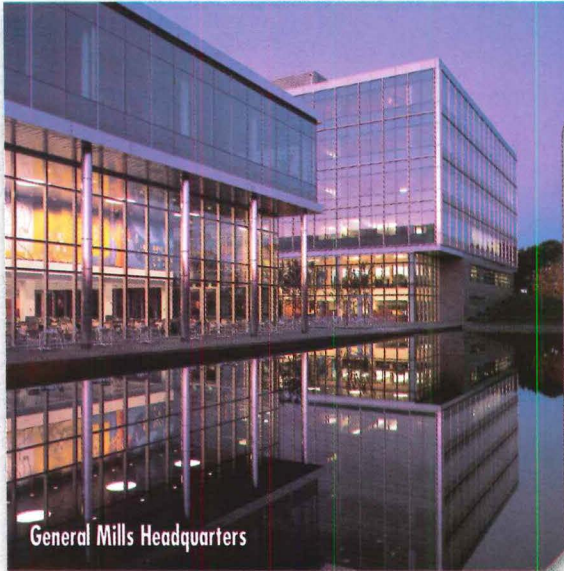
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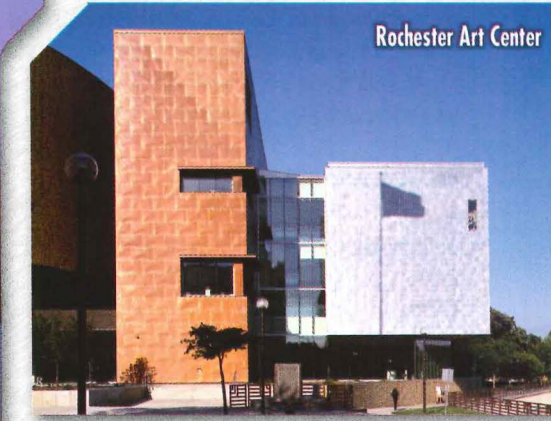
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to elisabeth_broome@mcgraw-hill.com.

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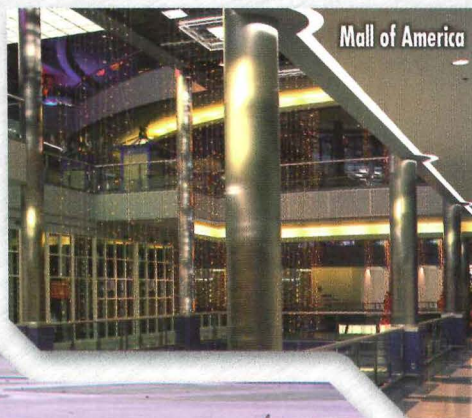
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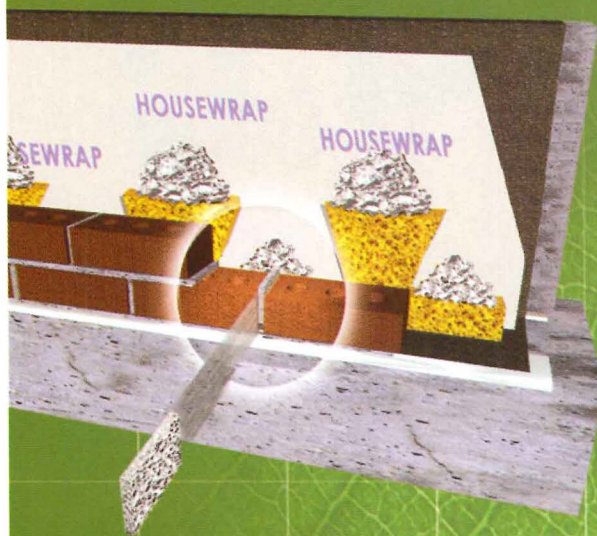
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Dates & Events

Association (PCA) and administered by the Association of Collegiate Schools of Architecture (ACSA), students will be challenged to investigate an innovative application of portland-cement-based materials to achieve sustainable design objectives. The competition is open to all ACSA-affiliated schools. Visit www.acsa-arch.org.

2006 Benjamin Moore HUE Awards

Deadline: May 19, 2006

Presented by the Benjamin Moore company to honor architects and interior designers for exemplary use of color in both residential and contract projects, the awards recognize design professionals who incorporate color in innovative and imaginative ways—through the use of interior and exterior paints, building materials, textiles, and other surfaces, plus design elements and furnishings. Call 212/966-3759, x 233 or visit www.benjaminmoore.com.

Rafael Viñoly 2006 Research Fellowship

Deadline for Grant Proposals: June 1, 2006

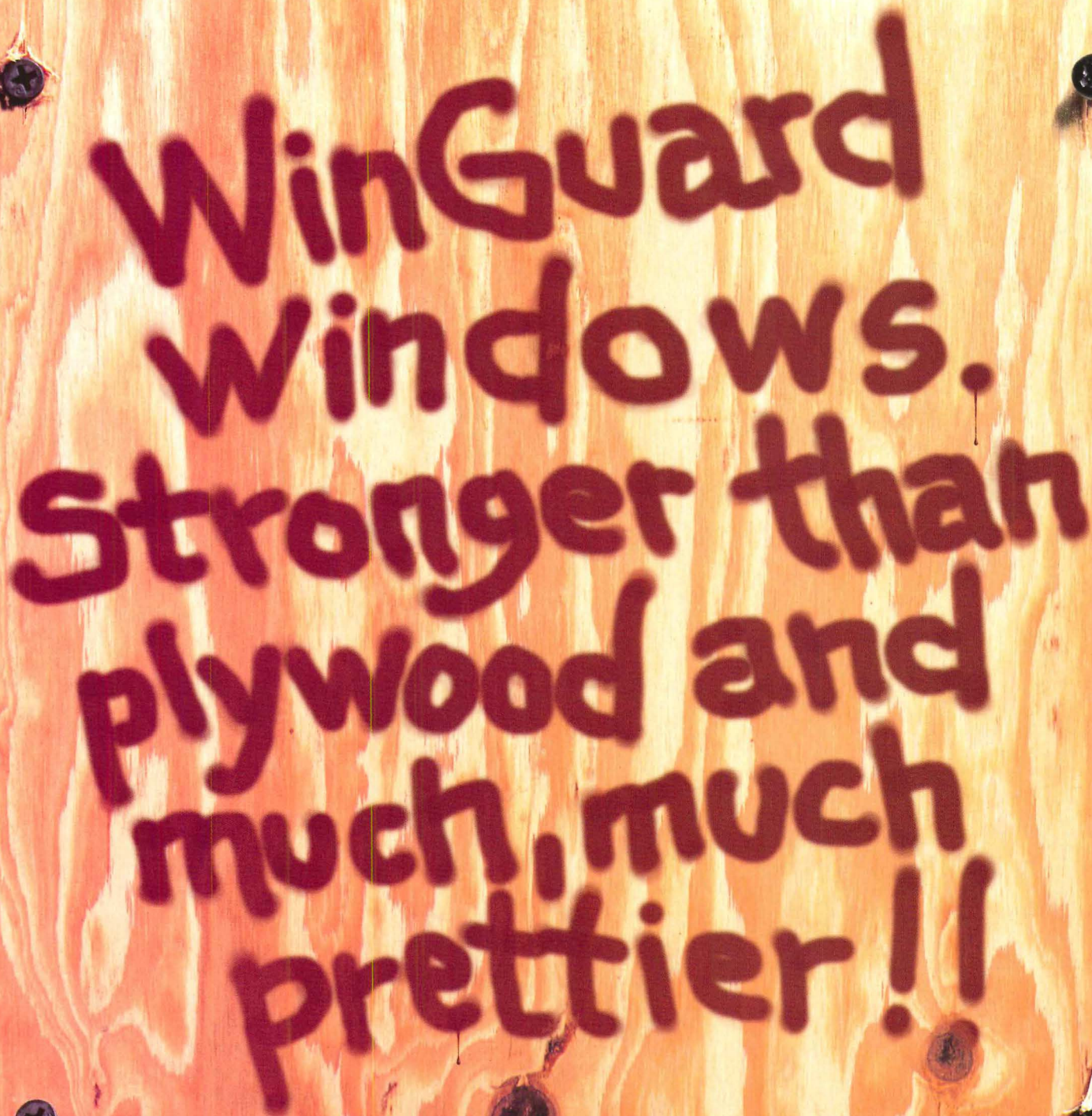
Rafael Viñoly Architects is again offering fellowships to support original research that advances the craft and practice of architecture and can benefit from being carried out in the environment of an architectural office. Potential areas of research may include design methodologies, construction technologies, design representation and fabrication, materials technology, and sustainable design, or other topics. In addition to a stipend and research expenses of up to \$60,000, Rafael Viñoly Architects will provide work space and support. Fellows are to be resident for terms of three to twelve months, between September 2006 and September 2007. For more information, visit www.rvatr.com.

Seattle Architecture Foundation Ideas in Form⁹ Architectural Model Exhibit Seattle

June 9–July 8, 2006

Deadline for Entries: May 5, 2006

Seattle Architecture Foundation (SAF) uses its annual Ideas in Form architectural-model exhibition to educate the general public about the creative process. The show features 80 to 100 projects still on the boards, under construction and recently completed by Northwest architects or architects designing projects in the Northwest. This year's exhibition will be open daily June 9 through July 8 in the Rainier Square Atrium in Downtown Seattle, 1333 5th Avenue, First Level. Call 206/667-9184 or visit www.seattlearchitecture.org.



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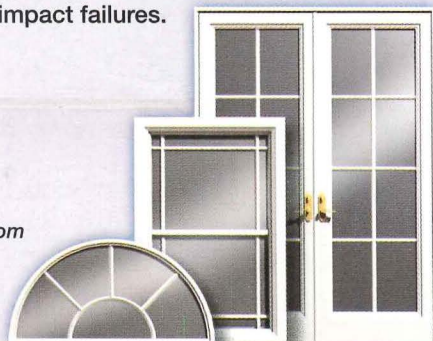
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Dates & Events

ent and future. At the Center for Architecture. Visit www.aiany.org or www.peoplesarchitecture.org.

Spotlight on Design:

Rem Koolhaas Washington, D.C.

April 28, 2006

The architecture of Rem Koolhaas is recognized worldwide for combining technology, function, and design in groundbreaking ways. In his first lecture in Washington since 1996, the founding principal of the Rotterdam-based architecture firm Office of Metropolitan Architecture (OMA) will discuss his recent and current projects—including store designs for Prada, the Seattle Public Library, the McCormick Tribune Campus Center at the Illinois Institute of Technology, and the CCTV Television Station and Headquarters in Beijing—and share his views on the current state

of architecture. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

The Architecture of Sustainability Shepherdstown, W.Va.

May 4–7, 2006

With renewed interest in the environment, many questions arise as to what extent architecture plays a role in green design. This three-day conference will consider the impact of sustainability on architectural design from several perspectives. Speakers will include Jeanne Gang of Studio Gang, James Timberlake, FAIA, of Kieran Timberlake, Andrew Whalley of Grimshaw, and others. Also, the winners of the Design Ideas Competition, “House for an Ecologist,” will be on view. At the National Conservation Training Center (NCTC). For more information, visit www.aia.org/cod.

Competitions

AIA New York Chapter Design Awards 2006

Entry Deadline: April 14, 2006

Submission Deadline: May 5, 2006

The Design Awards Program seeks to recognize and promote design excellence in three categories: Architecture, Interior Architecture, and Projects. Visit www.aiany.org/designawards.

The SOM Prize

Deadline: April 28, 2006

Since 1981, the Skidmore, Owings & Merrill Foundation has helped young architects and engineers broaden their education through travel fellowships awarded annually. The \$50,000 grant will be awarded to the most promising student in architecture, urban design, and design, as selected by an independent jury of prominent professionals. Graduating undergraduate and graduate students of accredited U.S. schools of architecture, urban plan-

ning, and design are eligible. Visit www.somfoundation.som.com.

Request for Expressions of Interest

Deadline: May 1, 2006

The Anacostia Waterfront Corporation (AWC) issued a Request for Expressions of Interest (RFEI) for the redevelopment of 47 acres of publicly owned land along the Southwest Waterfront that is slated to be transferred to AWC. The RFEI is an open invitation to qualified local, national, and international developers with experience in large-scale, mixed-use, retail, residential, and public/private development who are interested in redeveloping the site. For more information, visit www.swwaterfrontdc.com.

International Student Design Competition: Concrete Thinking for a Sustainable World

Deadline: May 3, 2006

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Dates & Events

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Spotlight on Design:

Emerging Voices: dECOi/George Yu Architects Washington, D.C.

April 5, 2006

Mark Goulthorpe, founding principal of dECOi in Paris, France, and Cambridge, Massachusetts, will present his firm's work, ranging from pure design to architecture and urbanism. Los Angeles-based George Yu will discuss, among other projects, the creative workspaces of the Sony Design Centers in Los Angeles and Shanghai. Both architects were selected as "emerging voices" by the Architectural League in New York. At the National Building Museum. To learn more, call 202/272-2448 or visit www.nbm.org.

Symposium: Women in Architecture: Three Tracks to Success Washington, D.C.

April 6, 2006

According to the American Institute of Architects (AIA), women comprise only 12 percent of AIA members but over 40 percent of students now enrolled in architecture schools. Three successful principals of women-owned architecture practices—Suman Sorg, FAIA, principal of Washington, D.C.-based Sorg Associates; Joan Goody, FAIA, principal of Boston-based Goody, Clancy & Associates; and Carol Ross Barney, FAIA, principal with Chicago-based Ross Barney + Jankowski—will discuss their careers in a profession where the number of women is on the rise. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Alexander Garvin, Edward Uhlir, Charles Renfro Chicago

April 6, 2006

From Chicago's own Millennium Park to master plans for the Olympic Games, new projects are redefining how we approach public space. Three designers and organizers of event and public spaces come together at the Chicago Architecture Foundation (CAF) for a dialogue on the future of public space. Panelists include Alexander Garvin, Alex Garvin & Associates, New York; Edward Uhlir, project director, Millennium Park, Chicago; and Charles Renfro, Diller Scofidio + Renfro, New York. With moderator Ned Cramer, curator, CAF. At the John Buck Company Lecture Hall Gallery. Call 312/922-3432 or visit www.architecture.org.

Sustainable Design Seminar: Sustainable Strategies/Rating Systems Long Island City, N.Y.

April 8, 2006

In this one-day course, students will learn how sustainable materials and renewable energy strategies are integrated into the building design process. Instructors will also review current green building rating systems. The course is led by ARUP consultant Shruti Narayan and Jamy Bacchus, both of whom are LEED-accredited engineers and sustainability consultants. Learn the feasibility and applicability of the current green building rating systems, including LEED, LABs 21, and Greenglobes. At NYDESIGN Design Business Center. Visit www.nydesigns.org.

3X3

New York City

April 17, 2006

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Dates & Events

New & Upcoming Exhibitions

Julius Shulman, Modernity and the Metropolis **Washington, D.C.**

April 1–July 30, 2006

This exhibition offers highlights from the recently acquired archives of Julius Shulman, the internationally renowned photographer whose iconic images helped to define Modern architecture. His photographs, such as those of Richard Neutra's Kaufmann House in Palm Springs (1947) and Pierre Koenig's Case Study House #22 in the Hollywood Hills (1960), transcend mere documentation of steel and glass. They reveal the essence of the architects' visions and capture the spirit of the eras when the structures were conceived. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Between Form and Circumstance: Re-Thinking the Contemporary Landscape **Cambridge, Mass.**

April 3–May 24, 2006

An exhibition of the recent practice of Michael Van Valkenburgh Associates. At Harvard University Graduate School of Design. Visit www.gsd.harvard.edu.

Secret Cities: Extraordinary Urban Photography **Chicago**

April 14–June 17, 2006

The contemporary photographers in this exhibition are poets of light and shadow unlike many architectural photographers. Included in the show are works by Christophe Valsecchi, John Kimmich-Javier, Darris Lee Harris, Alex Fradkin, Jay King, Tony May, and Madeline Doering. At ArchiTech. For more information, call 312/475-1290 or visit www.architechgallery.com.

Vaults of Heaven: Sanctuaries of Byzantium **New York City**

April 26–July 28, 2006

An exhibition of 30 large-format color photographs of some of the greatest examples of Byzantine architecture. Captured by the renowned Turkish photographer and architect Ahmet Ertug, the striking images reveal in astonishing detail the extraordinary churches and sanctuaries of ancient Byzantium. At the World Monuments Fund Gallery. For additional information, call 646/424-9594 or visit www.wmf.org.

Ongoing Exhibitions

On-Site: New Architecture in Spain **New York City**

Through May 1, 2006

Featuring 53 noteworthy architectural projects, this exhibition focuses on the most recent architectural developments in a country that has become known in recent years as an important center of international design experimentation and excellence. At the Museum of Modern Art. Call 212/708-9431 or visit www.moma.org.

Prairie Skyscraper: Frank Lloyd Wright's Price Tower **New Haven**

Through May 5, 2006

Marking the 50th anniversary of the completion of the celebrated landmark Price Tower, the Price Tower Arts Center has mounted this exhibition comprising documents, drawings, furniture, building components, and other artifacts that bear witness to the genius of its architect. At the Yale School of Architecture. For information, call 203.432.2288 or visit www.architecture.yale.edu.

Symmetry **Los Angeles**

Through May 7, 2006

In the world of space and time, symmetry derives its meaning from a center, a repetition of forms on mirroring sides of an axis. This exhibition features works by Los Angeles-based contemporary artists that use or relate to this concept. At the MAK Center for Art & Architecture L.A., at the Schindler House. Call 323/651-1510 or visit www.makcenter.org.

Open: New Designs for Public Space **Chicago**

Through May 7, 2006

The Chicago Architecture Foundation investigates the evolving conditions of public space in Chicago—from the spectacular Millennium Park to the development of streets and gardens in city neighborhoods—with more than 300 architectural renderings, photographs, and models. At the ArchiCenter. Call 312/922-3432 or visit www.architecture.org.

Hiroshi Sugimoto **Washington, D.C.**

Through May 14, 2006

The first career survey of one of Japan's most important contemporary artists. Sugimoto is known for his starkly minimal images of architecture, seascapes, and movie theaters, as well as his richly detailed photographs of natural history dioramas, wax portraits, and Buddhist sculptures. At the Smithsonian Hirshhorn Museum and Sculpture Garden. For more information, call 202/633-1000 or visit www.hirshhorn.si.edu.

Southpoint: From Ruin to Rejuvenation—ENYA International Ideas Competition Exhibition **New York City**

Through June 17, 2006

The Emerging New York Architects (ENYA) Committee presents an exhibition of the second biennial international ideas competition. The exhibition features 77 visions for a Universal Arts Center at Southpoint Park on Roosevelt Island. ENYA Prize recipient, second place, third place, student prize, and historic preservation award, along with 42 selected entries, are included in the accompanying catalog. At the Center for Architecture. For more information, call 212/683-0023 or visit www.aiany.org.

Morphosis **Paris**

Through July 17, 2006

Sixteen projects (layouts, drawings, photographs, etc.) from the Morphosis agency, currently involved in the construction of numerous buildings, are on view to convey the idea of architecture as "in the act." Screens and Webcams will open windows onto buildings in operation or building sites underway in order to follow their evolution. At the Centre Pompidou. Visit www.cnac-gp.fr/pompidou.

Lectures, Conferences, and Symposia

Harvard Graduate School of Design Lecture Program **Cambridge, Mass.**

The Graduate School of Design's (GSD) lecture program presents internationally prominent speakers in the design fields. They are invited to share their work and ideas with the GSD community, thus providing insight into contemporary professional practice and scholarship. Speakers include Ricky Burdett, Luis M. Mansilla, Holly Gretch Clarke, Jan Kaplicky, Bjarke Ingels, Jean Nouvel, Jorge Silvetti, Terence Riley, Nathalie de Vries, Julie Snow, Katrin Scholz-

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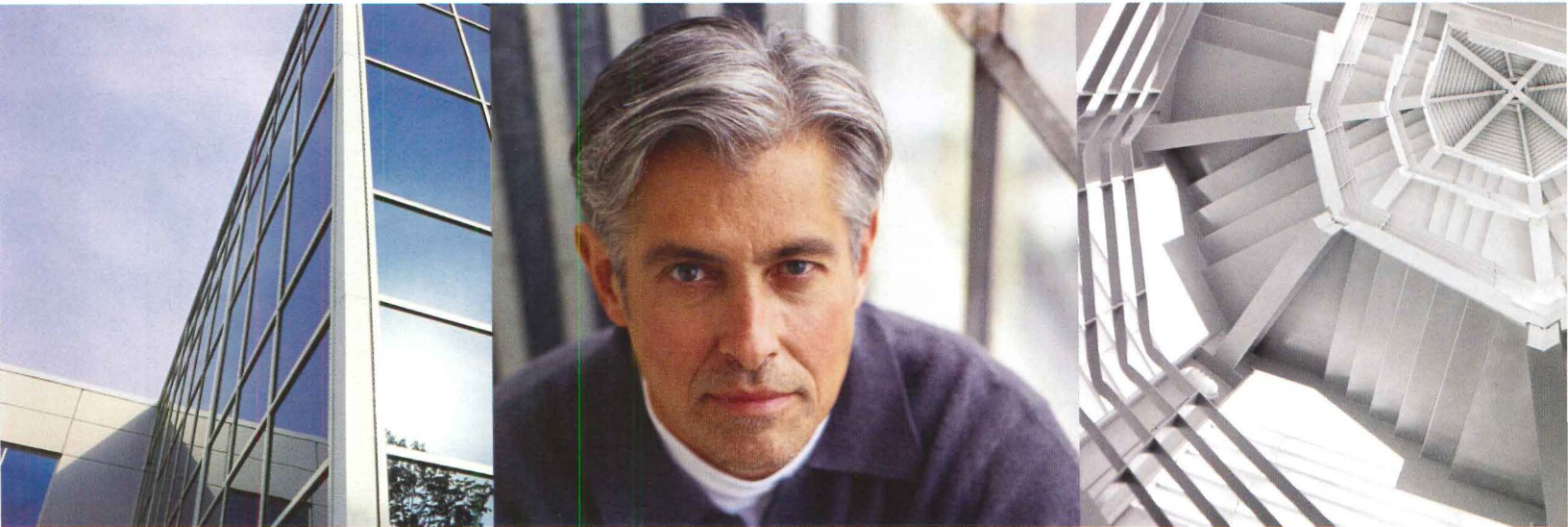
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available. Here's where the Network for products will make a dramatic difference. "Architects are intellectually curious," observes Dora Chomiak, senior director, product development, for McGraw-Hill Construction. "The Network for products lets them research products their way, doing it faster, more easily, and more accurately." We've even incorporated *Architectural Record's* Building Types Studies to enhance the user's experience and allow greater depth of information and intelligence.

If you're a contractor, you may already use the McGraw-Hill Construction Network to find, bid, and win projects. "The McGraw-Hill Construction Network lets you work continuously on your project using the same platform where you located it," states Joseph Scott, marketing director, Contractors & Services channel, for McGraw-Hill Construction. "Yet continuity is just one of its benefits. Using its product search engine, you can quickly and easily identify options for the building products the architect is specifying, learn how they're installed and operated, and then get practical answers to that inevitable question: Where can I find suppliers to get this stuff to me?"

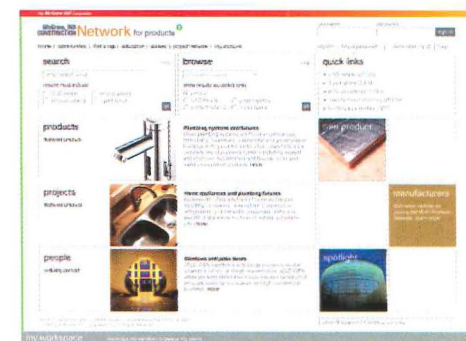
"This represents an unparalleled way for industry players to connect to one another and to projects and products in a whole new way."

Building product manufacturers will benefit by reaching a robust audience of end users with the deeper, richer content they need to make product decisions. Better yet, you'll monitor all requests for your product information in real time using a new Performance Dashboard created expressly for you. Per Lofving, senior director, product development, for McGraw-Hill Construction, points out, "If you've been looking for a cost-effective way to deliver information about your products directly to architects with projects that could use your products, and maintain communications with them to make sure you win the order, you've got it now."

The power of this new offering is its integration with our McGraw-Hill Construction Network. One powerful, industry portal enables you to find, research, compare, specify, and purchase building products, collaborate with the people who make, specify, and use building products, and identify the projects they are supplying, designing, and constructing - faster, better, and smarter. In short, the power is in the connections this new offering provides.

The portal is open, and everyone is invited. Extending a warm invitation to the construction industry to put this powerful new tool to work, McGraw-Hill Construction's Norbert Young says, "Check out our new Network for products by going to:

www.products.construction.com



Roger Yee is an architect and writer living in New York

connecting people_projects_products



The Connection Goes Live.

McGraw-Hill Construction's proven ability to connect the construction industry to vital information has just become a lot more powerful

By Roger Yee

Norbert W. Young Jr., FAIA
President, McGraw-Hill Construction

"The world has changed! The Network for products sets new standards for connecting people, projects and products."

Every industry has its trusted sources. For architects, contractors, and building product manufacturers, the industry-leading brands of McGraw-Hill Construction—Dodge, Sweets, *Architectural Record*, *ENR*, and our Regional Publications—have been the preferred connection to vital information for over a century. Sweets, for example, has defined professional standards for building product information since 1906, and is now taking a quantum leap forward as McGraw-Hill Construction harnesses the power of online technology and launches the McGraw-Hill Construction Network® for products.

"The world has changed," declares Norbert Young, president of McGraw-Hill Construction. "The new Network for products continues our evolution of transforming the global construction industry by setting new standards through connecting people, projects and products. Architects, contractors and building product manufacturers will find it's built for them, because they helped us build it, through months of interviews, surveys, and research."

The Network for products is built on the 100 year history and integrity of Sweets. Today, however, the Network for products goes far beyond what was provided in the past. It offers a new industry standard for researching, finding, comparing, specifying and purchasing building products, and collaborating with industry associates.

All told, the Network for products is like no other product resource available today. From the look and feel of the site to its ease of navigation and rich content in context, the Network for products was designed with your needs in mind.

A community thrives when everyone contributes to and gains from its group activities. For architects, contractors, and

building product manufacturers, that community now exists in the McGraw-Hill Construction Network for products. You'll enjoy a whole, new, personalized web experience from McGraw-Hill Construction—accessing product catalogs, detailed specifications, CAD drawings and project galleries from more than 10,000 manufacturers, and the ability to download information into your own "workspace" right on the Network.

"Now it's easier than ever for architects to research products and evaluate them in an architectural context."

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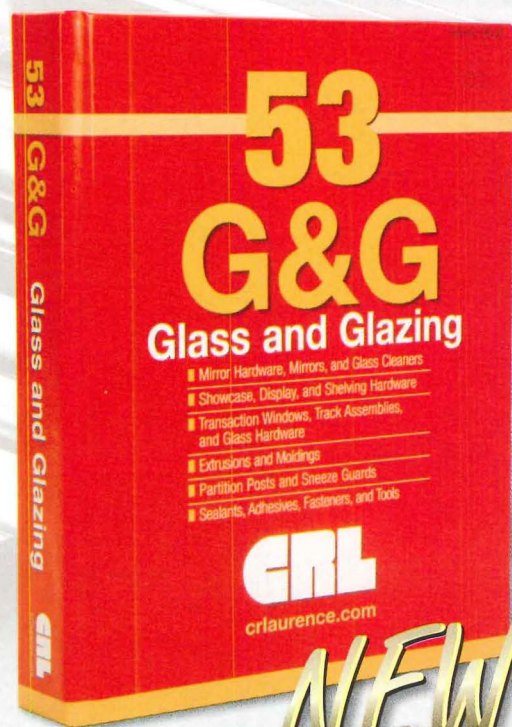
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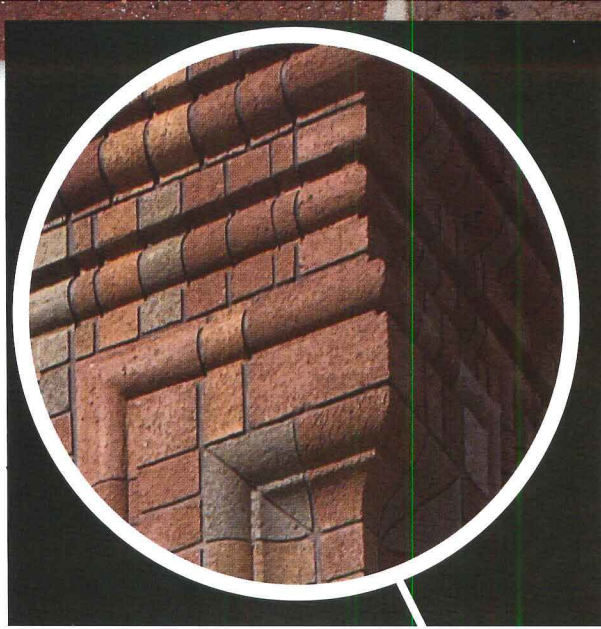
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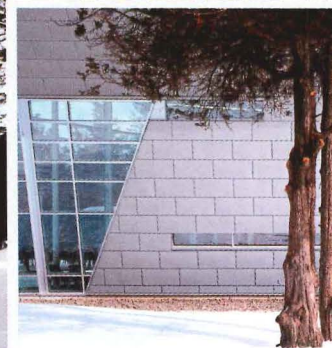
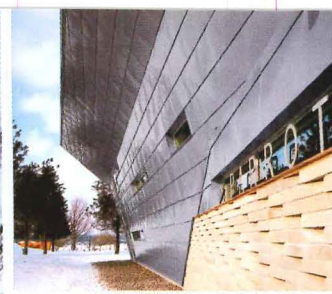


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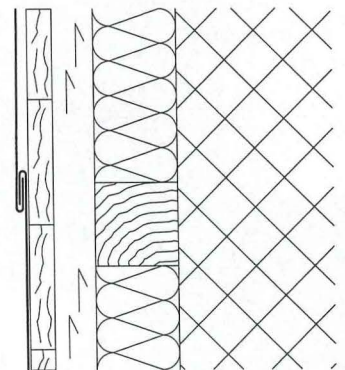


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Product Resource: On the Web

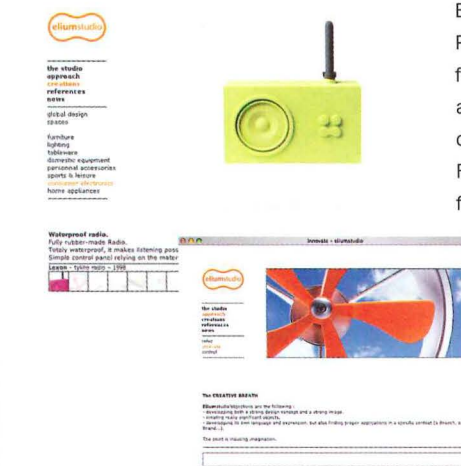
www.thermatru.com

Therma-Tru Doors has redesigned its Web site to be more interactive, with customized navigation for consumers, builders, and architects. Visitors will see expanded content, easier navigation, a redesigned interface, an enhanced product catalog, and a more powerful search tool.



www.eliumstudio.com

Eliumstudio is a team of five, Paris-based product designers from the architecture, design, and fashion industries. The studio's easy-to-navigate site (in French and English) gives profiles on the team members as



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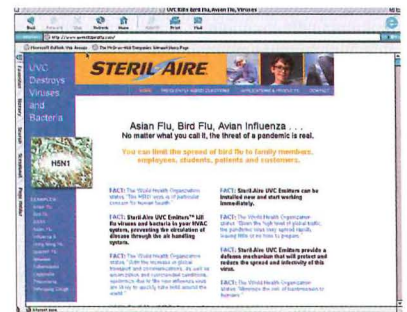
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www.uvkillsbirdflu.com

A topical new Web site from Steril-Aire discusses how the company's ultraviolet-C (UVC) technology may be used preventively to control the spread of bird or avian flu in residences and buildings of all types. The site includes sections on frequently asked questions, applications, and products.



www.rainforest-alliance.org/greenbuilding

The Rainforest Alliance has compiled the SmartGuide to Green Building Wood Sources, a comprehensive listing of all Forest Stewardship Council-certified suppliers in North America, including contact, company, and product information. The SmartGuide can be downloaded for free at the Rainforest Alliance site listed above.





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Product Resource: Literature

Green building products guide

The expanded and revised 6th edition of the *GreenSpec Directory* of environmentally preferable building products contains nearly 2,000 listings, providing a complete source for green building product information.

The directory includes 1,997 product listings—more than 200 product listings were added and 100 were dropped from the last edition. BuildingGreen, Brattleboro, Vt.

www.GreenSpec.com **CIRCLE 221**



Brochure of laminate designs

Abet Laminati is offering a new brochure describing more than 500 decorative, high-pressure-laminate surfaces, including metallics, wood grains, textures, solid colors, digitally printed or silk-screened designs, and Diafos translucent designs. All products are stocked in five locations throughout North America. Abet Laminati, Englewood, N.J. www.abet-laminati.com **CIRCLE 222**



Greener ceilings catalog

Armstrong's 2006 *Ceilings Systems* catalog places an increased emphasis on green issues. The mineral fiber/fiberglass sections include a chart indicating the ceiling's ability to help attain LEED credits, and the catalog is printed with vegetable-based inks on paper made from hydrogenerated energy and approved as an FSC "chain of custody" stock.

Armstrong World Industries, Lancaster, Pa. www.armstrong.com/ceilings **CIRCLE 223**



Hardwood sports floor catalog

A new, 12-page catalog from Action Floor Systems details the company's extensive line of hardwood sports systems. The 2006 catalog features two new systems along with specifications for 16 other subfloor systems that are designed to absorb shock, provide uniform resiliency and ball bounce, and reduce vibration and sound transmission.

Action Floor Systems, Mercer, Wis. www.actionfloors.com **CIRCLE 224**



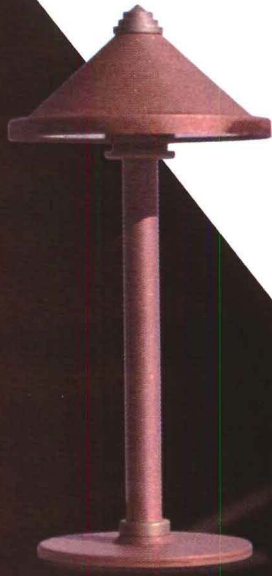
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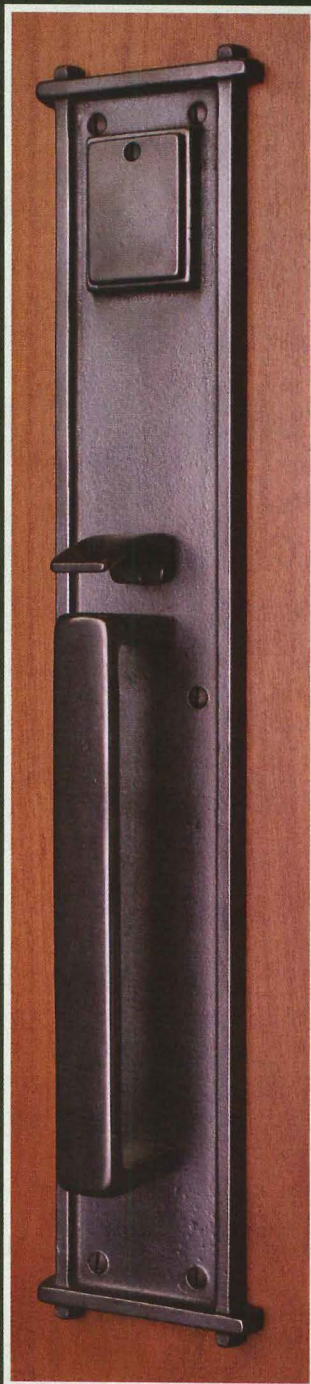
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Product Briefs

▼ Fire-resistant particleboard

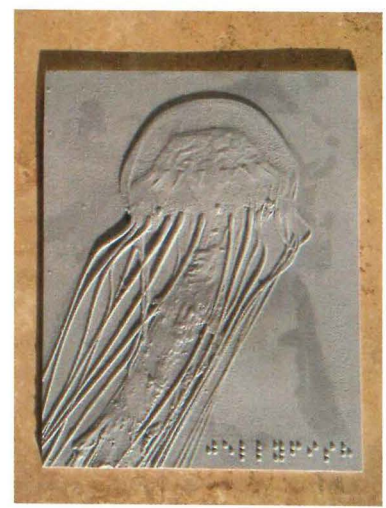
Temple-Inland has introduced TemStock-FR, a fire-rated particleboard for interior usage in industrial and commercial construction projects. Combining the cost-efficiency and versatility of particleboard with the fire-retardant



properties required by commercial construction codes, TemStock-FR is an option for fabricating cabinets, fixtures, furniture, and various types of wall-system assemblies typically used in schools, offices, hospitals, and other commercial structures where fire safety is a primary concern. The particleboard is manufactured in thicknesses of ¼" through 1½" and in standard 4' sizes. Temple-Inland, Diboll, Tex. www.templeinland.com **CIRCLE 218**

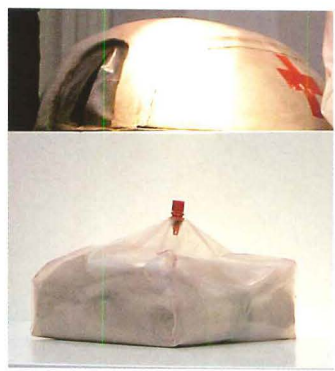
► It's stainless, but it's not steel

The result of nearly three years of intensive R&D, NuCrete is a stainless concrete now available from the precast-concrete experts at Sonoma Cast Stone. Made of actual concrete (not an epoxy-covered surface), Nucrete can withstand the harshest acids and oils and is offered with a five-year guarantee against staining. It is created by modifying concrete's traditional curing and finishing process and introducing some proprietary additives to the batch mix and finish. Sonoma Cast Stone products are available through a network of more than 100 authorized dealers around the country. Sonoma Cast Stone, Petaluma, Calif. www.sonomastone.com **CIRCLE 219**



◀ Creativity that can change the world

The Saatchi & Saatchi Award for World Changing Ideas promotes inventions that have the potential to change the world. The 11 finalists in the fourth annual competition included Photo-Form Tactile Graphics [RECORD, October 2004, page 233] that allow "pictures" to be seen by a blind person's touch (far left). The \$100,000 grand prize was given to



Peter Brewin and William Crawford of London's Royal College of Art for Concrete Canvas, a rapidly deployable hardened shelter for victims of natural or man-made disasters (model, near left top; undeployed shelter, bottom). Saatchi & Saatchi, New York City. www.saatchi.com/world-wide/innovation_award.asp **CIRCLE 220**

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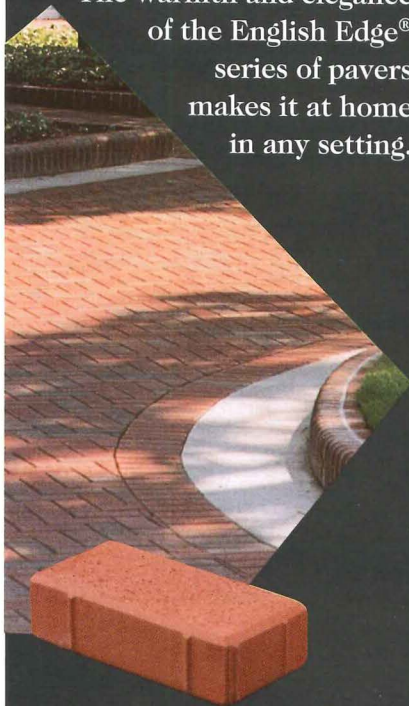
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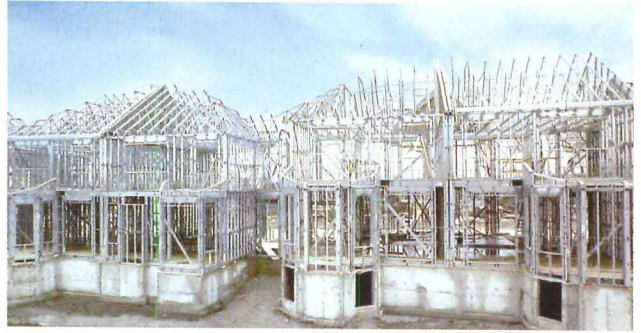
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Product Briefs

► Steel framing system

The Building Components division of USG has introduced a new residential framing system as a modern alternative to traditional wood "stick" building methods. The light-gauge steel framing components, including roof trusses, wall panels, and floor panels, are factory manufactured to ensure precision and quality. The components can be incorporated individually or as a complete engineered framing system. After the components are delivered to the job site ready to install, small crews can frame a home in a fraction of the time it takes using traditional methods. Steel components are dimensionally more stable than wood and resist fire, mold growth, and termites. USG, Chicago. www.usg.com **CIRCLE 215**



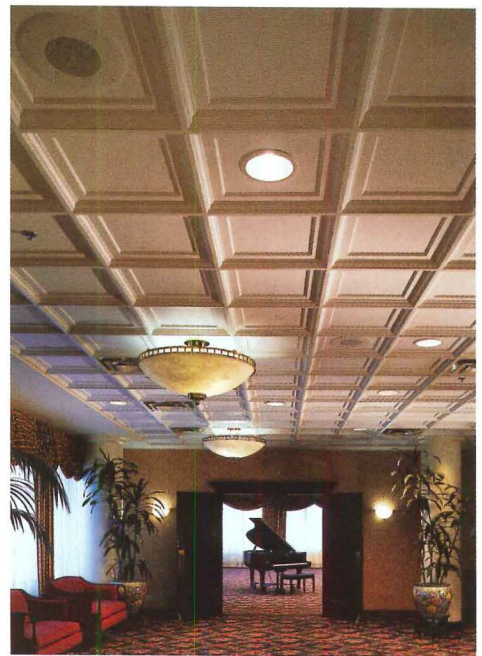
▼ Glass-reinforced gypsum panels

Chicago Metallic has expanded its line of Monarch GRG ceiling panels to include six new patterns. In total, the classically sculptured, glass-reinforced gypsum panels are now available in 12 decorative profiles, including the new Executive Wood Mahogany, Centennial, Bamboo, Classic Wood Mahogany, Victorian Poppy, Palm Leaf, and Classic Textured patterns. Monarch panels help create artistic ceilings ideal for the hospitality market or any room seeking a dramatic or historic appeal. The panels, approved by the U.S. Coast Guard for marine applications, are unaffected by moisture and humidity. Chicago Metallic, Chicago. www.chicagometallic.com **CIRCLE 216**



▲ Cupola collection

The new William E. Poole Collection is a collaboration between Fypon and William E. Poole, a leader in American home design. The low-maintenance urethane Fypon pieces include a line of 25 ornamental cupolas ranging in height from about 5' tall to more than 7' tall. The low-maintenance cupolas are made of cellular PVC for the base and roof support, with the sill, crown molding, and louvers made of urethane. The designs include bell, pagoda, and hipped roof styles with the center portions including the decorative accents of louvers, glass, or wren birdhouses. Fypon, Archbold, Ohio. www.fypon.com **CIRCLE 217**



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Product Briefs

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▲ Path of roses

Spanish-rug diva Nani Marquina offers a range of new products for 2006 from her eponymous company. Basic, a line of six collections that play with color and texture, offer the sophisticated style expected from the manufacturer but with more general appeal. For fans of avant-garde design, the company doesn't disappoint with Roses, a Marquina design made with felt die-cut "petals" that gives movement and softness to the rug. It is available in red, brown, ivory (above), orange, and gray. Offerings from collaborating designers include the Tomato Pouf seat and the Stone-Wool collection of blob-shaped wool area rugs. The Terence Conran Shop, New York City. www.nanimarquina.com **CIRCLE 212**

► Menu of workspace options

Designed by Richard Holbrook, the Menu case-goods platform offers 10 work-surface shapes and varied storage components that lend themselves to space-efficient configurations. All of Menu's materials and finishes may be optioned up or down to meet a range of budgets and reflect employee status within an organization. Menu's material palette includes satin aluminum structural elements; glass and marble floating worktops; and 3Form modesty panels, doors, and privacy fences. Gunlocke, Muscatine, Iowa. www.gunlocke.com **CIRCLE 213**



▲► Protected from attic to countertop

Debuted at this year's Builders' Show, Granite Certified by Dupont is the first all-natural stone surface from DuPont Surfaces. Available in 15 colors, the granite is protected by a proprietary sealant that fills in natural cracks, helps repel stains, and maintains the stone's natural hue. Also launched at the show is Tyvek AtticWrap, the first breathable roofing membrane to completely seal a home's building envelope. Specially targeted for the attic, the wrap creates a continuously airtight space that prevents air and water intrusion and helps conserve energy. DuPont, Wilmington, Del. www.granite.dupont, www.construction.tyvek.com **CIRCLE 214**



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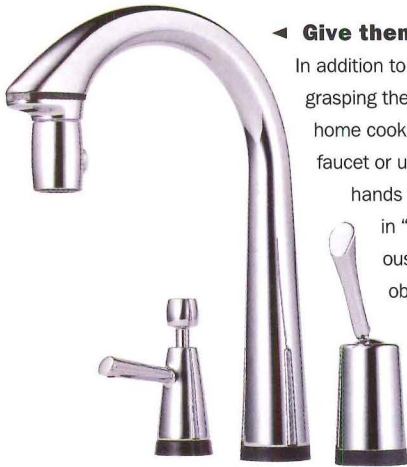
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Product Briefs

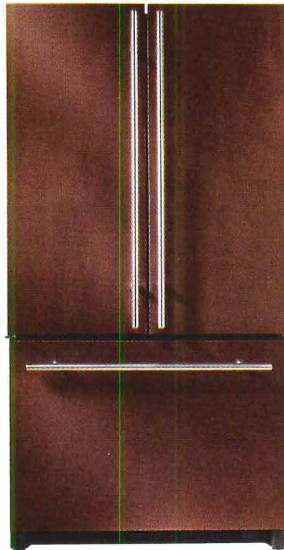


◀ Give them a hand in the kitchen

In addition to the traditional activation method of grasping the handle, the Pascal Culinary Faucet allows home cooks to activate water flow by tapping the faucet or using the hands-free option, reserving both hands for cooking and cleanup. While Pascal is in "hands-free" mode, water will run continuously as long as the water work space has an object in it. Pascal also features a pull-down spout to simplify kitchen duties such as filling pots. Water temperature and flow are set by the faucet's single-handle manual valve. Delta Faucet Company, Indianapolis. www.brizo.com **CIRCLE 207**

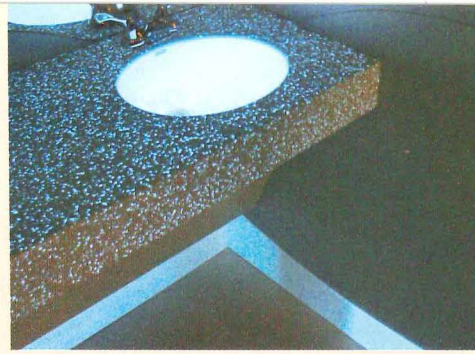
▶ Alternative to stainless

Inspired by the growing interest in metallic finishes for kitchen walls, fixtures, backsplashes, and countertops, the Oiled Bronze antique metallic finish from Jenn-Air can be used as the focal point among stainless appliances or as an entire suite. Stainless-steel accents tie the appliances into a variety of kitchen designs. The finish is available on select refrigerator, dishwasher, wall-oven, hood, cooktop, and warming-drawer models in prices competitive with Jenn-Air's floating glass offerings. Jenn-Air, Newton, Iowa. www.jennair.com **CIRCLE 209**



▼ Grab-your-attention handrail set

British typeface designer Andrew Byrom has translated his skill for creating unique letter fonts into the Grab-Me series of handrails. Grab-Me is a collection of 26 3D steel tube letters/grab bars for use in swimming pools, spas, bathrooms, or as indoor and outdoor signage. Available exclusively from the designer, the made-to-order letters (about \$1,000 each) are manufactured using 1.5"-diameter stainless-steel tubing with a 180-grit brushed finish. Andrew Byrom, Chicago. www.andrewbyrom.com/grabme **CIRCLE 210**

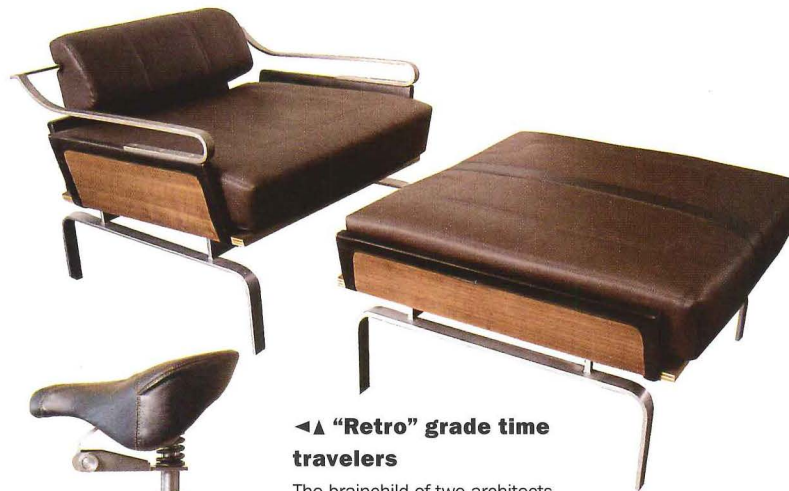


Product of the Month Lumistone Solid Surface

Under normal lighting conditions, Lumistone offers all of the typical characteristics of premium acrylic-based solid surfacing; but in a darkened environment, it glows with a greenish yellow or blue cast.

Manufactured by Tower Industries, the material was originally developed to be used as a safety product and is ideal for providing a clear path for evacuation in case of an electrical power loss in airplanes, theaters, or public spaces. Possessing solid surfacing's inherent ability to be thermoformed or shaped by the same method as wood, it can also be cast in a variety of shapes, for applications ranging from safety handrails on a cruise ship to bar tops in a nightclub to custom inlays in a residential countertop that display hidden messages in the dark.

Lumistone is available in a range of color options in sheet form, strips for use as inserts, precast in bowls or other shapes, or as a precatalyzed liquid mixture for creating custom decorative inlays. The strength and duration of the material's luminous glow can also be adjusted as needed. Tower Industries, Massillon, Ohio. www.towersurfaces.com **CIRCLE 208**



◀◀ "Retro" grade time travelers

The brainchild of two architects and two graphic designers, the multifaceted AvroKO is notable for its highly conceptual eateries (such as PUBLIC in New York City, owned and operated by the company), residential interiors, and brand imaging. Not surprisingly, this diverse design studio's first furniture collection takes its cues from the preindustrial cars and cycles of the late 19th and early 20th centuries. Dubbed The Transport Series, the richly detailed mix of cold-rolled steel, red-tinged leather, and walnut comprises a chair, ottoman, and stool (shown), as well as a height-adjustable table, floor lamp, and playful storage barrel/pet bed. AvroKo, New York City. www.avroko.com **CIRCLE 211**

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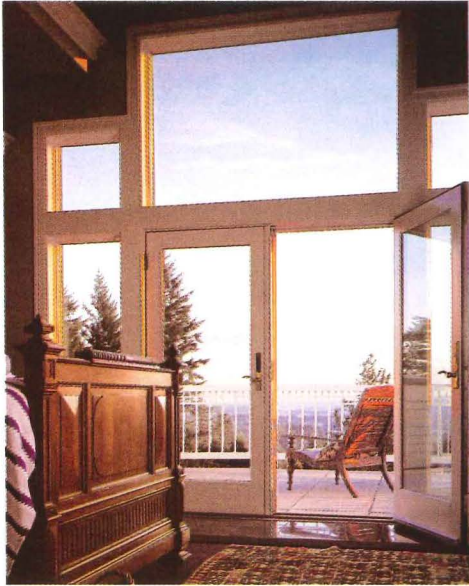
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Products Doors & Windows

► Latest low-E generation

Andersen Windows' high-performance Low-E4 glass features an exterior coating that, when activated by sunlight, helps reduce dirt buildup and water spots, and promotes faster drying. Exclusive to Andersen windows and doors, the glass will be standard on the manufacturer's 400 Series products. Low-E4 glass is on average 41 percent more energy efficient in summer and 35 percent more energy efficient in winter than standard dual-pane glass. The glass coatings can also reduce glare and cut UV light by 83 percent. A removable protective film applied to the interior and exterior sides of the glass provides additional protection against shipping and installation hazards. Andersen Windows, Bayport, Minn. www.andersenwindows.com **CIRCLE 202**



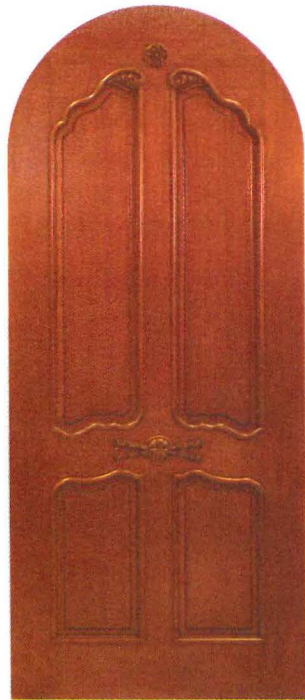
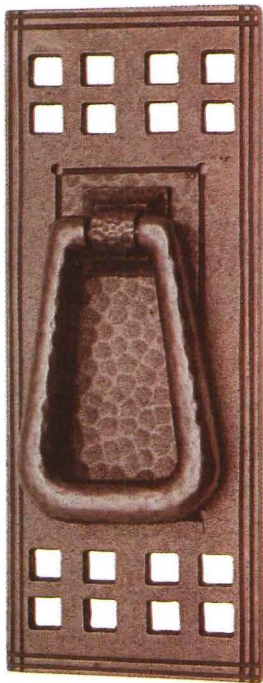
► Between-the-glass panels

Pella's new decorative panels for Designer Series windows and patio doors complement the manufacturer's line of between-the-glass window fashions. Designer Series is Pella's exclusive wood window and patio door collection that offers snap-in, snap-out blinds and shades in 25 different colors. Other enhancements to the Designer Series collection for 2006 include fabric panels and panels simulating stained glass that insert between the panes of glass, and an expanded grille offering. Pella, Pella, Iowa. www.pella.com **CIRCLE 203**



▲ Renovating our coastal treasures, one window at a time

The Jeld-Wen Reliable Lighthouse Restoration Initiative is designed to help local lighthouses that are badly in need of care and maintenance. For Jeld-Wen's first test project, the company donated and replaced the windows and entry door at the historic Umpqua River Lighthouse, located on Oregon's southern coastline. Jeld-Wen replaced the warped entry door with a custom fiberglass front door and installed 12 architecturally correct, energy-efficient, double-hung wood windows to replace the aluminum windows installed in the early 1980s. Jeld-Wen, Klamath Falls, Ore. www.jeld-wen.com **CIRCLE 204**



▲ Making his home yours

Moulding Associates and Biltmore Estate For Your Home have partnered to create a collection of wood entry doors designed to evoke the luxury of Biltmore Estate, George W. Vanderbilt's historic property in Asheville, North Carolina. The collection features the exclusive hardwood Malaga Cherry as well as an American white oak hardwood. Biltmore has also collaborated with Period Brass to offer decorative and functional hardware for door, cabinet, furniture, and bath applications in a range of motifs. Biltmore Estate For Your Home, Asheville, N.C. www.biltmore.com **CIRCLE 205**

◀ Solar power blinds

Velux now offers solar-battery-powered blinds for its fixed skylights. The new blinds offer the convenience of an electrical blind without the expense of installation by a professional electrician. The built-in solar cell converts direct or diffused light from the sun to electrical energy, which is stored in a battery with a capacity of approximately 500 operations without recharge. The blinds will be competitively priced with existing blind offerings from the manufacturer. Velux America, Greenwood, S.C. www.veluxusa.com **CIRCLE 206**



Products **Doors & Windows**

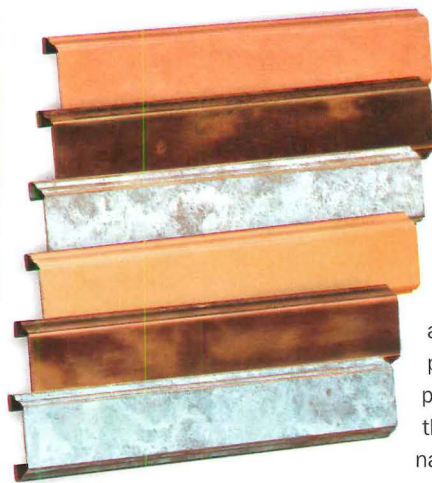
Our roundup of door and window products includes introductions seen at this year's **International Builders Show** in Orlando. At the show, luxurious options, such as copper-and-bronze-clad windows and doors, stood alongside modern conveniences, such as **solar-powered blinds**. *Rita Catinella Orrell*



Window detailing (above). Copper and bronze palette (right) ranges from Natura (unpatinated) to Verdigris (green).

Handcrafted copper- and-bronze-clad windows and doors

A radically different addition to Loewen's extensive selection of Douglas fir and mahogany offerings, the Cyprum Collection features handcrafted copper- and-bronze-clad windows and doors. Artisanal



in detail, down to the soldered exterior joints, capped sill ends, and recessed mullions, the collection is named after Aes Cyprum, the name ancient Romans gave to the copper first mined in Cyprus.

The collection, available in casement, picture/direct set, awning, speciality windows, and terrace doors, develops patinas that define the character of a home's natural locale. Environmental factors such as humidity and salinity work together with time to coat the surfaces with a distinct and ever-changing patina. A palette of custom patina finishes is available within the collection: Natura (unpatinated), Umbra (brown), and

Verdigris (green).

Nominal, .040"-thick copper and bronze is used to craft a cladding for sash and frame segments as well as for Simulated Divided Lite bars. All Cyprum Collection products are built on a Douglas fir or mahogany core, which provides natural wood window interiors. The windows are built with a triple-laminated sash that accommodates deeper cladding and glazing-stop profiles to deliver an architecturally balanced appearance. Cyprum door and entryway systems are equipped with standard multipoint hardware with stainless-steel exposed components. Loewen, Manitoba, Canada. www.loewen.com **CIRCLE 200**

Window and door prototypes have historic look and modern touches

Collections is a group of high-end window and door prototypes from Weather Shield that blend classic old-world character with fashionable hardware and eclectic finishes. Introduced at last January's International Builders Show, the windows and doors were developed on a window chassis with traditional properties and will feature a blend of assorted wood species and diverse finishes. Surprises include a push-out casement design, hide-away roll screens, and old-style hardware. The massive proportions of the stiles and rails echo the aesthetic of historic wood windows, and a solid 5¼" jamb gives the windows additional heft.

Standard putty glaze stops, interior glazing bead, and Simulated Divided Lite bars deliver the energy

efficiency of new technology while capturing the look of historic windows and true divided lites. Weather Shield has collaborated with Stone River Bronze to offer handcrafted hardware on all Collections windows and doors, with a complete product line of pulls, plates, hinges, levers, and lifts. Initial Collections window product offerings will include push-out casement, push-out French casement, awning, transom, picture, and single-hung tilt with wood jamb liner (1¼" sash). Collections' initial door offering will



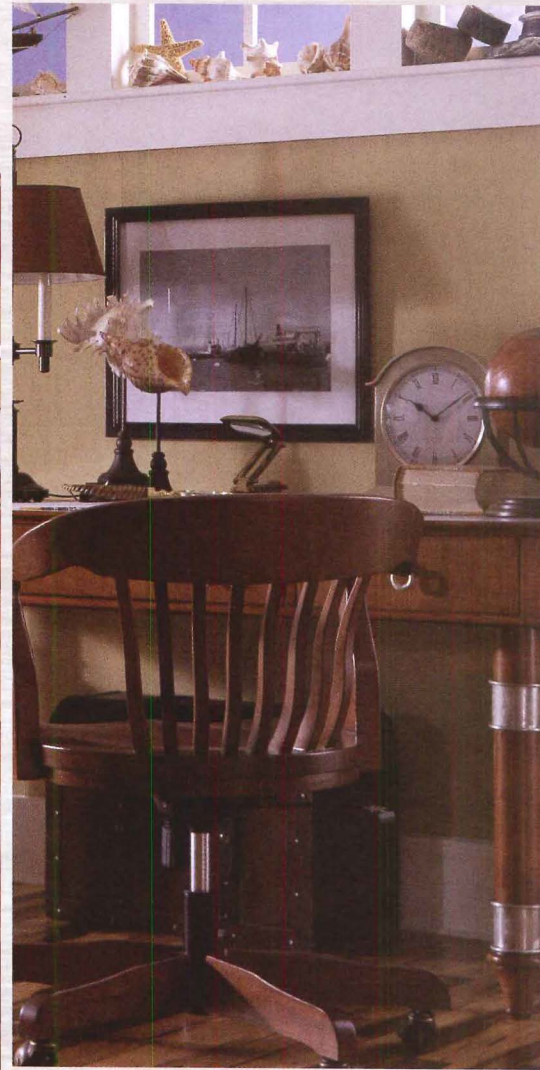
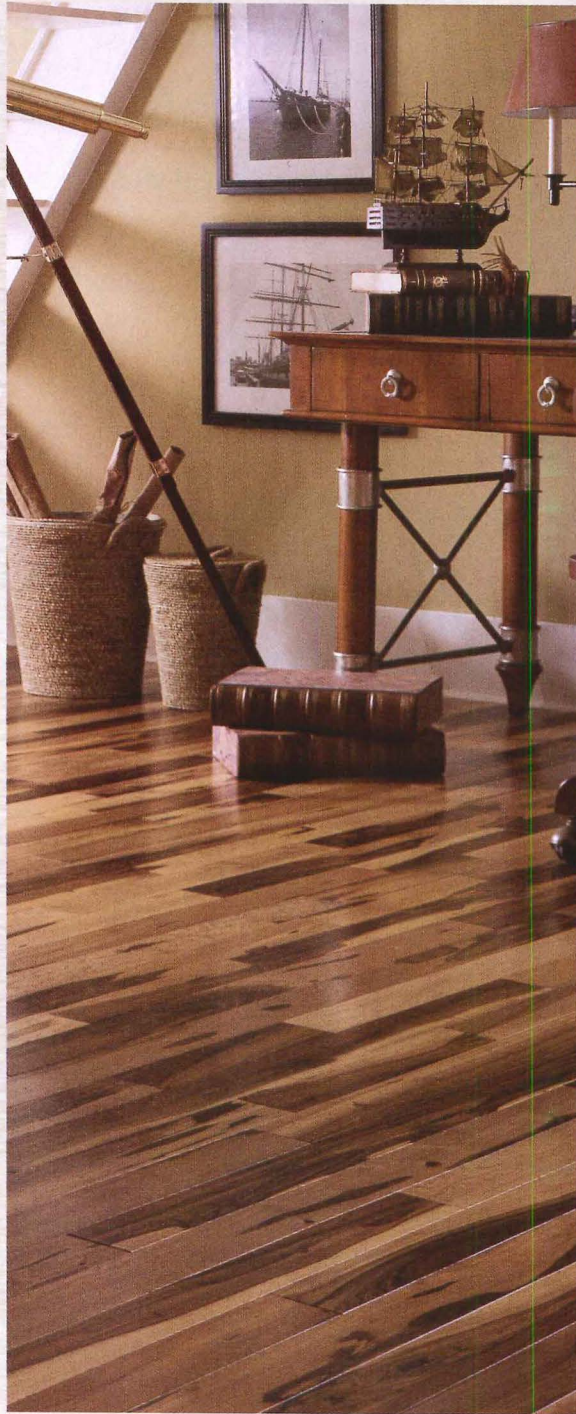
The windows will feature hinged wood screens (above) and hide-away roll screens (right).



include a French sliding door, hinged patio door, and premium entrance door. Both hinged wood screens and concealed wood screens will be available to enhance the look and

function of the new line. The collection is scheduled to be introduced in early summer 2006. Weather Shield, Medford, Wis. www.weathershield.com **CIRCLE 201**

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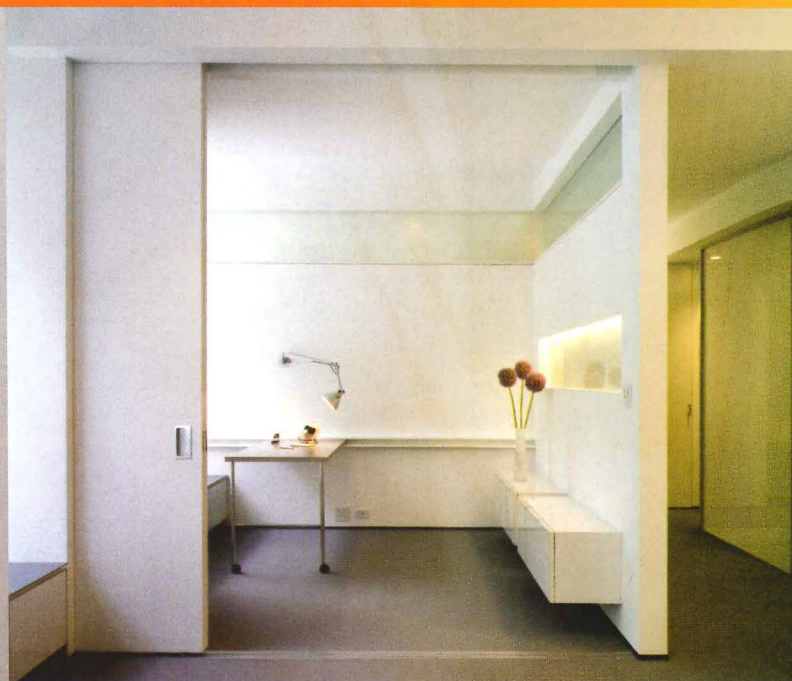
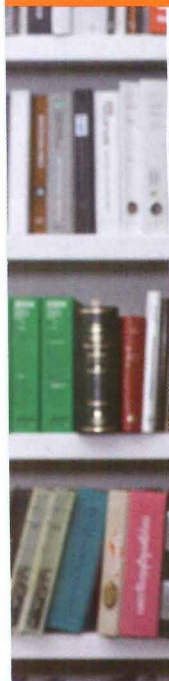
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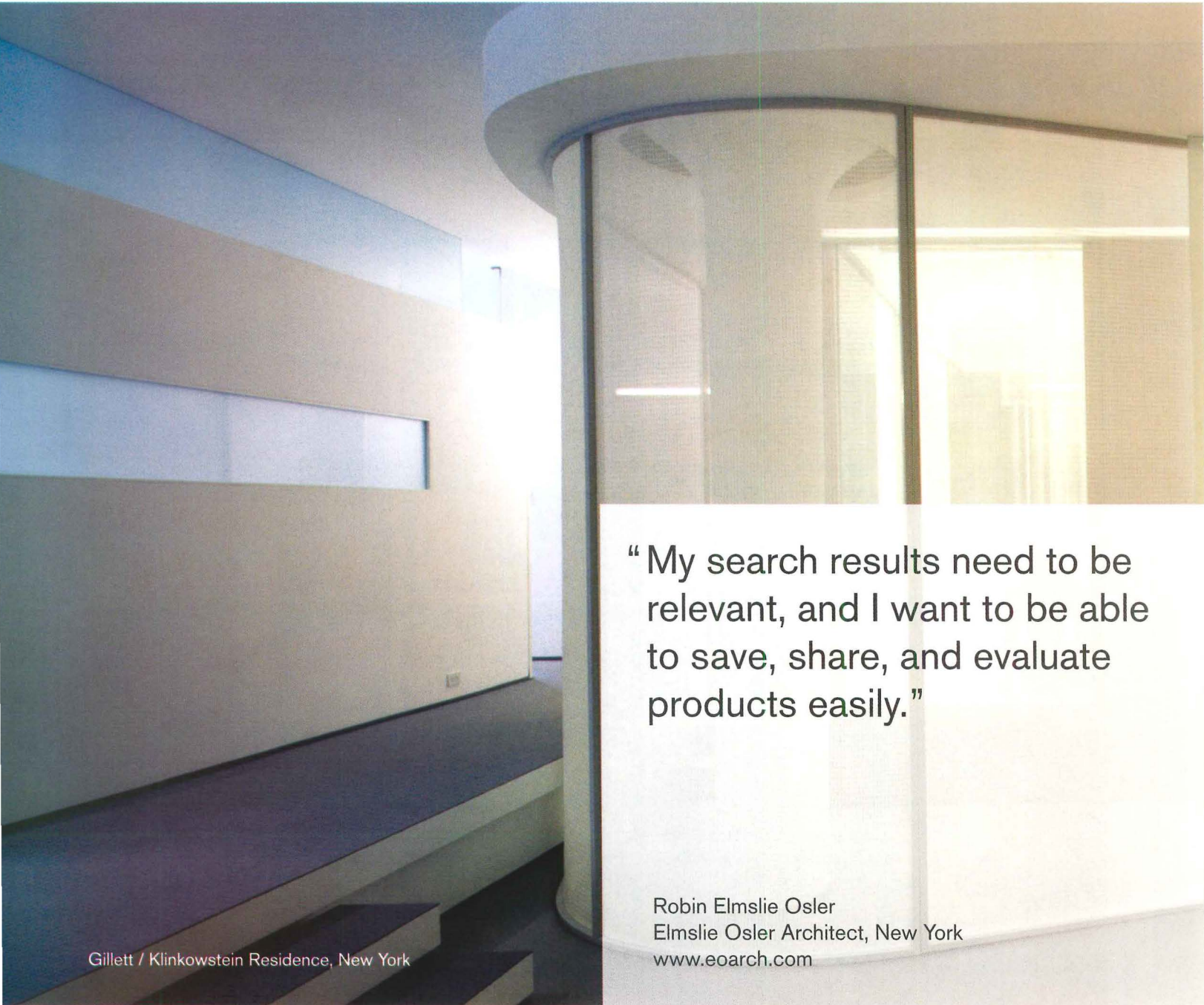
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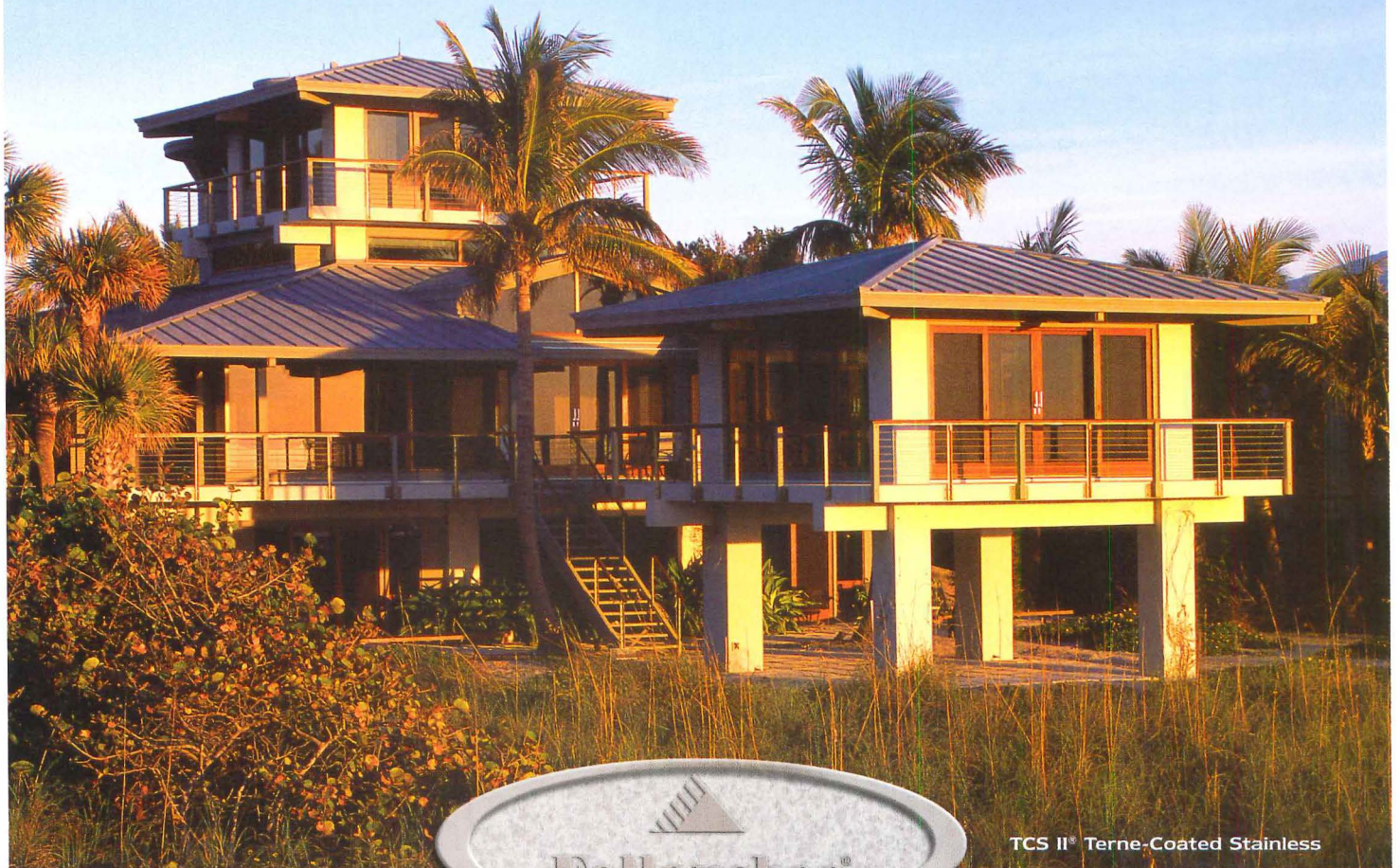
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Applying BIM to Projects

Once a firm has conducted its research and is comfortable with the tools it has in place, the best way to get started is to just do it. Experts recommend that architectural firms

carefully select projects for BIM and apply them. One litmus test in determining if a project is right for BIM is whether a firm can deliver a completed project to the owner that is cheaper, faster, better, and safer by utilizing the BIM process. ■

CLICK FOR ADDITIONAL REQUIRED READING

The article continues online at <http://archrecord.construction.com/resources/conteduc/archives/0604steel-1.asp>. To receive AIA/CES credit, you are required to read this additional text. The quiz questions below include information from this online reading. To receive a faxed or emailed copy of the material, contact Larry Flynn by e-mail at flynn@aisc.org or call (312) 670-5437.

AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION Series

LEARNING OBJECTIVES

After reading this article, you should be able to:

- Apply Building Information Modeling (BIM) to a building project.
- Understand the major benefits of BIM.
- Recognize how BIM enables an integrated project team to deliver a project that is completed faster, is less expensive, of higher quality, and safer than those developed with traditional delivery systems.
- Learn how collaborating with the structural steel industry can provide design professionals with valuable information and best practices when applying BIM to projects.

INSTRUCTIONS

Refer to the learning objectives above. Complete the questions below. Go to the self report form on page 206. Follow the reporting instructions, answer the test questions, and submit the form. Or use the Continuing Education self report form on *Record's* web site—archrecord.construction.com—to receive one AIA/CES Learning Unit including one hour of health safety welfare credit.

QUESTIONS

1. The key to reducing risk and building trust in a BIM project is:
 - a. Collaboration, integration, and communication
 - b. A good lawyer
 - c. Software
 - d. A detailed schedule
2. The most important element of BIM on which to focus is:
 - a. The software
 - b. The process
 - c. The model
 - d. The budget
3. With BIM, the project is designed and virtually constructed up front in the design phase, which allows construction to proceed more quickly in the field, reducing overall cost of a project and enabling the building to begin operation sooner.
 - a. True
 - b. False
4. The true value of BIM is realized:
 - a. During pre-planning
 - b. Upstream earlier in the design phases
 - c. Downstream in the design and construction process
 - d. After the project is completed
5. A Building Information Model:
 - a. A complete 3-D digital representation of a building system or subsystem
 - b. In most cases can replace the term 'construction documents' as it relates to building construction.
 - c. May include other BIMs.
 - d. All of the above
6. Which of the following is not a benefit of BIM for the architect:
 - a. BIM gives the architect enhanced influence over the entire life of the project.
 - b. BIM enables the architect to provide a better solution to the client.
 - c. BIM reduces the architect's risk and possibility of litigation.
 - d. BIM reduces the architect's work load and responsibility.
7. Evidence from projects constructed utilizing a BIM methodology indicates that it is possible to deliver completed projects to clients that are completed faster, are less expensive, of higher quality, and with increased project safety and reduced exposure to risk and litigation.
 - a. True
 - b. False
8. Interoperability may be defined as:
 - a. Use of software systems that are able to communicate and exchange data and information through a neutral file format.
 - b. A practice employed to evaluate the operational impacts of BIM on a firm's bottom line
 - c. A labor-saving construction technique
 - d. The cross-training of staff on CAD and BIM equipment
9. Experts agree that the best way to start working in BIM is to:
 - a. Wait until the firm has transitioned its software
 - b. Thoroughly train staff in the use of BIM tools before starting a project
 - c. Select a project and "just do it"
 - d. Begin working in BIM only after the industry as a whole has transitioned
10. The transition to BIM is not without its hurdles and requires some reallocation of:
 - a. Effort
 - b. Cost
 - c. Risk
 - d. All of the above



The American Institute of Steel Construction provides specifications and technical information that makes the design and construction of structural steel easier and more economical.

How BIM Benefits Architects

Building Information Modeling offers architects the following advantages:

- *Enhanced influence over the entire life of the project:* BIM enables architects to be the primary shaper of the built environment. Over time, architects have seen their influence upon building projects erode as project progress toward completion. BIM gives architects a greater capability to see their designs through to project completion. The BIM process gives architects the power to estimate costs in real time, keeping projects on schedule, avoiding the necessity for last-minute changes, and reducing project scope as the only means of addressing project cost overruns.
- *Providing a better solution to clients:* As the member of the building team with the earliest contact and the closest relationship with the owner, the architect has the opportunity to enhance the firm's image as an industry leader on the cutting edge of technology and industry practice. Being an experienced BIM practitioner separates a firm from the competition, giving the architect a powerful way to bring added value to the owner and their project. Architects can demonstrate to owners how BIM can be implemented to reduce project costs, shorten project schedules, increase project quality, and improve safety through information sharing, emphasis on front-loaded design and virtual building, and off-site fabrication of building components. One of the maxims in the construction world is that a project owner may ask for cheaper, faster and better, but will only be able to get two of the three. The evidence from projects constructed utilizing a BIM methodology indicates that it is possible to deliver completed projects that are completed faster, are less expensive, of higher quality, and with increased project safety, and reduced exposure to risk and litigation.
- *Increased profitability:* Early collaboration with the structural engineer, steel team, MEP consultants and other specialty contractors leads to more accurate and complete drawings the first time, as well as efficient resolution of RFIs, and fewer RFIs later in the project. This saves time and money for the architect in that the project proceeds more efficiently and quickly to completion, allowing the firm to handle more projects. Fewer, if any, change orders means a reduction in the cost of those changes and delays attributed to the architect.
- *Reduced risk and possibility of litigation:* The integration of the entire design team through the use of 3-D computer-aided design and construction technology nurtures cooperation, trust, and team building, which reduces risk instead of increases it. Interferences are identified and resolved earlier on in the design process, reducing the number of issues that arise late in the project and lessening the likelihood of litigation. With BIM, it can truly be said that before construction begins, an as-built model of the project exists.
- *Preservation and growth of the practice:* BIM is an important innovation and trend for the building design and construction industry, and is increasingly applied to large-scale, complex projects. Most industry experts predict that in 10 years, 3-D-integrated BIM will be the principal method in which the built environment is designed and constructed. Architects have the opportunity to step forward, engage the process, and assume more responsibility for their building designs. As much as a technological change, the transition to BIM is a cultural change, requiring a rethinking of how the design and construction process can and should work.

costs, firms such as SmithGroup are selecting a software purchasing option called a "crossgrade," which allows a firm to migrate a software license from one software vendor's product to another of its products. This also allows a firm to continue to receive upgrades for both products, says Thoman.

Transitioning a firm can be a complex and challenging process, especially for large, multi-office firms with multiple disciplines. Some suggestions include:

- Consider forming a team comprised of individuals from the different offices and disciplines within the firm, and possibly an outside non-vendor consultant to evaluate the firm's needs, and to develop a perspective on BIM in the industry.
- Appoint one individual at the firm to champion the transition and coordinate the overall process.
- Consider conducting tours of the firm's offices with upper management to explore how to accelerate implementation of BIM. SmithGroup is implementing this practice.
- Conduct just-in-time training of staff on BIM tools in conjunction with actual building projects. SmithGroup, SOM, Ghafari Associates, and others agree that this is the most effective training method. Abstract training won't do, says SOM's Galioto.
- Be proactive about implementing the BIM tools that will prepare the firm to move forward on a project. Care must be taken not to overcommit to a solution until there is a clear understanding of the desired workflow for the trial project. Ideally, the project should be one for a repeat client with whom the firm has a positive, open relationship. The client should be part of the transition process, recognizing the benefits that can accrue, while being aware of the challenges that can often occur on pilot projects.

Enter the transition with a proactive mindset:

- Perform due diligence by conducting research, reading industry reports, white papers, and publications.
- Attend meetings and conferences where BIM is on the agenda.
- Communicate with peer firms to learn about their approach to the transition.
- Seek information and advice from industry professionals who have had success with 3-D modeling and integration to lower costs and shorten project schedules for owners, such as steel industry detailers, fabricators, and structural engineers.
- Use software vendors as information resources and providers of training.
- When using out-of-the-box BIM software, consider developing and writing guidelines for project teams, which will be using the technology, so elements such as title boxes and pull downs will automatically be there for them, as is the case with technology that meets the present CAD standard.



Rendering credit: Putnam, Collins, Scott Associates

With the steel team utilizing a design-build framework and 3-D modeling, delivery of the structural steel for Mt. Tahoma High School, Tacoma, Wash., designed by BLRB Architects, Tacoma, cut the construction schedule by three months.

engine plant, the Denver Art Museum expansion, and many others, are overcoming these barriers through the collaborative efforts of structural engineers and steel fabricators using 3-D modeling as a common design and construction vehicle. The transition to this process has not been easy, requiring a redefinition of the design and construction process.

Architects Making the Transition

Architects and architectural firms are beginning the process of transitioning from existing CAD environments to BIM, utilizing 3-D computer-aided design and construction, training staff, and applying BIM successfully on projects, as part of integrated design and construction teams. For that transition to be effective, BIM must be clearly understood in terms of its benefits, technology, and implementation.

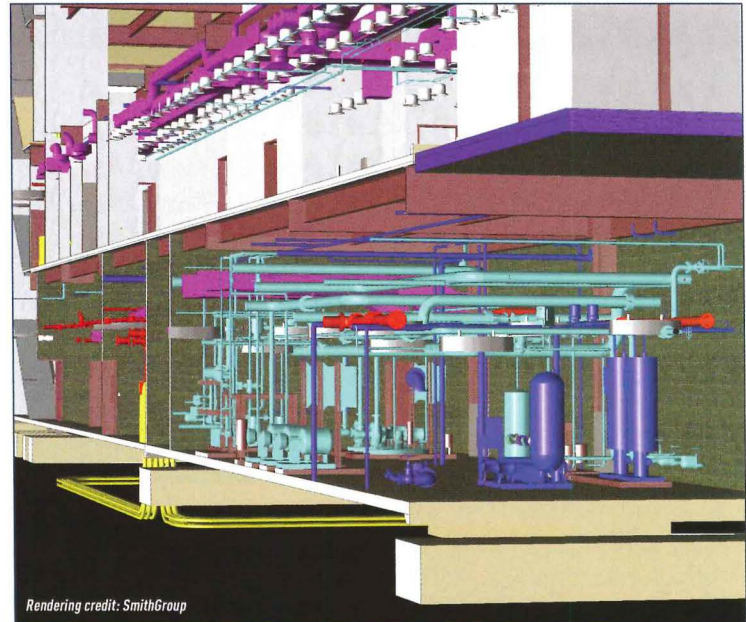
Just as the success of CAD in transitioning building design from the drafting table to the computer required a cultural shift for the entire building design and construction industry, the transition from CAD to BIM tools and processes will require a similar shift as well. Internally, firms need to evaluate how this transition will affect their in-house technology, staff, and their ability to fund and support the transition. Externally, the firm must seek out appropriate projects and partners that they believe lend themselves to the BIM process and move forward.

"BIM will change the distribution of labor in the design phases. When done correctly, the labor is front-loaded earlier in the design process, during the schematic and design development phases, and less in construction documents." -- Carl Galioto, FAIA, partner, Skidmore, Owings & Merrill (SOM), New York.

SOM and Detroit's SmithGroup are two large, multi-office A/E firms making the transition to BIM. SOM's New York office is using 3-D modeling on a number of projects, including New York's Freedom Tower. "We're looking at BIM as being a complete database, as opposed to just 3-D information," says SOM's Galioto. The firm is using the model to arrive at and optimize intelligent solutions, test applications and simulations, such as thermal, daylight, glare, and computational fluid dynamics—the use of technology to study things that flow—for heating, ventilating, and air-conditioning. The firm also is using BIM for collision detection, points in the 3-D model that illustrate where the building's structure and MEP ducts, piping, and equipment improperly intersect with one another.

The next step for SOM is interoperability, the exportation of data and information via the 3-D model, as opposed to producing traditional 2-D drawings. The firm is working with curtain wall manufacturers on this process. "Interoperability is the challenge," Galioto says. "We are spending a lot of time finding ways to get the software to work together. It all comes down to the integration of multiple models. The structural steel industry is ahead of the curve on this."

The goal of SmithGroup, a firm with 800 architects, is to be modeling all of its projects in 3-D in 2006. The firm has implemented BIM on a number of key pilot projects throughout the United States, including a corporate pharmaceutical lab facility in the Detroit area, the new headquarters of general contractor Sundt Construction in Tempe, Ariz., and an expansion of Comer Children's Hospital in Chicago. The Comer project, due to be completed in Spring 2006, is the Chicago office's ninth BIM project, the first to integrate the architecture with the structural steel frame and the mechanical and electrical systems. "BIM is so important for where we're going," says principal Jens Mammen, leader of the Chicago office's BIM transition. "Strategically, BIM is on the verge of revolutionizing how we deliver our projects. We don't draw buildings any more, we build buildings."



Rendering credit: SmithGroup

In the design of Chicago's Comer Children's Hospital expansion, A/E firm SmithGroup integrated the architectural design with the structural steel frame and mechanical and electrical systems.

The true value of an integrated BIM project is realized downstream, during the design and construction process. Collision detection and coordination of the project with design and construction team members is where BIM benefits the SmithGroup financially and saves costs on the project, says Mammen. "Fifty percent of coordination is about the 2-D drawing itself," he says. "With the 3-D model, the project is so well coordinated and built so quickly that we're receiving very few questions from the field, especially during the bidding process."

On the Comer project, the firm received only six RFIs in the bidding process, an astoundingly low number compared to the hundreds that would typically be received. For Mammen, the benefits attainable through BIM are too great to ignore: "I can't foresee ever going back to the 2-D world."

Transitioning the Practice

The success of CAD over the last 30 years has resulted in most design firms being so firmly entrenched in the technology that it can create a barrier to the transition to BIM, says SmithGroup principal Rick Thoman, AIA, IT manager in the firm's San Francisco office. But SOM's Galioto says architects will welcome the transition: "By switching to the model, our people say that they feel more like architects because they are working in three dimensions."

Transition to BIM will require research, information gathering, and financial backing of the firm's leadership. Unlike the early days of CAD, when a junior staff member or draftsman could be placed in front of an early generation PC, given an early version of a CAD package and be told to figure out a "better, faster way to draw," the transition to BIM will require commitment from senior staff members intimately involved with design decisions and processes.

The transition to BIM will require an investment of capital and resources from firms, demanding strong commitment from the firm's management over an extended period of time. In 2006, the typical cost of a BIM application can range between \$5,000 and \$6,000 or more, but this is only a small portion of the cost. Annual maintenance subscriptions fees, consulting fees, training, current generation hardware, and climbing the learning curve will cost much more than the cost of the software. To ease the transition while holding down



Photo credit: Structural Consultants Inc. Design
Architect: Studio Daniel Libeskind

3-D modeling and team integration enabled steel erection of the Denver Art Museum expansion to be completed two months ahead of schedule.



Photo credit: Miller Hare

The 3-D visualization model used on the Denver Art Museum expansion by local architect Davis Partnership, Studio Daniel Libeskind's joint venture design partner, became a BIM model during the project.

"BIM will change the distribution of labor in the design phases," says Carl Galieto, FAIA, partner, Skidmore, Owings & Merrill (SOM), New York. "When done correctly, the labor is front-loaded earlier in the design process, during the schematic and design development phases, and less in construction documents."

Steel Industry: A Model for Success

While most architects and other members of the building team are only beginning to apply BIM to projects, the structural steel industry is using 3-D modeling and interoperability—the use of software systems that are able to communicate and exchange data and information through a neutral file format—to integrate the design and construction process and speed the delivery of the structural steel package. Structural engineers are collaborating with steel detailers, fabricators, and erectors to share and exchange 3-D model information to create detailed designs for steel-framed buildings with tight tolerances. On numerous projects, this allowed mill orders to be placed earlier and steel to be delivered and erected on site more quickly, with few, if any field changes required. Fewer field changes enable the steel teams to provide a quality product, with less waste, and greater safety.

Using BIM on General Motors' new \$300-million V6 engine plant in Flint, Mich., enabled the steel mill order to be placed eight weeks earlier than typically would be possible and steel erection began eight days early, says Lawrence F. Kruth, P.E., engineering and safety manager for Douglas Steel Fabricating Corp., Lansing, Mich. Construction of the plant was completed five weeks ahead of schedule with no change orders, says Samir Emdanat, manager of advanced technologies for the architectural/engineering firm Ghafari Associates, Dearborn, Mich. BIM enabled the project's integrated building team to shave 24 weeks off what typically would have been an 85-week design and construction schedule. In benchmarking previous projects, GM estimates that three to five percent of total construction costs would have been saved by implementing BIM on those projects, according to Laird Landis, GM's senior technological engineer.

Modeling the steel and mechanical, electrical, and plumbing (MEP) with tight tolerances meant that the steel frame, sheet metal, and piping all fit into place in the field like an erector set, reducing construction waste. Less waste and field work resulted in a safer construction site, with only one injury recorded on the project, which was unrelated to construction activity.

In Denver, the need to understand, document, and coordinate the complex design by Studio Daniel Libeskind for the Denver Art Museum expansion, scheduled to open in Fall 2006, dictated sharing of the 3-D model between Denver architect Davis Partnership and the project's structural engineer, steel connection designer, and steel delivery team. "It's difficult to believe the project could have been done without BIM," says Davis Partnership's Maria Cole, AIA. Working with general contractor M.A. Mortenson, the integrated design-build steel team completed the project's steel erection two months ahead of schedule, after starting the design process two months behind schedule and returning \$400,000 to the owner in the process.

Championing a Better Way

The structural steel industry has championed the use of 3-D modeling and the value of a vendor independent suite of interoperable design and fabrication programs since 2001. Those efforts have paid major dividends for steel-framed projects in bringing many of the promised benefits of BIM to the structural framing system segment of projects. The lessons learned by the structural steel industry can be utilized to form a roadmap for design professionals moving toward BIM implementation in their practices.

The structural steel industry recognized that errors made in producing, interpreting and integrating 2-D construction documents were plaguing the construction industry at a time when owners were demanding that projects be completed in less time, while staying on or coming in under budget. Complicating the issue was the continuing pressure being placed on architects and engineers to reduce fees and accelerate schedules. The end result was a decline in the quality of construction documents resulting in an avalanche of requests for information (RFIs) and change orders. This resulted in the stifling of innovative design, increased risk, escalated costs and extended schedules—the exact opposite of the desire of the project owner. The inability of design and construction team members to communicate and exchange data clearly and efficiently through the use of CAD-based technology created an environment that fostered adversarial relationships instead of collaboration and invited litigation. Selected structural steel projects, such as GM's

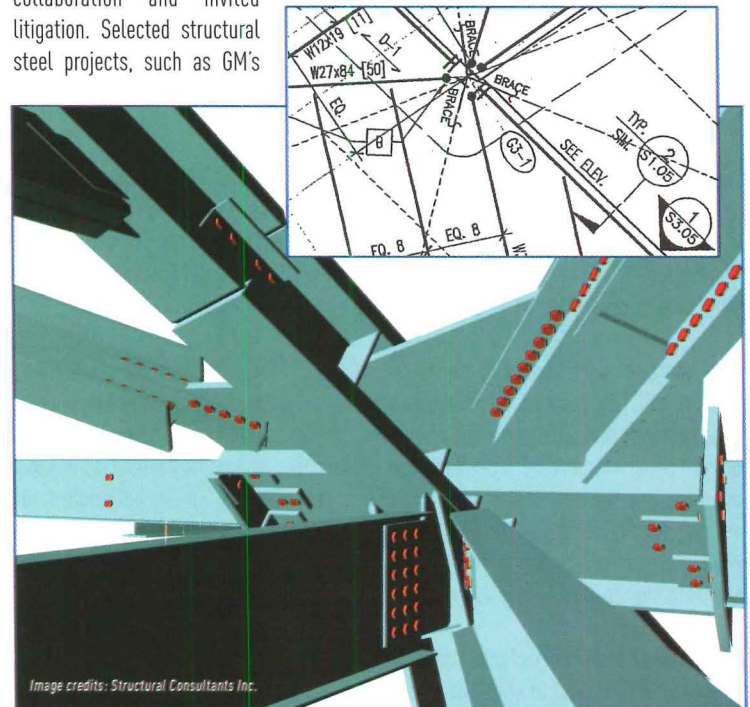


Image credits: Structural Consultants Inc.

A comparison of a 2-D drawing and a 3-D model of a typical steel connection on the Denver Art Museum expansion illustrates how much easier it is to visualize complex objects using 3-D modeling.

Getting on Board

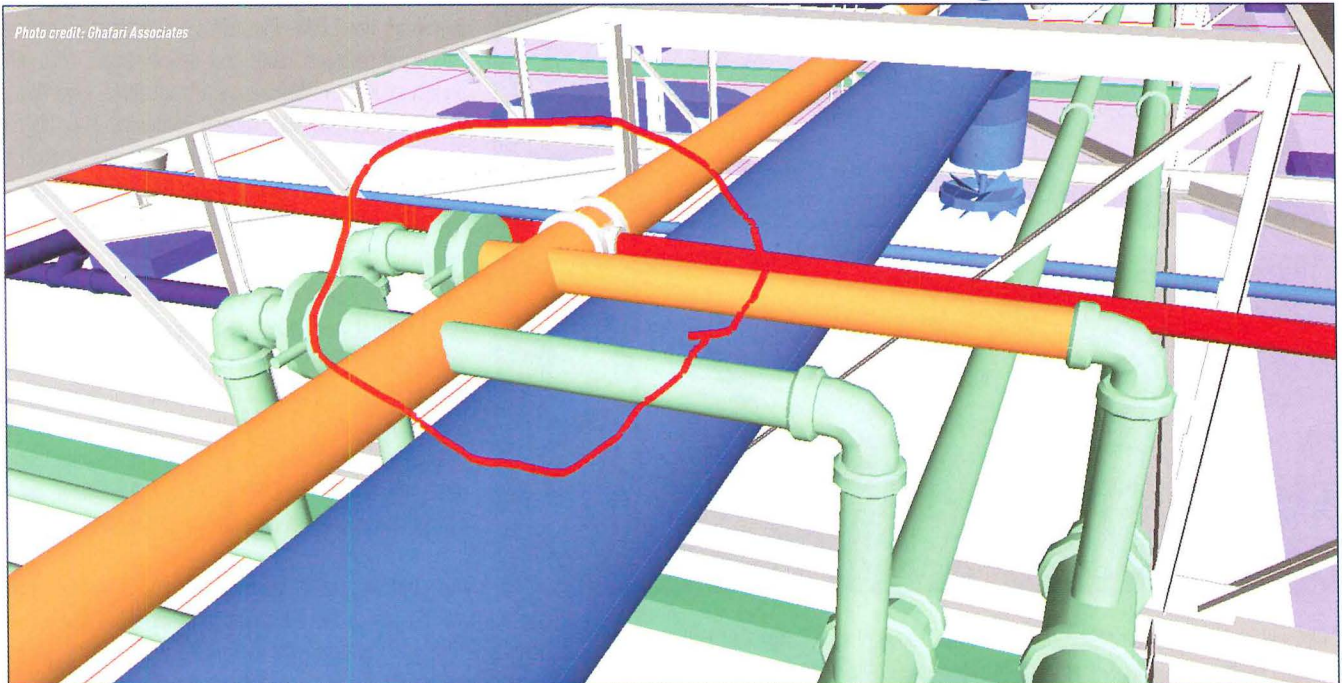


Photo credit: Ghafari Associates

The 3-D model of General Motors' new engine plant allowed A/E firm Ghafari Associates and design team members to digitally detect and correct interferences between building components early in design.

with Building Information Modeling

Using 3-D modeling to integrate the design and construction process

"If you want to survive, you're going to change; if you don't you're going to perish,"

- 2005 Pritzker Prize Laureate, Thom Mayne, FAIA, referring to Building Information Modeling at the 2005 AIA Convention

Provided by American Institute of Steel Construction

By Larry Flynn

Architects are increasingly adopting Building Information Modeling (BIM) as standard practice, and rising to the challenge of "change or perish." The sentiment echoing throughout the building design and construction industry is that the days of two-dimensional (2-D) drawing are numbered. BIM allows for more collaborative, integrated design-construction teams that provide value to owners and design professionals.

Like computer-aided design (CAD) in the 1970's, BIM—the process of using three-dimensional (3-D) modeling technology for creating, communicating, and reviewing building information—is the next step in the evolution of the design and construction process. BIM offers a better way of delivering projects in a collaborative and less fragmented fashion that blurs the line between design and construction. With BIM, the project is designed and virtually constructed during the design phase, which allows construction to proceed more quickly in the field, reducing overall project costs, and enabling the building to begin operation sooner. The result is a benefit to owners, and the project team.

"BIM is about sharing better information, earlier in the process, and broadly," says Daniel Friedman, FAIA, director of school of architecture, University of Illinois at Chicago. He says BIM holds the potential for immediate quantity surveys, identification of conflicts and omissions, fewer change orders, project delays, and cost overruns, and more clearly defined and shared accountability, risk, and reward.

CONTINUING EDUCATION



Use the learning objectives below to focus your study as you read **Getting on Board with Building Information Modeling**.

To earn one AIA/CES Learning Unit, including one hour of health safety welfare credit, answer the questions on page 167, then follow the reporting instructions on page 206 or go to the Continuing Education section on archrecord.construction.com and follow the reporting instructions.

LEARNING OBJECTIVES

After reading this article, you should be able to:

- Apply Building Information Modeling (BIM) to a building project.
- Understand the major benefits of BIM.
- Recognize how BIM enables an integrated project team to deliver a project that is completed faster, is less expensive, of higher quality, and safer than those developed with traditional delivery systems.
- Learn how collaborating with the structural steel industry can provide design professionals with valuable information and best practices when applying BIM to projects.

ON INTEROPERABILITY

CONSTRUCTABILITY "When doing the pricing on a recent project, Douglas Steel Fabricating Corporation asked us to review the job to enhance constructability. It was a community college project that originally called for fully welded moment connections and knee-braced frames. The number of pieces and amount of field welding made the project uneconomical. Douglas Steel sent us the original design documents. We put together an alternative design that satisfied the intents of the owner and architect. We then transferred our CIS/2-

DAVID I. RUBY, P.E., S.E., Structural Engineer. Principal, Ruby & Associates P.C., in Farmington Hills, Michigan. Specializing in steel designs that speed and ease constructability. Recently consulted on a community college project where his design and use of Interoperability resulted in a hyper-fast and efficient design—and a six-figure rebate from the fabricator to the school.



compliant model back to Douglas Steel, enabling them to process the model in SDS/2 so they could bid both the original and alternative designs on time. Without CIS/2 Interoperability — or what used to be called Electronic Data Interchange — we couldn't have turned it around fast enough to keep the job on schedule."

VALUE "The architect's drawings, the site constraints, points of access, equipment — there are so many different things to consider to come up with the most economical product that meets a client's needs. A lot of people talk about value engineering. What that really means is examining a set of decisions that have already been made, and going from there. You're talking inside the envelope. But when you design for constructability and value, outside-the-envelope thinking leads to things like speed to market and achieving budgets. CIS/2 Interoperability is a tool that lets us think like this."

EFFICIENCY "For the community college, the floor beams were spaced at about 3-foot, center-to-center, with a very light metal deck and a reasonably thin slab. As a rough count, we eliminated over 700 members, as well as 11,000 shear studs from the floor system and it was designed so everything could be field bolted. We ended up with a metal deck system and a thicker slab that added a little dead load to the structure, but increased the strength of the composite beams. Basically, we made it easier to build, stronger and much more economical. Plus, we stayed on schedule because the design only took four days thanks to CIS/2 Interoperability."

PERSPECTIVE "Working with Fazlur Khan to design the Hancock Building early in my career gave me a different feel for construction. One thing about the Hancock: The steel out-raced concrete to the roof. In fact, steel was 25 floors ahead at one point! We even had to design temporary braces to keep the structure together because we were so far ahead. Faz was such a great concept engineer. I learned you can't just look at a building as a design — it has to be built too! Piece by piece, stability is an issue during construction. But once it's done, the issue goes away and you let the building act as it should."

COMMUNICATION "The advantage of Interoperability is speed through the elimination of paperwork and many layers of communication."

Typically, a detailer would verbalize a problem to the fabricator who would submit a request for information to the contractor who'd send it to the architect. A response from the structural engineer would be communicated through the contractor to the fabricator and ultimately, back to the detailer. And many times the detailer would respond, 'That's not the question I asked.' This happens time and time again when you're trying to explain a three-dimensional problem in 50 words or less. CIS/2 Interoperability means the pertinent decision-makers — the engineer, detailer and fabricator — can look at the model in real-time, discuss the problem and collaborate on a solution. Better, faster communication is the value of Interoperability."

INTERACTION "With Interoperability, I work with the fabricator and detailer directly. We receive their files over the Internet, pull them into our system, make comments and send them back in just a couple of hours. This saves a tremendous amount of time and keeps us on schedule. Let's say there's a connection issue, or perhaps the fabricator has a question. We're not waiting because the drawings are in the mail. They just send us their three-dimensional models, and we solve the problem today. That's what Interoperability is all about."

UNIVERSAL "The files a fabricator works on are generated from the RAM model we send them. So when they pull our models into the system for detailing, they have the most current designs. There is less paperwork to keep track of and that's a significant advantage. If I send files at noon, by 3 o'clock the fabricator has his bill of materials. Manually, this process took a week. And we're not talking just 40 hours — but two or three people putting in 40 hours to pull that all together. Those extra hours are an expense completely eliminated due to Interoperability."

INTEROPERABILITY "The primary reason for Interoperability is to integrate design and construction processes by eliminating the need for manual re-entry of data. The advantage for steel is that the CIS/2 standard enables compliant software—Tekla, SDS/2, Bentley, RAM, FabTrol and others—to exchange data electronically with accuracy and speed. In fact, CIS/2 makes most structural steel design, detailing and manufacturing applications interoperable."

STEEL "Steel already gave us a much quicker delivery time. And that's now clearly enhanced by CIS/2 Interoperability. Steel lets me build a structure that can be modified, easily reinforced, adapted to another use and has overall economy from start to finish. Unless you're building sidewalks, there's never a reason not to use steel."



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INTEROPERABILITY is the ability to manage and communicate electronic product and project data between collaborating firms. It allows the exchange and management of electronic information, where individuals and systems are able to identify, access, and integrate information across multiple systems. The goal of interoperability is to create greater efficiencies by eliminating the manual reentry of data, duplication of business functions, and the continued reliance on paper-based information management systems. The steel design and construction industry uses the CIMSteel (CIS/2) neutral file format to enable interoperability.

New Fire Resistance Design Manual

The Gypsum Association's technical and building code committees are nearing completion of their work on the 18th edition of the Association's flagship publication, GA-600, Fire Resistance Design

Manual. The new edition is scheduled for release in June, at which time it can be obtained through the Association's website at www.gypsum.org.

GA-600 is referenced in several building codes and is a "must have" reference document for architects and specifiers. The new manual also provides users with the latest compilation of tested gypsum board fire-rated and sound control systems that are permitted for use by model building codes.

The 158-page 18th edition of GA-600 contains 41 new designs, including several double steel-stud wall designs, and an expanded section on roof-ceiling systems.

The revision process for each new edition of GA-600 incorporates a thorough review of the explanatory information that accompanies the tested systems. The reference information for the 18th edition has been completely reviewed by the Association's technical committees and staff and has been updated to incorporate the most current information relating to fire and sound tested gypsum board systems.

Watch for an order form for the 18th edition of GA-600, Fire Resistance Design Manual in the next issue of Gypsum Nexus or check the Association website at www.gypsum.org regularly for an announcement publicizing its release.



GYPSUM ASSOCIATION

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ASTM Publishes Standard Classification for Abuse-Resistant Gypsum Panel Products



ASTM International recently published *C 1629/C 1629 Standard Classification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels*.

Although abuse-resistant gypsum panel products have been available for a number of years, there have been no standardized methods for comparing the abuse resistance properties of different panel products. This new standard now provides producers and specifiers with a means to compare the relative abuse resistance of interior gypsum panel products and fiber-reinforced cement panels using four test methods.

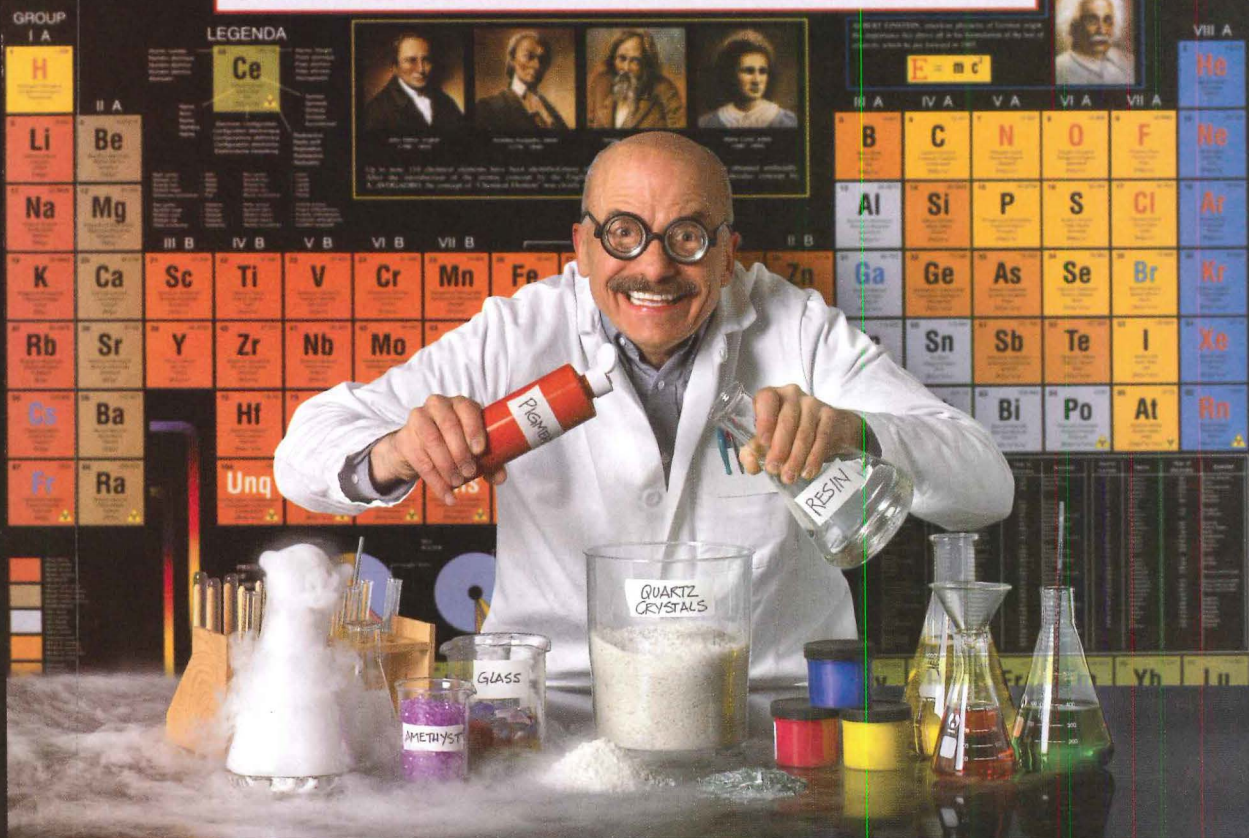
Three existing test methods (*ASTM D 4977 Test Method For Granule Adhesion to Mineral Surfaced Roofing by Abrasion; ASTM D 5420 Test Method for Impact Resistance of Flat, Rigid Plastic Specimen by Means of a Striker Impacted by a Falling Weight; and ASTM E 695 Test Method of Measuring Relative Resistance of Wall, Floor and Roof Construction to Impact Loading*) have been modified from their originally intended uses for the testing of abuse-resistant panels per the instructions in the standard. In addition, a new test method, the *Hard Body Impact Test*, has been developed specifically for the standard. Any combination of the four tests may be used to collect the data necessary to compare wall panel products for abuse resistance.

Four tables are provided in the standard to determine the abuse resistance classifications of panel products. Each table references a specific test method and provides three ranges or classification levels of abuse resistance: level 1 is the lowest classification for a specific property and level 3 is the highest classification.

The standard's annex contains complete instructions for conducting a hard body impact test, including instructions for assembling the test apparatus and formulae for calculating the impact energy created by the testing apparatus.

Copies of the standard may be purchased from ASTM International, 100 Bar Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959. Phone: (610) 832-9585 Fax: (610) 832-9555 Website: www.astm.org

PERIODIC TABLE OF THE ELEMENTS



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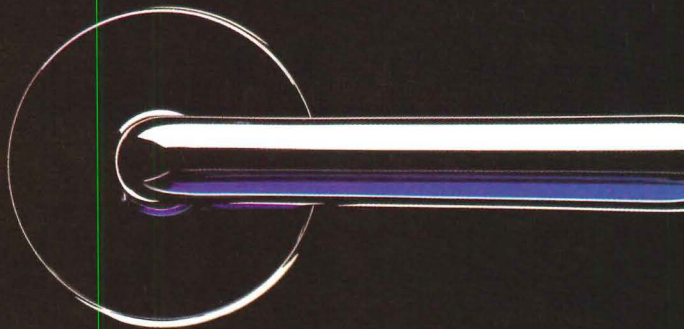
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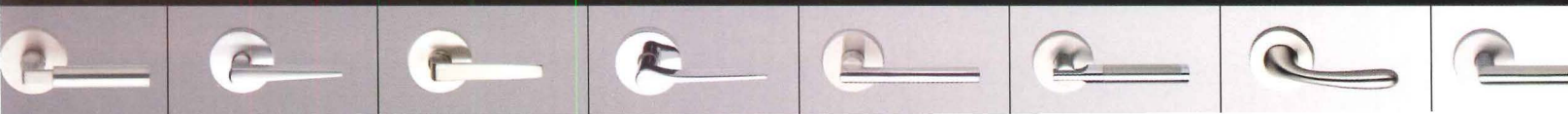
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resolved through the mock-ups.” Even with extensive reviews and site visits for the customized, kinetic countenance, the project penciled out at \$165 per square foot, including finished interiors and design fees—about the same as an average office building. The building’s small facade area in relation to its floor plate accounts in part for the cost-effectiveness. Energy savings are projected at about 40 percent. Getov’s advice for architects interested in the process seems counterintuitive. “The small manufacturers can be the most helpful because they don’t already have a set solution in place,” affording architects more conceptual control and collaboration, he explains. “It allows you to break down the process.”

Omniscient control, or edge monkeys?

Beyond two ways to build a wall, the Morphosis projects also suggest two ways to make walls smart: independent control or centralized control. A project at Cooper Union in New York will integrate all facade operations into the building automation system (BAS), whereas Caltrans has independent (although Internet-accessible) envelope controls and a common override function only for emergencies, such as high winds.

Recent thinking on active envelopes mirrors that for m/e/p design generally: avoid complexity and, therefore, very integrated schemes. Some projects, such as Arup’s Plantation Place, have explored highly localized automation. There, sensors mounted on the inner facade detect solar conditions for each tenant zone. Solar blinds in specified areas

raise or lower autonomously, depending on the local temperature, sun strike, and occupant preferences. Natural ventilation rates are determined locally as well. Like the robotic edge monkeys, however, such islands of control need occasional global guidance—and the will to ignore the people they serve. “You can’t rely on human input,” says Arfon Davies, an associate with Arup Lighting in London. “And if automatic shading controls are independent from the BAS, they should still be able to send a signal to the BAS to indicate a fault.”

Davies adds that even the most automated systems should have a local override. More important, says LBNL’s Lee, “Windows are very much a personal item, and having that control taken away from you can be a pain. You have to have manual override.” Taking a related tack, Gould Evans chose to split the control of interior blinds for Biodesign Institute. Above 8 feet from each floor, the shading is fully automated based on solar position; below that, occupants choose. “These systems begin to have a determinist impact on the psychology of the user,” says Gould Evans principal Jay Silverberg. Is any optimism warranted for a new wave of smart buildings? “Architectural environments will be increasingly smart and responsive and capable of complex behaviors,” predicts Michael Fox, the Venice, California–based architect and robotics expert. “Designing interactive architectural systems is not inventing, but appreciating and marshaling the technology that exists and extrapolating it to suit an architectural vision.”

Edge monkeys, indeed. ■



AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION

INSTRUCTIONS

- ◆ Read the article “Robo Buildings: Pursuing the Interactive Envelope” using the learning objectives provided.
- ◆ Complete the questions below, then fill in your answers (page 204).
- ◆ Fill out and submit the AIA/CES education reporting form (page 204) or download the form at www.archrecord.com to receive one AIA learning unit.

QUESTIONS

1. Where did double-glass or interactive-envelope buildings first appear in the early 1980s?
 - a. Germany
 - b. Austria
 - c. England
 - d. New York
2. The driving forces for interactive envelopes are all except which?
 - a. occupant satisfaction
 - b. sustainability
 - c. value engineering
 - d. stringent energy codes
3. The conventional application responsible for the fervent support of interactive envelopes by designers is which?
 - a. fresh-air ventilation
 - b. daylighting control
 - c. thermal-mass cooling
 - d. radiant cooling
4. Adoption of high-tech envelopes has been slow because architects worry about which?
 - a. operable components being stripped off buildings
 - b. stringent energy codes
 - c. sustainability
 - d. the novelty of the idea
5. The drawbacks to using interactive envelopes include all except which?
 - a. high installed costs
 - b. mismatched warranties
 - c. occupant satisfaction
 - d. famous failures
6. The typical energy profile of large commercial buildings shows what amount of the cooling load is needed to counteract the heat gain from lighting and sun?
 - a. one fourth
 - b. one third
 - c. one half
 - d. two thirds
7. Smart windows consist of which?
 - a. photosensors
 - b. dimmable lighting controls
 - c. switchable glazings
 - d. solar-tracking devices
8. The energy draw of conventional fixed blinds is beat by up to 52 percent in summer by which?
 - a. automated daylight setups
 - b. dimmable electric lighting
 - c. switchable electric lighting
 - d. a combination of all three
9. The European use of the term “active facade” describes which?
 - a. primary space conditioners
 - b. any ventilated double wall
 - c. edge monkeys
 - d. hoppers, vents, and shades
10. According to Morphosis’s Pavel Getov, small manufacturers can be the most helpful to architects contemplating the robotics process for which reason?
 - a. they will cost less
 - b. they have more experience
 - c. they do not have a set method in place
 - d. they will exert more control



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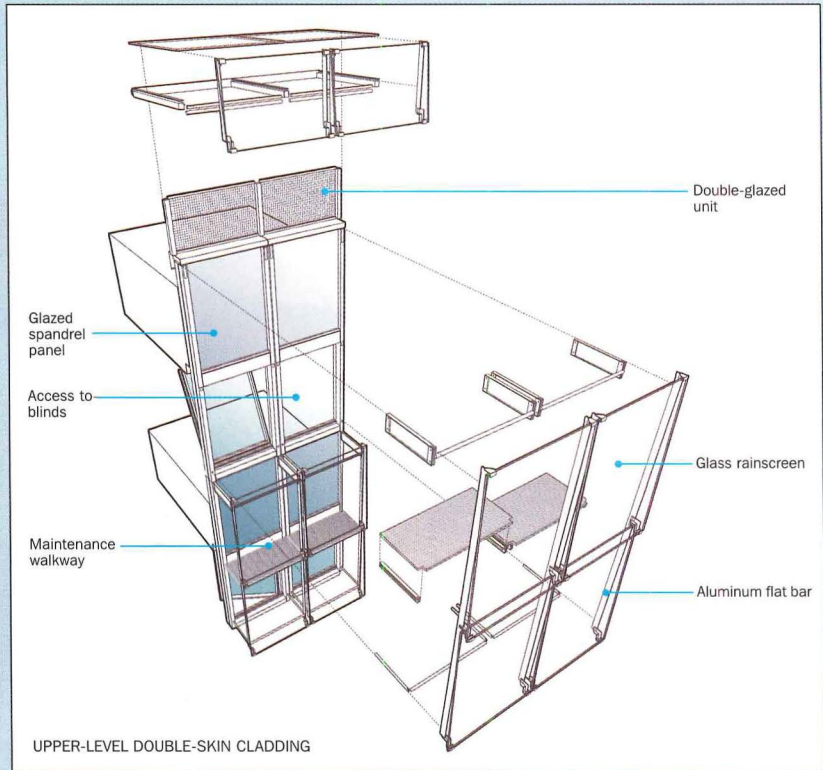
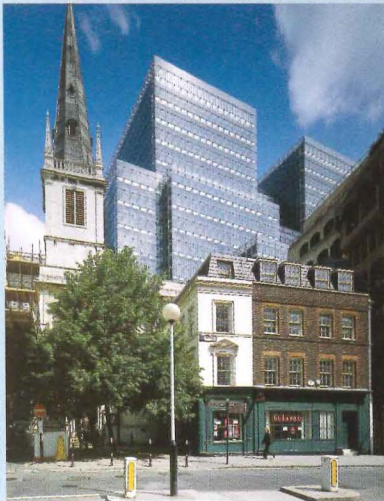
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At the upper levels of the building, the outer layer of double-skinned facade is made up of frameless glass panels, angled

at 3 degrees, with open joints. Behind the screen is a walkway used for maintenance. Tenants can open the windows to provide natural cooling. The window

blinds are automatically raised or lowered based on current conditions in each tenant zone. The blinds are accessible from the outside for cleaning and maintenance.

bors. Upper levels, on the other hand, are all glass, yet those floors can be cooled with only natural ventilation during much of the year. The outer layer of the 2-foot-deep double walls comprises a rain-and-wind screen of shingled, frameless glass panels, angled at 3 degrees, with open joints. Behind it is a maintenance walkway and solar blinds adjacent to an inner window wall with operable panels. The two layers were delivered to the job site as 5-foot modules and prefabricated on-site into units with integral blinds and catwalks.

To ensure that occupants enjoyed the benefits of the complex facades, Arup Associates and facade engineers from Arup planned an unusual daylighting scheme. In each tenant zone, photosensors were mounted on inner facades to automatically control the raising and lowering of blinds based on local conditions. “There are reliability questions for automated daylighting control,” admits Arup facade engineer Neil McClelland. “Any design should recognize that there will be issues and allow for access to the blinds for cleaning and maintenance.” McClelland adds that the main reason to use automated blind controls is for maximum transparency, not energy-efficiency.

Stick-built robotics

For many architects, the European tradition of customizing an off-the-shelf, unitized, double-wall product presents a safe and effective entrée into the world of interactive facades. Less prevalent is the craft-based

approach used by Thom Mayne for Caltrans District 7 Headquarters in Los Angeles, which opened in late 2004. There, Morphosis Architects pulled apart the envelope’s functional elements, “redelegated” them, and coordinated their job-site “reassembly” among seven exterior subcontractors, says project leader Pavel Getov.

The result combines a large photovoltaic array and independently controlled, automated elements within a multiple-layer facade. The prominent shading layer of perforated metallic panels on east and west facades cuts initial solar heat gain by about 15 percent. The screen hangs about 1 foot from the slab edges of a weather-wall of metal framing, gypsum sheathing, and PVC membrane. In this way, the intervening space functions partly as convective cavity. One thousand or so of the scrim panels, corresponding to ribbon windows behind, open or close daily. Those on the east close in the morning, those on the west in the afternoon. For longevity, the architects specified stainless-steel hardware and a single pneumatic lift per panel, rather than the pair of electrical actuators originally considered. A rooftop sensor signals the panels to close during high winds.

According to Getov, 3D modeling and mock-up testing ensured the performance of the stick-built envelope under wind, rain, and seismic conditions. The firm shared a single building-information model among consultants and manufacturers, and component prototypes made on a 3D printer. Still, says Getov, “A lot of the design is



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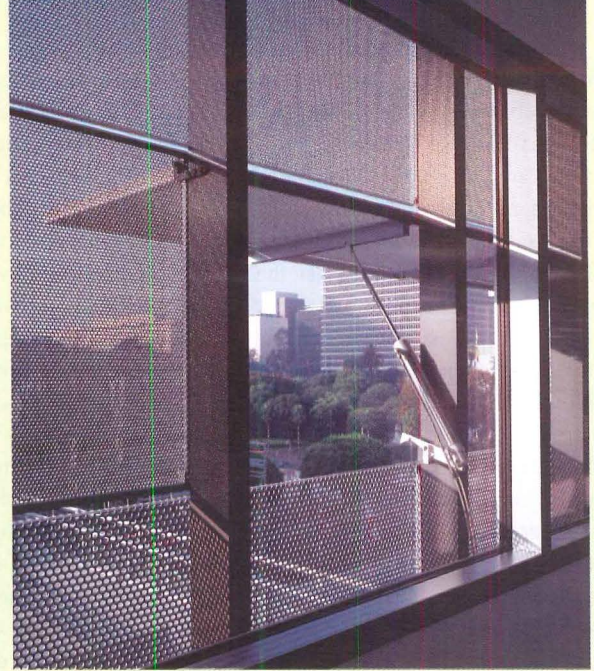
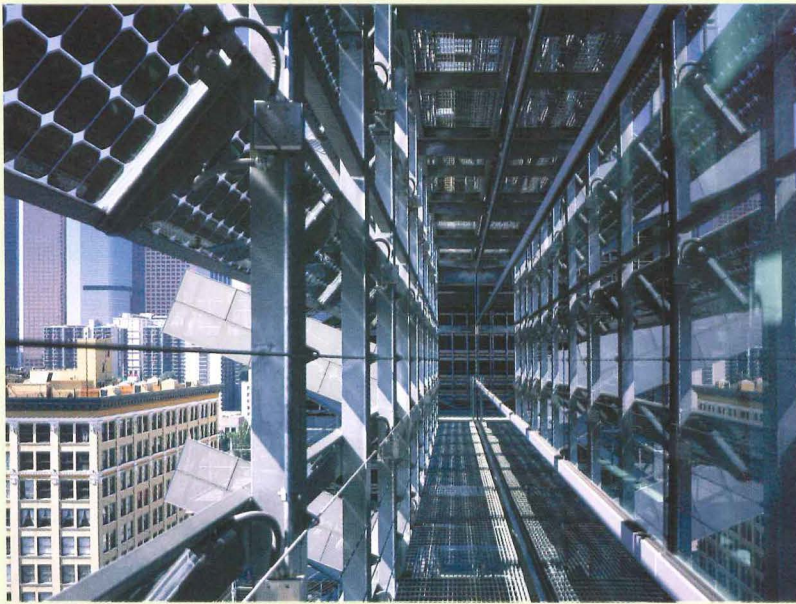
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Caltrans District 7 Headquarters, Los Angeles

Different elevations of the building have different systems. On the south side (above), large photovoltaic panels form a brise-soleil. On the east and west facades, perforated

solar-shading screens hang a foot from the exterior wall. When they heat, air around them rises, which draws cooler air from ground level. Each day, about 1,000 screens (above right), which are located in front of windows, open and close.



Is intelligent shading worth the bother? LBNL tests suggest so. Automated daylight setups coupled with dimmable and switchable electrical lighting beat conventional fixed blinds in terms of energy draw by about a third in winter and up to 52 percent in summer. Measured daylighting levels are comparable to those for unshaded bronze glazing, with only half the solar heat gain. Lee adds that the systems allow building managers to voluntarily curtail electrical loads as part of utility demand-response programs, which help avert blackouts.

Active doubles, anyone?

Harder to predict are the benefits of hybrid envelope systems, in which two or more interactive strategies are combined. Many European architects have integrated ventilation, shading, and other active technologies into double-wall facades that serve as primary space conditioners. Unlike Cannon's Occidental Chemical building, early double envelopes had few moving parts. (Some Europeans use the term "active facade" to describe any ventilated double wall, regardless of operability.) More recent projects feature more "edge monkeys": automated hoppers, vents, and shades.

An extreme example is the philology library by Foster and Partners at Berlin's Free University, completed last year. The four-story, orblike enclosure—with an underfloor air plenum—is engineered for free cooling for about seven months of the year using natural ventilation.

A checkerboard cladding of aluminum and glazed panels protects an inner glass-fiber membrane. Operable panels close during cold weather, and fresh air is drawn from outside through the floor cavity and into the envelope void. A concrete internal structure provides thermal mass and radiant cooling and heating of recirculated air. The client expects about 35 percent energy savings over a comparable facility.

Hopefully, performance data will bear this out. But unlike Foster's 1997 energy-miser Commerzbank Tower in Frankfurt, most large-scale projects don't document utility costs. Karl Gertis, a building physics researcher at the University of Stuttgart, thinks it's because they often miss the target. In the design phase, simulations prove notoriously unpredictable, he believes. Once built, natural ventilation often isn't adequate for room air handling or for maintaining comfortable temperatures. Weak convective airflows in wall cavities may preclude the use of insect screens and air filters, too. Last, Gertis cites numerous buildings designed without mechanical cooling that have failed. Foster's library stands prepared: On hot days, it leeches supplemental cooling from an adjacent structure.

For Plantation Place, a large office development in London, Arup Associates incorporated active solar shading and occupant-controlled operable ventilation in its double-skinned cladding design. At their lower levels, the buildings have a heavy curtain of limestone fins in deference to the masonry expression of the project's Neoclassical neigh-

performance or deficient maintenance. Other firms cite client interests, noting such high-profile failures as the broken actuators on the sun-control diaphragms cladding Jean Nouvel's 1988 Institut du Monde Arabe in Paris. "Culturally, we have little confidence in what we're doing, and in systems integration for these hybrids," says Volker Hartkopf, director of the Center for Building Performance and Diagnostics at Carnegie Mellon University, Pittsburgh. "Yes, these things can break, but so can fans, dampers, thermostats, and so many other things we take for granted."

"I think such worries are well-founded," counters Bruce Nichols, a principal of the New York City-based facade consultancy Front Inc. "While an automobile maker is a single source of responsibility, that doesn't happen in architecture." He recounts his work with the Japanese firm SANAA on a competition-winning office building for the Novartis campus in Basel, Switzerland. For its transparent triple glazing with integral automated ventilation and Venetian blinds, the shades came with only five-year warranties; the glass was guaranteed for at least 10 years. So, if a shade fails after five years, Novartis would have to pay for replacing a glass unit just to access the defective shade. "We asked the manufacturers if they could get their act together to offer a collective warranty," Nichols recalls. "They couldn't."

Beyond famous failures, high installed costs, and mismatched warranties lay big coordination challenges, adds Nichols, and conflicting liabilities among project team members. Plainly, the road to the inter-

TWO THIRDS OF COMMERCIAL BUILDING COOLING LOADS COME FROM LIGHTING SYSTEMS AND SUN-LOADED GLASS SURFACES.

active envelope is a rough one. But at the end of the ride, optimal energy performance is the payoff, right? So it is hoped. Yet Lee warns there is shockingly little postoccupancy data to confirm initial design claims on older projects.

Sun-tracking systems lead the way

While animated as much by polemics as by actuators, new interactive envelopes still have fervent supporters. A single, conventional application gets most of the credit for the good buzz: daylighting control. On its own, an operable shade or louver is easy for an architect to analyze, especially with new daylight analysis tools built into common CAD platforms. The overarching driver for most automated shading is the typical energy profile of large commercial buildings, according to LBNL. Cooling loads dominate, with more than two thirds needed simply to counteract heat gain from lighting systems and sun-loaded glass surfaces.

Also encouraging the use of interactive envelopes is the solid performance of photosensors, dimmable lighting controls, and novel solar-tracking devices. More recent advances include switchable glazings, sometimes called "smart windows." These automatically tint or frost, activated by either an applied voltage (electrochromic) or a small release of gas, such as hydrogen (gasochromic). The former type is more widely available, but both can reduce combined cooling and lighting loads by up to 5 watts per square foot in interior perimeters.

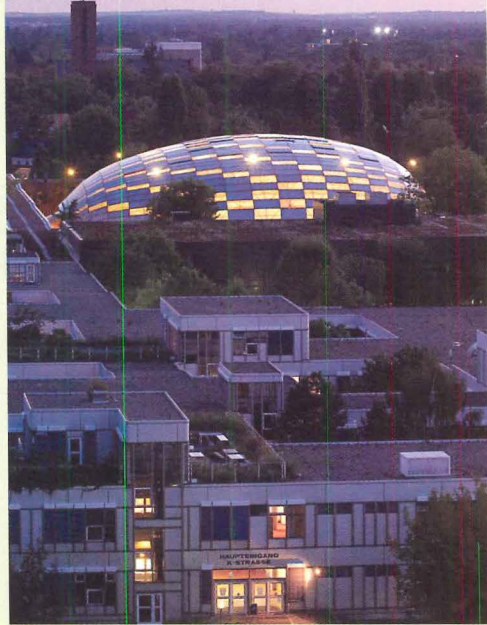
Another appeal of automated shading relates to the feasibility of the highly transparent, relatively unarticulated building enclosures currently in fashion. For Arizona State University's Biodesign Institute in Tempe, collaborators at Gould Evans and Lord Aeck Sargent Architecture compensated for a large easterly expanse of window walls by using interior aluminum louvers controlled continuously by photocells and sun-tracking software. A manual override accessible through occupants' computers allows personal adjustments to be made.



Biodesign Institute, Arizona State University, Tempe
A large, easterly expanse of windows uses aluminum louvers that are controlled continuously by photocells and sun-tracking

software. The design allows occupants to control most of the louvers in their offices using their PCs, although at above 8 feet from floor level the louvers are controlled automatically.

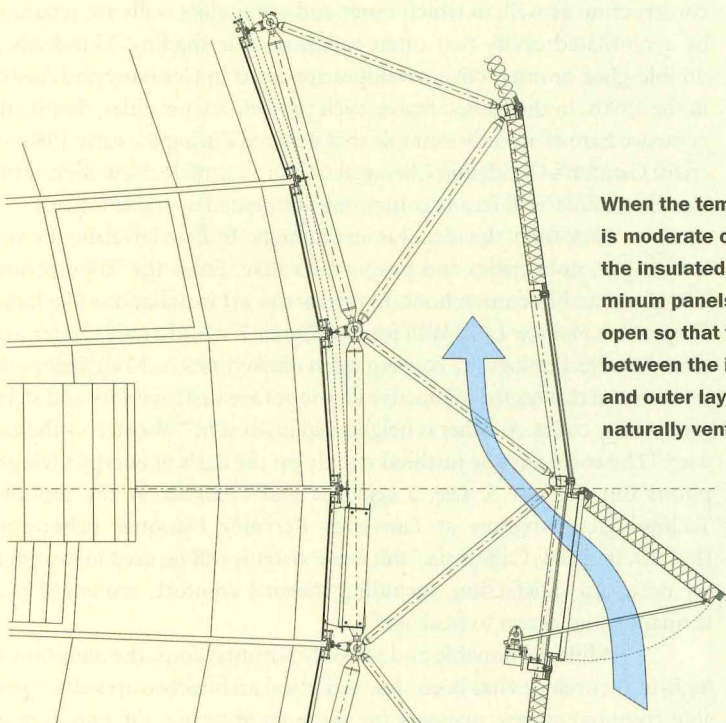
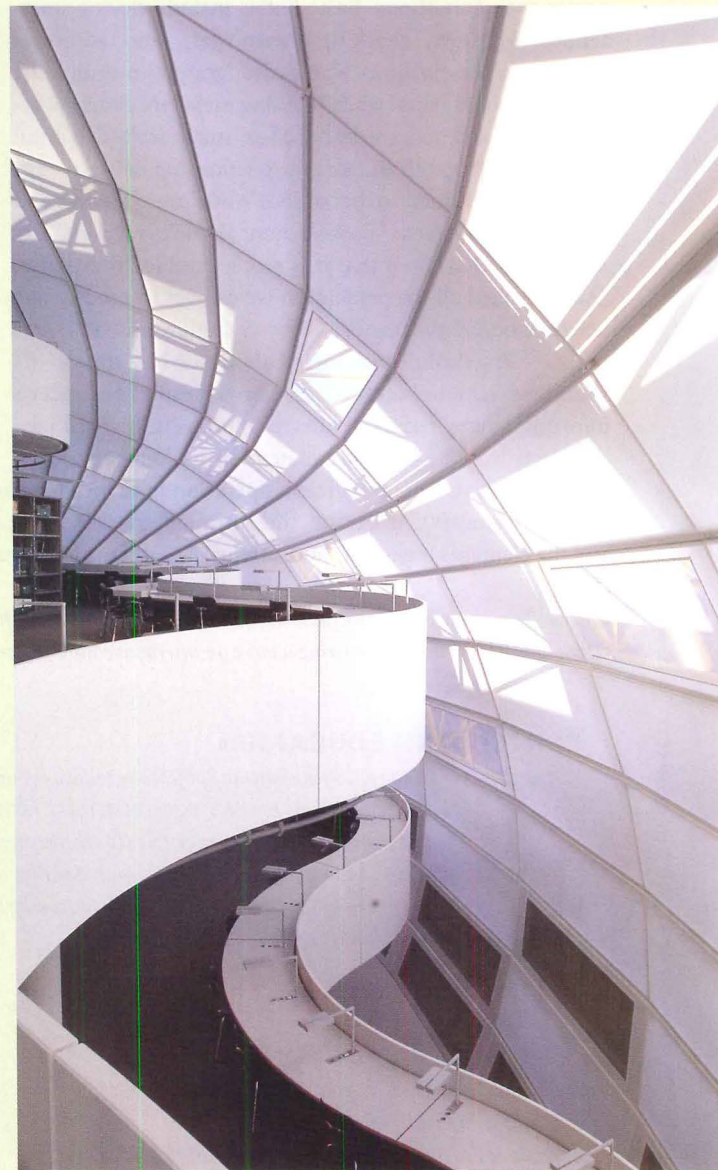




**Free University
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This building has an outer layer of windows and aluminum panels, and an inner layer of

fiberglass fabric. In winter, warm air between the layers rises to the top, then is drawn down through the building to provide heat.



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SECTION DETAIL

Robo Buildings: Pursuing the Interactive Envelope

IN RECENT PROJECTS, SMARTER BUILDING SKINS AUTOMATICALLY CONTROL DAYLIGHTING, VENTILATION, AND MORE TO BENEFIT OCCUPANTS AND ENHANCE SUSTAINABLE DESIGN QUALITY

By C.C. Sullivan

In an article published in the cyber journal *Technoetic Arts* last year, British architect-academics Stephen A. Gage and Will Thorne describe a hypothetical fleet of small robots they call “edge monkeys.” Their function would be to patrol building facades, regulating energy usage and indoor conditions. Basic duties include closing unattended windows, checking thermostats, and adjusting blinds. But the machines would also “gesture meaningfully to internal occupants” when building users “are clearly wasting energy,” and they are described as “intrinsically delightful and funny.” The authors liken the relationship between edge monkey and human to that of P.G. Wodehouse’s Jeeves and Wooster characters. “Jeeves’s aim is always to modify Wooster’s behavior so that it is more sensible,” they write. “And we need all the persuasion we can get to modify our behavior before the planet is severely compromised.”

Practicalities of microrobotics aside, this sci-fi-sounding scheme crystallizes the widespread concern informing many recent architectural projects. Increasingly, architects would like to automate their building envelopes rather than leave energy-efficient operation to chance (or harried maintenance engineers). As a result, the critical interface between the interior and the elements is getting more attention—and more animated.

C.C. Sullivan is a consultant and author who specializes in architecture and technology. He is currently writing a book on interactive building envelopes.

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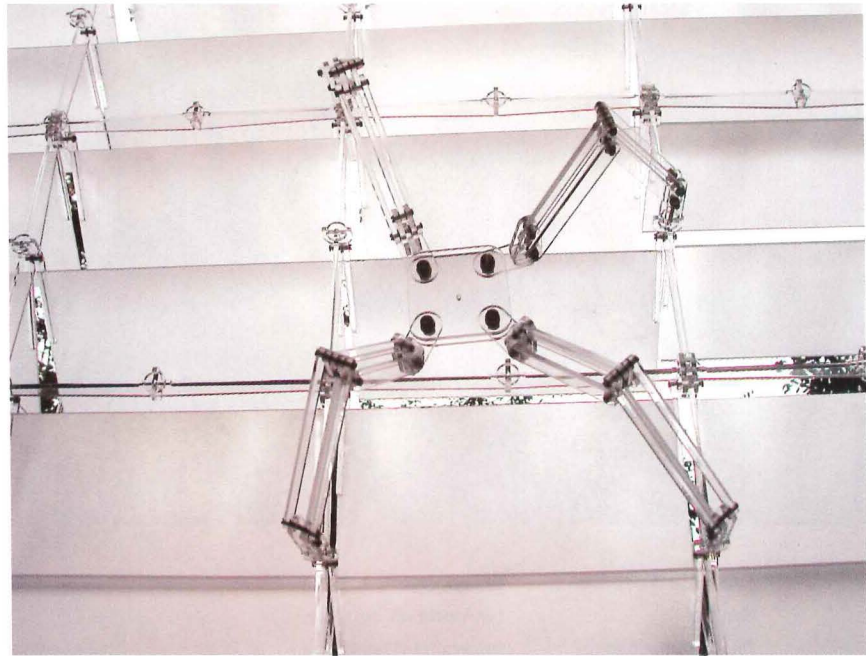
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LEARNING OBJECTIVES

After reading this article, you should be able to:

1. Describe interactive building envelopes.
2. Explain the current interest in active building skins.
3. Identify the application most responsible for interactive building support.

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“Edge monkeys” are robots that would close windows, check thermostats, adjust blinds, and “gesture meaningfully to internal occupants” when they are clearly wasting energy.

Thanks largely to innovators from Europe, buildings are wearing more smarts and moving parts. The lion’s share use double-skin construction as well, in which inner and outer glass walls are separated by a ventilated cavity that often contains solar shading. Hundreds of double-glass or interactive envelopes appeared in Germany and Austria in the 1990s. In the United States, such projects are novelties, despite the existence here of an early example that debuted during the early 1980s oil crisis: Cannon’s Occidental Chemical Center in Buffalo, New York, introduced a double-wall facade containing automated operable louvers.

Back then, the idea was an anomaly. Today, activating the skin is in vogue, note critics and proponents alike. From the “robotecture” labs at top architecture schools to interactive art installations like James Carpenter’s *Podium Light Wall* for New York’s 7 World Trade Center, aesthetics and technology are converging in unlikely places. Nonetheless, the mainstream drivers for interactive envelopes are sustainability and stringent energy codes. Another is heightened interest in “Wooster”—the end user. “The costs can’t be justified strictly on the basis of energy savings,” points out Eleanor S. Lee, a scientist and architect in the Building Technologies Program at Lawrence Berkeley National Laboratory (LBNL), Berkeley, California. “But these systems will be used increasingly for occupant satisfaction, including thermal comfort, acoustical performance, and access to fresh air.”

While fashionable and possibly advantageous, the adoption of high-tech envelopes has been slow. Skeptical architects worry that operable components are magnets for value-engineering. Or they foresee them being unplugged and later stripped off their buildings due to poor



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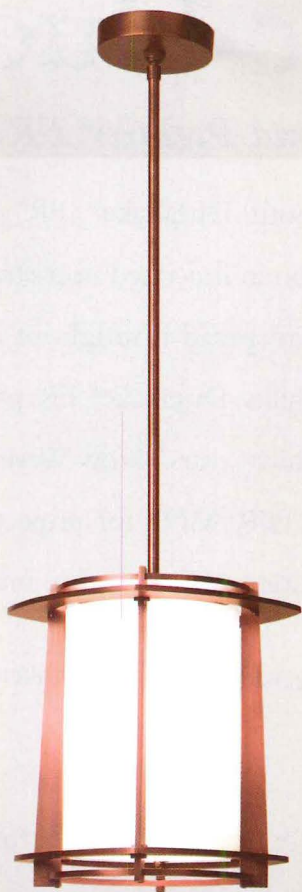
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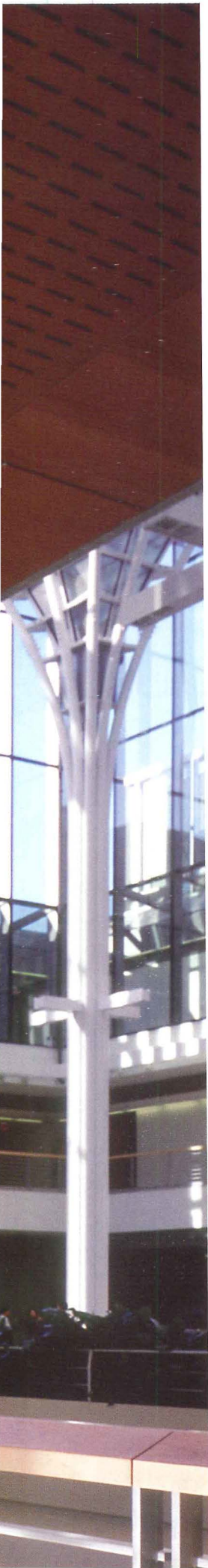
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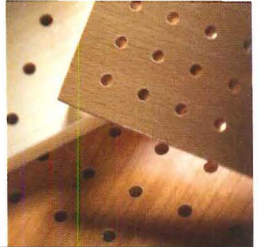
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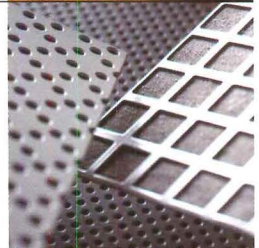




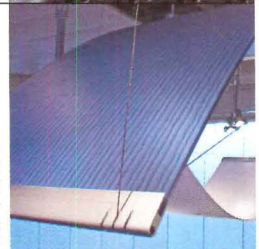
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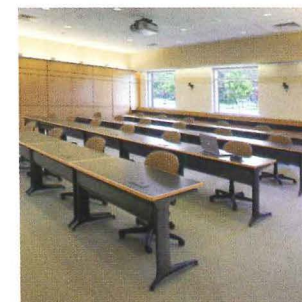
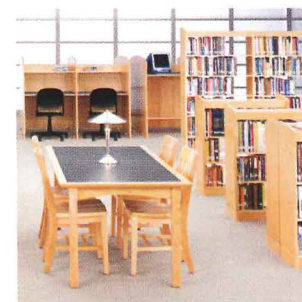
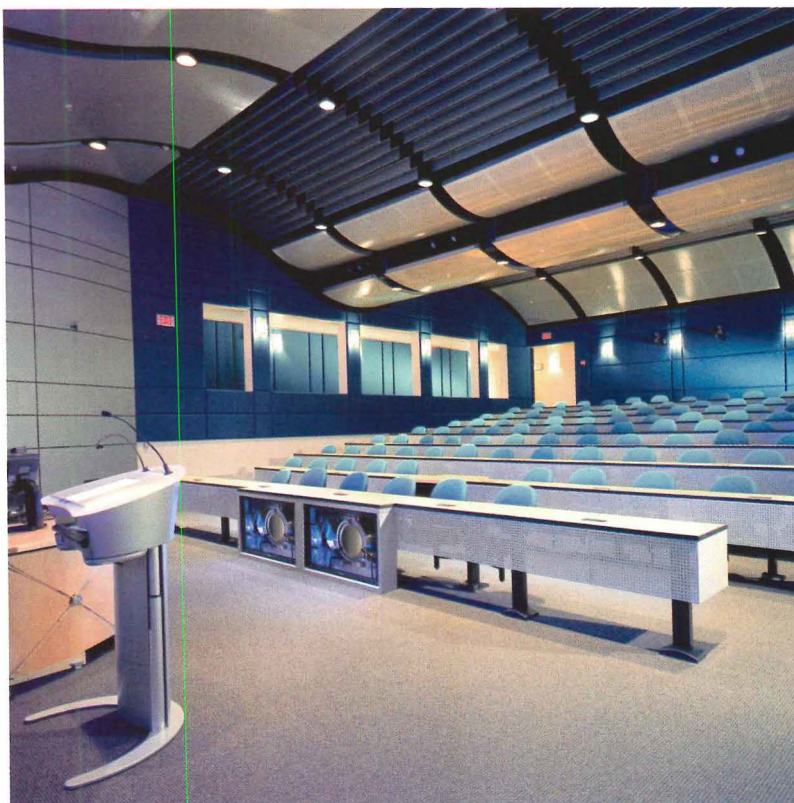
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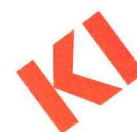
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REVIEW

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by KieranTimberlake Associates
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10.2006

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From the publisher

Dear Reader,

Echo boomers, the children of the baby-boom generation, are making their way through the education system in massive numbers. In fact, college and university enrollment is expected to grow 17 percent through the year 2014, according to a recent McGraw-Hill Construction report. Eyeing these numbers, we thought it was a good time to take stock of this market's architectural and construction opportunities. We've selected 30,000 architects, owners, and contractors to receive this special supplement, ARCHITECTURAL RECORD REVIEW HIGHER EDUCATION. It's our way of helping to empower the decision-makers who design for growth.

This supplement is organized into three parts. We begin with an essay that examines the demographic trends driving college and university construction, as well as the financing available for these projects, and how both of these factors impact private institutions, public universities, and community colleges. Tapping into the rich market data gathered by McGraw-Hill Construction Dodge Analytics, we show you what to expect in the future.

Next, we revisit three projects originally covered in ARCHITECTURAL RECORD'S November 2003 Building Types Study, supplementing them with post-occupancy reports created by talking with architects, university faculty, and students.

Finally, we showcase exemplary products used in the construction of college and university buildings around the country. In following this market as closely as we do, we've encountered some great options that we'd like to share with you.

We are proud of this supplement, ARCHITECTURAL RECORD REVIEW HIGHER EDUCATION, and we sincerely hope that you too will find it valuable.

Laura Viscusi

VP/Associate Publisher, ARCHITECTURAL RECORD

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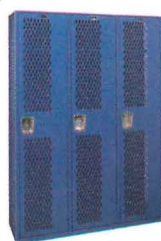
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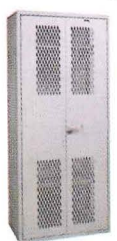
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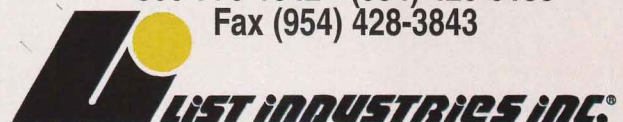
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Hitting the Books

COLLEGES AND UNIVERSITIES ARE EXPANDING CAMPUS BUILDINGS TO MEET SWELLING ENROLLMENTS, AND THEY'RE CATCHING UP ON DEFERRED MAINTENANCE.

By Jayne Merkel

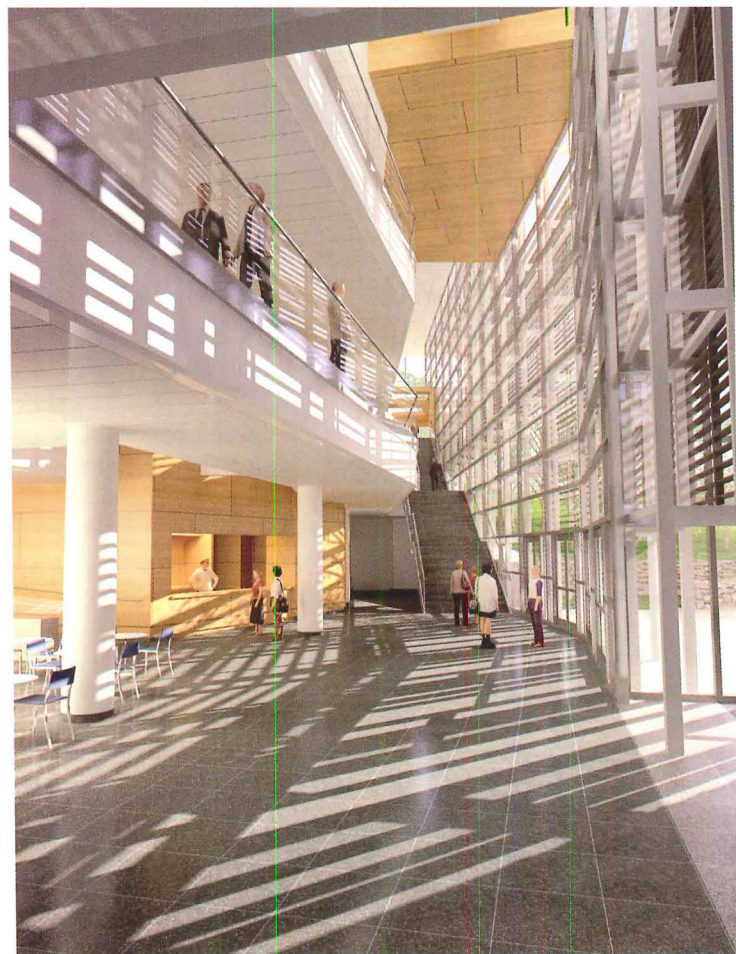
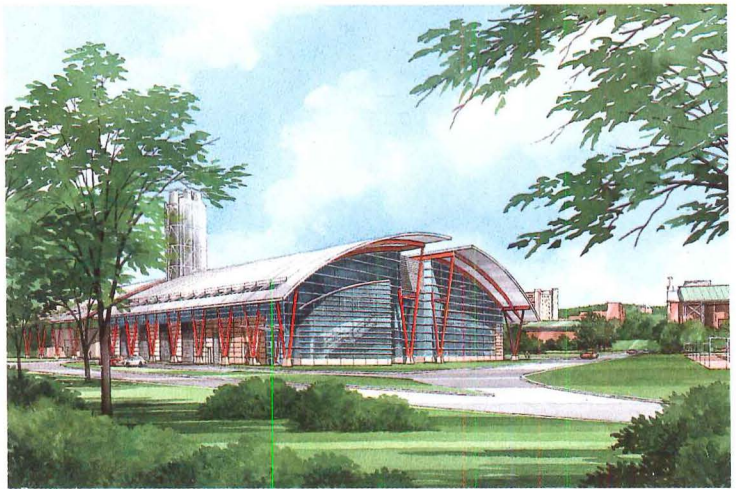
Growing enrollments, new technology, aging infrastructures, rising tuition, and competition among schools are ensuring that the recent building boom on college campuses remains strong. Although most of the new square footage is rising at public institutions and community colleges, a few elite universities account for the lion's share of expenditures, thanks to costly museums, renovations, and high-tech laboratories—projects like the ones featured in the following pages.

College and university construction is continuing apace along with that of other educational facilities, exceeding even last year's healthy 5 percent increase, according to a mid-2006 McGraw-Hill Construction report, *The Outlook for Education Buildings and Dormitories: Reaping the Benefits of Stronger Economies*, by Kim Kennedy. Long-term prospects also remain strong because, although school construction is expected to decline by the end of the decade in response to a lower birthrate, colleges will continue to grow as echo boomers, children of the baby-boom generation, move into the post-secondary system.

The bump in college enrollment is already much in evidence. The report notes that the National Center for Education Statistics (NCES) estimates that enrollment in all degree-granting institutions reached 16.6 million in 2002, a 23 percent increase since 1989. And in the years between 2002 and 2014, NCES expects enrollment growth to be "almost as strong," with a 17 percent gain, for a total of 19.5 million students.

Eyeing the continued influx of students, many universities are announcing massive capital improvements and expansion plans. But growth will not affect all schools equally. As tuition fees at private schools have risen sharply, the report notes, "state colleges have come under increasing pressure to expand." Trustees of the University of Massachusetts, for example, approved a five-year capital plan in August 2005 that will total \$2.3 billion, half of which will be spent on the flagship campus in Amherst, with the remainder divided among four satellite campuses. One reason for this capital plan, according to the McGraw-Hill report, is that "tuition at Massachusetts' private Boston College is over \$40,000 per year, while the University of Massachusetts's is just \$16,000 per year for an in-state resident—making the state school a much more affordable alternative." Another reason is that at UMass and many other schools, building and maintenance have been deferred for decades, leading to pent-up demand for up-to-date facilities.

Thanks to its affordable tuition, the **University of Massachusetts's** flagship Amherst campus is enjoying rising enrollment numbers. A capital plan totaling \$2.3 billion, approved in 2005, is helping the school update its basic infrastructure, such as constructing a new central heating plant (above right), designed by a team of architects and engineers that included Cambridge Seven Associates, as well as build new academic facilities, such as an integrated sciences building (bottom right), designed by Payette Associates.



ESSAY



Anshen + Allen + Rothman are renovating an existing structure at the University of Massachusetts's Amherst campus to house the School of

Nursing. An addition at the east elevation (at left in the above image) frames a new interior courtyard that the architects have dubbed a "living room."

Among the first components of UMass Amherst's capital plan is a prosaic but nevertheless critical piece of infrastructure: a \$118.7-million, 45,000-square-foot central heating plant to replace one that dates to the 1940s. A team comprised of R.G. Vanderweil Engineers, Cambridge Seven Architects, BSC Group, McNamara/Salvia, Haley & Aldrich, and Earth Tech, all Massachusetts-based firms, is designing it. UMass Amherst is also getting a \$16-million, 47,000-square-foot visual arts building, designed by Gund Partnership; a \$16.3-million renovation of its nursing school, by Anshen + Allen + Rothman; and Payette Associates' new \$79-million, 328,000-square-foot integrated science building. Payette will also be designing a student recreation center, although this has yet to be integrated into the capital plan.

"STATE COLLEGES HAVE COME UNDER INCREASING PRESSURE TO EXPAND," ACCORDING TO A MCGRAW-HILL REPORT.

In addition to academic needs, Amherst also addressed student housing. A \$92-million, 864-bed student apartment complex, designed by ARC/Architectural Resources Cambridge, opens this fall. It is the first new dormitory on the Amherst campus in 30 years, even though the University of Massachusetts system, which houses more than 11,000 students, boasts one of the largest numbers of on-campus units in the country. Still, more housing is needed.

"Like other construction at colleges and universities, dormitory construction has benefited from the strong gains in enrollments that have occurred over the past 12 years and that are projected for the next 12," the McGraw-Hill report notes. But the gains have occurred unevenly. In 2004, for instance, construction starts plunged 26 percent, to 21.1 million square feet, reversing a 22 percent rise in 2003; but in 2005 they quickly rebounded by 22 percent, perhaps in response to strong growth in endowments the year before. Although a modest pullback is likely in 2006, the report predicts, demographic trends indicate that the need for student housing will remain strong: "Dormitory construction is expect-

ed to bounce back with more moderate gains in both 2007 and 2008, before starts begin to slip back slightly due to weaker economic conditions. Starts will hit a peak for this forecast at 25.3 million square feet in 2008 and at \$4.5 billion in 2009."

The report points out that changes in financing also play a big role in construction. State institutions, in particular, are "at the mercy of the economic cycle. During the past recession, state revenues plummeted, leaving little money for higher education. As a result, construction dried up. Now, as state coffers become flush once again, construction activity at state schools should see growth." But capital improvements at state universities are not entirely publicly funded, and increasingly universities themselves must raise money, the same as private schools. Only one-fifth of the cost of the new integrated science building at UMass Amherst will come from the state; other government sources will contribute substantially, but the school must pick up the remaining tab itself.

Even federal money will not be available for long. "Recent developments in Washington could deal a blow to lab construction down the road," according to the report. "As the legislative year wound up, the House and Senate approved a series of bills that cut 2006 funding for federal agencies such as the National Institutes of Health (its first reduction since 1970), NASA, and the National Science Foundation. This will put a major crimp on research grants and other government funds that are critical for universities and research institutions. These reductions are part of a growing trend aimed at cutting funding to scientific research and diverting the funds to research funding for new hardware such as warships and battlefield robots."

Costly private expansions

Federal cutbacks will impact capital projects for scientific activity at both public and private schools alike because major research facilities, such as those at Princeton and Caltech, discussed later in this *Review*, traditionally are heavily funded with public money.

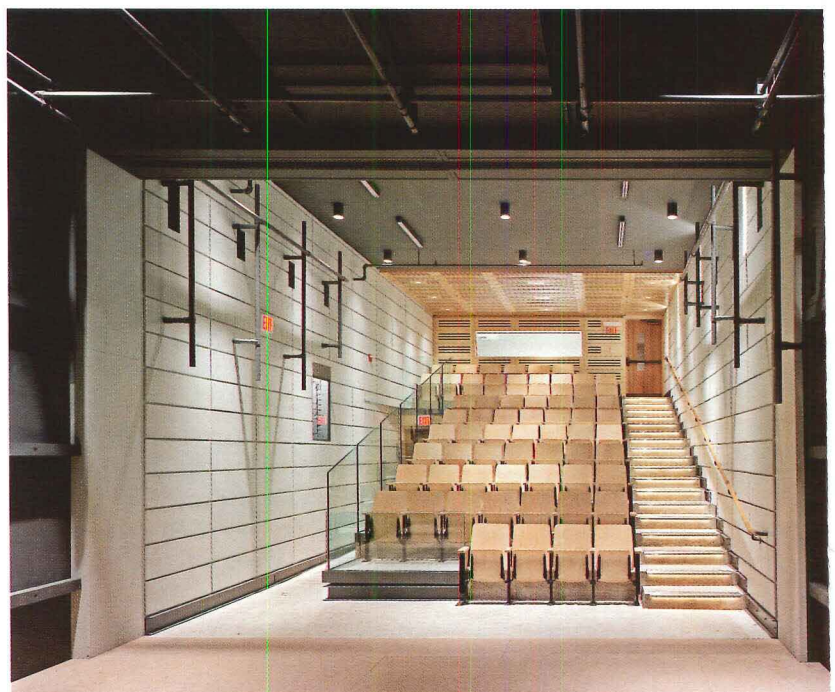
Other projects at private colleges will remain unaffected, and

At **Yale University**, in New Haven, Conn., KieranTimberlake Associates renovated James Gamble Rogers's 1930s-vintage Davenport College (left) and Pierson College dormitories, adding an elegant Modernist touch. The dorms share certain program elements, such as a 60-seat theater (bottom right), which is housed in a converted squash court at the basement level. In expanding Pierson College, the architect designed a series of prefabricated modules that could be easily hoisted into place at the site of a small courtyard formerly known as "The Beach." The Philadelphia-based KieranTimberlake has completed several dormitory renovations for Yale in the past few years as the school updates its student housing. And almost every historic building on campus is also receiving a facelift or touchup.



though the resources available to these institutions vary tremendously, things are generally looking up. As the report notes, "Private colleges are riding the tide of improved financial conditions. According to the National Association of College and University Business Officers (NACUBO), endowments gained an average of 15.1 percent during fiscal year 2004 (July–June)—after averaging just 3.8 percent over the past five years. The 2004 gain in endowments represents one of the largest gains since the organization began collecting data in the 1990s, and is a positive turn for schools following declines in 2001 and 2002. In the NACUBO survey, all but a few of the 741 schools posted gains in 2004, with most of the big name schools posting very strong gains. Harvard University, which continues to have the largest endowment (\$22 billion), saw growth of 18 percent, while Yale University (ranked no. 2 with an endowment of \$15.2 billion) saw gains of 16 percent."

Not surprisingly, Harvard, Yale, and other wealthy private schools are making significant capital improvements. In addition to expanding its business and law schools, both designed by Robert A.M. Stern (see "Focus on Higher Education," *Architectural Record Review*, April 2005), Harvard is expanding to the north and west, as well as south across the Charles River to Allston, where the business school is located. And last November the university completed the 226,000-square-foot Center for Government and International Studies, a five-story building with an



An area that KieranTimberlake Associates dubbed “The Knuckle” provides shared circulation for both the **Davenport College and Pierson College buildings at Yale University**, in New Haven, Conn. At the basement level (right), exposed roughened stone foundations contrast with the clean lines of contemporary materials. Elsewhere on campus, Gwathmey Siegel is restoring Paul Rudolph’s controversial 1963 Art and Architecture building (below), adding a 85,000-square-foot wing next door that will house the university’s art history department. Another historic mid-century building, Louis I. Kahn’s 1953 Yale Art Gallery addition, is set to reopen in December after receiving a deft restoration by Polshek Partnership.



atrium that brings together members of the government department in a single location next to existing research centers. The \$88 million project was designed by Henry S. Cobb, of Pei Cobb Freed & Partners, the same firm that designed Caltech’s Broad Center (see page 34).

Harvard has also embarked on an ambitious campaign to restructure its three existing art museums, on the main campus, and to construct a new arts center in Allston. The celebrated Renzo Piano Building Workshop, which is in charge of this effort, will renovate the historic Fogg Art Museum, James Stirling’s Sackler Museum, and Gwathmey Siegel’s Busch-Reisinger, while the avant-garde Los Angeles firm Daly Genik Architects will create the new art center within adjacent buildings on Soldiers Field Road in Allston.

Not to be outdone, Yale is tackling its own art buildings as part of

a \$500-million overhaul that includes renovating its Gothic Revival and Georgian Revival residential colleges and constructing new science facilities. In the way of art buildings, Polshek Partnership is rebuilding Louis I. Kahn’s famous 1953 Yale Art Gallery addition, a project that’s expected to be completed in December. Similarly, Gwathmey Siegel is set to restore Paul Rudolph’s controversial 1963 Art and Architecture Building; next door it will add an all-new 85,000-square-foot building for Yale’s art history department. KieranTimberlake, meanwhile, will design a new sculpture center.

Based in Philadelphia, KieranTimberlake has remodeled several residential colleges for Yale, jobs that often involved more than repairing old stonework and windows. For instance, its \$30-million renovation of James Gamble Rogers’s 1933 Pierson College included the addition of 18 bedrooms, which were fabricated off-site and then hoisted into place, as well as a new underground theater, print shop, digital media studio, and basketball court to be shared by adjacent Davenport College, which was also designed by Rogers and renovated by KieranTimberlake. Busy as ever, KieranTimberlake is also remodeling Silliman College, Yale’s largest, which was designed by Otto Eggers and completed in 1940. Meanwhile, the Boston-based firm Goody Clancy recently renovated Yale’s Trumbull College, increasing its size by 10,000 square feet.

Renovation and restoration comprise a big component of the construction work at Yale; almost every historic building is seeing some work, including the football and baseball stadiums, and the school is moving several historic houses to new locations. But the university is also constructing projects from the ground up, such as a new 34,000-square-foot police station, designed by William Rawn Associates. Even

It's time to look at architectural metals in a whole new light.



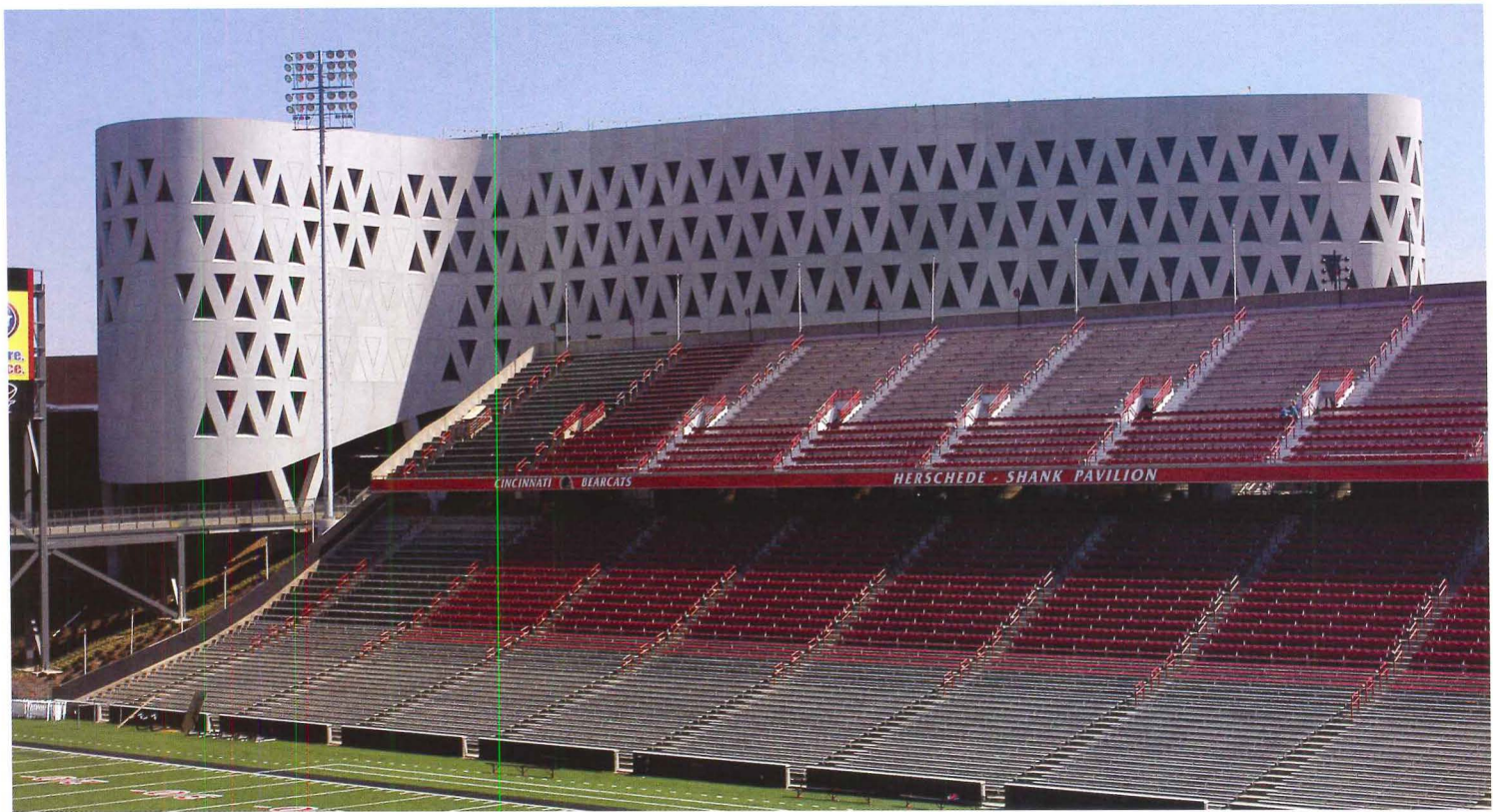
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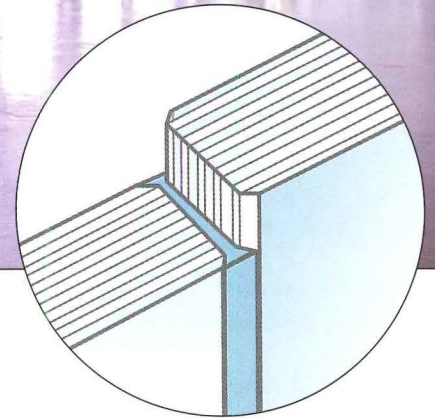
The **University of Cincinnati's Varsity Village**, a 16-acre sports precinct located in the heart of campus, includes the Richard E. Lindner Athletic Center (top and bottom left), designed by Bernard Tschumi and Glaserworks, and the

Marge Schott Stadium for baseball, designed by Glaserworks (bottom right). These buildings resulted from the university's "signature architects" program, which successfully injected striking new design into its traditional campus.

more ambitious is Yale's program for science. Payette Associates and Venturi, Scott Brown designed the \$140-million, 440,000-square-foot Anlyan Center for Medical Research and Education, which was completed three years ago; at the same time, Hillier began renovating Philip Johnson's 1965 Kline Biology Tower. And last year a \$50-million, 117,800-square-foot Class of 1954 Chemistry Research Building, designed by Bohlin Cywinski Jackson with Cannon Design, was completed, as was the 63,117-square-foot triangular Malone Engineering Center. Designed by Cesar Pelli & Associates, the Malone building features a curved wall of glass and straight walls of limestone. Currently, design and construction of a new 65,000-square-foot arch-roofed Forestry and Environmental Studies Building is underway to unite facilities that are now spread throughout Yale's campus.

Raising the bar

Big name schools aren't the only ones with a lock on commissioning interesting architecture. According to the McGraw-Hill report, more square footage will be built for community colleges than for any other form of higher education, due to a surge in the number of nontraditional students who work and take classes part time. Though most have modest budgets, some are producing quite interesting buildings. The new Cape May County Campus of Atlantic Cape Community College, at the southern tip of New Jersey, provides complete facilities for a pair of recently merged junior colleges under one set of roofs. The campus's \$12.7-million, 63,825-square-foot main building was designed by Duca/Huder & Kumlin Architects with Garrison Architects, both of New Jersey. Its two long, three-story red brick curved-walled blocks are connected by a two-



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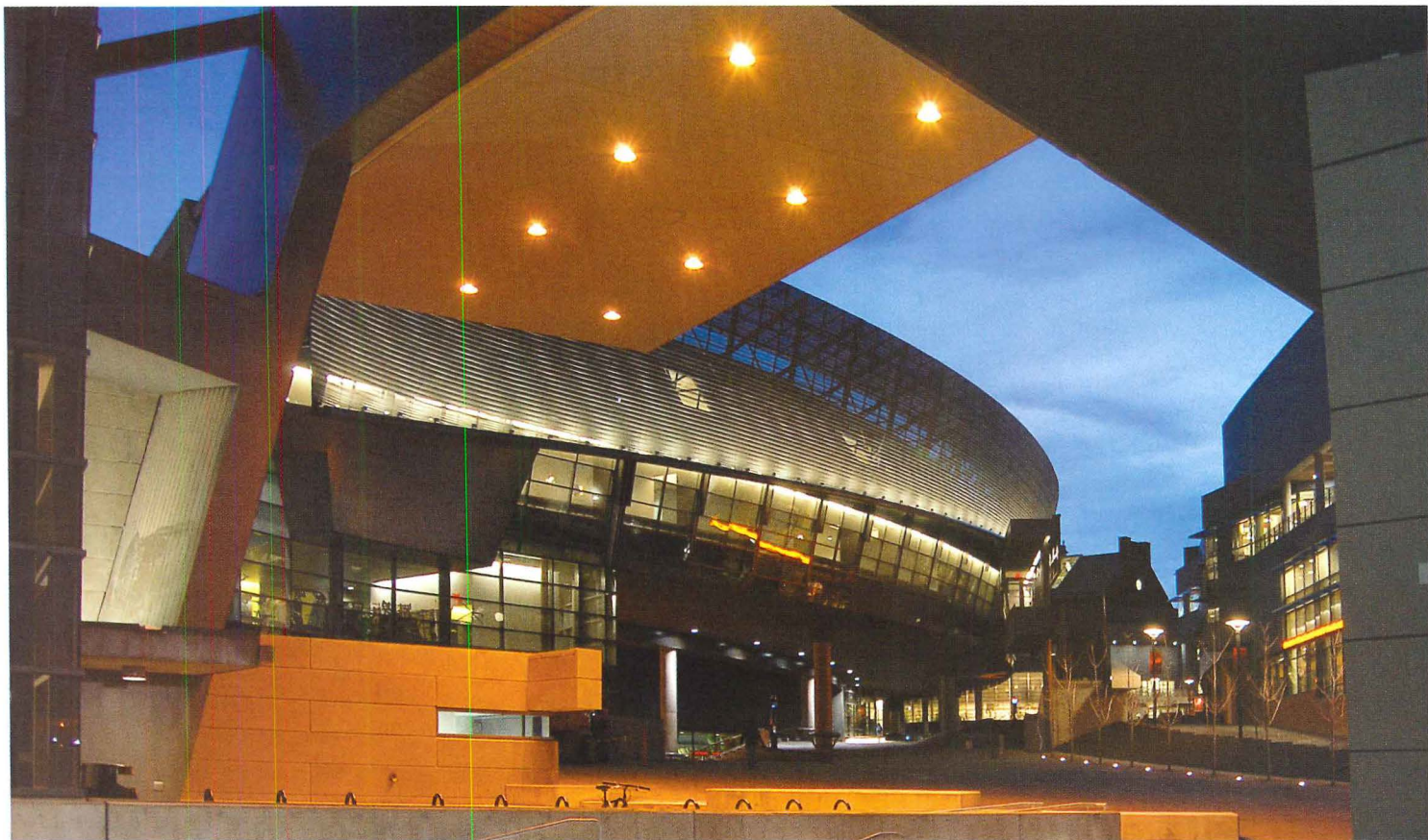
Pictured Above: The Houston Independent School District Administration Building in Houston, Texas. Here the Vision 60 System is used not only to protect lives and property, but to provide full vision and light into the stairwell enclosures on multiple floors



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Morphosis and KZF's **Campus Recreation Center**, with its glass curtainwall and curvy form, completes the **University of Cincinnati's Varsity Village**, providing athletic facilities for all students. Other buildings in the school's sports district are geared toward specific user groups, such as varsity teams.

story glazed structure with a double-height colonnade where all the students and faculty enter, congregate, and dine.

In Ohio, meanwhile, the University of Cincinnati recently completed the most interesting buildings yet in its "signature architects" program: Morphosis and KZF's \$113-million, 350,000-square foot

viding athletic facilities for all students. Other buildings in the school's sports district are geared toward specific user groups, such as varsity teams.

Campus Recreation Center, with sports facilities for all students, and Bernard Tschumi and Glaserworks's \$80-million, 236,000-square-foot Richard E. Lindner Athletic Center for team sports. That curvaceous eight-story building, surrounded and supported by exposed diagonal concrete and steel trusses, also contains coaches' offices and facilities for team sports, health services, and academic support services for athletes. The boomerang-shaped building, with triangular fenestration, also contains an athletics museum.

With its distinctive looks, the Lindner Center forms the heart of Cincinnati's massive "Varsity Village," a 16-acre sports precinct at the center of campus. Components of the \$109-million complex include the 85,000-square-foot, 450-seat Trabert-Talbert Tennis Center; the 1400-seat Gettler Soccer and Track Stadium; Sheakley Lawn, a 160-by-300-foot grassy area; and the fine \$11-million, 3,085-seat Marge Schott Stadium for baseball by Glaserworks, which defines the athletic precinct's southeast corner.

St. Edward's University in Austin, Texas, has undertaken a similarly ambitious construction program. It recently completed a Natural Sciences Building, by Moore Ruble Yudell, and has hired rising stars Rick Joy to design a new chapel; Alejandro Aravena, of Chile, to build a dormitory; and Specht Harpman to renovate a 3,500-square-foot space in the landmarked Main Building for the school's marketing department. To make that project symbolize the creative process of the writers and designers, who create everything from fund-raising brochures to course catalogs, Specht Harpman built an entry wall composed entirely of No. 2 pencils. That kind of care and innovation suggests that St. Edward's is certainly a campus to watch for other aesthetic breakthroughs. ■



Architect Specht Harpman used No. 2 pencils to line the entry wall of the new marketing offices for **St. Edward's University** in Austin, Texas.



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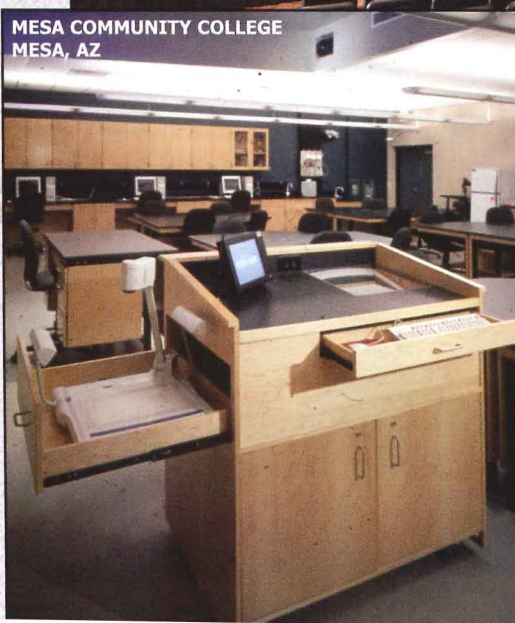
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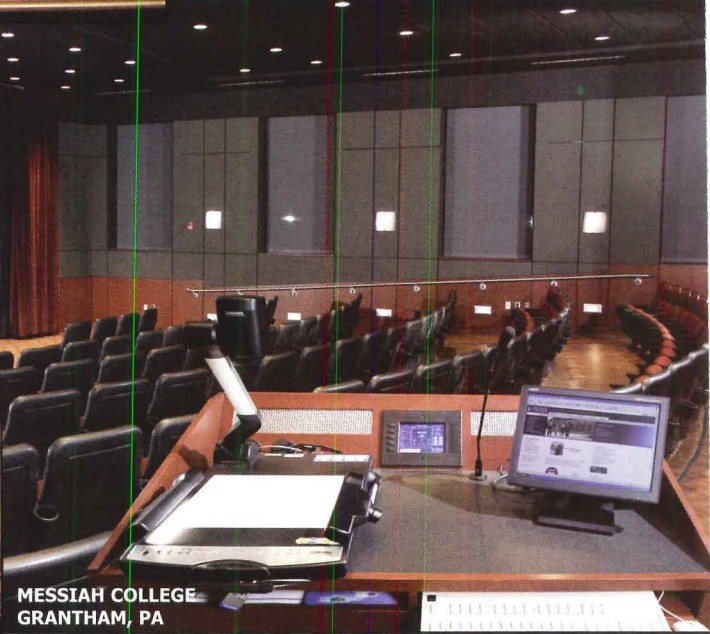


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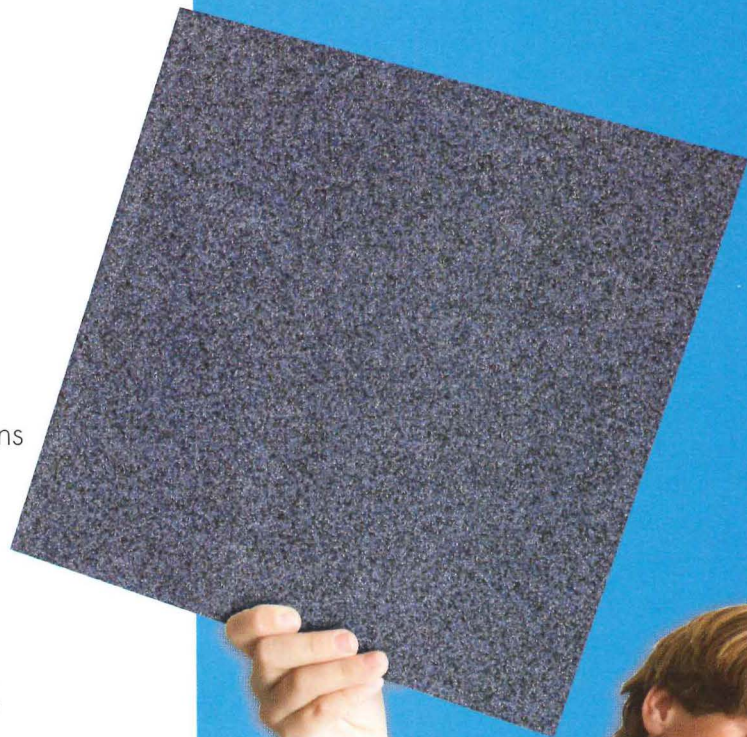
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IT'S TIME FOR 'GOOD DESIGN 101' AS WE REEVALUATE THREE UNIVERSITY BUILDINGS WHOSE ARCHITECTURE WAS INTENDED TO ENCOURAGE COLLEGIALITY AND MANAGE GROWTH.

By Jayne Merkel

INTRODUCTION



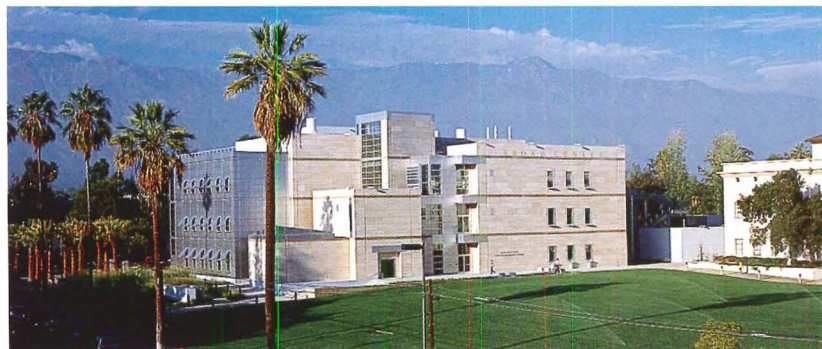
1. Carl Icahn Laboratory Lewis-Sigler Institute, Princeton University, Princeton, New Jersey, by Rafael Viñoly Architects



2. Academic Center for Student Athletes, Louisiana State University, Baton Rouge, Louisiana, by Trahan Architects

3. Broad Center for Biological Sciences at Caltech, Pasadena, California, by Pei Cobb Freed & Partners and SmithGroup

Colleges today are building quickly to keep up with new technology and growing enrollment. Enabled by flush endowments and special state funding to compensate for federal cutbacks, they are using architecture to beef up academic programs and make their campuses more attractive. In this review we revisit three projects previously discussed in architectural record to see what can be learned from them now. In all three buildings, architecture actively encourages collegiality. At New Jersey's Princeton University, Rafael Viñoly Architects designed the Carl Icahn Laboratories at the Lewis-Sigler Institute for Integrative Genomics around a café where scientists with different areas of expertise cannot help but meet informally and exchange ideas. In the Broad Center for the Biological Sciences at the California Institute of Technology in Pasadena, Pei Cobb Freed & Partners Architects created a sensitive transition between Mission-style buildings on the old campus and a new area pegged for future expansion; the building also helps foster dialogue between scientists in different disciplines. Similarly, at Louisiana State University in Baton Rouge, Trahan Architects transformed a dignified old Renaissance Revival gym into the Cox Communications Academic Center for Student-Athletes, where athletes can study, be tutored, and take classes in elegant modern interiors. ■



Carl Icahn Laboratory Lewis-Sigler Institute Princeton, New Jersey

2003

RAFAEL VIÑOLY CREATES A BUILDING THAT CAPTURES THE SWEEPING NATURE OF ITS USERS' SCIENTIFIC QUEST.

By Clifford A. Pearson

Architect: Rafael Viñoly Architects—Rafael Viñoly, FAIA, principal in charge; Jay Bargmann, AIA, managing director; Sandra McKee, AIA, project director; Jennifer Swee, Anooradha Raman, Christina Seilern, project managers; Charles Blomberg, AIA, Stacey Greenwald, Asaka Kusama, Carlos Soubie, Lily Lim, Justin Kim, Jerrold Fox, project team
Client: Lewis-Sigler Institute for Integrative Genomics, Princeton University

Engineers: Dewhurst, McFarlane & Partners in association with Joseph Goldreich (structural); Burt Hill Kosar Rittelmann Associates (m/e/p); Van-Note Harvey (civil)

Consultants: Quennell Rothschild & Partners (landscape); Acentech (acoustical); GPR Planners (labs); Wojciechowski Design (graphics)

Construction manager: Barr + Barr

Size: 138,000 square feet (gross)

Construction cost: \$48 million

Completion date: January 2003

Sources

Metal-and-glass curtain wall: National Glass and Metal Company

Precast concrete: Global Precast

Acoustical ceilings: Armstrong

Demountable partitions: Inscape; Fisher Hamilton

For more information on this project, go to Projects at

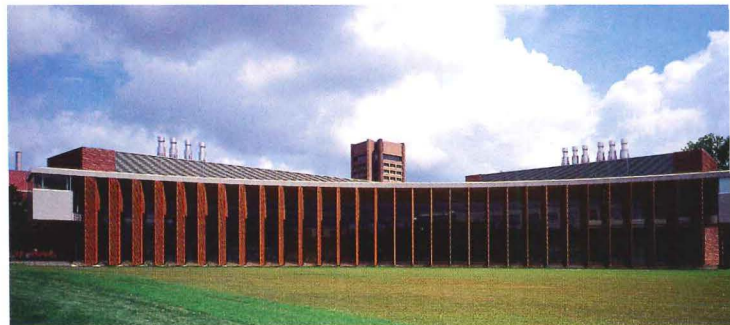
www.architecturalrecord.com.

As its name suggests, the Lewis-Sigler Institute for Integrative Genomics at Princeton University takes an interdisciplinary approach to the study of life sciences and genetics. Just a few years old, the institute brings together experimental biologists, computational biologists, physicists, chemists, engineers, and applied mathematicians so they can bounce ideas off one another and “ask a whole new set of questions” at a time of rapid progress in genetic sequencing, says Shirley Tilghman, who was the founding director of the institute and is now the president of Princeton. Like the program it houses, the new Carl Icahn Laboratory by Rafael Viñoly Architects takes an inclusive approach to design, bringing the outdoors in and providing an attractive venue for scientists to come together.

Program

Because research in life sciences is changing so rapidly, the laboratory presented a difficult design challenge. “When I first sat down with Rafael, I had no idea what this science would look like,” recalls Tilghman, a mammalian geneticist by training. “But I knew that our building had to break down the cultural barriers that had grown up around various disciplines and promote risk taking. And it had to be extremely flexible.”

Part of a master plan by

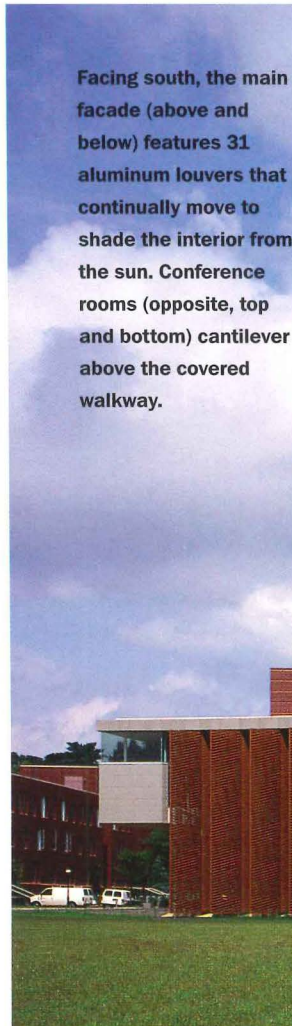


Machado and Silvetti Associates that creates a new quadrangle set around an ellipse-shaped athletic field, the new lab connects underground to the adjacent Lewis Thomas Laboratory, designed by Venturi Scott Brown and Associates (VSBA) with Payette Associates and completed in 1986. Although begun just a little more than a decade after the VSBA building, the Viñoly lab needed to reflect a new world of integrated genomic studies where the whole is more important than any of the individual pieces, says Tilghman.

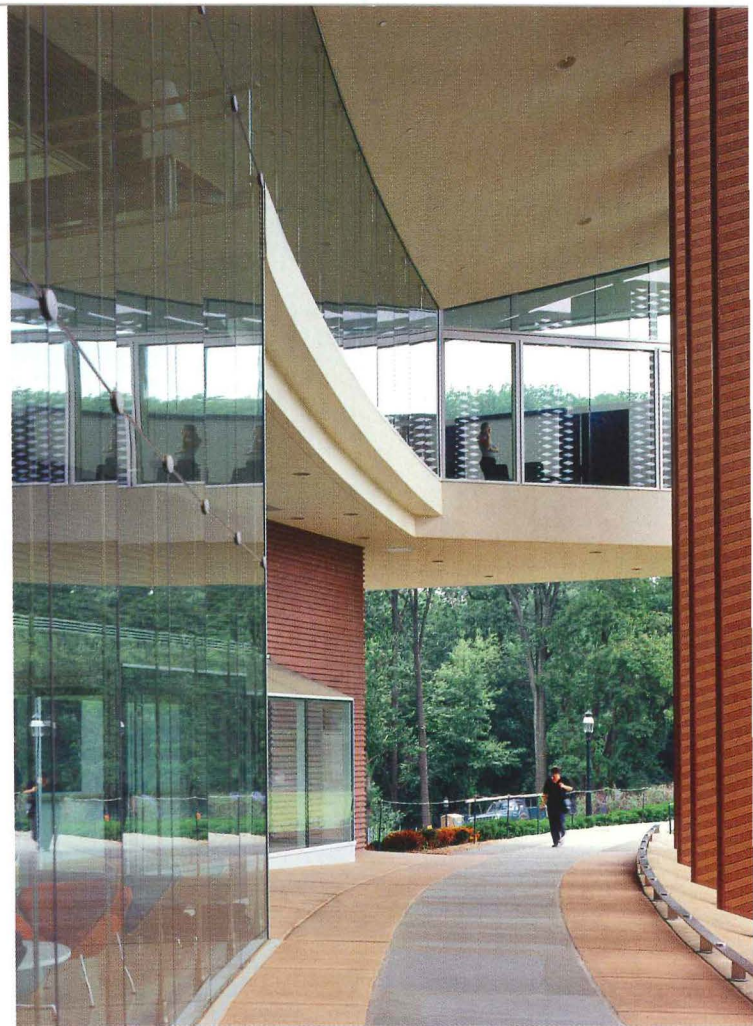
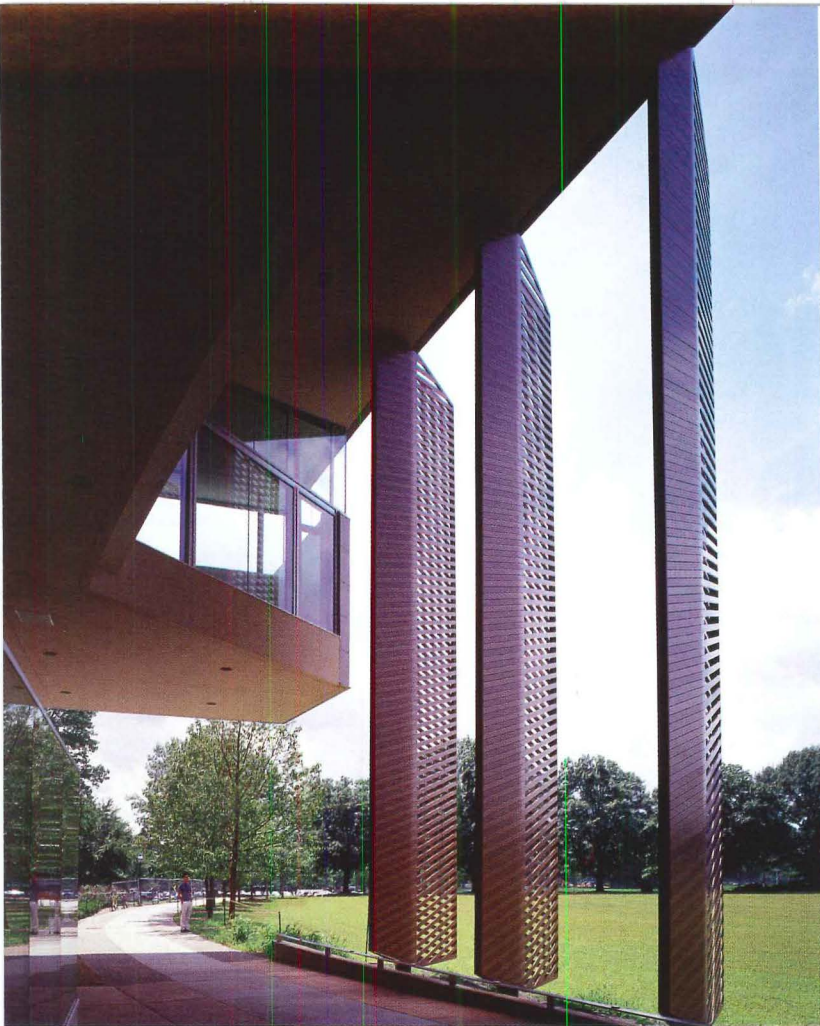
Laboratories for about 15 faculty members (along with their assistants and students) occupy most of the building's 120,000 net square feet. Offices, conference rooms, a small lecture hall, and a café round out the rest of the dedicated space, though Tilghman encouraged Viñoly to think beyond the essential components of the program. “I didn't want a building like any other lab that existed,” she states.

Facing south, the main facade (above and below) features 31 aluminum louvers that continually move to shade the interior from the sun. Conference rooms (opposite, top and bottom) cantilever above the covered walkway.

PHOTOGRAPHY: © ROMAN VIÑOLY

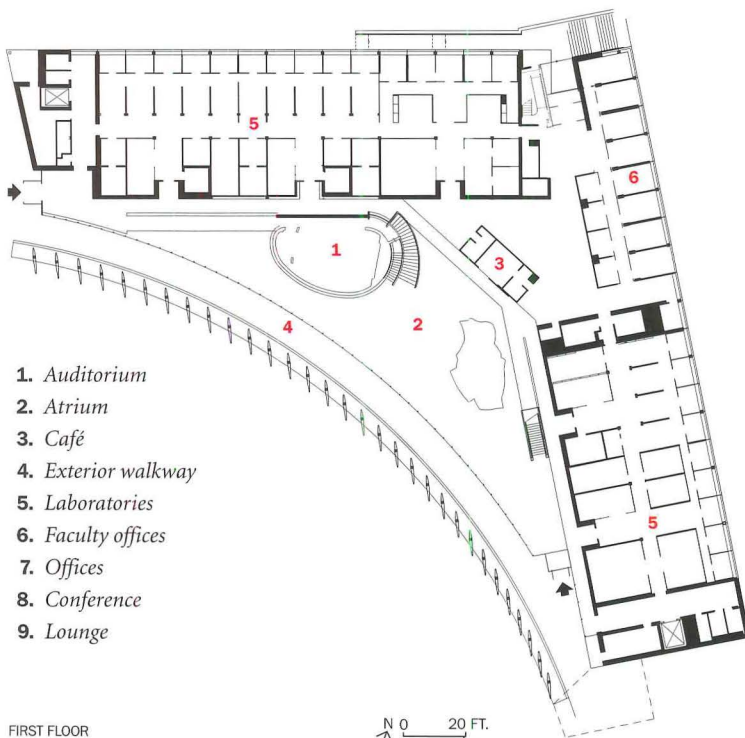






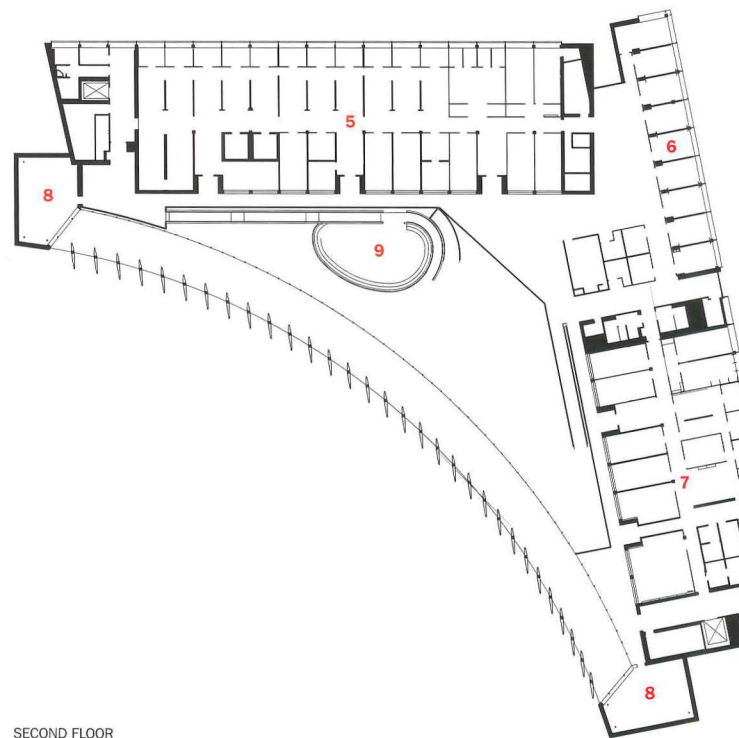
The 40-foot-high vertical louvers (above left and right) are controlled by computer and driven by hydraulic

jacks. All of the mechanical equipment can be repaired by campus engineers using standard parts.



1. Auditorium
2. Atrium
3. Café
4. Exterior walkway
5. Laboratories
6. Faculty offices
7. Offices
8. Conference
9. Lounge

FIRST FLOOR



SECOND FLOOR



Because the walkway (above) works as an integral part of the architecture, it helps connect the building to the rest of the campus. The atrium (right) is the social hub of the building and includes a Gehry sculpture (left in photo) that encloses a conference space.





A stair winds around the maple-clad auditorium (above). Skylights above corridors and a glass roof between a lab block (left in photo at right) and offices help enliven common areas. Bands of deeply recessed, angled windows bring daylight but little glare into offices and labs (bottom).



Solution

"When we started, Shirley told me, 'You won't believe this, but the most important part of this building is the coffee,'" says Viñoly with a laugh. What she meant, he explains, is that the social spaces, the places where the scientists and students bump into each other, are critical to the success of the institute. So the architects designed a great curving atrium between two wings of labs and offices. The two-story-high space faces south to the playing field through a curving wall of millionless glass panels braced by vertical steel cables.

To protect the glazed facade from the impact of the sun, Viñoly and his team designed an arcade of 40-foot-tall aluminum louvers that stand outside the building and help define a covered walkway linking the lab to two nearby dorms. The 31 louvers, controlled by computers and driven by hydraulic jacks, rotate in conjunction with the movement of the sun to reduce solar heat gain.

The social hub of the building, the atrium encompasses a small, freestanding café, a cylindrical lecture hall, and a Frank Gehry sculpture that houses an informal conference space. Curving stairs around the lecture hall and a flight of straight stairs along one of the two-story lab/office wings lead directly to the atrium, reinforcing its role as the heart of the project.

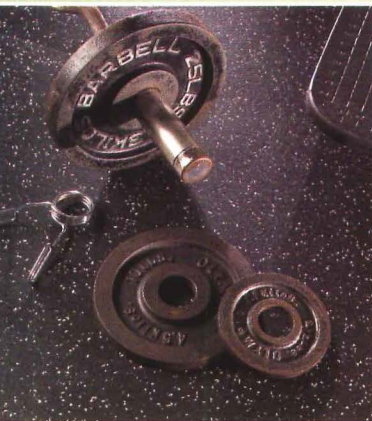
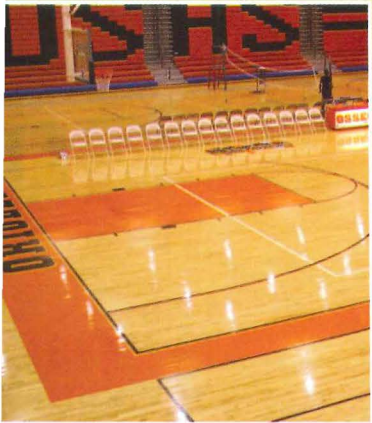
For the laboratory spaces, Viñoly created a system of demountable elements using commercially available lines of modular lab benches and modular partitions. An 8-foot-high interstitial space above each floor accommodates all of the necessary mechanical, electrical, and venting systems.

Commentary

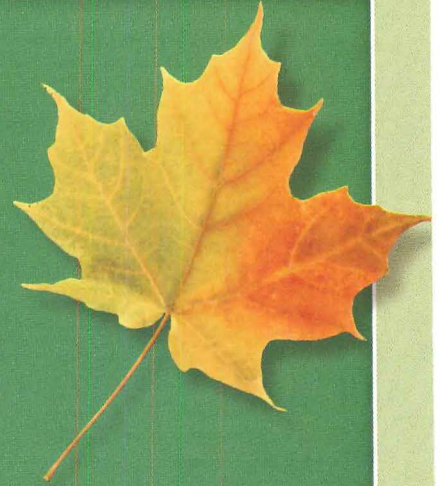
Turning an outdoor walkway into a grand gesture of movement and connection, Viñoly gets a visual and metaphorical bang out of a fairly simple strategy. Supporting the light-filled social hub with restrained but flexible lab spaces, the architect has created a building that both works and inspires. ■

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Post-Occupancy 2006

Princeton University's Carl Icahn Laboratory at the Lewis-Sigler Institute Princeton, New Jersey

By Jayne Merkel

The Carl Icahn Laboratory, home to the Lewis-Sigler Institute for Integrative Genomics, accommodates numerous brilliant scientists as well as millions of dollars' worth of high-tech equipment, but what makes it truly wondrous is the natural lighting and its central café, an attractive, accessible place to meet informally with colleagues. Susan Powell, the institute's assistant director, helped plan the building. She calls it "a truly beautiful place to work. There are many lovely vantage points that offer spectacular views. My favorite part of the building is what the louvers do to the light. Since they move and have a lattice grid pattern, the light that filters into the atrium is constantly changing. It gives the building an organic feeling. It makes it feel alive."

Architect Rafael Viñoly, FAIA, is happiest with the fact that the building's users are happy. The project director from his office, Jay Bargmann, says he is pleased with how the building integrates with campus circulation and open space. "The arcade is simultaneously within the building and the defining wall of the crescent-shaped open space," he says. "Internally, the laboratories are very flexible and intercommunicate seamlessly with the common space that is shared with the university."

Flexibility turned out to be very important because even before the building was completed, Shirley Tilghman, the Lewis-Sigler Institute's founder, was tapped to become Princeton's president. Her departure set in motion some significant modifications.

"Alterations in these buildings occur even before they are finished, in spite of what programmers try desperately to avoid," says Viñoly. "In this case, the whole approach to the impact of computational biology in the future of genomics changed with the departure of Dr. Tilghman. A major component of the original vivarium was replaced by a large computer room, which transformed the operations of the basement. The structure, and the way the services were laid out, adapted very efficiently to it."

Although the building adapted well, the changes produced some peculiar spaces. According to Powell, the institute's new director, David Botstein, envisioned a different teaching focus and built infrastructure space that he thought was missing. "We had to shoehorn those new teaching labs and infrastructure spaces—for imaging, microarray, and computation facilities—into the basement," she explains. "If we had known at the beginning that we needed them, they would have been better designed. The architects cheerfully did their best with the limits of the space in the basement, but the results are cramped, odd-shaped rooms with low ceilings."

In general, however, the flexible lab systems are proving to be very easy and inexpensive to change as new faculty is hired, which is impor-



Susan Powell, Assistant Director of the Lewis-Sigler Institute, calls the Carl Icahn Lab's central atrium and cafe "a truly beautiful place to work."

tant because, as at Caltech, most of the researchers were hired after the building was designed.

"When we were in the building phase, only 25 percent of the scientists were here," Powell recalls. "We didn't really know what kinds of scientists would be hired, so we made an educated guess and fitted out the space in a generic way, knowing that we would have to spend money to reconfigure it. We actually put money aside to do this. It has worked out quite well, though we've only been in the building for three years. We have installed a generic molecular biology lab bench setup and have hired mostly molecular biology experimental types."

"The building had undergone continual alteration even before it was completed," Bargmann notes. "A full vivarium has been added in un-programmed space in the basement that connects below grade to other vivariums on campus. We have learned to program in as much unassigned space as possible. It is typically used to provide additional support spaces, vivarium expansion, 'factory' spaces for development

of instrumentation, vibration-free spaces for future imaging requirements, and the like. We also continue to evolve flexible case work that is much more adaptable than traditional lab case work,” he continues, “which can be reconfigured from bench-type space to computer workstations using the same components and without requiring the services of contractors or engineers. Laboratory spaces are designed to be quieter and conducive to more computer-based research, utilities are designed to be more accessible without impacting operations, and support space is increasing in relation to bench-type research space.”

Regardless of the type of space, drawing daylight through the entire building was a major design consideration. “We continue to see natural daylighting as integral to the design and functioning of all lab spaces,” Bargmann says. “The laboratories were conceived of as open ‘loft’-type spaces, with the infrastructure to support wet bench lab space, computational stations, or closed offices. Daylighting is provided at two levels, for perimeter offices and then with high clerestories that bring daylight and views to the bench spaces. This flexibility has demonstrated itself as the four large labs have been fitted out for individual researchers.

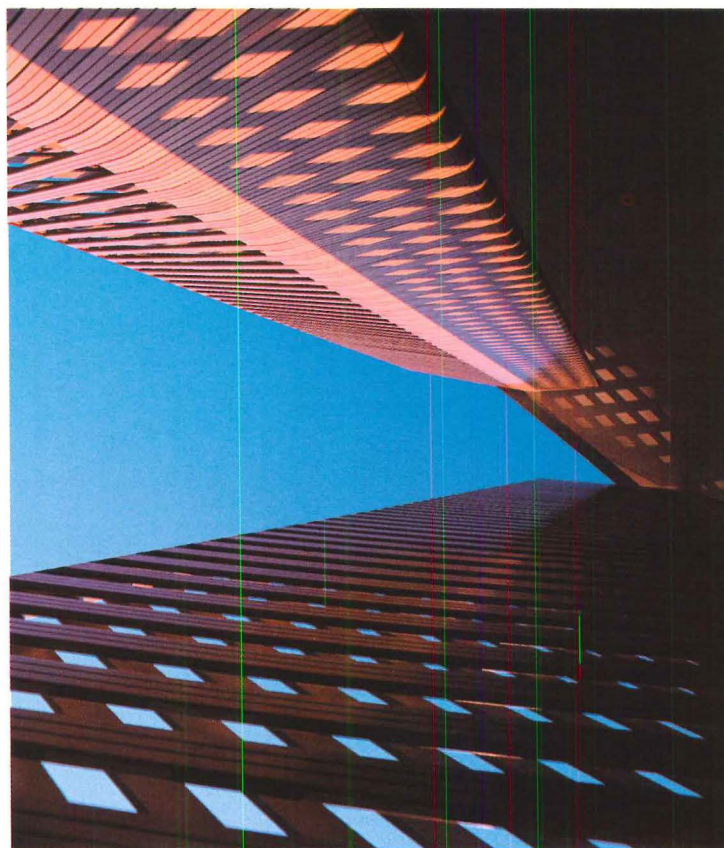
“The perimeter was designed to accommodate offices while still admitting daylight to the lab spaces,” he adds. “Support spaces are constructed of demountable partitions, which can be rapidly reconfigured. Catwalks above the ceiling, accessible from outside the lab, allow for utilities to be reconfigured with minimal impact on the functioning lab spaces.”

While the clean appearance of these spaces makes their design seem effortless, maybe even generic, this effortlessness belies intense forethought. “Everything you do, working in this building type, has the tendency to appear formulaic, and it is really not at all,” Rafael Viñoly says. “The general design principles may be the same, but the idiosyncrasies of the institutional conditions that the building is supposed to serve are so determinant that there could be no generic response from one project to the next.”

The point is underscored by the project Viñoly’s firm is currently completing, the Howard Hughes Medical Institute’s Janella Farm Research Campus in Ashburn, Virginia, which features a very different relationship of laboratory to office space. As Jay Bargmann explains, “At Princeton the offices are concentrated in the knuckle of the L-shaped laboratory; at HHMI the offices are in clusters and situated immediately adjacent to the laboratories. Princeton laboratories have generic lab case work with modular walls for support spaces; HHMI labs have custom-designed highly flexible case work that does not require a mechanic to reconfigure the lab spaces. The common spaces are centrally located adjacent to the lab spaces at Princeton, while at HHMI the building-wide common spaces are placed on the ground level with the labs and offices, and are connected by two large glass-enclosed staircases to the public spaces.”

Despite these differences, commonalities exist. For instance, Bargmann believes that double-height spaces for large equipment are desirable, as are large service corridors that provide direct access to mechanical and electrical spaces as well as to laboratories. Also important are large data centers with raised floors, accessible cabling, and dedicated HVAC systems.

Bargmann says that his experience with the Icahn labs convinced him that having “larger and more flexible interactive social spaces dispersed throughout the building, as well as concentrated in central areas, brings researchers out of their laboratories and promotes informal interaction not only among the scientists within the building but



Computer-controlled louvers filter daylight along the Carl Icahn Lab’s southwest elevation, energizing the space and creating an almost organic feel.

with other members of the university or research community. Research facilities need to increase their transparency and accessibility and utilization by the full academic or research community and should not be seen as isolated, closed, or ‘specialized’ buildings.”

Viñoly agrees, adding that “planning for change and solving the practicality of implementing it are two of the most important challenges of these buildings. It goes well beyond the traditional idea of flexibility that informed many building designs of the 1960s and ‘70s. I think that in this kind of building the separation between the notion of a building fabric and the furnishings that go in it should be forgotten.”


That said, aesthetics are very important. “I can’t emphasize enough what a beautiful and inspirational building it is,” says Susan Powell. “The glass curtain wall, the louvers, the expansive atrium, the innovative furniture, the lofty yet functional lab spaces, the soothing color scheme, even the Gehry sculpture in the atrium—all contribute to make it a very pleasing experience. It also is quite functional. I am honored that I was part of the team that brought it to fruition.” ■

LESSONS LEARNED

- Build laboratories to accommodate change, as it is bound to occur before a facility is even completed.
- Natural light dramatically improves a work environment.
- Inviting, accessible places to meet informally really do encourage collaboration.
- Provide a budget for the alterations that will inevitably be needed.

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Academic Center for Student Athletes

LSU, Baton Rouge, Louisiana

2003

TRAHAN ARCHITECTS USED SIMPLE MATERIALS AND SPARE VOLUMES TO CELEBRATE THE ORIGINAL CHARACTER OF THIS 1927 STRUCTURE.

By Christine Kreyling

Architect: Trahan Architects—Victor F. Trahan III, AIA, principal and designer; Lisa Coco Hargrave, AIA, project manager and designer; Jason P. Hargrave, AIA, project designer; Bryan F. Hammond, Assoc. AIA, Michael Monceaux, Assoc. AIA, Kirk Edwards, Assoc. AIA, Phong Le, AIA, team members

Client: Louisiana State University

Engineers: Associated Design Group Consulting Engineers (m/e/p); McKee & Deville Consulting Engineers (structural); BAI, Boner Associates (acoustics)

General contractor: The Lemoine Company

Size: 55,000 square feet

Cost: \$9.5 million

Sources

Windows: Custom Windows

Glazing: Architectural Glass and Metal

Doors: Architectural Wood Products; Architectural Glass and Metal

Interior stone: Intrepid Enterprises

Plaster and veneer plaster:

Southern Stucco

Wood flooring: Aacer Flooring

Cotton fabric ceiling: Quantum Sail Design Group

Furnishings: Architectural Wood Products; Sunset Settings; Herman Miller

Lighting: Engineered Lighting Products

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

Louisiana State University's Gym Armory building was constructed in 1927, when athletic facilities enjoyed the dignity characteristic of academic structures on the campus. The brick and limestone building is a symmetrical mass in the Italian Renaissance style established for campus architecture in the early 1920s. The 2002 interior renovation reinforces the connection between academics and athletics. The design by Trahan Architects distills the historic architectural language to its essence, creating a sequence of clean, clear spaces that articulate rational thought in three dimensions.

Program

The not-for-profit Tiger Athletic Foundation, which supports LSU athletics, commissioned the Trahan firm to turn the Gym Armory into an academic center for the school's athletes while respecting its historic style. The program called for the conversion of 55,000 square feet spread over three floors into counseling, tutorial, study, and career-resource spaces for college players. To pull the academic community more firmly into the facility, the program also included a computer lab and auditorium for classes and lectures open to the general campus population.

Trey Trahan, AIA, explains that, as principal in charge, football coach

Christine Kreyling is architecture critic for the Nashville Scene.



Nick Saban “wanted to increase the graduation rate” for his players by developing “an academic environment conducive to their special needs.”

The center's executive director, Dr. Roger Grooters, had previously worked with Saban to develop a similar academic center at Michigan State University. “We realized the power of such a facility, for both recruiting and retaining athletes,” Grooters says. Parents and prospective students “can see in the center the commitment on the part of the university to support student athletic development.”

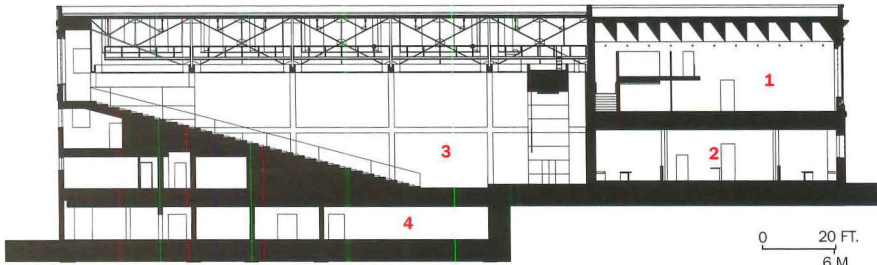
Solution

The Trahan team followed the lead of the 1927 structure. They abstracted a 1 by 2 proportional module from

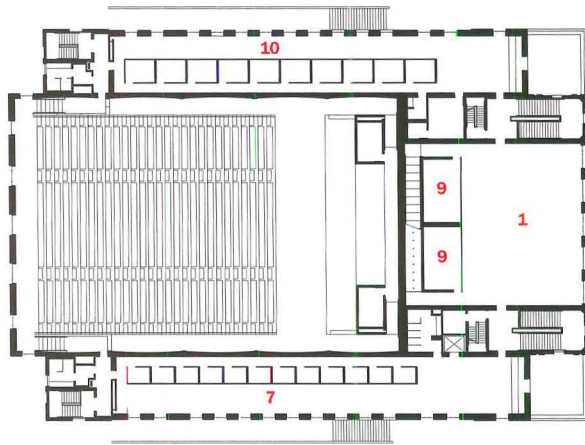
the existing skeleton to determine the pattern of new interiors. They also retained the building's symmetrical organization while paring away remodelings that had obscured the volumes of the historic interior. Project designer Jason Hargrave, AIA, says the team articulated the chronological gap between exterior and interior by means of a ¾-inch reveal—between floors, walls, and ceilings—that suggests new skin is floating within the old shell. The architects utilized a simple and consistent palette of colors and materials—white to blonde for the rooms at the building's perimeter, warmer and darker for the core—to evoke serenity. “Student athletes lead life at a pretty hectic pace,” Trahan says. “We felt that minimiz-

In the adaptive reuse of the Gym Armory building, symmetrical arched entrances are defined by bronze walls inscribed with the names of donors (right and below). Inside, austere halls of cream limestone continue the subtle exploration of light, mass, and volume (opposite).

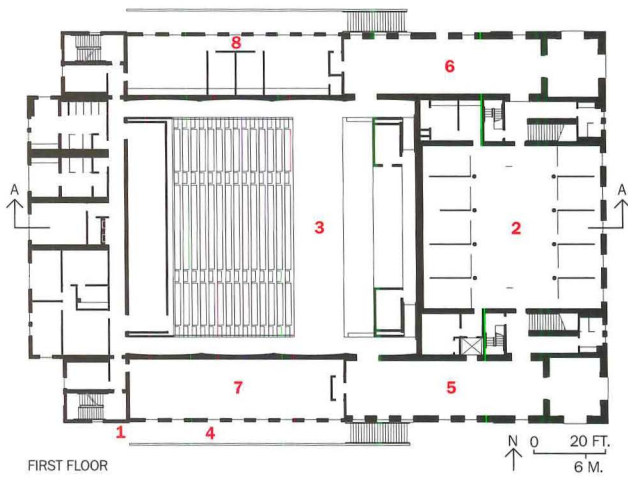




SECTION A-A



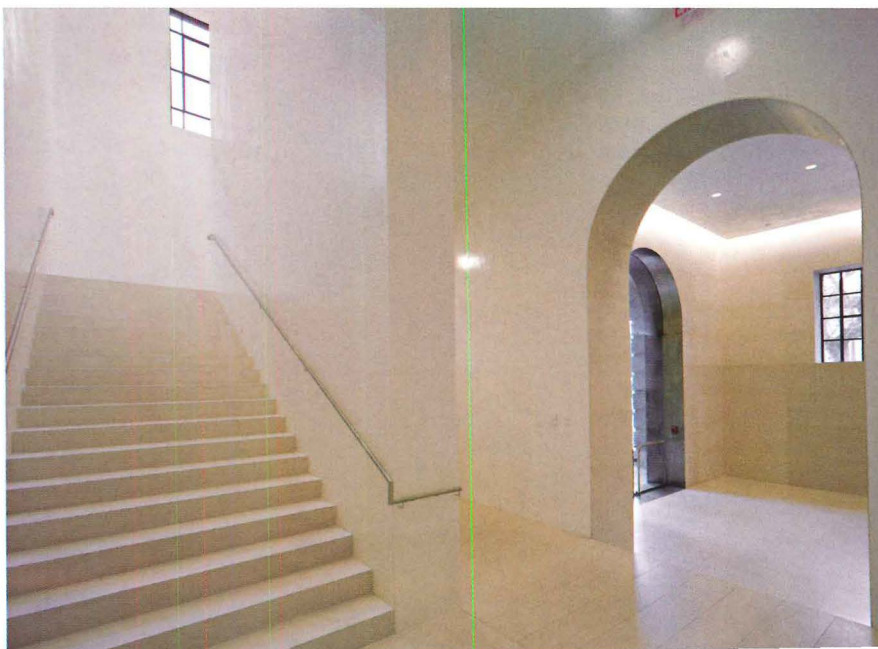
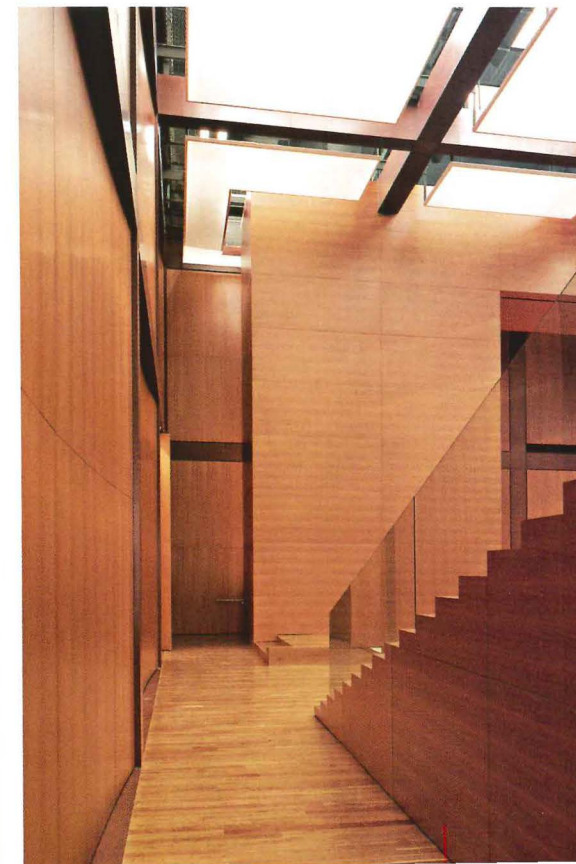
SECOND FLOOR



FIRST FLOOR

1. Reading room
2. Offices
3. Auditorium
4. Basement
5. Academic Hall of Fame
6. Hall of Champions
7. Computer lab
8. Directed studies center
9. Classrooms
10. Study hall

A return to the original building materials and volumes that had been compromised over several decades of renovation have resulted in pure, uninterrupted spaces.



ing visual distractions would help them focus on their studies. And because jocks can be pretty hard on their surroundings, we needed extremely durable materials: limestone, 2¼-inch solid plaster rather than gypsum board.”

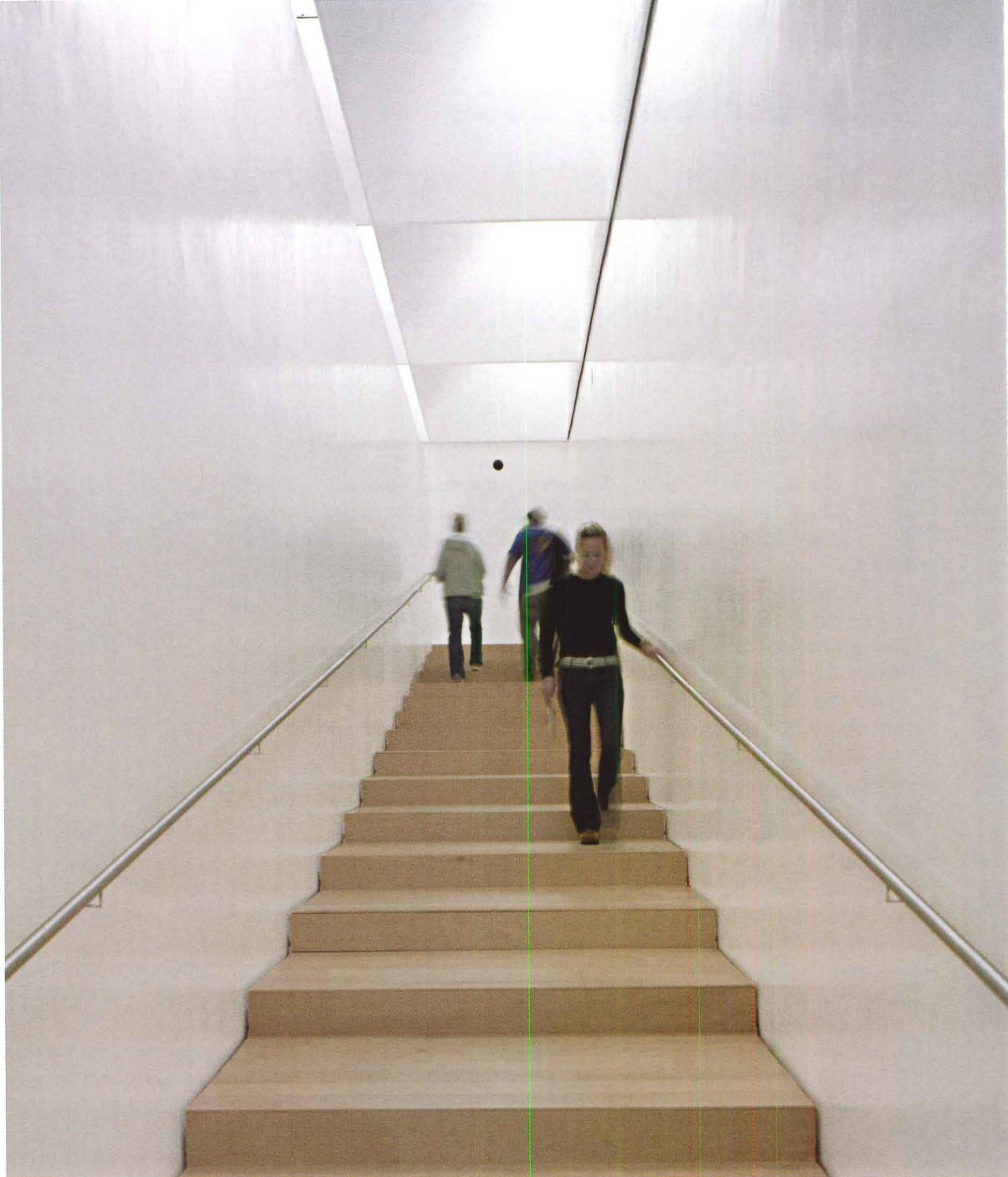
The architects located spaces open to all students on the first floor. Symmetrical arched entrances are defined by bronze walls inscribed with the names of donors. Inside, in austere halls of cream limestone, inscriptions pay homage to athletes who achieved academic distinction and teams that won championships. Between the halls, the center’s administrative complex is the first in a series of spaces featuring unpainted but sealed plaster and pale maple. Offices are divided from reception by acid-etched glass to allow natural light to penetrate the interior.

Monumental mahogany doors open into the auditorium, which Trahan calls “the rich box” at the heart of the building. The architects used original columns, beams, and trusses as the grid for the wood-clad room. Book-matched mahogany veneer emphasizes the slight curvature of the walls. Cotton fabric panels within the trusses allow sound and light to filter from fixtures while concealing visual clutter.

Upstairs, in space once occupied by the old gym’s tiered seating, the architects placed the computer lab and study hall. Desks of solid plaster are cantilevered from plaster walls, forming smooth cubicles for concentration. In the library/reading room, the architects restored the 20-foot height of the space, revealing the windows’ original arcuation. Illuminated coffers in the shape of oblique parallelograms create a dynamic pattern of light and shadow.

Commentary

The one off note: The introduction by university personnel of dark carpeting and furnishings—not to mention potted plants and other paraphernalia—contrasts too definitively with the architects’ subtle gradations of color and texture. Sometimes, as Trahan Architects has demonstrated, less really is more. ■



Up the stairs (above), the architects placed the computer lab and study hall. In the library/reading room (left), they restored the 20-foot height of the ceiling, revealing the windows’ original arched forms.

Post-Occupancy 2006

Louisiana State University's Cox Communications Academic Center for Student Athletes Baton Rouge, Louisiana

By Jayne Merkel

Louisiana State University's decision to convert an elegant classical gymnasium into a place where athletes can study produced the best of both worlds: a proud, traditional structure in a prominent location on campus, replete with sleek, modern, inspiring places. Architect Victor Trahan III, FAIA, transformed the gym into study space with originality, skill, and sensitivity to the purpose of a university, designing simple interiors that are almost monastic in character.

Rehabilitating an older structure produced other happy side effects, such as interior spaces that are larger than they would have been if the building had been designed from scratch. "Because we were restoring and renovating a large building," Trahan explains, "the owner made the decision to utilize more space than would have been considered for a new facility, so we made allowances from the start for growth in the number of users."

But there was a downside to working with an older building. "We would have likely designed a different entrance from the two entry points of the historical structure," Trahan admits. "Because we were restoring an historical building, there were certain restrictions and conditions that were dictated in terms of volumes."

Trahan is happiest with student response to the center and the fact that "we were able to restore one of the most historical buildings on the LSU campus to its original mission, that of being a vibrant gathering place. I also like that we were able to make a successful transition from historic to modern, using clean detailing and natural materials."

Jade Jenkins, assistant director of the Cox Center, says that the building has become something of an icon. "It serves as a huge recruiting tool when students come on campus," she says, adding that when recruits return as actual students, they begin to appreciate the center even more.

LSU student John Pourciau, for one, likes "the way the historical exterior and the modern interior play off each other. From the outside, the building fits well into the rest of the campus; once entering, it becomes a new and pristine environment in which to learn."

Jay Lawless, another student, is impressed by "the building's sleek design. It always looks clean and it gives the feeling of being in a place of uniqueness."

Students notice other little, but no less important, details. "The seats are not too close together, and there is plenty of room, so you do not feel crowded by other students," Jennifer Mire observes. Student-athlete Jeff Cook adds, "The personal study rooms are very impressive. They allow a student to get one-on-one tutoring in an easy and quiet manner, or to have quiet time to do homework."

Cook, however, is less fond of the center's enormous auditorium, although not necessarily because of its aesthetics. "A class with 1,000



Trahan Architects preserved the character of LSU's 1920s-vintage gymnasium by inserting spare interiors that are almost monastic in character yet encourage both quiet study and socializing.

people is something to get used to," he says. "That is just a big class." Still, he agrees that "the building looks impressive from the outside, and once you enter, it is even more impressive."

Indeed, student Matthew Monceaux feels that 1,000-seat auditorium is "the best part of the building. I think it provides a good environment for a class. I personally enjoyed my class in the auditorium and did not feel that it was too large."

The center's project designer, Jason P. Hargrave, AIA, who worked at Trahan Architects when the center was underway but is now at Post Architects, thinks one of the most successful parts of the project is its unique program. It "combines intense academic support for student-athletes with general-use spaces such as the computer labs and 1,000-seat auditorium," he notes, "which allows for chance meetings and interactions between students and faculty who might otherwise be segregated."

Hargrave also likes that "the building's rigorous use of existing space and resources can serve as a model for inserting a timely and contemporary architectural language while preserving, and restoring, an important historic resource within its rich campus fabric." He was disappointed, though, that the architect was not able to design the building's surround-

ings. "Our scope ended at the building envelope, but there was perhaps a missed opportunity to expand the experience further into the landscape."

In a similar vein, Victor Trahan bemoans the fact that "some of the furnishings are inconsistent with the nature of the spaces. There is always a tendency to 'decorate' a new building, which does not always complement its design."

Trahan adds, "If we were starting over, I think I would try to integrate more diversity into the program as a way of more fully involving the student-athletes in campus life. While the auditorium serves as a general classroom and lecture hall for the entire campus community, we might look at something like a coffee shop or another space to provide a greater opportunity for meeting other students and faculty members."

When asked how the architects planned for future changes to the center, Hargrave responds, "It was important to us and to the client to provide a strong infrastructure for technology—primarily data and audio-visual—that would, as best as we could, provide for the incorporation of emerging technologies. Because of the minimal direction of the interiors, this was especially challenging, but through strategically located access to mechanical areas and raceways, I believe we were able to provide a facility that can evolve with the center's needs. One example is the system of catwalks above the fabric ceiling in the auditorium. All of the lighting, mechanical systems, and audio-visual equipment—speakers, cameras, and such—are easily accessed and maintained. Barring some very fundamental change in the way these systems are implemented, the auditorium can be easily upgraded and maintained without sacrificing the original design."

Hargrave continues, "We learned with the design of the center that today's students do appreciate quality architecture and are respectful of the building. While some would argue that you should be very utilitari-

an or industrial when designing for student-athletes, we found that they have been very proud of the building and respectful of the limestone, plaster and wood finishes, maintaining the beauty of the materials used in the renovation."

One of the building's most personal touches forges this connection: two halls that honor both academic achievement and athletic championships. "We designed these halls so that the names of individual students and teams can be added to the limestone walls to provide permanent honor for their accomplishments," Trahan says. "It was our intent that these walls would change over time and be enriched in texture as the new names were sandblasted into the limestone."

Like every other detail in the center, this one hasn't gone unnoticed. Student Adam Marchand comments, "The entry Hall of Champions is a nice touch—it's sort of an inspiring moment for any athlete to see the great competitive accomplishments of the university—but it's still within the context of an academic center, thus showing that these things are not accomplished with only athletic ability, but on the foundation of knowledge."

That's a very sophisticated message for a building to give. ■

LESSONS LEARNED

- Retrofitting an historic building can provide even more space than needed.
- Allowing the building architects to supervise interior design, rather than bringing in decorators, provides a more consistent environment.
- It is possible to preserve the elegance of an historic building and create an exciting modern environment at the same time.
- A beautiful campus building can be a recruiting tool.



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Broad Center for Biological Sciences at Caltech

Pasadena, California

2003

PEI COBB FREED & PARTNERS AND SMITHGROUP USE SCALE, PROPORTION, AND MASSING TO RELATE A MODERN LAB TO A SPANISH COLONIAL CAMPUS.

By Suzanne Stephens

Design Architect: Pei Cobb Freed & Partners—James Ingo Freed, partner in charge, design; Michael D. Flynn, partner, technology and administration; Richard Cutter, associate partner, project manager; Robin Taff, senior associate, design

Executive architect: SmithGroup—Susan O’Connell, principal in charge, project manager; William L. Diefenbach, laboratory design principal; Bernard Kummer, project architect

Client: California Institute of Technology—William Nunez, project manager, physical plant department

Consultants: ARUP (structural, acoustical, m/e/p); Kornberg Associates Architects (laboratory planner); Land Images (landscape); Horton Lees Brogden (lighting)

Size: 118,000 square feet, including two floors (57,300 square feet) below grade. Outdoor spaces include an 11,500-square-foot courtyard, a 24,040-square-foot pistache-tree mall, and a 7,000-square-foot palm grove.

Cost: \$47 million

Completion date: Fall 2002

Sources

Stainless-steel cladding: Nisshin Steel

Travertine cladding: Marriotti

Granite: Cold Spring Granite

Metal roofing: Follansbee Steel

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

Caltech may be famous in the scientific community for its research and training, but it is also revered by many in the architectural world for its handsomely arcaded Spanish Renaissance- and Mission-style campus. The romantic sensibility of the original master plan, developed by Bertram Goodhue in 1915–17, was marred, however, by garishly unsympathetic expansion in the 1950s and 1960s. No amount of lush palms and pistache trees could cover up the egregious mistakes.

In 1985, the city of Pasadena began reviewing major changes on the campus. A new master plan conceived for the school in 1989 encouraged additional buildings to reinforce the architecture and planning of the Goodhue vision but couldn’t guarantee adherence to the proportions and delicacy of ornament of the originals. Then a proposal for a new biological research center came along that opened up issues of historicism. The lead donor for the center, Eli Broad, chairman of AIG SunAmerica financial services company and a renowned patron of the arts and architecture, wanted a “high design” architect. Broad, along with Caltech’s president, David Baltimore, interviewed Richard Meier, Gwathmey Siegel, Robert A.M. Stern, and Pei Cobb Freed. Although this group is not outrageously avant-garde, only Stern could conceivably have “Mission” as his middle name. But



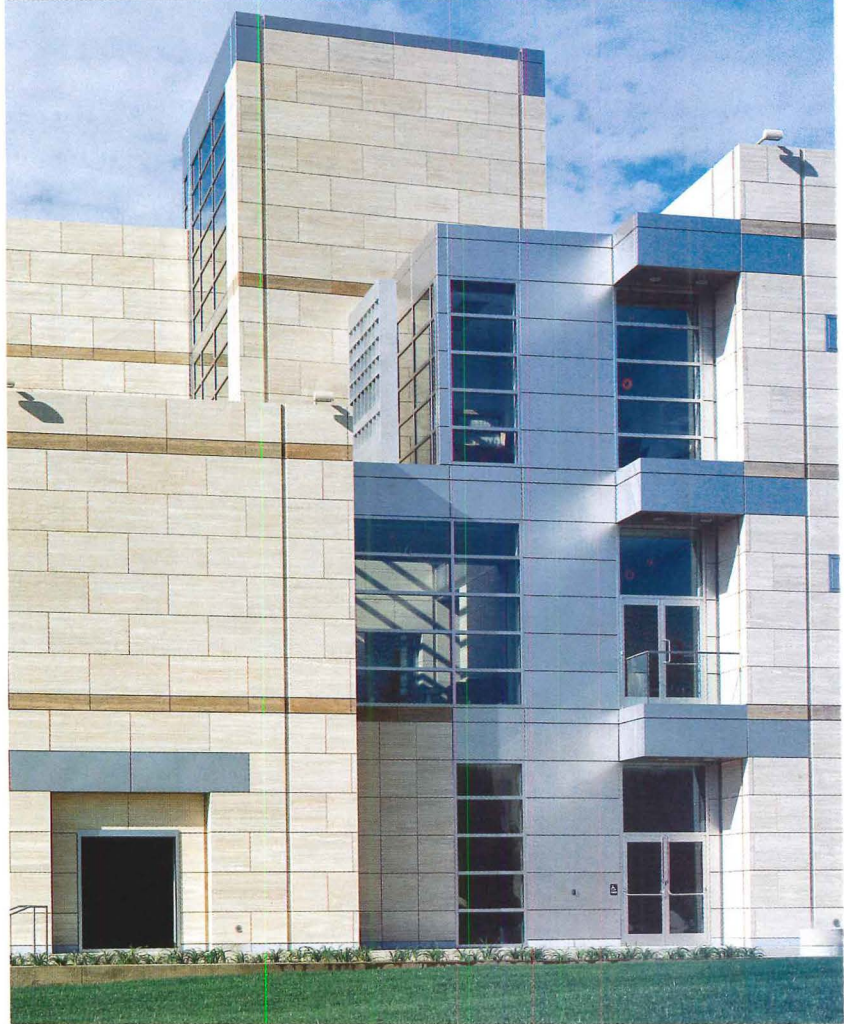
Broad and Baltimore chose Pei Cobb Freed. “We were taken by James Freed’s ‘hybrid’ architectural approach,” explains Broad, alluding to the architect’s desire to bridge the old campus to the south with future expansion to the north through the building’s carefully massed blocks of stainless steel and travertine.

Pasadena’s design review commission, however, wasn’t sure that Freed’s solution was fully in keeping with the spirit of Caltech’s master plan, particularly since it lacked an arcade. The school appealed the case to the city council, which in turn sided with Pei Cobb Freed. Because of the firm’s New York location, Caltech asked it to associate with the SmithGroup, whose Los Angeles office, headed by Susan O’Connell, has designed a number of educational buildings in the area.

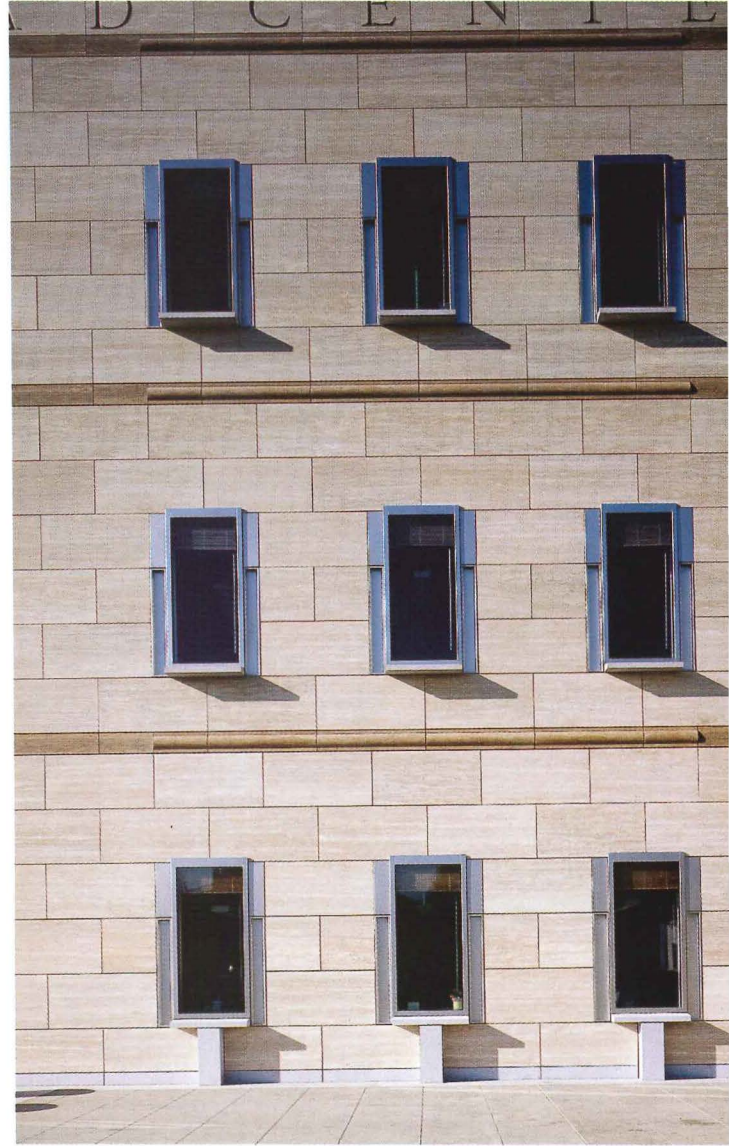
The clustered, travertine-clad masses of the south side of Broad Center (above) face the existing campus and the Beckman Institute, designed by A.C. Martin in 1989, next door.

Program

The program called for an 118,000-square-foot laboratory flexible enough for the “primary investigators” and their research teams. Needed were labs with work space for computers, wet areas for experiments, plus an experimental Magnetic Resonance Imaging facility, along with seminar rooms and a 100-seat auditorium. But just as important were lounges that could foster casual interaction between students and professors of various disciplines. In addition, the lab was not only to serve as a gateway for future expansion to the north, but to



The west facade is marked by stainless-steel cladding with perforated-steel-plate awnings (above and below left), while the south entrance (above) is mostly travertine.



- | | | |
|-------------------|------------------|------------------------|
| 1. Auditorium | 6. Labs | 11. Shipping/receiving |
| 2. Prefunction | 7. Lab support | 12. Pistache arcade |
| 3. Light tower | 8. Great lawn | 13. Palm Grove |
| 4. Administration | 9. Oak courtyard | 14. Seminar room |
| 5. Offices | 10. Café | 15. Student lounge |

The one-story pavilion for the café (photo, bottom left), which was not initially in the program, was added to provide a social link to the cam-

pus as well as serve the students and faculty. A bridge and fire stair link the center to the café. Both the north facade of embossed stainless

steel (top left) and the south facade of travertine (above) are precisely detailed with projecting sills and floated windows.



GROUND FLOOR

N 0 30 FT.
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SECOND FLOOR

hook into the circulation routes for the rest of the campus to the south.

Solution

To preserve the open space on the 2.2-acre site, Freed opted for a double-cube block, and Arup engineers addressed earthquake concerns with an unbonded, braced-steel-frame structure. The plan, essentially a grid with cross-axial circulation, places labs on north, west, and east sides, with nontechnical spaces, including the entrance, extending along the southern portion. A 67-foot-tall "light tower" with a monumental stair at its base is included to give a sense of space and architectonic drama to the interior. The south facade, oriented to the existing campus, is clad in travertine to echo the solid surfaces of the older buildings. The other exterior walls, which enclose the labs, are sheathed in a shimmering knock-'em-dead stainless steel with an embossed finish. "It suggests a technological occupancy," says Freed.

Commentary

This hybrid of materials and massing successfully makes a transition between old and new campuses, and the detailing obviates the sense of blockiness. While the villagelike cluster of solid forms on the south facade relate well to the nearby architecture, the other steel-clad facades—light, thin, lustrous—carry the day.

Not only does the luminous stainless-steel finish subtly catch changes in daylight, its intricate articulation of reveals, indentations, projecting sills, and other details seems to take its inspiration from Carlo Scarpa, with a touch of Otto Wagner. Yet, the new addition follows the underlying principles of the campus, retaining the same scale, massing, proportions, and rectilinearity of its Goodhue-esque antecedents. The lobby stairway to nowhere (it ends abruptly on the second level) in the glazed light well seems odd. But that anomaly aside, it is understandable why Broad considers the lab building a "triumph," and Baltimore calls it "beautiful and remarkably functional." ■



A monumental stair (right) sits at the base of the light well, surrounded by lounges (bottom right). The labs are arranged along storage corridors (bottom left).



Post-Occupancy 2006

Broad Center for Biological Sciences at Caltech Pasadena, California

By Jayne Merkel

The main mission of the superbly equipped Broad Center for Biological Sciences is to generate new ideas. One way of doing this is to provide spaces in which highly specialized researchers can meet people possessing other kinds of expertise. On each floor of the building, lobbies, dubbed “family rooms,” allow for exactly this kind of socializing. Architect Susan O’Connell is thrilled with the “community of research” these rooms have created. “The family rooms provide space for researchers and students to interact,” she says. “The openness in the labs has made a very large building inviting and accessible. The offices are clustered in the middle of the lab to encourage cross-disciplinary dialogue. The meeting rooms and their relation to the lab spaces work very well. My favorite public space is the courtyard between the lab building and the café building. Sitting under the 150-year-old oak tree gives one perspective.”

O’Connell, who is now an independent consultant working on various projects at Caltech, led the team from SmithGroup that collaborated with Pei Cobb Freed & Partners (PCFP) on the project. Design architect James Ingo Freed, who died last December, was already severely disabled by Parkinson’s disease when the project began, but, as PCFP project architect Robin Taff explains, he agreed to travel from New York to Los Angeles every two weeks to work on the job. His commitment proved invaluable. For instance, O’Connell points out that it was Freed who came up with the building’s horseshoe-shaped plan. “The lab block wraps around on the west, north, and east,” she explains, “while the south portion of the building houses the shared meeting and lounge spaces. The faculty offices are right in the middle and anchor the lab areas.”

William Irwin, director of Caltech’s physical plant, believes that this layout is the building’s most successful element. “All of the wet lab facilities taking on the same design has been effective and efficient in recruiting new faculty,” he says. “Corridors and even stairwell areas are designed to accommodate interaction and create a researcher-friendly environment.”

Nurturing collaboration, of course, is just what the architects were after. “The mission of the Broad Center is to bring together scientists from different disciplines to investigate the biological nature of consciousness, emotion, and human perception,” says O’Connell. “With that in mind, shell space was created in the basement area to provide lab space for future scientists. The first build-out of that shell space was for a researcher in the social sciences who studies brain images in trying to map the brain and its functions. The imaging suite has morphed over time as new recruits and new imaging equipment have been acquired for the building. So far everything has fit, and changes were made quite simply.”

Even so, the fact that less than half the faculty had been hired when the Broad Center was being planned did present some problems. “As the researchers were brought into the building, the design team redesigned the space specifically for each of them,” O’Connell explains. “This required lots of time and added to the cost of construction significantly. I would encourage any university to set aside more funds in advance, knowing that the recruitment process will take place over a several-year period.”

Fortunately, the architects designed the building in a way to make retrofits easy, enabling scientists to tailor each space to their individual needs. Says O’Connell, “The research activities at the Broad Center range from studies of minute molecular structures to studies of whole organisms. The entire lab building is designed to be able to change from office to dry lab to damp lab to wet lab with minimal alterations and no disruption to other lab groups. This is an expensive proposition, but Caltech wanted to be able to accommodate a diverse group of scientific needs.”

“I WOULD INSIST THAT THE ENGINEERING TEAM BE FULLY ENGAGED IN THE PROGRAMMING PROCESS FROM THE VERY BEGINNING,” SAYS ARCHITECT SUSAN O’CONNELL.

This flexibility stems largely from the building’s service core. “Some of the ‘dry’ areas have services capped off, so they are easily accessible if the areas need to be converted to ‘wet,’” Irwin, the physical plant director, notes. “There is also interstitial space above the vivaria, which provides for better maintenance access as well as the ability for change. Sufficient power capabilities were designed in for increased occupancy and equipment increases.”

Asked what he would do differently if the Broad Center was being designed today, Irwin says that he would make the building larger. “We have increased people and equipment density. So far the changes have been accommodated, but the building is only four years old.”

O’Connell shares this sentiment. “The labs are packed and the ring corridor around the inner edge of the lab could have been bigger to allow for larger equipment—although I am sure that the scientists would simply find larger equipment and fill it up. It is always a dilemma in lab design.” She would also make more space for telecommunications and server rooms. “Researchers have several computers per person in the lab and this is going to continue to grow.”

Another change O’Connell would make if she were designing the building now would be to “encourage open labs with generic systems

for planning purposes, knowing that with each specific individual there will be customization. I would design a more generic open wet lab with a 'kit of parts' concept for individual customization." And, she continues, "I would insist that the engineering team be fully engaged in the programming process from the very beginning to properly size all of the building systems during programming instead of finding out those sizes during the first few months of design."

Similarly, she advocates planning design time during construction documents and construction, "knowing that the team needs to shift focus and accommodate new researchers during the entire design and construction process."

Seismic design, a significant element of planning for the Broad Center, would not be necessary in other parts of the country. But as Robin Taff observes, the way that the institute approached this—using a newer concept called performance-based structural design—may provide a good model for other places.

"Caltech typically asked engineers to design to code times 1.5," O'Connell says. "Instead of just meeting Caltech's code requirements, the engineers—ARUP, Los Angeles—specifically analyzed the structure and proved that less steel could be used, saving money, and would perform better if they made a computer model of the structure and tested it. The team used unbonded braces, or concrete-encased steel braces, to take advantage of steel's tensile strength and concrete's compressive strength. The engineers in Caltech's structural department were willing to listen to new ideas and change the way things had been done at the school for the last 30 years. So we saved money and got a structure that

would fare much better than a conventional brace frame in an earthquake."

This willingness to collaborate and rethink old ideas was a hallmark of the entire project. Taff recalls a process in which the faculty was "very passionate about how things should be." When the building was completed, researchers came together in the family rooms for meals, casual meetings, and late-night chats.

In a symbolic way, collegiality extended to the building's facade. The Broad Center's elegant exterior facilitates a smooth transition between romantic Mission-style buildings on the school's main campus and an expansion area where new buildings will rise. And as testament to how James Ingo Freed's colleagues at Caltech felt about his work, they inscribed his firm's name on the facade's stone wall. ■

LESSONS LEARNED

- Whenever possible, hire researchers before programming a building.
- Listen to new ideas. Caltech's willingness to change a 30-year-old method for engineering buildings to survive earthquakes led to a safer structure and saved money.
- Convenient, attractive, informal meeting spaces, such as the Broad Center's "family rooms," really do lead to the exchange of ideas.
- Although it is expensive to design a building so that office space can be converted to a dry lab, damp lab, or wet lab with only minimal alterations, allowing for this flexibility saves time and money in the long run.

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▲ Chairs that let you move

The Permiso conference chair (left) allows users to change posture and stay engaged in meetings through the application of four features: a folding arm option, continuous back and arm, recessed arms, and a chair back of ideal height for an armrest. The x-Stack chair (right) offers an optional right- or left-handed table, an ambidextrous monopod for laptop use, and a cup holder. Vecta, Grand Prairie, Tex. www.vecta.com

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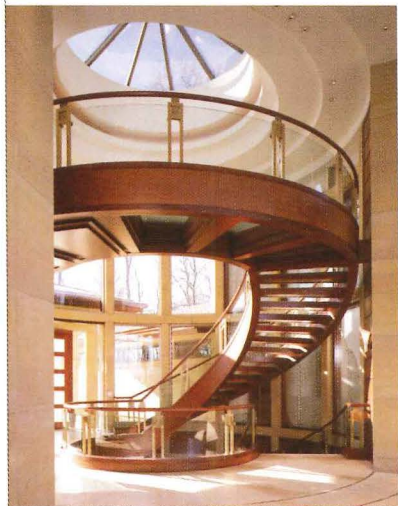
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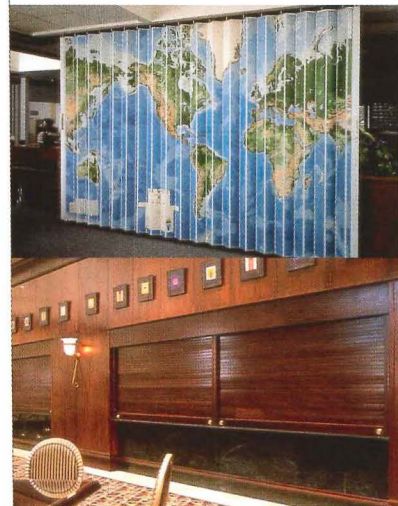
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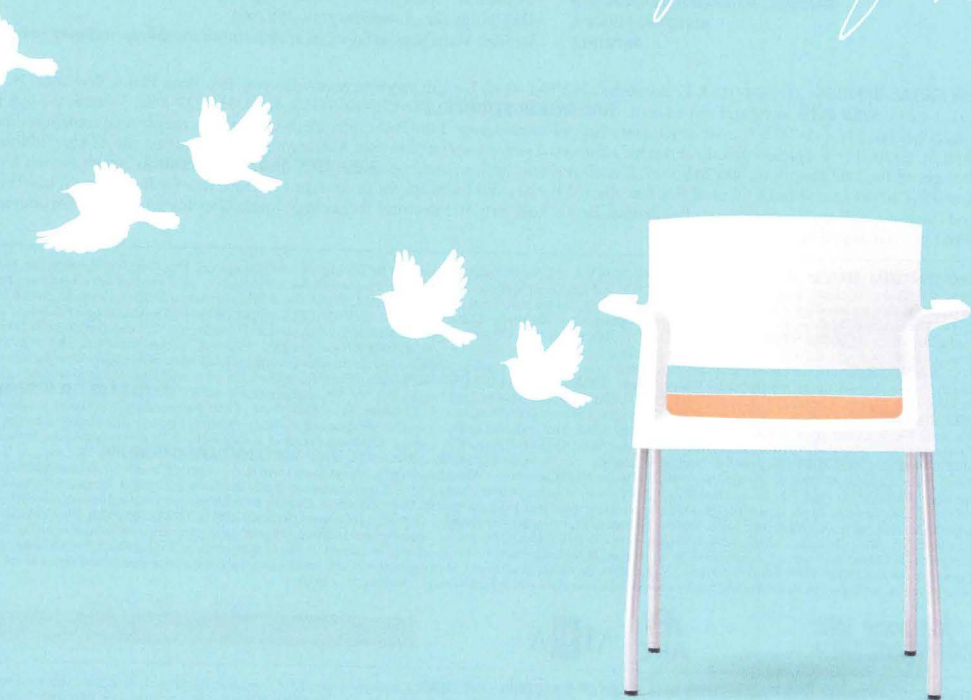


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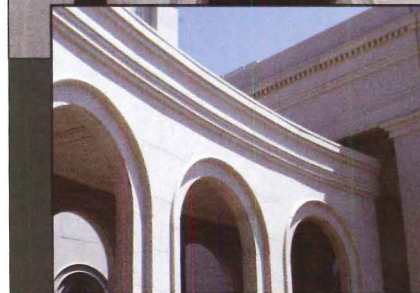
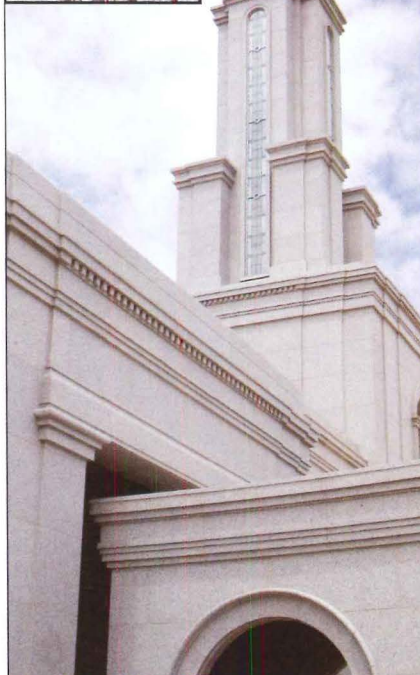
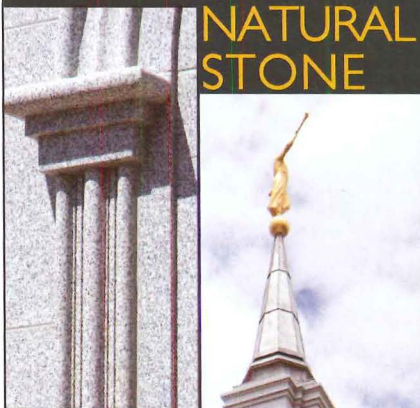
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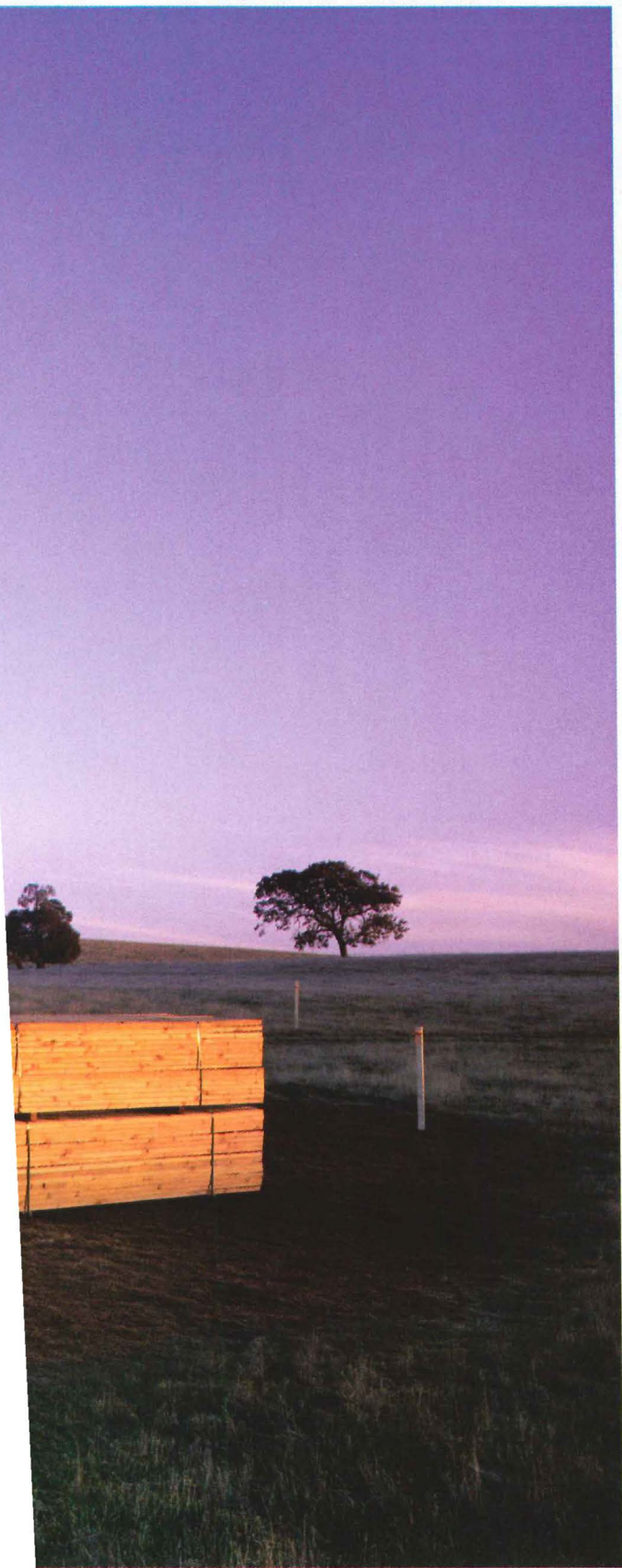
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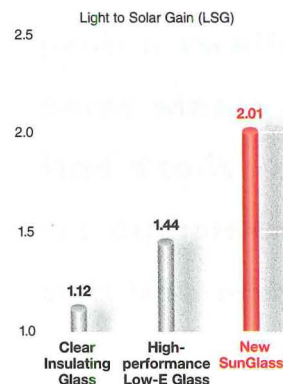
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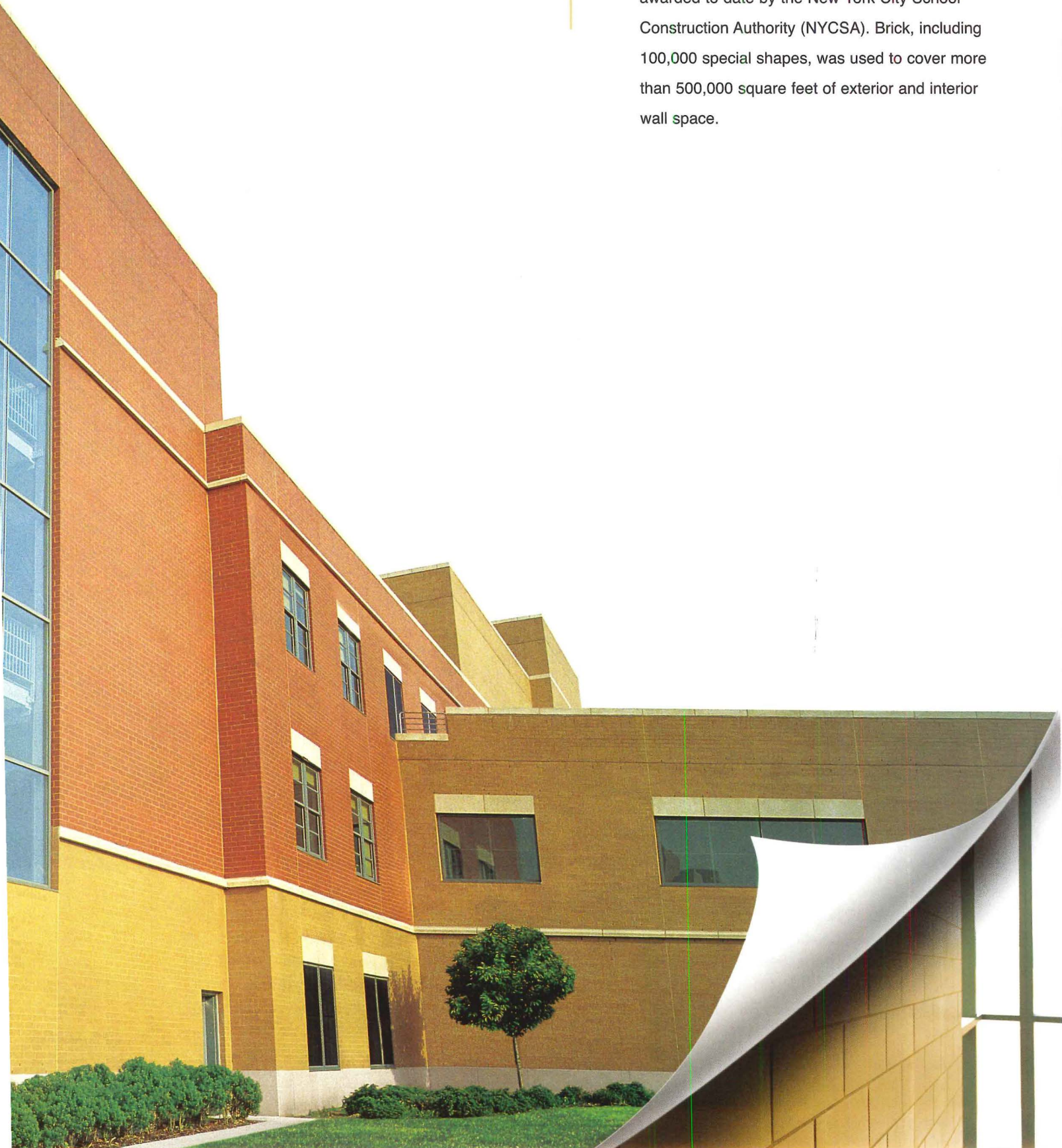
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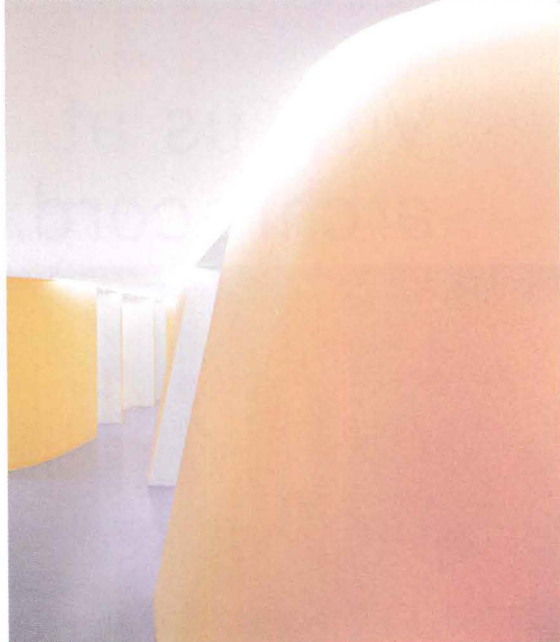
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Right: La Maison Unique Longchamp, by Heatherwick Studio. Photograph by Nic Lehoux.

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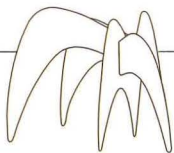
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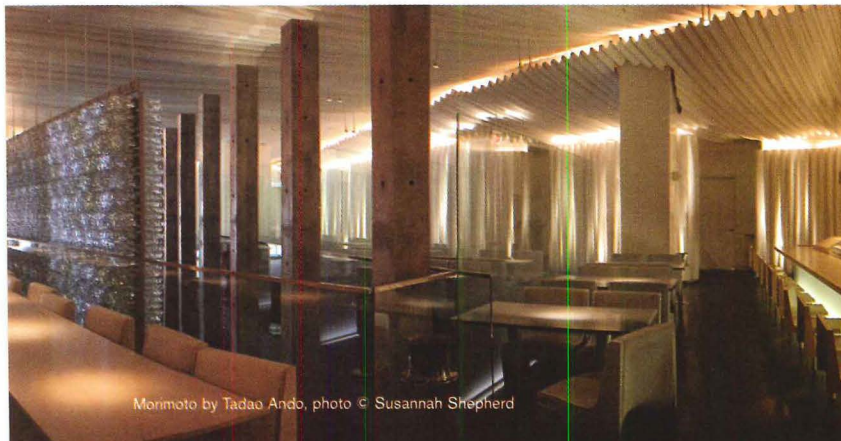
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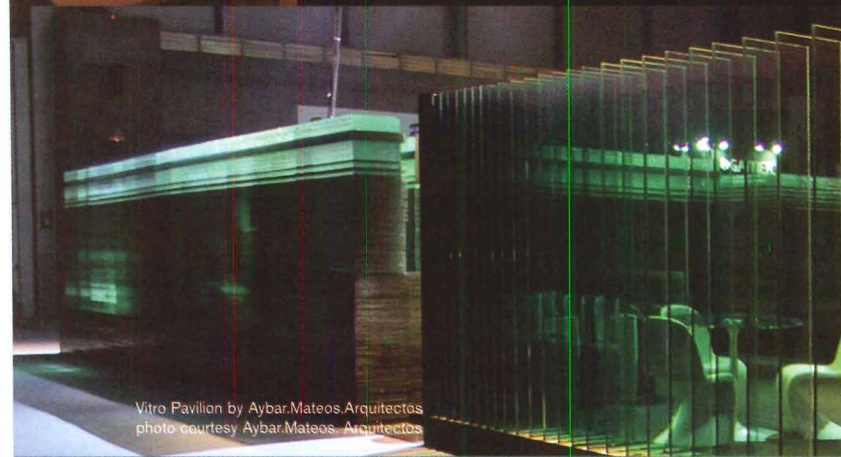
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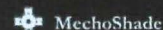


Vitro Pavilion by Aybar.Mateos.Arquitectos
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Record Interiors

From a dental clinic in Berlin to a beauty salon in Tokyo, the seven Record Interiors projects shown here present new insertions that compellingly alter our perception of an existing structure. Light, transparency, the dazzling multiple views seen through a kaleidoscope, tubelike passageways of rubber and vibrant red resin, prisms of water-filled bottles—all these and more are included in the evocative techniques and materials being used by our featured architects to create intimate, sculptural interiors.

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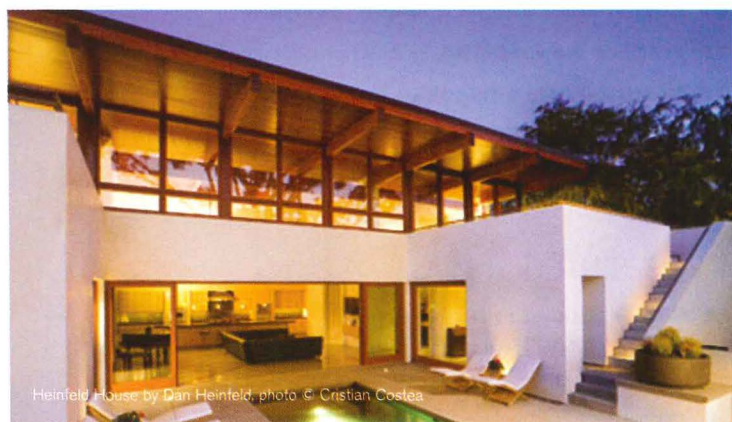
Web-Exclusive Interiors

Online we present 10 more interiors that awaken the senses and offer spatially transformative experiences. Go to archrecord.com for Web-only videos, panoramas, and pictures that let you in these inspired spaces.

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Heinfeld House by Dan Heinfeld, photo © Cristian Costea

Archrecord2

The emerging architects featured in this month's archrecord2 are living for ideals—and setting the highest of standards for their work. Examples? SsD's house almost completely constructed of discarded materials from Boston's Big Dig, and Trevor Pan's two-year labor of love, 3 Desert Way. Visit www.archrecord.com/archrecord2/ for more.

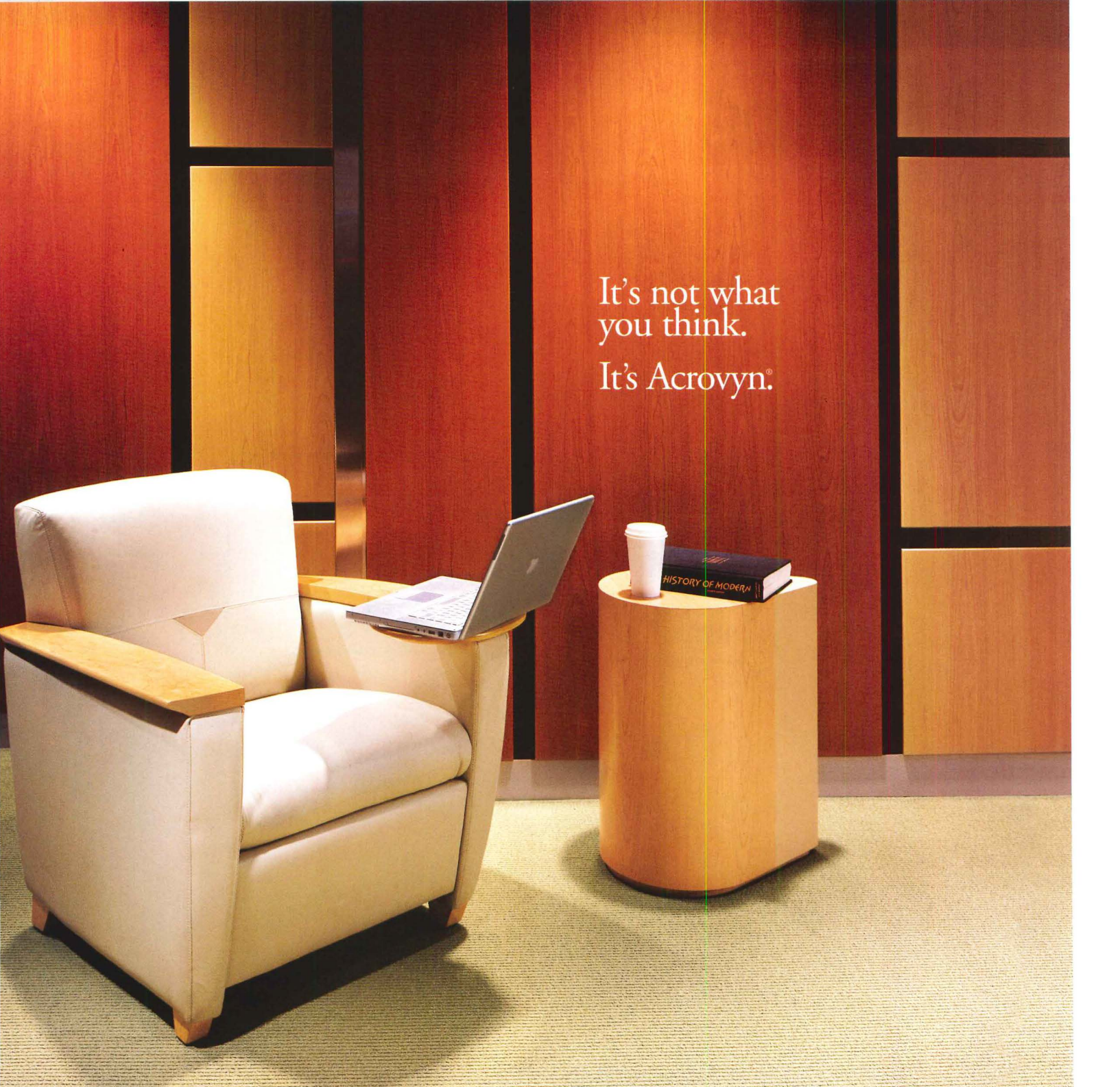
House of the Month

Built with green principles in place from openings to envelope, this architect's home in Newport Beach, California uses pocket doors to bring the outside in or keep it out depending on the climate.

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CIRCLE 10 ON READER SERVICE CARD OR GO TO ARCHRECORD.CONSTRUCTION.COM/PRODUCTS/

Editorial

By Robert Ivy, FAIA

The sight of thousands of passengers in the long lines at Heathrow Airport, JFK, and LAX, snaking through the arrival halls or waiting patiently outdoors in rain slickers on August 10 produced a familiar kind of dread mixed with acceptance: Since September 11, 2001, our world has irrevocably changed. In assessing the implications of the attacks on the World Trade Center and the Pentagon, we find that—besides the discussions and plans for the affected sites and their memorials, and our new awareness of the elevation of architecture in the popular consciousness—the aftermath of those events has provoked spirited debate and sometimes transformation in the built world. Five years later, we ask, have we in fact progressed toward safer, healthier spaces?

To judge from the expressions on the faces of the waiting public in the airports, not much. Despite massive investment in airport security, including computerized baggage screening, various metal and trace explosive detectors, surveillance and perimeter intrusion systems, we still have no effective way of pinpointing liquid, peroxide-based explosives in our airports. So-called “puffer” technology, which emits bursts of air to find explosive traces on clothing, comes at a high price and takes up more precious space. Nor do we have guarantees that terrorists would not find other ways of slipping through the permeable borders that airline terminals, not to mention rail centers and ports, represent.

With all our investments and all our cleverness at tightening things up, we remain vulnerable. Aviation Week and Space Technology recently reported that if the perpetrators of the recent airline plot in Britain had managed to secrete the liquid materials among their possessions, they might well have slipped through security and boarded their intended flights. Another new gadget might have helped, but there is no guarantee.

As a culture, we have relied on technology to solve problems sometimes better solved by people. Investigators, real people using human intelligence, not electronics, cracked open the plot, exposing the intentions of more than 20 persons to blow up planes of four different airlines before they set foot in an airport or entered the area we call “security.”

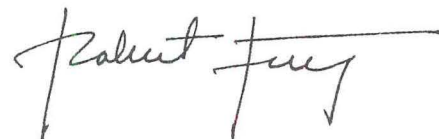
What can we learn from these experiences, and how can we architects make a difference? The shift in tactics by a dangerous few has implications for architects worth considering. First, the dynamics of security

in the post-9/11 world requires nimbleness of response. Yesterday’s norm, a bottle purchased in a duty-free shop, becomes tomorrow’s incendiary device. Marilyn Jordan Taylor, FAIA, who has led major terminal design teams at Skidmore, Owings & Merrill, places the burden on design professionals not only to “understand operations and security” at airports, but also “to provide acceptable, understandable experiences for passengers.” If others control security, architects control the experience, she postulates.

In a world with increasing surveillance, a world that sometimes feels as inescapable as the terminal in Steven Spielberg’s film of that name, we may face other days similar to August 10, despite our collective efforts. Will architects have provided pleasant places for queuing? Places of rest or peace in the hubbub? Opportunities for the elderly or the weary to sit? Changes in lighting levels, in perspectives, in coloration? While we will inevitably require choke-points for maximum scrutiny, can we also provide comfort, settings that minimize fear and maximize our awareness of personal space and of individual self-control? And what to make of cell-phone-infested waiting areas?

For those relatively few architects tasked with upgrading existing terminals or building new ones, we can segregate movement systems in a way that effectively separates cars and people, that minimizes feelings of anxiety caused by crowding, and that still gives us a sense of arrival and possibility that travel suggests. Airports, like the rail terminals that preceded them, remain primary points of embarkation and arrival, now stretched to the global scale.

What have we learned in five years? Machines may give us the illusion that we are actively solving the security problem, but the human mind, the most remarkable machine, deserves our full attention as architects. While we may not be security experts, shaping the character of human behavior in public space lies squarely within our hands, an ability undetectable on anyone’s screening system.



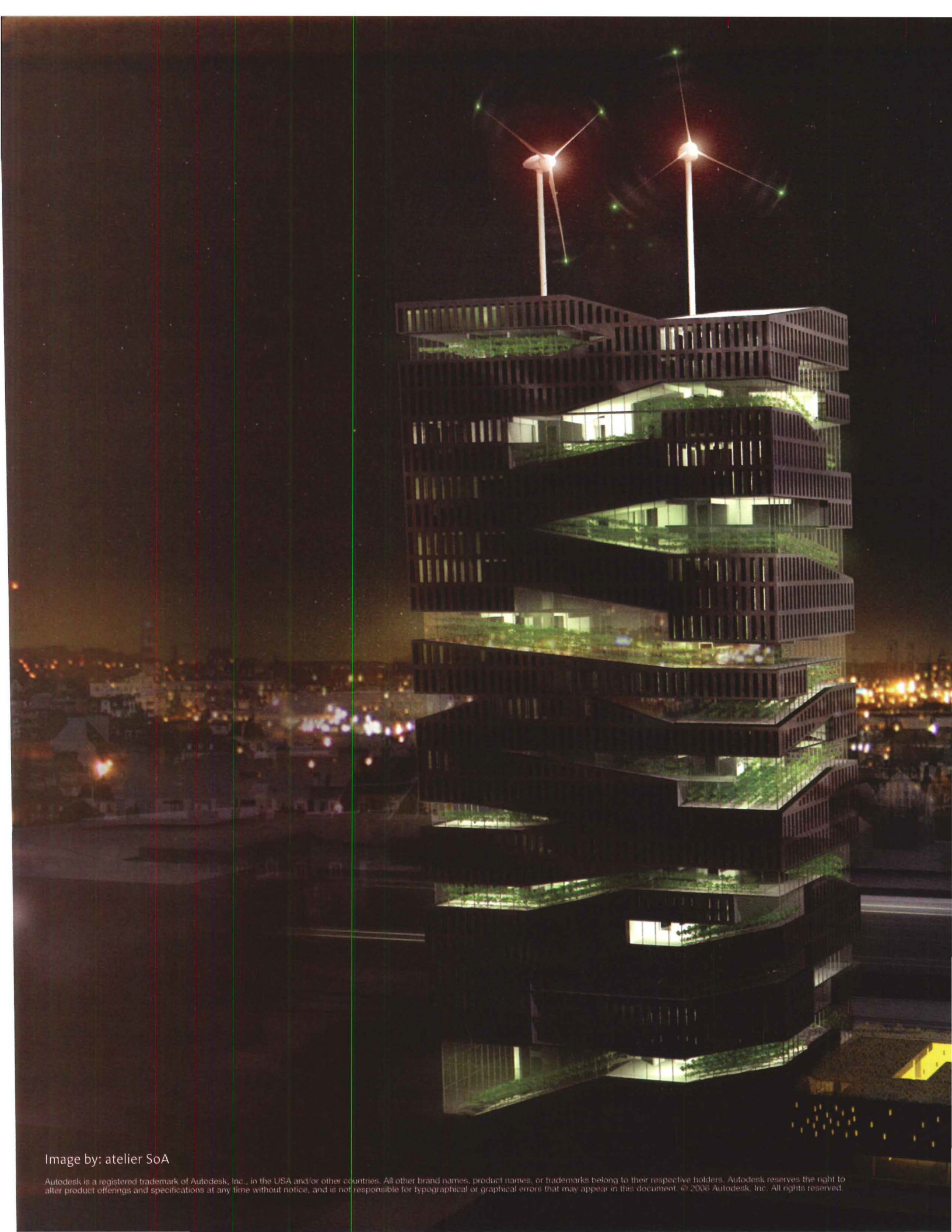


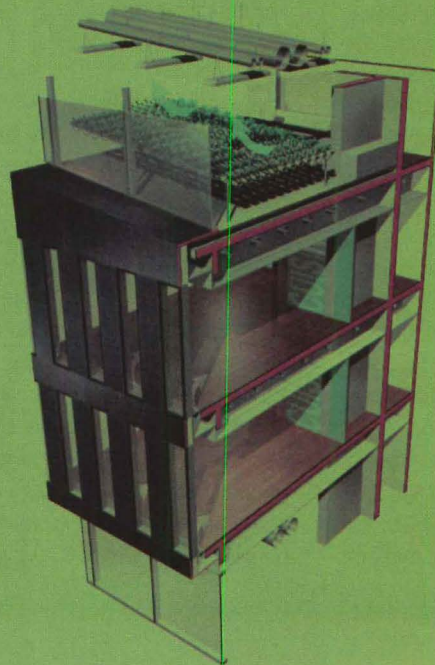
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Letters

DEPARTMENTS

Lasting words

I can't begin to tell you how profound I found Robert Ivy's editorial, "The Essence of Education" [July 2006, page 17]. I was in attendance at William McDonough's talk on the last day of the AIA convention in Los Angeles, awaiting his closing words of inspiration. Ivy's "capture" of Bill McMinn's memorable event is an inspiration in itself. Thank you.
—William R. Freimuth, *AIA Farmington, N.Mex.*

Another "Aha!"

Walking on Roman streets, Bill McMinn always talked about what he referred to as an "aha moment": the instantaneous, immortal, and sublime recognition of an architectural discovery. For us, the real superb event was to see him become renewed through our own novice experiences. An initial thank you for honoring once again his dedication and commitment in your pages, and a second for letting a former student pay yet another humble respect.
—Javier Galindo
Via e-mail

Private business

I am writing in response to Robert Ivy's August editorial, "Five Distinct Dramas" [page 17]. To suggest that a government agency (or government anything) is the answer to the Gulf region's current challenges is a fundamental and disgraceful absurdity.

The government's records of achievement around anything related to Katrina have been and are deplorable. From an incompetent mayor to a bumbling and inept governor to bloated federal agencies—the government has failed at every level. The only bigger failure is the failure of individuals to accept their responsibility to rebuild in a prudent manner. Far too many of those who could act

in your drama scenarios cling to editorials such as yours and stick out their hands for the proverbial "free lunch." Some, unfortunately, willingly abdicate their own good judgment.

The fundamental premise as well as the logic of Ivy's editorial is flawed. He notes that FEMA is not performing well, yet just a few paragraphs later suggests that a new government agency is worthy of consideration. What makes him think "things will be different this time around?" Furthermore, while he notes that his analogy of the Depression and the TVA "is clear," I found the context foggy and inappropriate.

Ivy will better serve his readers by noting that these challenges can and should be met by the private sector. The most effective and reliable approach is based on individual and local responsibility, combined with the prudent employment of qualified private-sector planners, designers, and builders.
—Scott Braley
Atlanta, Ga.

Bravo

EXCELLENT editorial on "Five Distinct Dramas." Thank you.
—Frank Bruckner
Asheville, N.C.

Some like it hot

In your August feature, "Big Ideas for a Little Planet" [page 61], Mattias Schuler states in his interview that in New York, buildings are cooled to 68 degrees F in the summer and warmed to 80 degrees F in the winter. "This is ridiculous," he says. "It should be heated to 68 degrees in winter and cooled to 80 in the summer." Schuler might not be aware that New York law requires residential buildings to be heated to 68 degrees in winter between the hours of 6 A.M. and

10 P.M. and to 55 degrees between 10 and 6. As for cooling in the summer, perhaps we should emulate the European approach of grin and bear it, despite the increasing number of deaths that have occurred during recent heat waves.

—Eugene Brodsky
New York City

The whole picture

Looking over the 10 years of the AIA Top Ten projects [August 2006, Record News, "2006 COTE winners reflect green trends," page 30], I'm gratified to see that architects and design teams are moving past a focus on individual categories such as energy efficiency, material selection, and indoor air quality. They are now beginning to glimpse and express the interconnectedness of the whole. To ensure the efficacy of their actions, they are placing a high value on data collection and are more ready to share lessons learned with others.

But there are ways to bring an even greener future within our reach; by long-term collaborative visioning and action—by using effective metrics of improvement (the parts) and by embracing holistic design approaches (the whole). For example, effective energy metrics, such as EPA's Target Finder, added to the AIA Top Ten criteria and to USGBC's LEED for Existing Buildings, is an effective metric to address climate change. In tandem, emerging concepts such as regenerative and biophilic design show us the interconnectedness of all our actions and the broader impacts each design decision directly makes on our "long-term self interest." Once we pursue the whole *and* the parts, the line between where a project begins and where it ends begins to blur, and the way we practice architec-

ture begins to change dramatically.
—Gail A. Lindsey, *FAIA Wake Forest, N.C.*

All that jazz

I share your obvious excitement that Morphosis will get a chance to put New Orleans on the global map by designing the Hyatt Jazz District [July 2006, Record News "Morphosis unveils plan for downtown New Orleans," page 25]. The use of "bulky, sculptural forms, silvery steel mesh, cantilevered building elements, and folded and curved planes" will not only give New Orleans the cutting-edge buildings that every other major city in the world now is proud of, but will metaphorically express the devastation of Katrina. Thank God there are no references to the culture and the architectural tradition of New Orleans! I am sure that neither the residents nor tourists want to be reminded ever again of the "old" New Orleans. The only disappointment is that the buildings were not designed with shipping-container modules like the award-winning housing project you recently published.
—Michael Mekeel
West Hollywood

Corrections

An August News item on Chicago's Green Permit Program [page 34] misspelled the name of the Spert Institute of Jewish Studies. The *Icefall* water feature in the Hearst Tower lobby [August 2006, page 7] represents the collaborative work of Foster and Partners, James Carpenter, and Fluidity Design Consultants. For the June Snapshot of Birmingham's Spiral Café [page 89], readers should note that Benoy Architects was the lead architect for the Bullring complex.

Write to rivy@mcgraw-hill.com.



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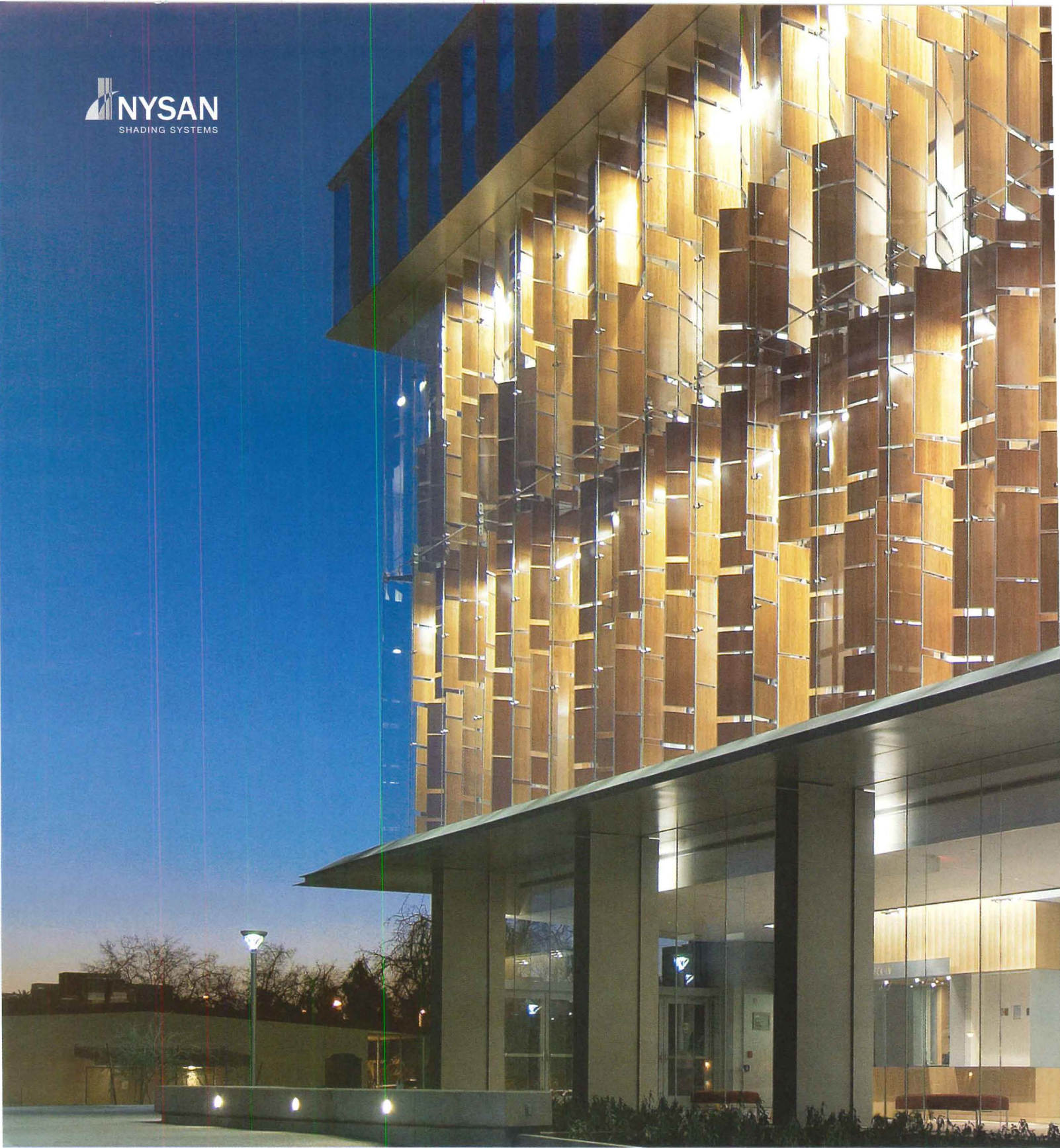
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p.30 Special section: Fifth anniversary of 9/11

p.36 Rebuilding the Gulf Coast

p.40 New designs from Herzog & de Meuron

p.45 Calatrava Chicago site changes hands

Exhibition fetes Twin Towers

Visitors to New York's Skyscraper Museum this month will be able to experience an approximation of the World Trade Center Twin Towers. In an 11-by-22-foot hall, four acrylic posts mimic the dimensions of the buildings' columns. Illuminated from inside, they are reflected in the permanent stainless-steel floor and chromed ceiling designed by Roger Duffy, and in mirrored walls installed by exhibition designer Local Projects. The repetitive effect gives one the feeling of standing beneath two endlessly tall buildings.

The installation is part of the new exhibition, *Giants: The Twin Towers and the Twentieth Century*. Curator Carol Willis explains that the show is devoted not to 9/11, but rather to the design, planning, and

reinvention of Lower Manhattan in the 1960s that culminated in the World Trade Center project. She adds, "This was part of that moment in American history when there was faith in technology and ambitions of bigness, whether it was the towers or jumbo jets or a moonwalk."

Models, photographs, and drawings describe the planning and design process of the downtown area. Additional elements, such as audio clips of people involved in making and working in the Twin Towers, contrast the epic architecture with human experience—a strategy of which the mock plaza is one component. "Our starting point was that people's experience of the towers is fading, it's a history," says Local Projects principal Jake Barton. "We wanted to recreate



The *Giants* exhibition features this abstraction of the Twin Towers.

not just ideas about the towers but the towers themselves in as many facets as possible."

The Skyscraper Museum will launch a Web database of 500 con-

struction photos of the Twin Towers, taken by the buildings' structural engineer Les Robertson, to complement the show. *Giants* runs through March 4. *David Sokol*

New architecture for Katrina-ravaged town

The town of Pass Christian, Mississippi, sits on a sliver of land that straddles St. Louis Bay and the Gulf of Mexico. It was largely wiped out by Hurricane Katrina one year ago. When New Orleans businesswoman Martha Murphy, a native of Pass Christian, learned of her hometown's destruction, she decided to help out. A new building designed by SHoP Architects (below), which celebrates a soft opening this month, is the first of her good deeds.

Murphy was the primary benefactor of an addition to the Richardson Building at Tulane University, in New Orleans, a job SHoP won. Days after the storm, Murphy contacted the firm to design and build a kind of triage center for the Pass Christian community. In the spirit of fast, temporary construction, the architects designed two long, rectilinear buildings linked by a porch with a freestanding roof. "The enclosed structures were really

sheds," says SHoP partner William Sharples, "and originally the roof was as simple as we could make it." Southern pine timber and cladding were mostly donated for the project, as were the efforts of New York firms Buro Happold and Focus Lighting.

But come October, the team had a realization about Pass Christian. "No one's come back," Sharples says. "Part of the problem was that the commercial services aren't there. Martha started looking

at a more permanent building—and to create a catalyst, with both services and architecture, to get people excited to come back."

Now the buildings house a restaurant, a bookstore, a nonprofit organization, and other

tenants. And the architecture was redesigned for more iconographic effect. The underside of the skylit porch roof is a series of trusses with cable-secured intersections that give the appearance of a scoliotic spine and become internally illuminated striations at night. Sharples says the design breaks down the scale of the very long, 5,000-square-foot porch. Inside, the tongue-and-groove ceiling is similarly articulated to accommodate ductwork.

Local schoolkids plan to do homework on the porch, reports Sharples. The project also promises to be a focal point for the design community. Students at Parsons School of Design, in New York, have been the first to flock to the site. They are building an adjacent information center and laundry that should open by the end of the month. *D.S.*



A crew completes work on two SHoP-designed buildings unified by a sculptural canopy.

LMDC announces pending dissolution

The Lower Manhattan Development Corporation (LMDC) announced in late July that it will essentially disband, ending operations by the end of this year.

The LMDC was created as a joint state-city corporation in the aftermath of 9/11 to plan, finance, and coordinate the rebuilding and revitalization of Lower Manhattan. Its planning process resulted in the adoption of the Daniel Libeskind

master plan for the World Trade Center site and the competition for a permanent memorial, which Michael Arad won. But with completion of the memorial, Freedom Tower, and other new construction at the site still years away, critics question why the LMDC is stopping operations now.

In an interview for the public radio program *Marketplace*, architecture critic Paul Goldberger

compared the announcement to the United States abruptly leaving war-torn Vietnam decades ago, saying, "LMDC has sort of declared that it's won and is disbanding. But, in fact ... [it's] leaving a very incomplete, uncertain project behind that's in a lot of chaos and confusion."

The LMDC, which allocated more than \$2.7 billion in federal grants to support downtown residents, businesses, and cultural

programs, says that the Port Authority of New York and New Jersey will oversee construction of the major buildings on the site. But the LMDC has not yet finished design guidelines for the construction of the tall buildings that are planned for there. The exact dates of the release of the design guidelines and when the LMDC will disband were not available at press time. *John E. Czarnecki, Assoc. AIA*

Carol Ross Barney comments on WTC redevelopment

David Childs, Michael Arad, and others have been at the center of attention as they continually redesign components of the World Trade Center (WTC) site. The scrutiny they face is immense, and no one knows that better than Chicago architect Carol Ross Barney, FAIA. The principal of Ross Barney Architects designed the U.S. Federal Building in Oklahoma City, replacing the Murrah Federal Building that was bombed in 1995. Here she discusses the challenges of rebuilding in the wake of terrorism, and comments on the WTC design process. J.E.C.

ARCHITECTURAL RECORD: Based on your experience with the Federal Building, how do you respond to developments at the WTC site?

Carol Ross Barney: There are similarities, like the inability to attract tenants to the Freedom Tower. The Murrah bombing created a market void for office space on that site. The General Services Administration (GSA) had to persuade federal tenants to move into our new building; it looks like government is going to step in there, too. For these buildings, the symbolism of the place initially overwhelms the functional role.

AR: Did your client, the General Services Administration, encounter

hesitancy in the rebuilding process?

CRB: The largest protest was from employees of the Department of Housing and Urban Development, which was located in the Murrah and had the most casualties. Some people were not comfortable being so close to the site of the bombing.



The U.S. Federal Building was constructed after the Oklahoma City bombing.

AR: GSA is more distinct than the factions at the WTC site. Is that a key difference in the success of a project of this scope and attention?

CRB: In a way, Oklahoma City was more democratic. From the beginning of the design process, GSA provided an open forum for stakeholders, but no single stakeholder was able to override the process. GSA gave us a lot of latitude to address all parties and to explain what we were doing. I think that promoted intelligent consideration

of controversial issues like security, instead of knee-jerk solutions.

AR: Any lessons you learned for moving through the obstacles and remaining true to your design vision?

CRB: We tried to concentrate on the long view and consider how our

building would benefit and influence Oklahoma City in five years and 50 years, rather than design to negate the latest threat or fear.

AR: How did you deal with the spotlight when you were selected for the Oklahoma City project?

CRB: At first, it made me uncomfortable. But it did give me a forum to talk about design and the importance of livable environments. I had to set my defaults, because there's a lot of clutter along the way.

AR: What's your opinion of the design of the Freedom Tower?

CRB: Look at the base of the Freedom Tower. How does that add to the urban quality of the area? It's not a friendly urban building. The police forced a solution according to their notion of threat. That unfortunate base is there because of what happened in Oklahoma City, a vehicle bomb parked near a building. And that has happened only once in recent history. What a price to pay for a single event! It is sad that this building doesn't break any new ground about security design or make this intense land use more livable.

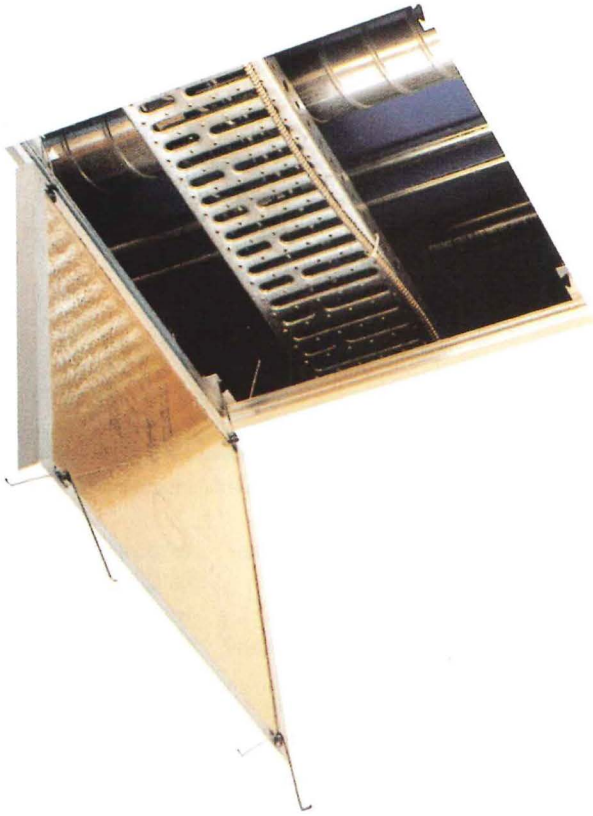
AR: From what you have seen, are the designers of the buildings and the memorial at the WTC site incorporating the most effective means for a secure, yet open and inviting place?

CRB: No, security design is not rational at all, and it has limited effectiveness. If you did a cost/benefit analysis on security upgrades, the stuff doesn't pay. The government standards are written to prevent another Oklahoma City, but a future terrorist attack is unlikely to be anything like Oklahoma City.

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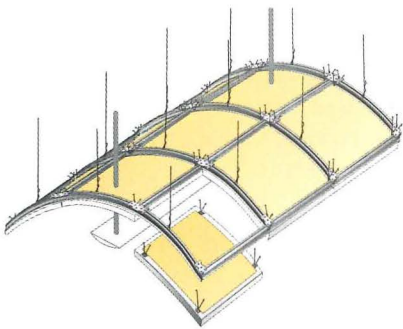
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Memorial architects say work is moving quickly

As controversy and politics have slowed progress at the Ground Zero memorial site, several other memorials to the victims of September 11 are proceeding at paces that surprise even their designers. The memorial to victims in Westchester, New York, will be dedicated on September 10. And the Staten Island memorial, though significantly smaller than some of the others, was completed in 2004.

Paul Murdoch, AIA, who is designing the Flight 93 Memorial in Shanksville, Pennsylvania, says that his process has been “not only surprisingly smooth, but also surprisingly accelerated,” even though Murdoch finds that he’s working with far more constituents than he normally does. He credits the

assumed that raising \$20 million would be a drop in the hat,” Beckman points out. “It wasn’t.” The bureaucracy has been kept to a minimum, according to Beckman, because the Pentagon Memorial Fund is the sole client, and the Pentagon itself is not weighing in on aesthetics. “The Pentagon is kind of its own entity, like the Vatican, so there’s less outside pressure to make changes,” she says.

In comparison, the memorial in Hoboken, New Jersey, is inching along. “It’s nothing unusual,” says Jeanne Gang, AIA, the architect member of the designers FLOW Group—“just more people to have to talk to.” For Gang, as for many of the architects, the emotional content of memorial design is one of the most



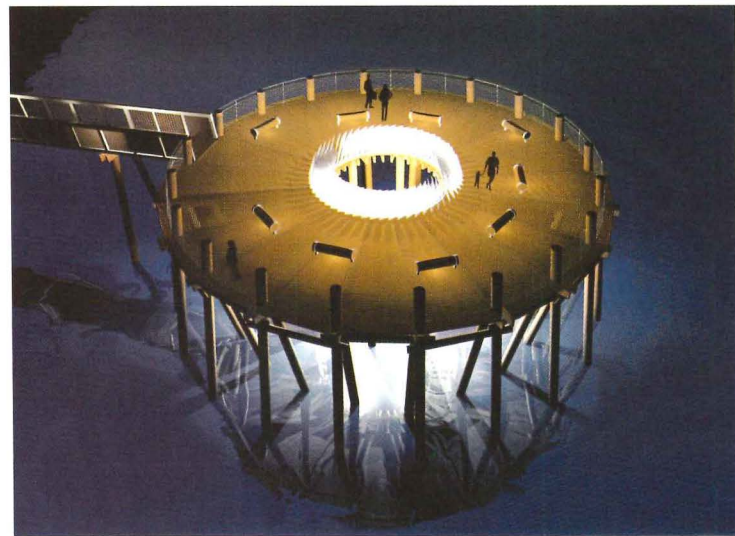
Paul Murdoch's Flight 93 Memorial is proceeding at an “accelerated” pace.

National Park Service for its guidance of the process. Nevertheless, since it involves as much as 2,200 acres of landscape, the project is not scheduled to be complete until 2011.

In Alexandria, Virginia, Julie Beckman, who is designing the Pentagon Memorial with her partner Keith Kaseman, has had a slightly different view of working on one of the three major memorials. She says that while the process, which entered the construction phase this summer, was “very fast in the world of memorials,” fund-raising efforts delayed construction from the original two-year timeline. “They

demanding aspects of the work. “Now we’re dealing with symbolic meaning,” she says, “which I haven’t really dealt with before. It’s been very difficult, but I feel compelled to move on and do this really well.” Gang’s team currently is working on construction drawings. They hope that, in spring 2007, they will drive the piles for the artificial island that will be the memorial’s centerpiece.

Frederic Schwartz, FAIA, who dealt with political maneuvering as part of the THINK team at Ground Zero, is now designing two memorials: the New Jersey State memorial, in Jersey City, and the one in Westchester, New York. “I would use



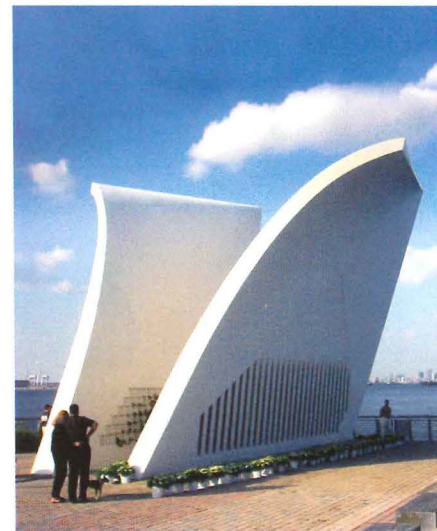
FLOW Group's artificial-island memorial should start construction in spring.

the words ‘phenomenal’ and ‘fantastic’ to describe the processes,” Schwartz says, who also agrees with Gang’s assessment of the sensitive nature of the design work: “The emotion is never ending.”

But for all the praise of the fast memorial processes, perhaps none has been as smooth as that of the Staten Island memorial, two curving fiberglass “postcards” designed by Masayuki Sono and Lapshan Fong. Their design was selected in 2003, and the memorial opened September 11, 2004—though some work continued after that time. Fong says, “We couldn’t delay even one day.”

For some of these designers, memorial work has led to other projects. Kaseman and Beckman were invited to a closed interview process for the design of a memorial to the space shuttle Columbia in Nacogdoches, Texas. They were selected for the project and are awaiting NASA’s unveiling of their design. Schwartz says that his memorial designs led the people of New Orleans

to recognize that his firm could help; it is now among the teams working on rebuilding plans there. He emphasizes, however, that he does not bolster his résumé with the memorial projects. Fong says that the Staten Island memorial had led to more work indirectly, because “it’s in the portfolio.” But his partner has a different view of the marketing influence of their design. “People see the memorial,” which consists of two curving fiberglass panels, Sono says, “and don’t think, ‘I want a house like that.’” Kevin Lerner



The Staten Island memorial is already open.



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Firefighters' Monument unveiled across from Ground Zero

It was originally meant to be a series of vitrines—an exhibition of 9/11 memorabilia and photographs presented in glass cases and illuminated by small halogen spotlights. But when Viggo Rambusch was introduced to the Firefighters' Monument project, he remembers countering, "a display case is not a permanent memorial."

Now it's a figurative, 7,000-pound, bronze bas-relief sculpture installed within a 6-by-66-foot niche on 10 House, the newly built home of Engine Company 10 and Ladder Company 10 that sits across Liberty Street from Ground Zero. Crews worked through the night of June 10 to lift the monument's three panels into place, and at daybreak, as if out of nowhere, it appeared for its official dedication. The day marked the fourth anniversary of the conclusion of the Fire Department's recovery effort. Crews are still waiting to lay granite—the same used for the Freedom Tower's cornerstone—in the sidewalk in front of the sculpture.

Rambusch is honorary chairman and senior project manager at

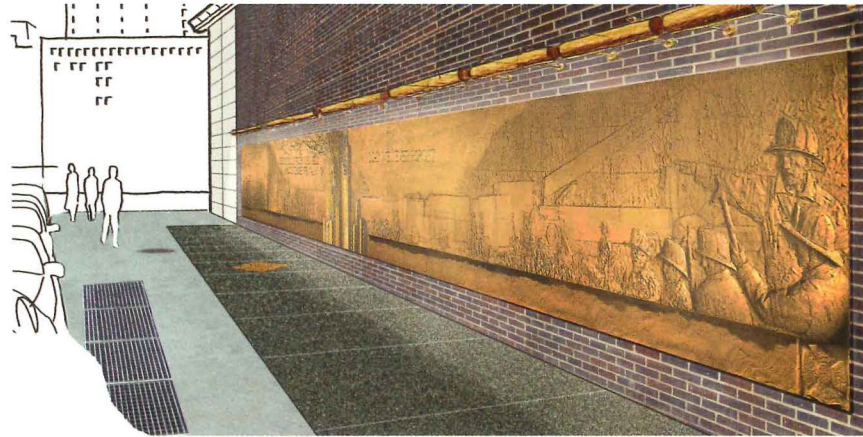
the Rambusch Company, a 108-year-old firm that fabricates decorative metalwork, stained glass, and lighting. When Brian D. Starer, vice chairman of Holland & Knight Charitable Foundation, which funded the Firefighters' Monument, approached Rambusch with the request to make the piece, Rambusch evoked Trajan's Column instead of the display cases. The 98-foot-tall column has stood in Rome since the year A.D. 113, its spiral bas-relief commemorating Emperor Trajan's victories in the Dacian Wars. Rambusch vetted bronze as a noble material that could also withstand "hammers, paint, and all sorts of damage." Unlike its precedent, this memorial doesn't reveal: The Twin Towers, depicted at the moment of the second plane's impact, stand at the center of the relief. It is flanked by scenes of firefighters engaging in rescue, with several of the fig-

ures exhibiting strain and exhaustion, but not despondency. At the behest of the New York City Fire Department, "It is a collage of the entire rescue effort; both buildings have been hit, but there is not the suggestion of collapse," says Martin Rambusch, chairman of the board.

The relief was rendered in three panels, so that it can be moved from 10 House to a permanent stand at Ground Zero sometime in the future. "It was a small congenial group, which allowed us to move along at a steady clip," Martin Rambusch

says of the memorial's fast execution. "Everyday politicians find a photo-op in front of Ground Zero. You'd think they'd be embarrassed that nothing's complete."

In the meantime, the monument hugs the wall of the station house, honoring the 343 firefighters who died. A separate plaque is dedicated to Glenn J. Winnuk, a partner at the Holland & Knight law firm and volunteer firefighter. He ran from his office at 195 Broadway to the Twin Towers to help victims, and never came back. *Leigh Batnick*



A symbolic granite sidewalk will finish off work on the Firefighters' Monument.

Interviews drive ongoing WTC evacuation study

Most studies that have tested the structural integrity of the Twin Towers, such as last year's comprehensive report by the National Institute of Standards and Technology (NIST), utilize computer simulation and materials analysis. One research project, still under way, relies solely on interviews with people who escaped the buildings.

Ed Galea, a professor of fire safety engineering at the University of Greenwich, England, oversees HEED, or High-Rise Evacuation Evaluation Database. He is investigating whether or not the World Trade Center buildings were well suited for a quick evacuation, and

why evacuees left the building in the manner that they did. The project, funded by a \$2.75 million grant from the British Engineering and Physical Sciences Research Council (EPSRC), began in September 2004 and will continue through next year. To date, more than 300 interviews have been conducted, and Galea hopes the total will reach 1,000.

"It's a fairly unique project in that we're looking at a mix of psychology and engineering," says Galea, who is also working with scholars from the universities of Ulster and Greenwich. Interview queries broach the processes by which people left the buildings, their

reasons for responding to fire alarms at varying speeds, why they might have moved slowly down stairs, and whether or not they yielded to evacuees entering at lower floors, listened to building superintendents' commands, and considered exiting the building to be a risk. There is no video footage of stairwell evacuation.

Galea says that the results of the study, to be released in November 2007, will encourage faster fire-alarm response and evacuations. He also predicts the research will result in better building codes and more accurate evacuation-simulation software.

The exhaustive interviews can require as much as two hours. Data is broken down into categories, such as "response times" and "motivating factors for leaving." "People in the building who evacuated are the experts," Galea says. Similar investigations, such as the NIST effort, use questionnaires that limit the range of responses. After the project is completed, interview transcripts and researchers' analysis will be distributed to engineers and made accessible to the public on wtc-evacuation.com. Prospective interview candidates can also consult this site to learn more about participating in the study. *Sam Lubell*

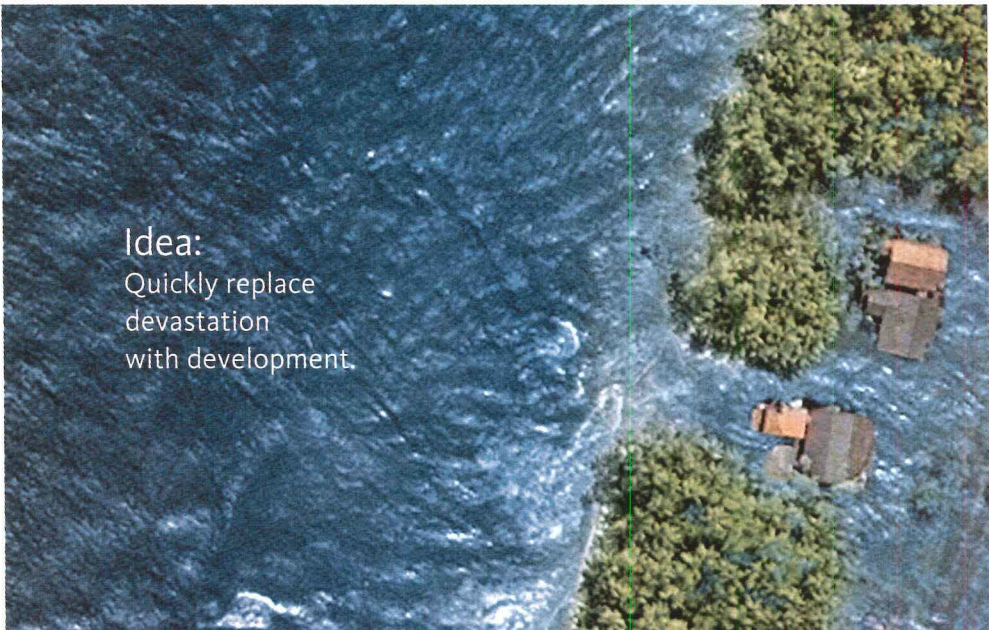
Port Authority takes over WTC memorial

On July 6, the Port Authority of New York and New Jersey, owner of the World Trade Center (WTC) site, assumed control of building the memorial and its museum. The WTC Memorial Foundation ceded control of construction but will continue fund-raising and overseeing design.

Under the new deal, the Port Authority will pay as much as \$150 million for the memorial's related infrastructure, and an additional \$45 million for cost overruns. The Lower Manhattan Development Corporation has said it will contribute \$250 million through federal Housing and Urban Development grants. The foundation has raised \$131 million so far.

At the announcement, Governor George Pataki praised the "efficiencies" that would result from the transition, and pledged that it would expedite the building process. He pointed out that the Port—which is developing the Freedom Tower and building the WTC Visitors Center, the World Trade Center transit hub, and Tower 5—built the temporary PATH station at the WTC site in "just 16 short months." Construction on the memorial is scheduled to begin September 11.

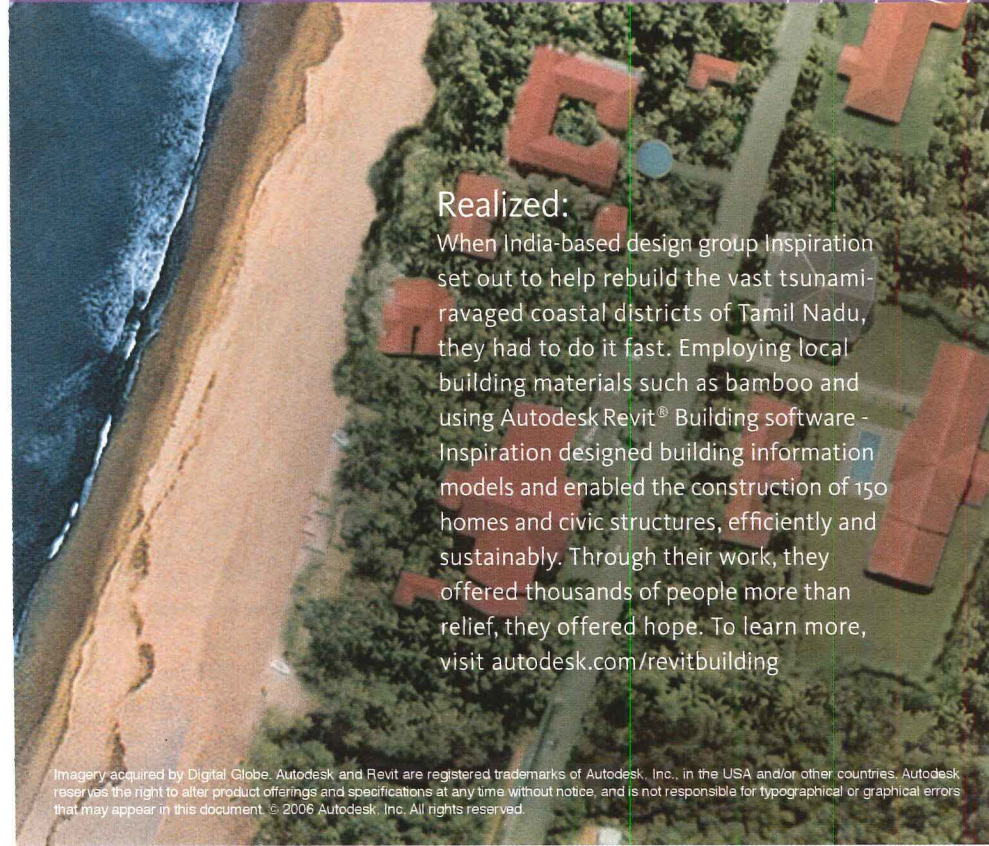
Citing the Port's reputation for bureaucracy, cost overruns, and value engineering, some critics wondered whether the agency can shoulder another complicated project with high design values. The public response to the move has been largely positive, though. Jeremy Soffin, vice president for public affairs at the New York planning advocacy group Regional Plan Association, was pleased with the changeover: "It makes things a lot easier to have one agency in charge, and it gives them the ability to do what they do best, which is build," he said, adding, "Forget about the past; I think the current leadership of the Port Authority has shown itself to be quite competent." S.L.



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High costs plague Gulf rebuilding effort

Several market phenomena could hamper the Gulf Coast's rebound from the 2005 hurricane season. Shortages of raw materials, in combination with record fuel prices, are forcing price increases for residential contractor supplies as well as construction delays.

"Construction and labor supplies have been tight for several years, with material costs increasing much faster than overall inflation," says Michael Carliner, vice president of economics for the National Association of Home Builders (NAHB). In the aftermath of Hurricane Katrina, there was a spike in demand for certain repair materials. But Carliner explains, "The 2005 hurricanes actually reduced demand in the short term. The long-term rebuilding effort will mean additional demand, and shortages are therefore likely to continue for several years."

Surging domestic construction and demand from fast-growing nations such as India and China, as well as manufacturing constraints, are combining to drive prices higher globally for some building products. This is taking place even though, in the U.S., increasing mortgage rates and slowing job growth have since

brought a slowdown in new home construction and remodeling.

Copper, for example, leaped in price from \$1.60 per pound to more than \$3 per pound, says John Mothersole, an economist with Global Insight in Washington, D.C. A new 2,100-square-foot, single-family house uses about 440 pounds of copper, mostly in wire, pipes, and plumbing fixtures. According to Ken Simonson, chief economist for the Alexandria, Virginia, trade group Associated General Contractors of America, copper and brass pipe, wiring, faucets, and flashing have experienced an 88 percent price increase since last year.

Similarly, the NAHB survey of builders in early May 2006 found 34 percent reporting shortages of drywall, including 5 percent reporting severe shortages. That was the highest share reporting drywall shortages in five years. The U.S. Census Producer Price Index (PPI) shows that gypsum products have gone up in price by 22.9 percent since this time last year.

Energy markets are also contributing to the trend. Light-sweet crude oil prices hit a record \$77-per-

barrel cost in July, a 23 percent year-over-year increase, which has pushed prices for PVC pipe up 20.5 percent in the same period, reports the PPI. Asphalt, tar roofing, and siding products likewise shot up by 16.7 percent on the PPI.

The upward trends in fuel prices account for approximately 20 percent of cement prices. And with cement consumption topping 130 million metric tons in 2006, a 3.7 percent increase from 2005, it has jumped 15 percent in price. As a result, concrete products are up 10.5 percent, too, according to the PPI. Edward Sullivan, chief economist for the Portland Cement Association, foresees average annual demand increases of 2.5 percent through 2009.

Simonson adds that fuel prices can have a double-whammy effect. Because building supplies are transported to work sites by means of diesel fuel, "the delivered costs of many materials have gone up even more than their prices at the producer's point of sale."

Lumber is a rare exception. It is experiencing relief thanks in part to a U.S. Commerce Department deci-

sion in December to halve duties on Canadian softwood lumber imports, which account for one third of domestic lumber use. The move helped drop composite framing lumber prices to \$317 per 1,000 board foot in July from \$419 in 2005. That decrease promises to continue in 2006 as fewer home orders lower demand.

But in the Gulf Coast, cheaper lumber is more than compensated by the compound expenses of other materials—and labor. Don Sampson, president of the Louisiana Home Builders Association, a Baton Rouge-based trade group, explains: "Our labor force mostly consisted of hourly workers that needed a paycheck each Friday, and when there wasn't one, they left. The people who stayed here are charging a premium. We are building more houses because of the storm. And that will last a couple more years. But it's taking about 30 percent longer on average to build a home due to workforce availability. It has taken a lot of the home buyers out of the market. Low interest rates were great, but high material costs are taking a lot of families out of the picture." *Tony Illia*

Students overcome materials shortage

Facing a shortage of materials in Katrina-ravaged Louisiana, how could 34 fifth-year students from the School of Architecture at Louisiana Tech University install elegant hickory wood floors, exterior wood siding, and tile in a house for an underprivileged family in Ruston? "We had to hunt and peck to find donations," says Justin Roark, one member of the group.

In 2005, the North Central Louisiana chapter of Habitat for Humanity commissioned the project on behalf of a mother, her partner, and three children. Since funds, materials, and labor were entirely

donated, students found themselves competing with relief efforts focused on the southern section of the state. A \$25,000 grant from Weyerhaeuser jump-started the team.

Despite the patchwork of materials donated by local suppliers or discovered by pure chance, the team finessed a house with contemporary appeal. The 1,350-square-foot building (right) is subtly massed to nestle into its wooded site; its floor plan takes advantage of prevailing winds and sunlight, while high ceilings enhance the sense of openness.

The design responds to family



This Habitat house is a lesson in creativity.

needs by providing privacy as well as desks for the children's schoolwork. Materials and systems were selected with an eye to keeping maintenance and operational costs at a minimum. Sustainable princi-

ples were also incorporated where feasible.

While students learned the logistics of material procurement and construction management, Roark, who now works for Nashville-based Earl Swensson Associates, says sheltering a needy family

resonated the most. "We had just put up framing for the walls in April; the mother saw that each child was going to have their own room and she started crying." They took occupancy in May. *Russell Fortmeyer*



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Challenged schools prepare for new year

This fall, the three Rs could easily represent repopulation, rebuilding, and 'rithmetic, as school districts affected by Hurricane Katrina try to provide an education with fewer intact structures, smaller tax bases, and an undetermined population.

In Mississippi, where 16 schools were completely washed away in the storm surge, and only 14 of 152 school districts didn't close, students were back in school by October 2005. Interviewees attribute the quick rebound to efforts by school superintendent Dr. Hank Bounds to loosen up federal dollars for portable classrooms.

Most students will continue to attend classes in these temporary structures while officials determine where schools may be built to comply with the new FEMA flood

elevation maps, and how they will be financed. Ironically, the Hurricane Recovery Act provided funds for restart but not reconstruction, says Caron Blanton, communications director of the Mississippi Department of Education.

The picture in southern Louisiana is far more fragmented. In New Orleans's St. Bernard Parish, where all housing stock was destroyed and 10 of 22 school buildings were recommended for demolition, 3,000 students are still expected to return to school this fall. They will attend classes in two renovated schools and portable classrooms. "We were a financially healthy school district, so we were able to buy our own trailers to get it up and running," says Beverly Lawrasen, assistant superintendent.

"We've since been reimbursed by FEMA for the trailers, but reconstruction, which is a 90/10 split, is a different story."

Between lost sales and property taxes, and state funding that's based on student population, St. Bernard is having a hard time coming up with the 10 percent match. To circumvent stipulations for Hurricane Recovery Act funds, the district is using its operational money for construction and shifting the federal dollars into its operation budget. "It would have been advantageous if a lot of the red tape had been cut for us," Lawrasen says.

In Orleans Parish, 56 of the 117 schools managed by the Louisiana Department of Education will be open. Approximately 12,000 students had attended classes last

year. Meg Casper, director of communications, notes, "We're planning for 34,000 this fall, [but] the demographers are telling us we will have far fewer than that."

Assessing damage, the order in which schools should be repaired, and availability of workers and materials has been more cumbersome in Orleans Parish than securing funds, Casper explains. "We are dealing with all the issues that people who are trying to rebuild their houses face. Costs are higher, and there is trouble finding materials and workers."

Schools are being repaired according to the amount of damage and repopulation trends. "As residents come back and the city does more planning, hopefully we'll be able to make more decisions," Casper says. *Angelle Bergeron*

New Gulf Coast subdivisions are designed to take a beating

While the natural force of hurricanes can be devastating, much property damage caused by storms comes from debris flying off nearby buildings.

Armed with this knowledge, real estate investors are transforming swaths of land into hurricane-fortified developments whose scale is unprecedented. To be truly safe, the thinking goes, not only must individual homes be heavily reinforced for potential disaster, but all of the surrounding homes must withstand wind and flooding, too.

Jim Hayes, founding principal of Beaumont-based developers Crown Team Texas, says his firm recently acquired 9,000 acres of coastal land near Houston for multiple housing developments. One of those parcels will become Audubon Village, a project that is currently under way. Each of the 600 residential units is built on concrete stilts and designed to withstand 130-mile-per-hour winds.

Hayes says, "Even with the hazards and the potential for disaster,

people want to be on the water."

Alys Beach, a development on the northwest coast of Florida, is similarly fortified, but designed using new-urbanist principles and inspired by Bermudan architecture. This 158-acre development will ultimately comprise 890 residential units, according to town architect Marianne Khoury-Vogt. Buildings will be all-masonry construction with impact-resistant doors and windows. "It has to be that way, otherwise there could be total devastation," Khoury-Vogt says.

Both developments are certified by the Tampa, Florida-based Institute for Business and Home Safety. Chuck Vance, program manager at the institute, explains that building codes represent minimums for safety, so his organization seeks to raise that threshold. Since the institute's launch in October 2000, the certification has been implemented in more than 1,500 homes in 11 states. *John Gendall*



The houses of Audubon Village (top) are reinforced against wind; concrete stilts allow them to stand above potential flooding. Recently completed buildings at Alys Beach (above) mask their defenses in the style of new urbanism.

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Record News

Herzog & de Meuron propose cut-glass ziggurat for Tate

Herzog & de Meuron have returned to the Tate Modern museum in London. In July, the Swiss team revealed the design for a glass extension to Bankside Power Station, which the firm renovated to serve as the Tate's home. The addition will increase the existing floor space by 60 percent.

Opened in 2000, Tate Modern was designed to accommodate 1.8 million visitors a year, but



The crystal pyramid design planned for Tate Modern.

last year, 4.1 million art enthusiasts passed through its doors. New York's Museum of Modern Art drew 2.67 million visitors over the same period, and 2.5 million visited the Centre Pompidou in Paris. "There is serious overcrowding, particularly at weekends," a Tate official says.

Bankside still generates electricity. So when, in 2000, EDF Energy Networks began considering plans to move its plant from the Switch House substation into a smaller area within the building, Tate director Nicholas Serota took to deploying the vacancy for the museum's use. Herzog & de

Meuron were appointed in January 2005.

The planned extension comprises 11 stories of stacked-glass blocks. The blocks protrude at a multitude of angles from the side of an essentially pyramidal form. It is a fragmentary, experimental contrast to the monolithic power station. The architects say that the protruding cubes can be interpreted in two ways: as the erosion of the pyramid, or as a pyramid in the process of emerging.

The addition, which is sited adjacent to the power station's southern facade, will include 11 new galleries for contemporary art, accommodating photography, film, video, and performance. Other features include teaching spaces, two new performance areas within the oil tanks of the former power station, and a new entrance that opens up a north-south axis through the building for the first time.

The top three floors of the 230-foot structure are visible from the north, changing the appearance of the South Bank from St Paul's Cathedral to a view that is generally considered sacrosanct in London. The Twentieth Century Society, an organization dedicated to the preservation of post-19th-century arts and design, has expressed concerns about the height of the proposed addition and its adventurous form, which the society fears may detract from the original structure.

Tate Modern will submit a planning application in the autumn. The £165 million (\$314 million) cost will be equivalent to the original conversion of Bankside Power Station. Officials hope to complete the addition by 2012, when London hosts the Olympic Games. *Adam Mornement*

New Parrish museum unveiled

Well-heeled Hamptonites attending the annual fund-raiser in July for the Parrish Art Museum, in Southampton, got first glimpse at renderings and models of the institution's new home. Herzog & de Meuron founder Pierre de Meuron, Hon. FAIA, was on hand to unveil the design for a 64,000-square-foot complex that is scheduled to open in 2009.

The design, a series of smaller built forms, was inspired by artists' studios located in Long Island's East End, the region that is being changed rapidly by the Hamptons' elite. The museum's indigenous landscape of meadow grass, scrub woodland, and coastal dunes reinforce the architects' intent that it appear as a small compound of studios.

Four main galleries are likely to contain work



by major artists, such as Willem de Kooning and Fairfield Porter, who are well represented in the Parrish inventory. North-facing monitors and generous windows will connect visitors to the native habitat outdoors, and to the daylight that attracted artists to the East End originally.

The event raised \$900,000 for the Parrish. Altruists were dutifully thanked: The evening's goodie bags included sculptural chocolates representing the different volumes of Herzog & de Meuron's proposed design. *D.S.*

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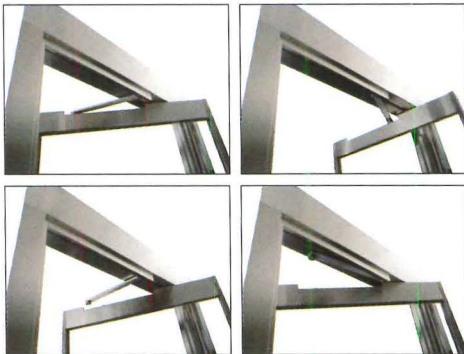
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Record News

Behnisch heads team for downtown Pittsburgh development

When development of a 6-acre site in downtown Pittsburgh is completed around 2014, ribbons of green will run up, down, and across it: Vertical gardens will wrap the interiors of apartment buildings, and a two-block-long elevated park will traverse a roadway, connecting city dwellers to the Allegheny



RiverParc's scheme has abundant green space.

River. This is the vision of the international design and development team RiverParc, headed by Behnisch Architekten, that won the Cultural District Riverfront Development Competition; additional team members included Gehl Architects of Copenhagen, and Toronto-based architectsAlliance. In July, the Pittsburgh Cultural Trust announced that RiverParc would design the \$460 million mixed-use project, beating out teams led by design architects Konig Eizenberg and MVRDV.

A 14-person jury of recommendation chose

RiverParc unanimously. Despite the nondescript nature of the buildings in the team's contest submission, the thoroughness of the planning effort prevailed. The cultural trust's guidelines state it is more important to have a well-designed master plan ... than to seek 'iconic' design."

Residential development pervades the winning master plan, which features 700 new residential units distributed among condominiums, town houses, and rental apartments. The first of two phases is scheduled to commence in mid-2007. It includes construction of four residential buildings (350-400 units) with ground-floor retail spaces, town houses, parking lots and structures, and infrastructure. A second phase calls for a performing arts venue, a four-star hotel, and additional residential buildings.

In creating a "three-dimensional garden city," RiverParc's scheme includes four outdoor public plazas and pedestrian streets to accompany the planted zones inside the residential buildings. At the new Three Sisters Gallery park, named after the group of three bridges that span the Allegheny River, will occupy an innovative span that captures space above the 10th Street Bypass. The architects say they will seek LEED-certification, and will enter the project in the USGBC pilot program to become one of the first LEED-ND certified neighborhoods in the country. *Jennifer Lucchino, AIA*

Design for Zurich Forum angers preservationists

Architect Rafael Moneo, Hon. FAIA, has won a competition to rebuild the Zurich Forum, a congress and meeting center on the Swiss city's lakeshore. But the proposed demolition of the Forum's current home has delayed the project.

The project brief, scaled back during the competition for excess bulk, called for demolishing the existing Kongresshaus and replacing it with a 200,000-square-foot facility. It also included new backstage areas for the two adjacent concert halls of the 1895 Tonhalle, and a 230-room hotel.

Moneo says his design of angled glass prisms will "create a publicly oriented Congress Hall where now there are a set of introverted auditoriums." Jurors acknowledged the proposal's respect for the existing urban context, its interior integration with the existing concert halls, and its "abstract translucency" and "strong urban presence," qualities they felt justify the estimated \$285 million cost.



Moneo's building would replace Kongresshaus.

Ironically, Moneo was also favored for preserving the adjacent historic Villa Rosau and much of its garden, around which he arranged the hotel rooms in low-scaled curving forms.

The original Kongresshaus was built for the 1939 Swiss Exhibition by architects Max Ernst Haefeli, Werner Moser, and Rudolf Steiger. Its defenders call it "a key work of Modern architecture," and are fighting to maintain its status as a protected monument. Their effort could force a public referendum, which could delay the project start until 2008—or cancel it outright. *David*

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Record News

Coney Island icon in the limelight

If the Parachute Jump, the famed thrill ride that operated at Coney Island between 1941 and 1964, was once compared to a flower, the 277-foot structure had become a spent dandelion by the late '90s—planners of a new minor league baseball stadium even feared the jump might topple onto it. In July, the Brooklyn icon bloomed once again, with the launch of a new integral lighting installation designed by Leni Schwendinger Light Projects.

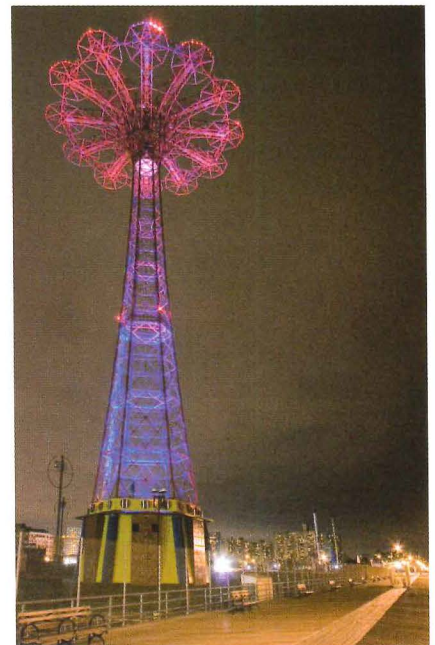
For Schwendinger, lighting designs explore “what’s possible with light above and beyond safety and security.” She adds, “What’s interesting about this way of working with light and lighting in the urban context is that we’re able to give these iconic figures a kind of fluidity or flexibility.”

Her transformation of the jump is a delightful addition to the area’s nighttime landscape, one that connects the gritty edge of Brooklyn with the rhythms of nature. One light sequence, for example, accompanies the full moon’s arrival and departure with a three-day waxing and waning of whites.

Although the illuminated jump is being celebrated as a symbol of Coney Island’s rebirth, the gestation of the project goes back as far as 1999, when the New York Department of Design and Construction enlisted engineers and architects STV Group to preserve the structure. The firm ultimately chose to take apart the rusted and delaminated tower in sections so that contractors could replace steel components and remove lead paint without contaminating the beach area, then reassembled it with new high-strength bolts securing the splice plates. After work was completed in 2003, “there was a little

lull in the action,” says Albert Thompson, STV project manager. “The city realized that it had received a newly refurbished, bright, shiny tower, [but] it could only be appreciated during the day.”

A year later, a consortium of city organizations revisited STV’s early suggestion that the jump be transformed into a lighted public artwork. Officials were particularly keen on the project because they felt the area was ripe for economic



The Parachute Jump shows off its makeover.

development. “The focus was not only on the Parachute Jump,” Thompson explains. “There was a focus on revitalizing Coney Island.”

Schwendinger was chosen from a short list of four teams to compose the lighting design. In her scheme, 17 floodlights and 450 LEDs perform six variations, including compositions for weekdays, weekends, and special events, which keep repeat customers enthralled. Schwendinger says, “I like to connect with the actual activities, the meaning of the site, the uses of the site, and express those in new ways.” *Jeremy Lehrer*

Developer takes over Calatrava site

, Dublin-based Shelbourne Development and the Shelbourne purchased the 2.2-acre Chicago lakeshore property originally used for a 124-story tower designed by Santiago Calatrava, FAIA. The firm LR Development sold the site for \$64 million after a third offer with competition on the property, Chicago-based Fordham Company, had a short on bidding for the 124-story/multifamily tower. Fordham originally announced the project with Calatrava. Since Shelbourne's acquisition, the



Skyscraper site gets new owner.

estimated cost of 400 N. Lake Drive was revised to \$1.2 billion from a March estimate of \$1 billion. "We think that that is a very optimistic number," says Thomas Murphy, spokesperson for Shelbourne executive chairman Robert Kelleher, referring to the final estimate.

Observers question whether the skyscraper will get built: The price tag exceeds Donald Trump's 92-story Trump Tower Chicago by about \$450 million. Furthermore, condo buyers have abundant choices in the Loop. A survey from Chicago-based Appraisal Research Counselors shows 3,041 units between Roosevelt Road and Michigan Avenue were delivered in 2005, and 4,446 deliveries are projected for 2006.

Jim Kinney, president of Chicago-based Rubloff Residential Properties, says Calatrava's tower has a good chance because of the Calatrava name and political backing. "There is a lot of interest in it, and I believe [Mayor Richard Daley]

would like to see it built," he says. "I think if you have the support of the mayor on any project, it's critical."

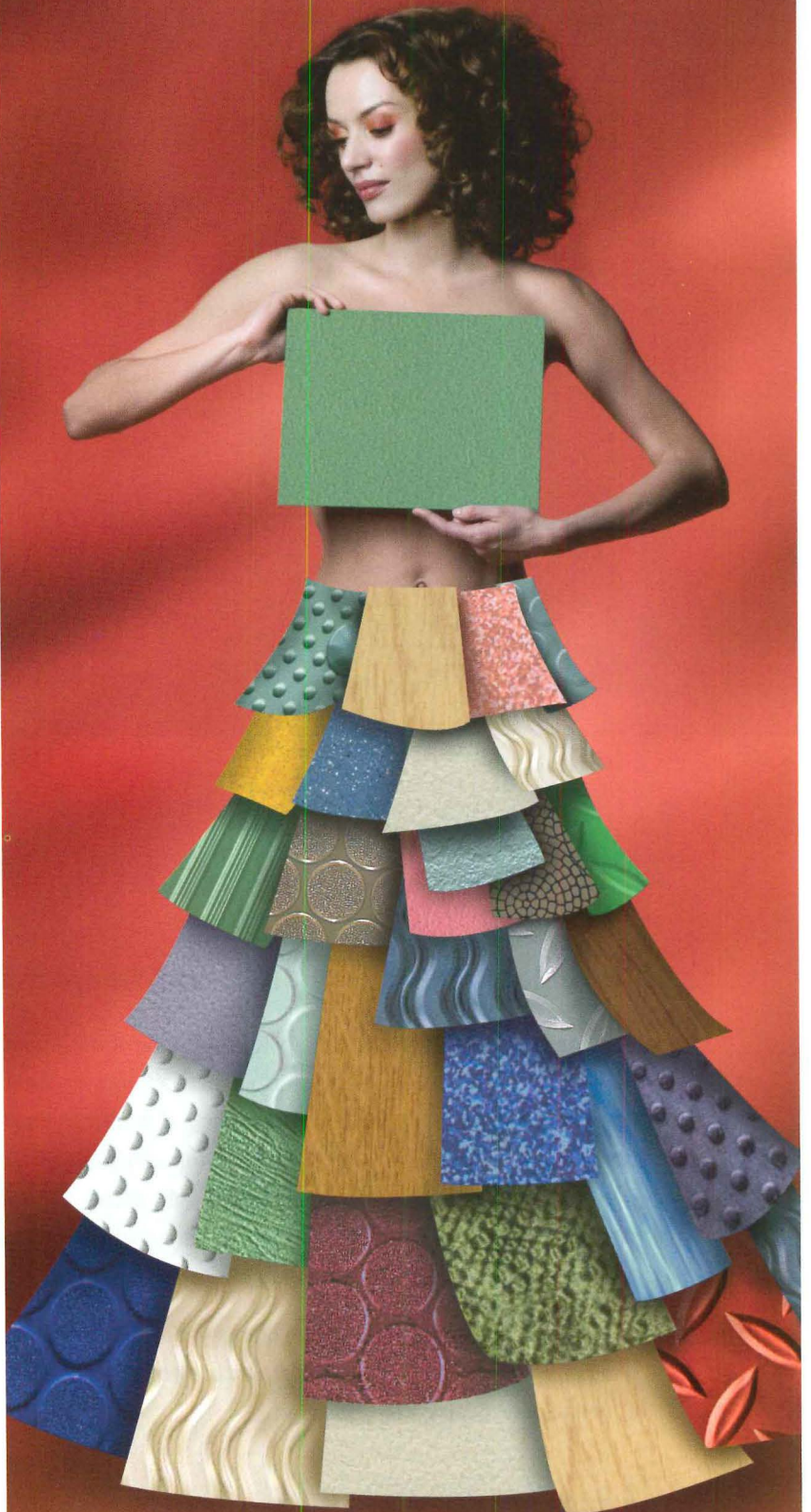
Another caveat is that the average condominium cost per square foot—\$800—originally announced for the project appears to have been on the rosy side. Rising construction material costs and increasing prices for luxury condominiums in the Loop will likely cause the figure to go higher. Plans call for unit prices in the 300-condo structure to range between \$600,000 (almost 20 percent more than the starting price at Trump

Tower Chicago) and \$5 million. The 920,000-square-foot building will measure 1,570 feet tall, and include a 500-foot-tall spire/antenna. In addition to the condo units, the building would hold 150 hotel rooms on 20 floors and 50,000 square feet of retail and support space.

Calatrava's spiraling design, which has inspired comparisons to a plume of smoke, drill bit, and swirling cloak, will be achieved structurally: Concrete shear walls will surround the building core, and modular box-like sections containing the units will cantilever from the core. The boxes each have curving, concave sides, and they would be stacked and rotated 2 degrees, twisting 270 degrees by the top of the ascent.

The Chicago Plan Commission and City Council approved the project in March and April, respectively. Once the drawings are finalized and the building permit is obtained, the ground breaking will take place in the spring. *Craig Barner*

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1

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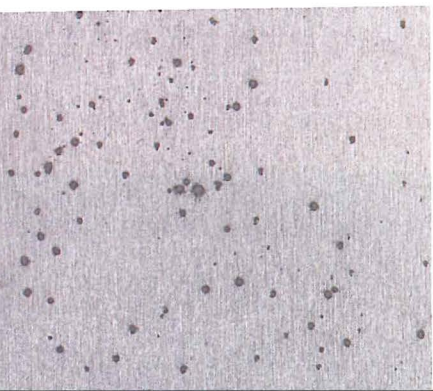
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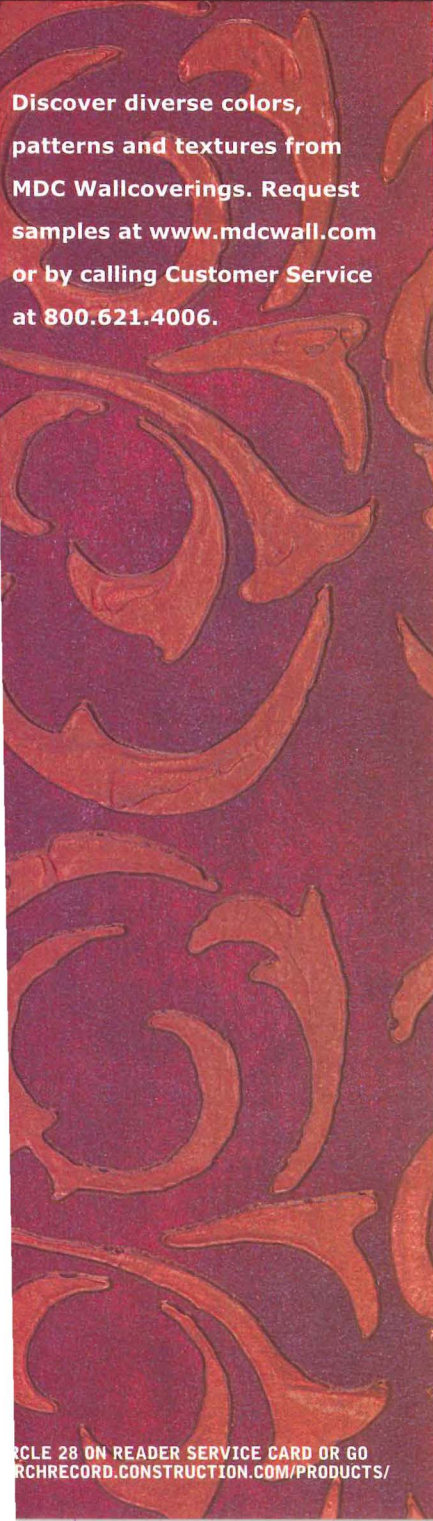
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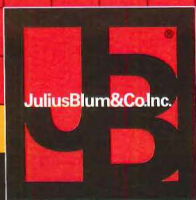
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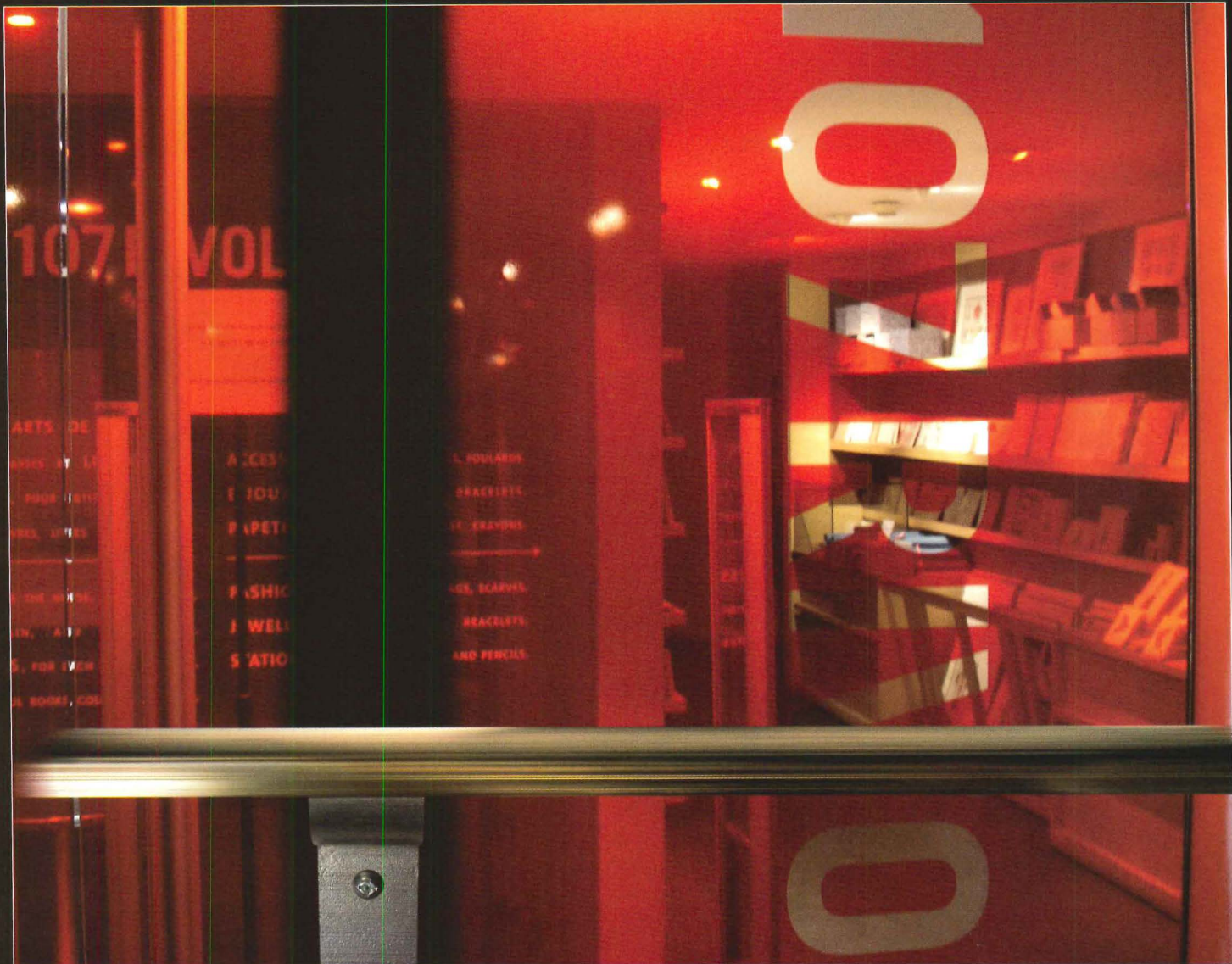


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For and about the emerging architect

archrecord2

DEPARTMENTS

From a Boston firm that was launched in a hurry to find design solutions for urban-scaled problems to a student taking his time to create the perfect desert shelter, the emerging architects featured in this month's archrecord2 are living for ideals—and setting the highest standards for their work. Examples? SsD's house almost completely constructed of discarded materials from Boston's Big Dig, and Trevor Pan's two-year labor of love, 3 Desert Way. Visit www.archrecord.com/archrecord2/ for more.

Design

The acceleration of Single Speed Design



Jinhee Park and John Hong, AIA, principals of Single Speed Design (SsD), grabbed the firm name from the single-speed bicycles they ride around on in Cambridge, Massachusetts.

Although they didn't mean the name to stick, in the end they decided to keep it. "We had a project, so we had to come up with something in a hurry," says Hong. "We thought we'd change it later, but it somehow fit us." Functional, simple, and aesthetically pleasing, the bikes represent the kind of architecture Park and Hong aspire to make. "We want to bring out the essence of design," says Hong, who says he even stripped all decals and branding from his bike.

Yet while simplicity is one of the concepts Hong and Park tout, complex and demanding theories have made their way into the fledgling practice's work, with maximum results. In just three years, the now-five-person firm has created locally and nationally award-winning multifamily housing in Boston, as well as a home built almost entirely of leftover materials from the city's Big Dig project. It has also achieved honorable mentions for designs submitted to global competitions.

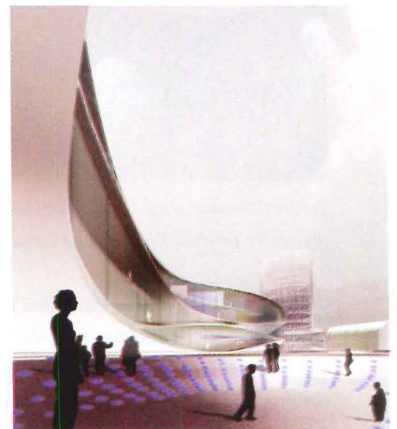
The Big Dig House in particular is an example of Hong and Park's ability to take risks. They had been given the chance, by a developer willing to try something different, to design the Valentine Houses, a multifamily housing structure in Cambridge. A contractor in charge of destroying the residual materials from the Big Dig's construction saw the Valentine project and contacted SsD. "He had a junkyard full of concrete and steel and this idea to recycle it into a house," says Hong. Because Park and Hong's client was willing to let his home serve as a research project, it was a success. Using over 600,000 pounds of recycled materials, the home has become a prototype for recycling large, heavy materials, and a bit of a curiosity in the area.

While the house has led to other possible projects using discarded Big Dig materials for the firm, SsD is also



Big Dig House, Lexington, Mass., 2006

The structural system for this house is almost wholly composed of steel and concrete from Boston's Big Dig, utilizing more than 600,000 pounds of recycled material, including pieces of the I-93 off-ramps. Large upper-level plantings blur relationships between interior and exterior spaces.



Asian Cultural Complex, Gwangju, Korea, unbuilt

An honorable mention in an international competition, this arts complex includes an existing fountain, amphitheaters, a rooftop theater, parks, and playgrounds on an urban scale. A porous concrete slab encircles the complex.

focusing on other sustainable issues, mostly in an urban context. Both Park and Hong have ties to Korea—Park moved from Seoul, where she studied industrial design, eight years ago, and Hong's extended family are there. While both have M.Arch. degrees from Harvard, they still look to Korea for an empirical education on how to design sustainably in a dense city. "Korea has very little land and energy resources," says Park, "so there's a consciousness about using energy in smart ways." Hong adds, "It used to be that when Asian cultures were developing, they borrowed from the West. Now the West borrows from the East. It's about creating modern designs with ancient building stock."

One of SsD's projects, HBNY in New York City, goes a step further in maximizing dense living. The architects researched occupancy levels in the city, and found that many buildings spend months empty, due to traveling residents. They created a loft space that three families could purchase together and share, with flexible areas that could change according to need. "We're amazed at how receptive people have been to the solutions we've been presenting," says Hong. With plans to design a LEED-certified, 7-story multifamily building in Jersey City, New Jersey, and a collaboration with a large Korean urban-planning firm in the works, it seems SsD is full speed ahead. *Ingrid Spencer*

For more photos and projects by Single Speed Design, go to

archrecord.construction.com/archrecord2/.



HBNY (Parenthetical Space), New York City, 2006

HBNY offers a solution to urban dwellers. Operable, parenthesis-like divisions with metal-mesh screens let 12 users territorialize their changing patterns of living while sharing a single apartment.

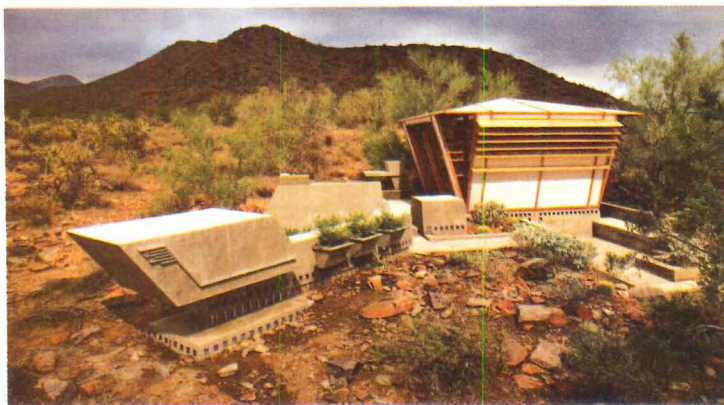
Valentine Houses, Cambridge, Mass., 2003

These three town houses address boundaries between inside and outside, private and community. The project incorporates double-height interior/exterior spaces, cantilevered garden balconies, and occupiable shared roof planes.



Work

Desert shelter explores Wright's design principles



Trevor Pan stretched "sunbrella" fabric over wood beams to create a sleeping shelter at Taliesin West. At the corners, open louvers provide natural ventilation.

During their first year at the Frank Lloyd Wright School of Architecture, students design a shelter capable of comfortably housing a person in the Arizona desert at Taliesin West, where the school holds winter sessions. Constructing it is optional, though, and most people complete their huts within a few months. Trevor Pan spent 400 days, stretched over two years, working on his project, and even remained at school to finish it after graduation.

What took so long? Pan explains that his shelter, dubbed 3 Desert Way, was his first built project—a labor of love. But the 24-year-old Colorado native is also in love with architecture, which he reverently spells with a capital A; he refers to it in the feminine gender, moreover, as though Architecture were a ship or a woman. "Architecture is an ideal," Pan explains. "It's a nice way of personifying it, I guess you could say, by calling it 'her.'" In its ideal form, he adds, architecture produces buildings that can exist in only one location,

made of materials taken from the earth nearby: an organic, holistic approach.

Organic design sports the "green" label today, but Wright was working this way a century ago—so for Pan, there was no better place to study than at the school that Wright himself founded. "When I first visited, I realized this was the place," says Pan, who received his master's degree there in May. "Seeing how the building and the landscape are one thing was a life-altering experience."

Also life-altering was 3 Desert Way, a Wright-inspired bungalow consisting of only one, 100-square-foot room. Pan maximized every inch, adding built-in seating for twelve and a foldaway bed. Outdoors, he landscaped a 150-square-foot patio, more than doubling the shelter's livable area.

Frank Henry, Pan's mentor and the school's studio master, explains that the shelter assignment explores Wright's "learn by doing" directive. "You learn the nature of materials, their limitations, and how to attach one to another," he says. "In a traditional school of architecture, you don't have that. You may study physics and construction documents, but you don't get your feet dirty and learn what concrete really is." Most shelters soon fade into the desert, Henry adds, but Pan's dedication ensures that his will survive.

Perhaps it's no coincidence that Pan was among the handful of students who stuck by the Wright school during its recent turmoil. When the dean left in 2005, several faculty members and students also left, leading a national accreditation board to put the school on notice.

But the school is on the mend. With a new dean, enrollment is rebounding. Another reason for optimism: As interest in green architecture keeps growing, future generations will likely be drawn to learn Wright's organic principles. At least, that's what Pan expects. *James Murdock*

For more information on Trevor Pan's 3 Desert Way project, and other career-related articles for young architects, visit [archrecord2's Work](http://archrecord2.com/work) section at archrecord.construction.com/archrecord2/.

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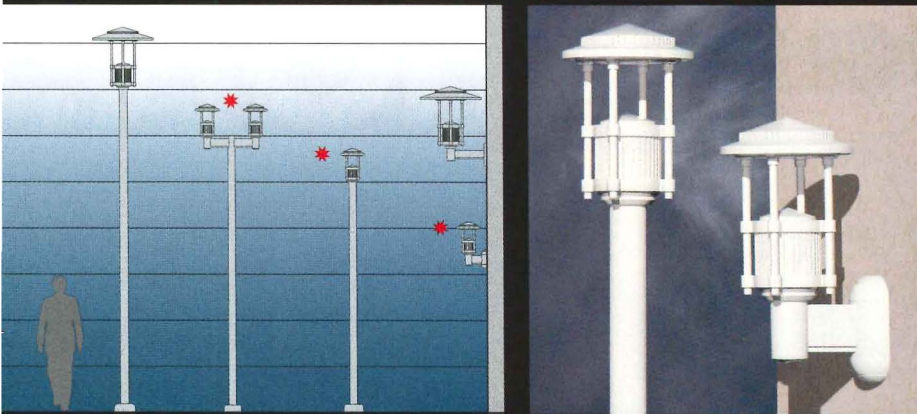
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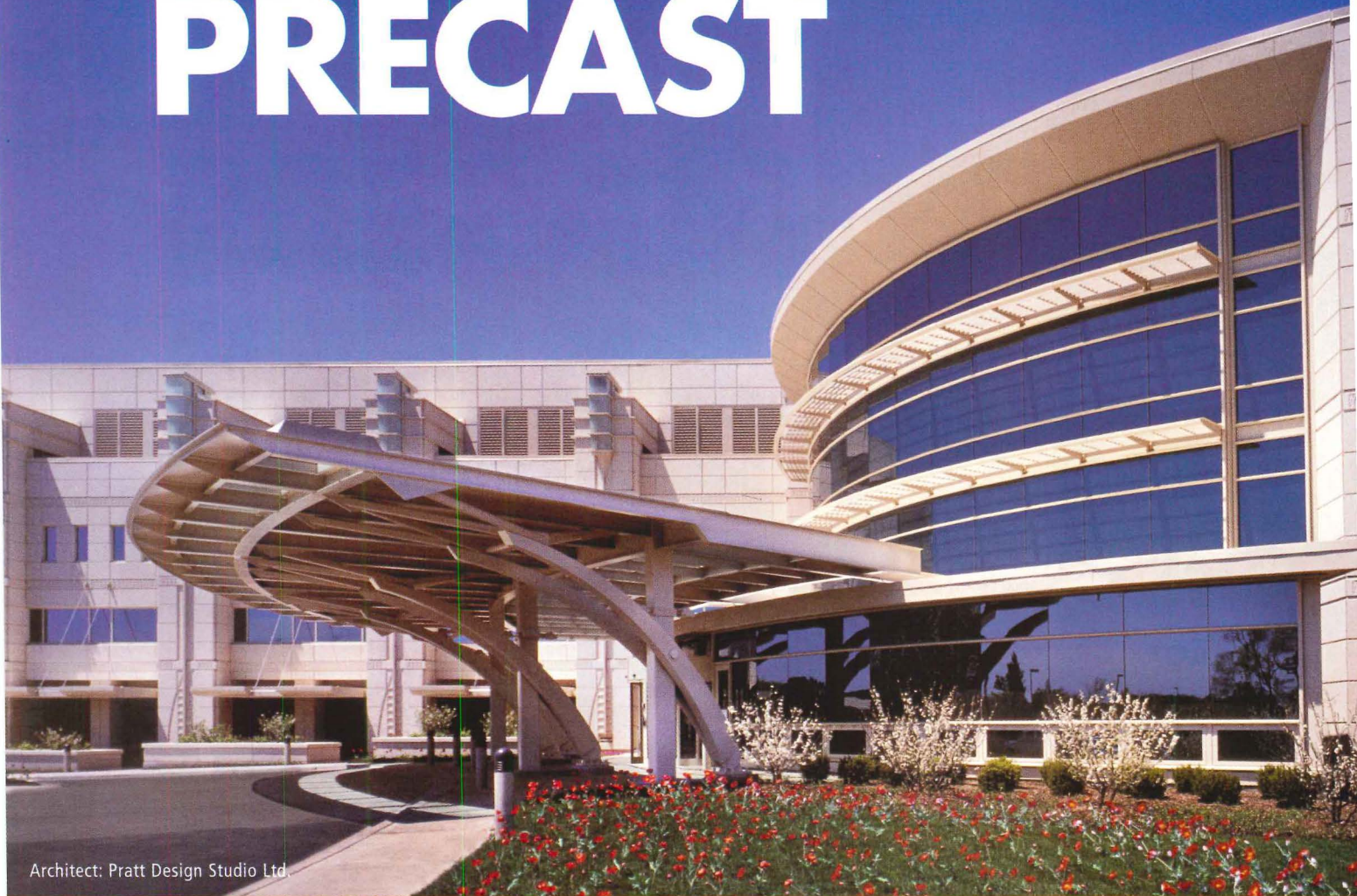
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Architect
KRS, Inc.
Dallas, Texas

Designer/Artist
Maregatti Interiors
Indianapolis, Indiana

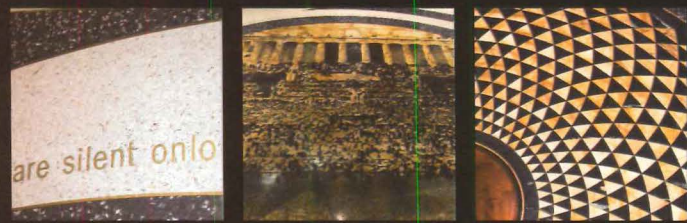


PHOTOS © DOUG SLACK

Clarian North Medical Center

Carmel, Indiana

When Clarian North Partners decided to expand their hospital care to the suburban north side of Indianapolis, they definitely wanted to make a statement. This upscale new hospital needed a floor in the main commons area and main corridors to compliment its floor-to-ceiling artistic design. They also needed a floor rugged enough to withstand the rolling and foot traffic that a major hospital incurs. The terrazzo easily achieved the artistic quality desired by the designer, and the 3/8" thick epoxy terrazzo with a vitrified finish gave the owner a color 22,000 square foot floor that will hold up to any traffic for many years to



*National Terrazzo & Mosaic Association
2006 Honor Award*

Architects
Coughlin Porter Lundeen
Seattle, Washington
Stickney Murphy Romine
Seattle, Washington

Designer/Artist
Linda Beaumont
Langley, Washington

King County Courthouse

Seattle, Washington

The geometric design recalls the historic patterns of the Alaskan marble used throughout the other floors of the building and also transforms this entry lobby floor into a shimmering plane, bringing light and clarity into the space. The image etched into the stone is from the March on Washington in 1963... and like an image on an old coin, it holds the essence of the photograph. There are three quotations from Martin Luther King Jr. made of waterjet cut brass letters imbedded into the terrazzo that surrounds the marble circles.



*National Terrazzo & Mosaic Association
2006 Honor Award*

Architect
Ellerbe Becket, Inc.
Kansas City, Missouri

Designer/Artist
Clearscapes - Thomas Sayre
Raleigh, North Carolina



Charlotte Arena

Charlotte, North Carolina

The Charlotte Arena is designed for the purpose of fun, delight, and recreation. Similarly, the space of the lobby area is also about delight. With its multi-levelled walkways, large complex volume, a variety of lighting and colorful surfaces, the lobby space cries out for gestures that employ and accommodate its complexity; but also help knit its spaces together. The primary composition of the lobby floor brings color and movement into the space while complimenting the architectural goals of the building. Derived from the physics of a bouncing ball, the terrazzo design depicts three patterns of color that roughly correspond to the reduction of the rebound of a freely bouncing ball. The three "balls" brought together in this central space then diverge and extend in different directions.

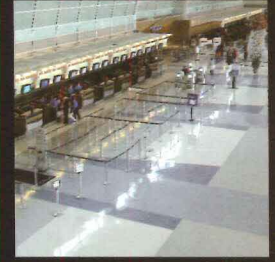


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*National Terrazzo & Mosaic Association
2006 Honor Award*

Architects
HKS, Inc.
Dallas, Texas
Corgan Associates
Dallas, Texas

Designers/Artists
Benito Huerta
Jerome Meadows



*Dallas/Fort Worth International Airport
International Terminal D*

DFW Airport, Texas



The new International Terminal D at the Dallas/Fort Worth Airport was one of the largest construction projects in the Dallas/Fort Worth, Texas area in recent years. Overall, 11 colors were installed in a band and arc pattern. The eight levels of the parking garage were designed to incorporate eight colorful native Texas wildflowers into the terrazzo. These designs provide not only beauty, but also a color-coordinated identity for each level. The 16 parking garage lobbies used 20 bright, exotic colors in the Texas wildflower patterns. This massive yet unique terrazzo installation guarantees years of visual attraction and beauty for the many international travelers.



*National Terrazzo & Mosaic Association
2006 Honor Award*

Architect
H.O.K.
Kansas City, Missouri

*University of Kansas
Allen Fieldhouse*

Lawrence, Kansas

The University of Kansas, with its nationally renowned basketball program, deserved nothing less than this H.O.K. designed addition and remodel of historic Allen Fieldhouse. With 10,000 square feet, this five color epoxy terrazzo floor and precast base design lent itself as the perfect flooring system to tie together both the remodel of corridors in the existing building and the new entrance/lobby and Jay Hawk Museum. The new addition features the project's centerpiece, a 26-foot tall by 25-foot wide terrazzo design of the University's famous "Jay Hawk" mascot. The use of specialty glass and mother of pearl chips, separated by 1/4" zinc divider strips make this the dominate visual effect while walking through the museum or from the balcony above.





*National Terrazzo
& Mosaic Association
2006 Honor Awards*

JOB OF THE YEAR

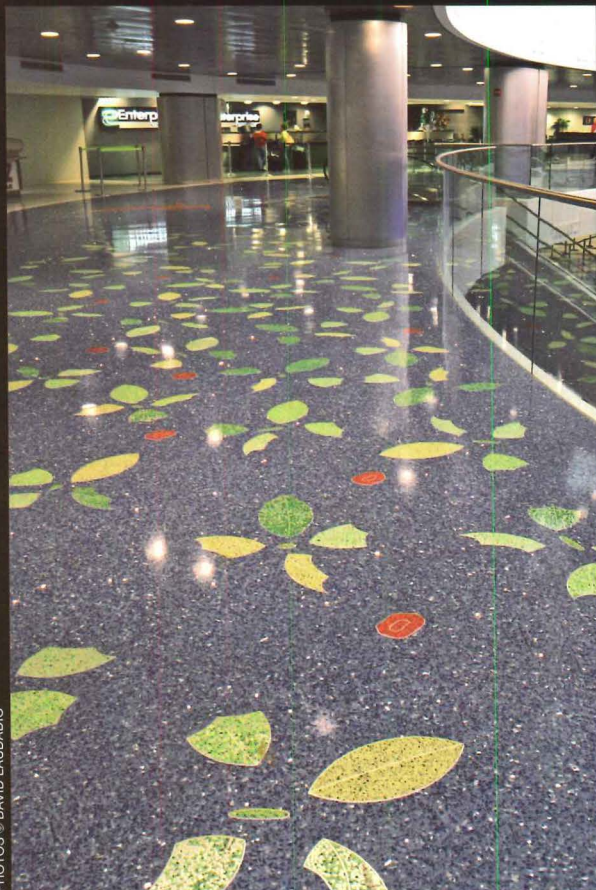


Fort Lauderdale – Hollywood International Airport Rental Car Facility

Fort Lauderdale, Florida

Architect
*Spillis Candella and Partners, Inc.
Coral Gables, Florida*

Designer/Artist
*Clearscapes – Thomas Sayre
Raleigh, North Carolina*



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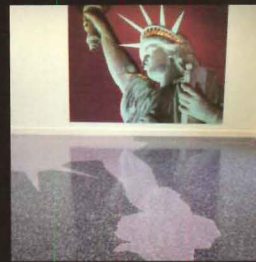
The design of "Mangrove Islands" is based on three sectional "slices" through a computer-generated 3-D model of a mangrove island, once prevalent in the immediate area. The composition of the facility begins on the first floor with a view of the mangrove island cut below the water level just above the sandy bottom. Within the terrazzo are sections of the many trunks of the mangrove tree, which branches into small trunks and roots below the water line, creating an eccentric pattern of unusual round shapes, each depicting the growth rings. Also visible are red fish, oysters, turtle grass, burma reed grass and horseshoe crabs.

On the second level and cut higher on the trunk of the mangrove at just above the water level, the larger trunk sections of the mangrove are visible. The burma reed grass and turtle grass change shape on the second floor as they do in reality when they break into the air at the surface of the ocean. Also depicted are turtles, manatees, and even two wind surfers, all at three times life size.

On level three, the floor depicts the canopy of the mangrove trees. The small diameter branches are connected to the mangrove leaves and blossoms. Playfully sprinkled throughout the leaves are butterflies. Finally, the floor is activated by three times life size pelicans that zoom through the space.

*National Terrazzo & Mosaic Association
2006 Honor Award*

Architect
*Simon Design, Inc.
Los Angeles, California*



Midway Airport Parking Garage

Chicago, Illinois



The choice to use terrazzo flooring in the elevator lobbies of Midway Airport's new Economy Garage was due in part to the positive experience the airport has had in the terminal garage and in the new terminal itself. Like the new Economy Garage, the terminal garage has a floor reminder theme of Chicago landmarks. Likewise the elevator lobbies were designed to enhance the individual floor theme. However, not each floor in the terminal garage had terrazzo. The other floors were done in vinyl. The airport administrators quickly found out that the terrazzo floors not only looked much better but also were so much easier to maintain and would last a much longer time. Those factors made the decision to go with terrazzo flooring in the new Economy Garage an easy one to make.



*National Terrazzo & Mosaic Association
2006 Honor Award*

Architect
*Corgan Associates
Dallas, Texas*

Designers/Artists
*Phillip Lamb
Susan Maglow
Dan Blagg
Nancy Lamb*

*Dallas/Fort Worth International Airport
Terminal Station Renovation*

DFW Airport, Texas

Our teams were commissioned to design the terrazzo floor of eight SkyLink train stations. Susan Maglow and Phillip Lamb created a history of airplane engines and oversized Texas wildflowers. Large solid aluminum components made the parts of the engines, which complimented the bright and colorful wildflowers in the design. Dan Blagg developed the 'Spirit Walk' design, as well as a pattern that included diamonds, clouds, and rain. The pattern is described as 'walking air.' Nancy Lamb installed a brightly colored terrazzo floor that included designs of "birds and clocks" and "stamps and pens." Brad Goldberg created a pattern in which the West Texas topography is displayed.



*National Terrazzo & Mosaic Association
2006 Honor Award*

Architect
*Godsey Associates
Louisville, Kentucky*

Designer/Artist
*Mitchell Sanders
Godsey Associates
Louisville, Kentucky*



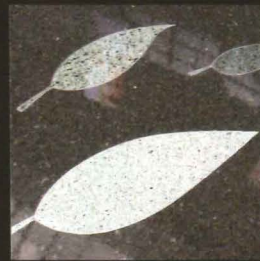
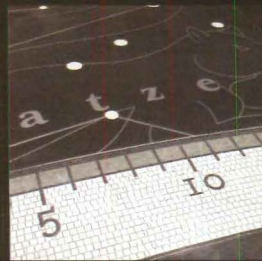
Kentucky Fair & Exposition Center

Louisville, Kentucky



PHOTOS © DAVID LAUDADIO

The architect used long sweeping patterns that help guide people to where they need to go. Also incorporated in the design are small circular areas dominated by plush seating to encourage conversation among the conventioners. Simple yet effective designs make this facility flow smoothly on both the main and upper level with dramatic visual vantage points from the upper level into the main level. A large oval pattern at the escalator helps to draw visitors to its location, and real plants and comfortable seating again contribute to the social atmosphere at this facility.



*National Terrazzo & Mosaic Association
2006 Honor Award*

Architect
*JPRA Architects
Farmington Hills, Michigan*

Mall at Millenia

Orlando, Florida

The floor honors the march of time as we measure and track time by dated calendars reflecting the movement of the stars, our sun and moon. The design team intended for the center court to be the showpiece of the mall. Visitors are able to view the design from the second floor mezzanine at various observation points. The main theme in the large circular terrazzo floor is a design with a nod to the millennium. The center court is a grand representation of constellations achieved with intricate zinc strip and solid metal designs featuring the zodiac signs, stars and Latin wording. Within the very center of the design is a swirling evolution of leaves and fish. All of this is surrounded with an accent band of a timeline created from marble mosaics in three colors.



*National Terrazzo & Mosaic Association
2006 Honor Award*

Architect
*Butler/Ashworth
Architects, LTD, LLC
Las Vegas, Nevada*

Designer/Artist
*Butler/Ashworth
Architects, LTD, LLC
Las Vegas, Nevada*



Grand Café at La Reve

Las Vegas, Nevada



This dining room is highlighted by a terrazzo floor, which incorporates three earth tone colors, separated by 1/4" brass dividers fabricated into fleur-de-lis designs of swirls, circles, and kite shapes, with all brass intersections mitered. All of the brass design work was fabricated on site from a small-scale hand drawn sketch, which was provided by the architect. The designs continue through the curved steps, which were cast in place, with a coping type radiused nosing.



*National Terrazzo & Mosaic Association
2006 Honor Award*

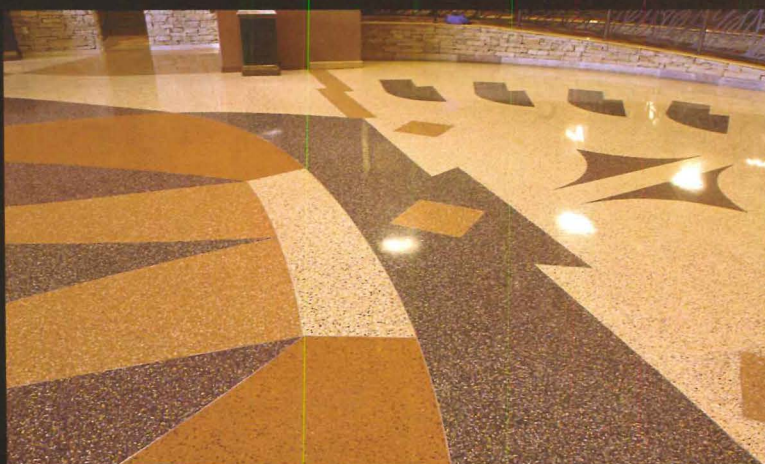
Architect
*Marnell Architecture
Las Vegas, Nevada*

Designer/Artist
*Studio 808
San Francisco, California*

Sandia Casino Hotel

Albuquerque, New Mexico

This casino floor is comprised of 5 colors of terrazzo, separated by 1/8" zinc dividers, depicting the traditional graphics of the Sandia Indian Tribe. Note how texture has been achieved in each color and design, through the blending of earth toned marble and glass aggregates.



*National Terrazzo & Mosaic Association
2006 Special Renovation Award*

Architect
*Gastinger Walker
Harden Architects, Inc.
Kansas City, Missouri*

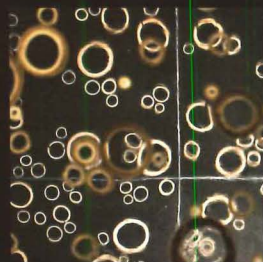


The Hilton President Kansas City

Kansas City, Missouri



When it originally opened in 1926 the old President Hotel's terrazzo was graced by elite guests such as Charles Lindbergh, President Harry S. Truman and Bob Dylan. However, the Kansas City landmark sat vacant and in a state of disrepair for 25 years. Even just walking across the former glamorous terrazzo would create puffs of dust emanating through the cracks from the cavities below. The intricate detail of the original design in some areas, like the current sales office, was offset by the casual palladiana design of the Aztec Room, all worthy of restoration. The more than 10,000 square foot restoration required epoxy resin colors to match the original sand cushion terrazzo.



*National Terrazzo & Mosaic Association
2006 Special Art Award*

Architect
*Rockwell Group
New York, New York*

Designers/Artists
*Rockwell Group
New York, New York
Durite
Great Neck, New York*

Nobu 57

New York, New York

Nobu's new location is in the heart of Manhattan and offers an oriental cuisine. Utilizing the most advanced materials alongside natural elements, Nobu's unusual appearance combines old world exotic woods such as bamboo and teak with composite stones, sea shells, canvas and natural fibers. On the first floor, the terrazzo contractor created a curved serpentine design with alternating black and white bands featuring jade with white pebbles in black terrazzo and black pebbles in white terrazzo. The second level incorporates cut sections of bamboo "O" rings embedded in black obsidian composition for the black color, and white Quartzite for the white color. To fully appreciate the Nobu project, you not only have to see it up close, but also run your hands over the floors and walls to believe your eyes.



Party on! How public space works when a million people show up

Critique

By Robert Campbell, FAIA

DEPARTMENTS

I happened to be in Berlin in July during the weekend of the World Cup finals. I didn't notice, when I planned the trip, that I'd chosen World Cup weekend. I'm an American. We don't know from the World Cup. I suppose they don't talk much about the Super Bowl in Tanzania and Portugal either. But not going into a frenzy over the World Cup is part of what makes the U.S. today feel a little isolated from the tightening weave of global culture.

Berlin, anyway, was a revelation. You forget sometimes, living in America, how wonderful the public life in a city can be. I'd always thought of Berlin as a party town, but this was something else. For the Cup, the city transformed itself into one huge public celebration.

Outdoor living

Bars and restaurants were jammed, of course, with TV-bewitched fans. But it went much further. People moved their own TVs outdoors, invited their friends, and hosted impromptu sidewalk suppers while they watched the games. Bunches of young guys marched around shouting slogans and singing victory songs, all in a good-natured, unthreatening way. Tourist boats on the river Spree responded to these slogan shouters by sounding their horns in sympathy. National flags were everywhere, not only filling the air but also worn as shawls or hip

Contributing editor Robert Campbell is the Pulitzer Prize-winning architecture critic of The Boston Globe and the author of Cityscapes of Boston.



During the World Cup in June and July, the city of Berlin used its great public spaces, such as the area around the Brandenburg Gate (above), as outdoor venues for celebrating soccer victories and life in general.

wraps. (Will our bizarre Congress really attempt to ban such playfully innocent uses of the American flag?)

The great east-west street that splits the Tiergarten, Berlin's central park, was closed for the eastern half of its length and converted into a linear carnival. The Berliners called it, in English, the "Fan Mile." An unbroken row of booths lined it on both sides, selling circusy food and football mementos. There were such odd-

ball attractions as a site where, for a euro, you could get your picture taken with two cheerful young women who wore only paint (national colors, of course) above the hips.

Why such a wealth of public life? Most of the reasons are obvious. Berliners, like other Europeans, live in smaller quarters, on average, than Americans. They therefore move out into the public realm as an enlargement of the living room. They seldom

have air-conditioning, so the outdoors beckons in the hot summer. As in other European countries, taxes tend to be higher than ours, and government invests in public services like transit. In the case of the World Cup, it sank a fortune into showing off the city for international visitors.

It's a paradox: Small apartments, no AC, and high taxes are not, in themselves, exactly virtues. But they all help nurture a great public world.

Critique

Speaking of government, it was nice to see the U.S. Embassy at long last under construction. I served as a juror in the architectural competition held way back in 1996. I've never been on a jury that came so quickly and unanimously to a verdict, only to watch as years passed while the U.S. wrangled about security issues. The building, by Moore Rubell Yudell, stands on a key site on the Pariser Platz next to the Brandenburg Gate. It's due to open in 2008.

Right across the street from

They play hide and seek, or pose for snapshots in the narrow aisles, or enjoy a gelato from a terrace that overlooks the site.

An improbable crypt

Oddest of all, in the middle of this place in which you are supposed to lose yourself in deep thoughts and feelings, you encounter the disruptive presence of a glass-box booth where a guard stands at the head of the stairs that descend to an underground "information center." This is, in fact, a holocaust

Memorial. I was struck by the resemblance between Eisenman's field of blocks and Libeskind's so-called Garden of Exile, an outdoor stand of 49 concrete piers in a 7-by-7-foot grid. Has everyone noticed this visual rhyme? Libeskind's piers are taller than Eisenman's, and olive trees grow from their tops, but the resemblance feels much too close for comfort.

In another part of Berlin, there's an irony for an American. While some preservationists here were, until recently, struggling to save the old Huntington Hartford Museum in New York by Edward Durell Stone, Germans were blithely building an entire executive branch of the national government (of which the German Chancellery by architect Axel Schultes is one piece) in a style that, to this observer at least, is a clear spin-off from Stone's. Here are Stone's thin, flat canopies and pencil-thin columns. It's as if the Kennedy Center had been repositioned in Berlin, then replicated until it stretched to half a mile in length. The buildings are crisp and elegant; they're artfully sited among public parks, plazas, and waterways; and they play green games with vines that climb the walls. But their stone, concrete, and glass all read as shades of bureaucratic gray. They lack materiality, too, seeming to have been built, like architectural scale models, out of some universal weightless substance.

Layers of history

London was my other major port of call. I want to plug an amazing place I'd never heard of, which was recommended by a friend. In the Blackheath neighborhood, a short train ride from the London Bridge station of British Rail, stands Eltham Palace. Once it was a royal palace, where Henry VIII spent much of his childhood. Most of the oldest parts are in ruins now, but a relatively youthful banquet hall survives, built in the 1470s by King Edward IV. The banquet hall is spanned by one of the most dramatic hammer-beam roofs I've ever


seen, and it's worth the visit by itself. But it's far from being the star player.

The star is an Art Deco mansion that arrived on the site in 1933. Stephen and Virginia Courtauld were wealthy patrons of art. They built a new house abutting the old banquet hall, which they renovated as a party space. Working with an architectural partnership called Seely and Paget, and with an interior designer named Rolf Engströmer, the Courtaulds created a set of Deco interiors that would make Josef Hoffmann envious.

The budget was, obviously, nonexistent. You certainly don't want to miss Virginia's gold-leaf and onyx bathroom. Or the stunning glass-domed entrance hall, with walls surfaced in elaborate marquetry. But what is here is not only an architectural masterpiece, but the memory of a way of life. Upstairs, you can leaf through Courtauld snapshot albums. You can watch home movies of the family touring the world on their enormous yacht, or playing among the Eltham fountains and gardens with their preppie-dressed kids, their many loyal dogs, and their pet lemur, Mah-Jongg. Jonggy, as the lemur was called, occupied his (her?) own bedroom on the second floor, with a private bamboo ladder allowing direct access to the downstairs entrance hall.

None of it lasted. In 1940 came the war. Eltham was commandeered by the British military. The Courtaulds never lived there again. In 1950, they moved to Rhodesia, today's Zimbabwe. Eltham remains as a window into a moment of taste and privilege that today seems as remote as the Romans. English Heritage owns the property now. With commendable brio, Heritage has surrounded the palace with newly designed contemporary gardens for strolling visitors, creating one more honest layer in what the late Kevin Lynch would have called, in his unforgettable phrase, a "temporal collage."

And you'll never see better domestic Deco. ■



The Chancellery in Berlin, designed by Axel Schultes, stands as one part of a larger complex of buildings housing the executive branch of federal government, and brings to mind the work of Edward Durell Stone.

the embassy is Peter Eisenman's Memorial to the Murdered Jews of Europe, generally known as the Holocaust Memorial, which I was seeing for the first time. I'm sorry to say that I thought it was a bore. It was about as interesting as you'd expect from a grid of 2,711 dark concrete blocks in the middle of a city. Pretentious and tedious, it offers a new twist to Hannah Arendt's famous phrase about "the banality of evil." Maybe that's the point, but if so, it's a purely conceptual point, not one that works experientially. Many people, in fact, don't take the Memorial seriously.

museum, which was added to the program after the original competition. It's weird to climb down into this improbable crypt that lies beneath the field of concrete blocks, near the site where Hitler's bunker once tunneled beneath the bombed ruins of the city. But once you get to the museum, your resistance is likely to melt. Brilliantly mixing archival photos, films, and text, it's a moving success in evoking the memory of the terrible days of the Nazi persecutions.

I happened to revisit Daniel Libeskind's Jewish Museum on the same afternoon as Eisenman's

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Bucky and Noguchi are back, informing three New York shows

Exhibitions

By Russell Fortmeyer

DEPARTMENTS

Artist's Choice: Herzog & de Meuron, Perception

Restrained. Curated by Herzog & de Meuron. At the Museum of Modern Art, New York City, until September 25, 2006.

OBRA Architects, BEATFUSE!

Curated by Pablo Castro and Jennifer Lee (OBRA Architects). At the P.S.1 Contemporary Art Center, Queens, New York, through October 2006.

Best of Friends: R. Buckminster Fuller and Isamu Noguchi.

Guest curated by Shoji Sadao. At the Noguchi Museum, Queens, New York, until October 15, 2006.

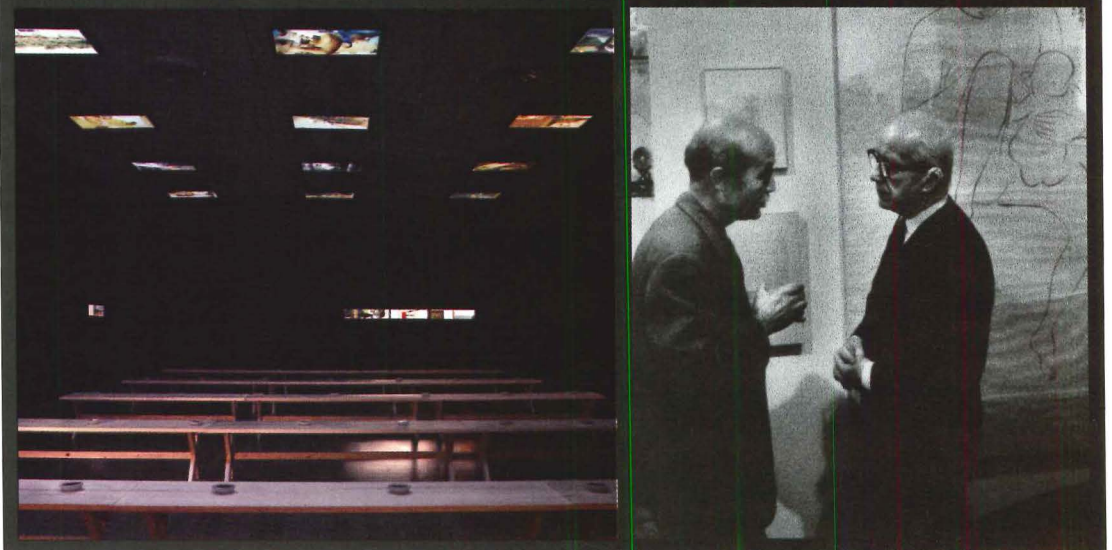
Upon the advice of his friend Buckminster Fuller (1895–1983), the sculptor Isamu Noguchi (1904–88) painted his New York studio silver in 1929. This rather innocuous gesture, undertaken to eliminate shadows, embodies the lingering mystique of the careers of these two somewhat atypical characters.

In the same year in that studio, Noguchi produced his famous chrome-plated bust of Fuller, which he described as a “form without shadows,” and cemented a lifelong friendship that would result in a prolific output of ideas, architecture, art, furniture, and public spaces that still stands apart as a model for interdisciplinary collaboration.

While history calls Fuller a scientist/philosopher and Noguchi a sculptor, the two men pushed these categories to absurdity independently with projects such as Fuller's



Three exhibitions explore architecture and art, all suffused with the spirit of Buckminster Fuller and Isamu Noguchi (below right). OBRA Architects' installation at P.S.1 (above) channels Fuller, while Herzog & de Meuron's conceptual installation at MoMA focuses on the larger issue of perception in an age of total distraction (below left).



Exhibitions

geodesic domes and Noguchi's paper lamps, exposing the limits of language and our modern need for classification. More often than not, they receive the lazy title of *genius*, which conveniently skirts the issue. Could we consider the formlessness of Noguchi's silver studio as a license for the blurring of the disciplinary lines between an architect and an artist?

The two men's friendship is the

subject of a small, illuminating show, *Best of Friends*, at the Noguchi Museum in Queens, New York. The exhibition, curated by Fuller associate Shoji Sadao with obvious affection, aims to document the collaborative relationship of Fuller and Noguchi, though the influence of Bucky on Isamu seems to prevail. Their spirits, however, haunt two other exhibitions in New York: *Artist's Choice: Herzog*

& de Meuron, Perception Restrained at the Museum of Modern Art, in Manhattan, and *BEATFUSE!* at P.S.1 Contemporary Art Center, in Queens.

While architecture's relationship to art grounds each show, at stake is our understanding of how architects, or to use a more inclusive term, designers, shape our experience of art through controlling its perception, setting a stage for its reception, or tossing its categories out the window and presenting us with something new. Fuller and Noguchi fall into this latter group: They embraced an opti-

mistic Modernism, seeking new forms via problem solving, and, with true Modern naïveté, a larger truth about the world. What is Fuller's geodesic dome but a more innovative version of Mies's universal space? Noguchi's sculptures, which take primitive-looking forms into the realm of refined sensuousness, tether that space to human scale. Modernism may not have found truth, but in its attempts to do so it contributed to an explosion of new possibilities for architecture.

Creativity restrained

Herzog & de Meuron's installation, in which the architects were charged with selecting and installing work from MoMA's collection in a gallery of their own design, amounts to a black box, or the very inverse of the museum's traditional "neutral" white one. It exists almost as the architects' pure mediation of experience. The choice is that you have no choice. Flat-screen televisions, the ultimate medium, dot the ceiling in a grid corresponding to rows of wooden benches below.

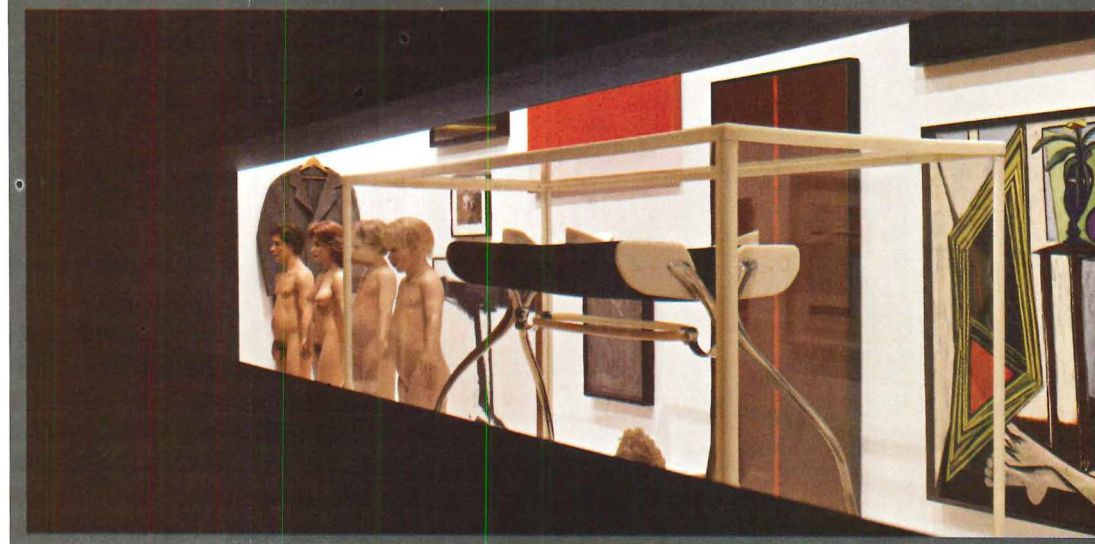
The televisions play violent and sexual clips from movies culled from the museum's collection (e.g., *Bonnie and Clyde*, *Fargo*, or *Mean Streets*). Meant for provocation, the selected clips would strike even the most facile cinemaphile as perhaps too obvious. But it's a cool distraction from the surrounding sidelined treasure troves of some of the best art from the museum's incomparable holdings.

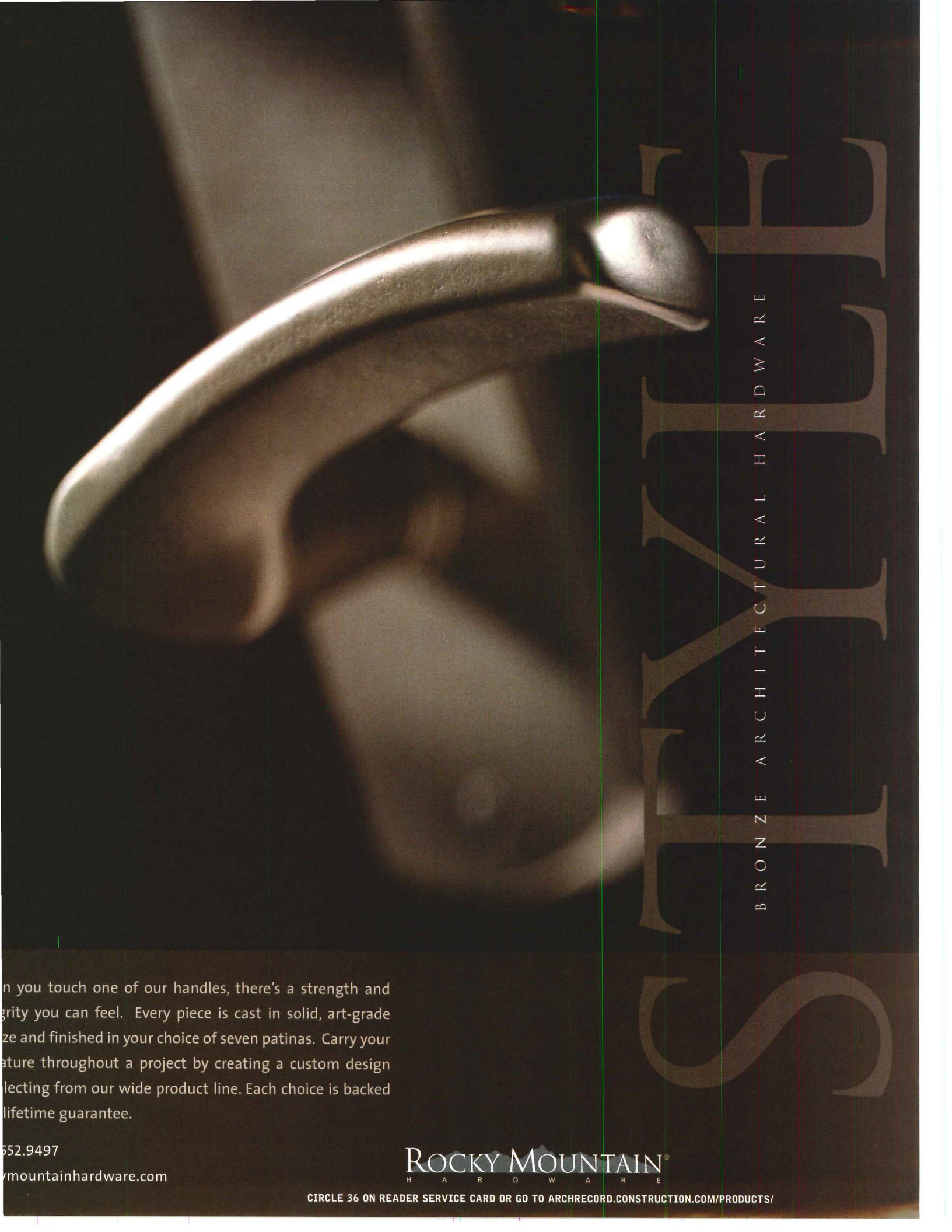
A choice grouping of works from MoMA's prize possessions—installed in cramped, white galleries visible only through narrow viewing slots—become curiolike, reduced to a peepshow version of grandma's attic. That is, if you can see the art; the slots are positioned for the tall among us. (Apparently ADA doesn't apply to conceptual installations.) It's a pity, too, since among the objects included are such icons as Joseph Beuys's 1970 *Felt Suit*, Willem de Kooning's 1952 *Woman II*, and Verner Panton's *Stacking Side Chair* of 1959–60, but art isn't the point in this hostile show.

To be fair, Jacques Herzog and Pierre de Meuron state in their introductory wall text that "perception"



Herzog & de Meuron's black-box gallery at MoMA may draw in curious visitors to view the flat-screen televisions on the ceiling (above), but it reduces art to a peepshow in physically inaccessible slots along the periphery (below).





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Exhibitions

was their subject matter, lamenting that the museum doesn't value "perceptive attention on the part of the museum visitor." Blaming the visitor for failing to see past the celebrity architecture, recorded tours, outside gift shops, and tasteless glitz is a bit disingenuous.

Institutional critique as an art project began to lose creative steam in the 1980s, so perhaps architec-

ture's version comes off a bit passé in 2006. What Herzog & de Meuron proposes tells us the problem, when we really only want to see architecture fix it. It's arguable that Fuller and Noguchi would have seized this opportunity to invent a more formally interactive environment, rather than wringing their hands in a multimedia installation. It's difficult to tell, as well, how this bit of research on the part of

Herzog & de Meuron figures into the firm's built work, especially since its Tate Modern, in London, and the new de Young Museum, in San Francisco [RECORD, November 2005, page 104], stand as such successful examples of not entirely unconventional museum spaces for viewing art. Surely Herzog & de Meuron don't view their own patrons so cynically?

The beat goes on

BEATFUSE! by OBRA Architects, a New York-based firm founded in 2000 by principals Pablo Castro and

Jennifer Lee, owes a clear debt aesthetically and structurally to Fuller's legacy. Installed in the courtyard at P.S.1 Contemporary Art Center, a Queens offshoot of MoMA, *BEATFUSE!* was the winning entry in the annual Young Architects Program, where five emerging architecture firms compete with proposals responding to the brief of bringing the beach to P.S.1's courtyard.

A crisscrossing mesh of plywood and polypropylene, OBRA's series of canopies dominates the courtyard like big bubbles oozing up from the water in wood wading pools below. Metal-mesh orbs, resembling disembodied eyes from a fly, spew cool mists that coat the atmosphere in a layer of intrigue. A room off to one side—a walk-in cooler lined with a silver insulated fabric and ringed with giant blocks of ice—offers respite from the pool party.

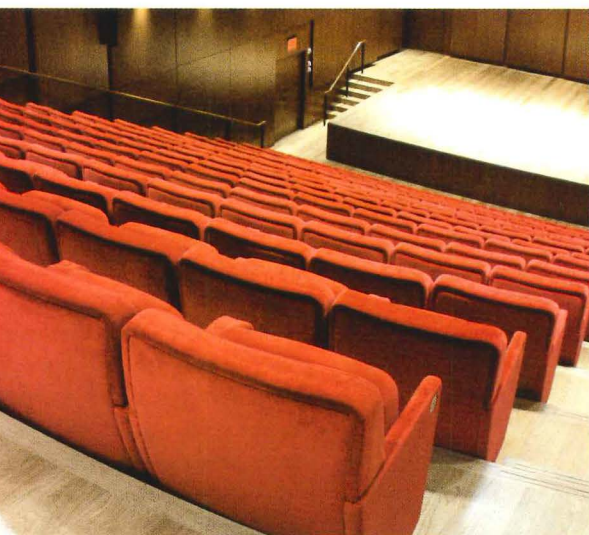
Although the program is in its seventh year, its brief has grown somewhat stale; the true test of the Young Architects Program occurs every Saturday during P.S.1's afternoon party, Warm Up, which features a multitude of bars and a changing lineup of hip DJs and live performers. Once you enter the courtyard, you encounter a fresh kind of freedom in what amounts to a hippie folly realized a few decades late—a design-enabled pleasure pavilion set up as a mood-enhancing playground that establishes a breezy tone for the art galleries inside.

It's clear OBRA and P.S.1 have a hit. While the museum traditionally relegates "art" to the interior galleries, OBRA—and, frankly, most of the past Young Architects Program winners—succeed in the spatial realization of true cultural experience in the vein of Fuller and Noguchi. One need only think of Fuller's 1967 Montreal Expo pavilion or Noguchi's 1956–58 UNESCO garden in Paris for precedents. *BEATFUSE!* is a poor man's geodesic dome amid a field of objects and pools not quite straight out of a Noguchi park. What's more, this is an architecture of frivolity absolutely necessary to the experience of P.S.1, but without a heavy curatorial hand constantly telling the visitor what to think



OBRA Architects' courtyard canopies, constructed of plywood and polypropylene, shelter hundreds of visitors to P.S.1's Saturday parties, when the crowds are avoiding the sun (above) or wading through one of the wood pools (below).





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Exhibitions

Critics may discount the throw-back bubble design as a relic of the 1960s or may choose to focus on the questionable construction integrity that forced some unsightly stopgap measures, such as temporary scaffolding. But on a \$70,000 budget for a fleeting project that directly engages a seen-it-all crowd with design, music, and social interaction, architecture rarely achieves

such success. Part of Fuller's strategy was to find a repeatable form and to deploy it in disparate contexts productively. OBRA's installation, far from groundbreaking, is clearly positioned to grease the wheels of social interaction in a way that benefits the public's engagement with contemporary art—serving a critical need architecture rarely addresses successfully.

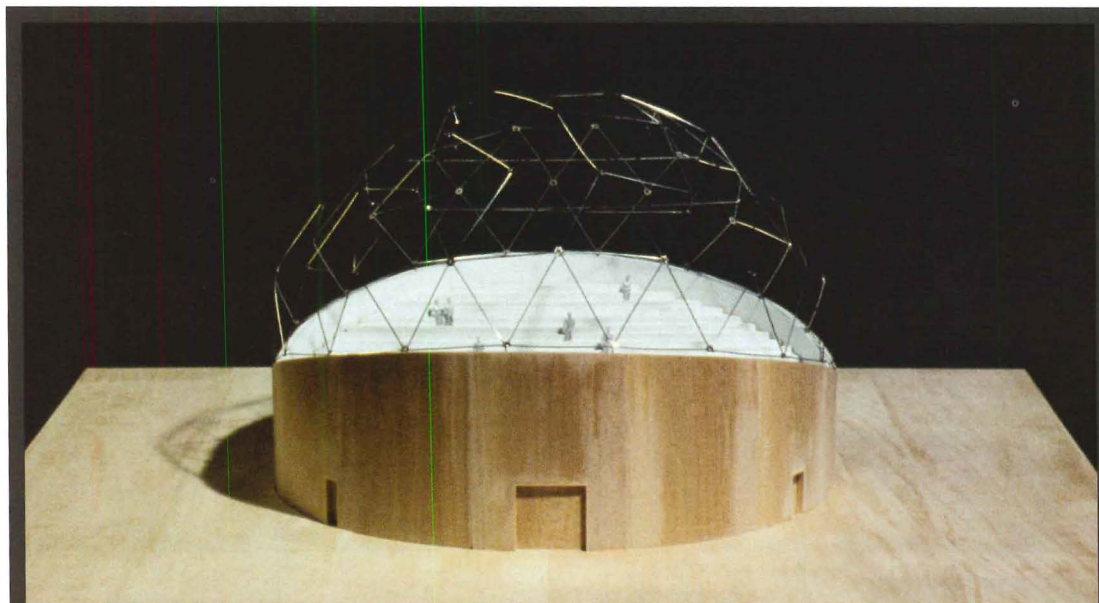
Friends to the end

It is tempting to imagine Fuller and Noguchi, had they started their careers in 2000 and not the 1920s, making the P.S.1 scene. They most certainly would have approved, especially given the fact the two of them met in a New York bar. You can't wander around the four galleries of their exhibition at the Noguchi Museum without being struck by a sense of their obvious love of life, from Fuller's 1928 *Dymaxion House* to Noguchi's 1986 *Slide Mantra*, a snakelike shell of

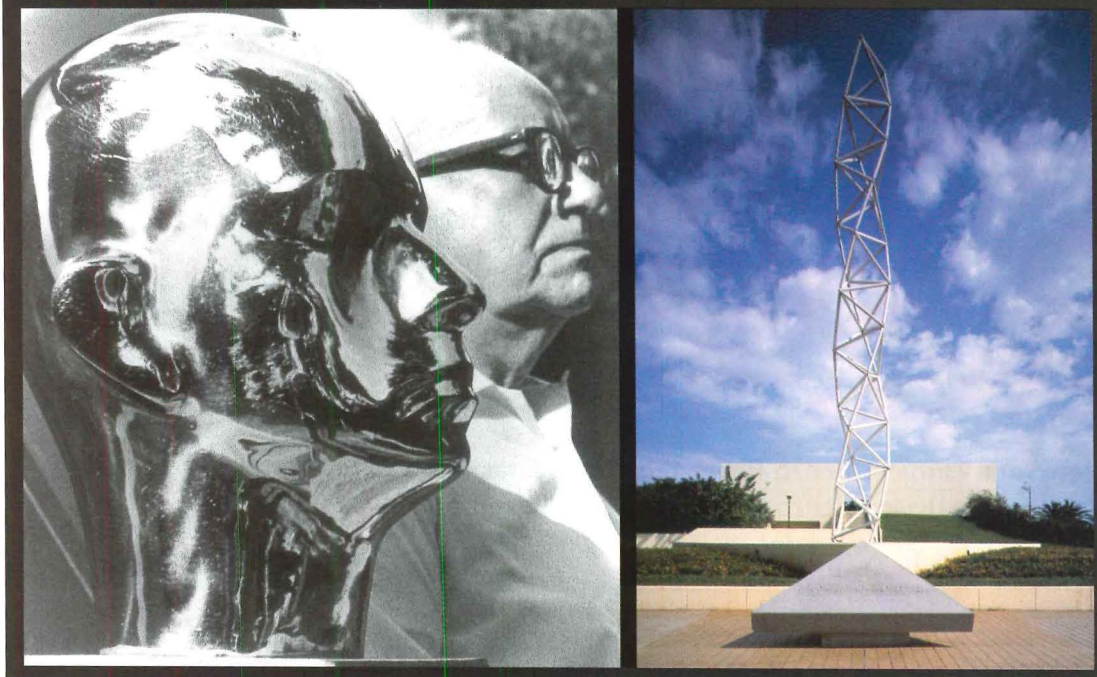
marble that doubles as a child's slide, produced for, of all serious things, the Venice Biennale.

The continuing influence of two men on architecture and design manifests itself in the way Noguchi having had an almost Picasso-Braque-like relationship with Fuller adapted Bucky's 1959 *Tensegrity Mast*, produced for a MoMA exhibition, for his 1986 *Challenger Memorial*, in Miami, Florida. The twisting space-frame of the *Mast* a lacelike distant cousin to Fuller's geodesic domes and Noguchi's lamps, has popped up in more than one skyscraper proposal in the past few years. Even Rem Koolhaas's summer pavilion at the Serpentine Gallery in London's Hyde Park, a large balloon floating on a circular structure, owes its genealogy to some degree to Fuller and Noguchi. Koolhaas has made a career out of reinventing the stalled projects of Modernism, Fuller's among them. His Office for Metropolitan Architecture's Seattle Public Library [RECORD, July 2004, page 88] is, to some extent, a contorted mesh of Fuller structures and members wrapping spacious, free-form Noguchi interiors.

While these three shows may strike us as mismatched in curatorial reach, theoretical purpose, and certainly in installation, they are nevertheless related in the questions they pose about the role of the attentive museum visitor and the view architects' hold of their adoring public. OBRA, Noguchi, and Fuller appear, in this light, to be rather optimistic about their audience's capacity for understanding the truths their work may unfold. As interesting and chic as Herzog & Meuron may seem with its critique of the viewer who must be wooed away from the pops and bangs of contemporary Hollywood schlock and back to the museum, the architects nevertheless come off as cold and condescending. While idealistic "larger truths" may seem a little obsolete after Fuller and Noguchi, the silver lining of our loss is architecture's continuing ability to investigate this disappearance. ■



Noguchi's 1976 design for the unbuilt Martha Graham Dance Theater (above) and his 1985 Challenger Memorial (below right) were inspired by his friend Buckminster Fuller, shown here (below left) with his 1929 bust by Noguchi.



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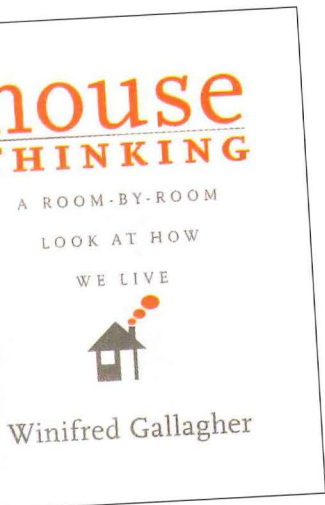
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Authors explore what makes a room or a building feel right

Books



House Thinking: A Room-by-Room Look at How We Live, by Winifred Gallagher. New York: HarperCollins, 2006, 352 pages, \$25.

Winifred Gallagher could as easily have titled this book *House Feeling*. She writes that feeling at home in certain houses “has less to do with aesthetic fashion than with evolutionary, personal, and cultural needs which many of us are mostly unaware.” She examines how decisions about home design can bring out our best selves, and, not unlike medicine or a hot cup of tea, “can make us feel better.”

The book focuses on two questions: How do the decisions we make about our domestic world reveal and influence our inner self, and how can we make better choices? Gallagher contends that whatever who we are, we can count on a few invariable design principles, most notably, what Wright

called “perching and nesting.” The author also argues for character, as achieved through nooks, alcoves, unconventional windows, custom woodwork, fireplaces, inviting porches. She favors tradition and craft and often derides avant-garde design for emphasizing novelty and art over comfort and practicality. Overall, she writes, your home should “support your identity, foster privacy and sociability, buffer you from stress, and connect you to the larger world.”

Gallagher moves from room to room, offering a bit of history, a little psychology, and some decorating tips. Her passage on entries and plans starts at Monticello, which Jefferson, “with a psychological insight that matched his architectural talent,” filled with artworks and 28 Windsor chairs arranged to force visitors, waiting for the great man, to marvel at his taste.

From there, Gallagher proceeds to an 1870s Stick Style New Jersey “cottage” designed by Frank Furness. “For status-conscious Victorians,” Gallagher writes, Furness tailored a tightly regulated front hall, “a screening station beyond which many never passed.” Her tour also stops in Longfellow’s dining room and in the bedrooms of Edith Wharton and Hugh Hefner. She counsels that living rooms “should say sociable and personal”; dining rooms should be showplaces for valued objects and describe social status; and bedrooms should be sanctuaries for rest and sex, not repositories for exercise machines and clutter. In a diverse and hectic

world, such prescriptions may seem out of touch.

House Thinking makes good reading, but you might become impatient with Gallagher’s repetition and quotes of social scientists asserting the obvious. The book’s strength lies in the author’s intuitions; she didn’t have to buttress them with academic opinions. Take away the props and you would have a small book with many valuable insights. *Andrea Oppenheimer Dean*

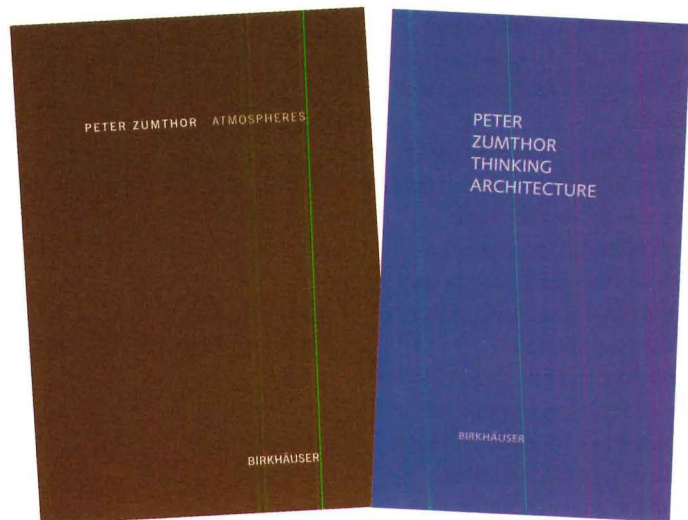
Atmospheres, by Peter Zumthor. Boston: Birkhauser, 2006, 80 pages, \$40.

Thinking Architecture, by Peter Zumthor. Boston: Birkhauser, 2006, 94 pages, \$40.

“I enter a building, see a room, and—in the fraction of a second—have this feeling about it. We perceive atmosphere through our emotional sensibilities,” writes Peter

Zumthor in *Atmospheres*. Memorable architecture, for this Swiss architect, depends on the moods, feelings, or character that buildings convey.

These two wise, slim volumes fit together like fraternal twins. In them, Zumthor writes, often poetically, about architectural quality. An intuitionist, Zumthor is devoted to affectionately crafted objects and spaces. He writes about listening to “the sound of the space, to the way materials and surfaces respond to touching and tapping, and to the silence that is a prerequisite of hearing.” While his 1996 Thermal Bath Vals in Graubünden, Switzerland (the town where he lives), has become famous in architectural circles, much of his other work—including the Swiss Pavilion for EXPO 2000, in Hanover, Germany, and in Graubünden, the 1983 Elementary School Churwalden, the 1989 Saint Benedict Chapel Sumvitg, and the 1990 Art Museum Chur—remains



Books

less widely published, a result in part of his belief that architecture should be experienced firsthand.

Thinking Architecture is a reissue (with three new essays) of Zumthor's popular, now out-of-print 1998 publication. *Atmospheres* expands slightly a June 2003 lecture Zumthor gave at a literature and music festival in Wendlinghausen, Germany. Carefully worded (and translated), the text of the talk explains how the architect goes about creating atmosphere in his own work. He writes, for instance, about composing and balancing materials, making sure they "are attuned to each other"; about arranging spaces in "sequences that guide us, take us places, but also let us go and seduce us"; and about giving "thought to careful and conscious staging of tension between inside and outside, public and intimate, and to thresholds, transitions, and borders."

He asks rhetorically how we recognize architectural quality. There are "buildings or ensembles of buildings, both small ones and monumental ones," he writes, "that make me feel good, that make me look good, that give me a sense of dignity and freedom, that make me want to stay awhile and that I enjoy using."

Architecture, he says, is not a "vehicle or a symbol for things that do not belong to its essence." Reality, for Zumthor, lies in place and purpose. Nor does he think style has much to do with architectural quality.

"When an architectural design draws solely from tradition and only repeats the dictates of its site," he writes, "I sense a lack of genuine concern with the world and the emanations of contemporary life. If a work of architecture speaks only of contemporary trends and sophisticated visions without triggering vibrations in its place, this work is not anchored in its site, and I miss the specific gravity of the ground it stands on."

Ultimately, he says, "It is our feelings that tell us whether abstract considerations really ring true." A.O.D.



Designing with Light, by Victoria Meyers; New York: Abbeville, 2006, 144 pages, \$28.

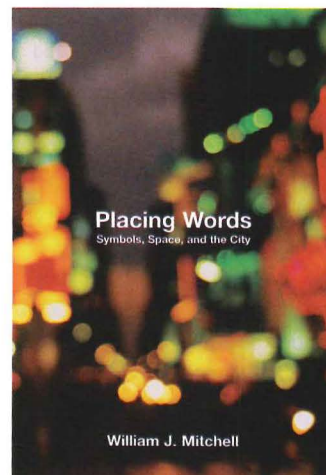
Light suffuses our existence so completely that we forget about it until we notice how often we employ it in speech to express optimism: enlightenment, light music, light humor, light of my life, light my fire, light brigade, the light of reason, light-hearted. So writes Bruce Ferguson, dean of Columbia University's School of the Arts, in a preface to *Designing with Light*. In terms of ideas and their presentation, this book is mostly downhill from there.

Meyers offers a little history in her first two chapters, and short introductions for each of the remaining chapters on color, line, form, glass, windows, sky frames, shadows, and reflection. The book's strength lies in images that show light creating color and line and articulating form in architecture. But the material (verbal and visual) in chapters on glass, windows, sky frames, and reflection are poorly related to the subject of light. Meyers's book seems mainly a vehicle for showing interior work by her firm, Hanrahan Meyers, alongside that of Rick Joy, Steven Holl, John Pawson, Michael Bagellini, and others of their caliber. A.O.D.

Placing Words: Symbols, Space, and the City, by William J. Mitchell. Cambridge: MIT Press, 224 pages, \$17.

William Mitchell, a professor of architecture and media arts at MIT and the author of such books as *City of Bits: Space, Place, and the Infobahn*, and *Me + +: The Cyborg Self and the Networked City*, is no academic recluse. He is fascinated by what architectural context means in today's world. Rather than a set of buildings arranged evermore along a street, context is the way "objects, narratives, memories, and space are woven into a complex, expanding web—each fragment of which gives meaning to all the others," he writes. This translates in *Placing Words: Symbols, Space, and the City* to such insights as the symbiotic relationship between Manolo Blahnik shoes and the oft-reviled World Trade Center Freedom Tower: "It looked as if David Childs and Daniel Libeskind had found the parti beside the bed of one of those *Sex and the City* girls ... Both Manolo spikes and world's-tallest-building candidates depend for their dramatic effect upon breathtakingly excessive height combined with improbable slenderness."

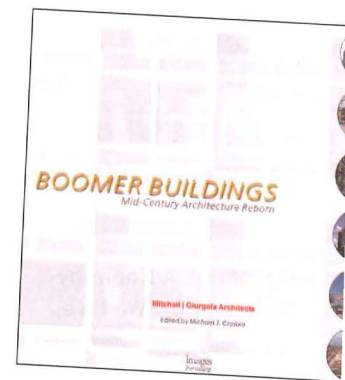
These short essays, which first appeared in the *Royal Institute of British Architects Journal*, also suggest that celebrity architecture can be the urban-scale equivalent of a rapper's bling-bling, and that in our increasingly stratified society, the tracking bracelet Martha Stewart wore after leaving prison could be repackaged with a chic look as an upscale convenience device that would record your whereabouts but allow you to enter an airport termi-



nal without passing through security. Sometimes Mitchell's approach is irritatingly glib, as when he distills Le Corbusier's theories into "Modernist Eye for the Beaux-Arts Guy." But Mitchell is onto something that most American architectural writers ignore: Design permeates our daily life, and it is changing just as quickly. *John King*

Boomer Buildings, Mid-Century Architecture Reborn, edited by Michael J. Crosbie, with Mitchell/Giurgola Architects. Mulgrave, Australia: Images Publishing, 2005, 162 pages, \$70.

While postwar furniture is commanding record prices, buildings of the period are facing the wrecker's ball. The six case studies of renova-



tions by Mitchell/Giurgola presented in this book show how cold war buildings can be made more useful, energy efficient, and attractive.

The copiously illustrated, sometimes redundant text explains how the architects analyzed each project's energy use, mechanical needs, curtain-wall performance, and structural stability. Crosbie writes, "In some cases, the origin building's urban enmity and contextual boorishness are tamed with new wings that create hospitable courtyards. The results are born-again buildings revived at a fraction of the cost of a new facility ... at the expense of far fewer natural resources."

All six renovations reenergize their surroundings. You would expect nothing less of their work.