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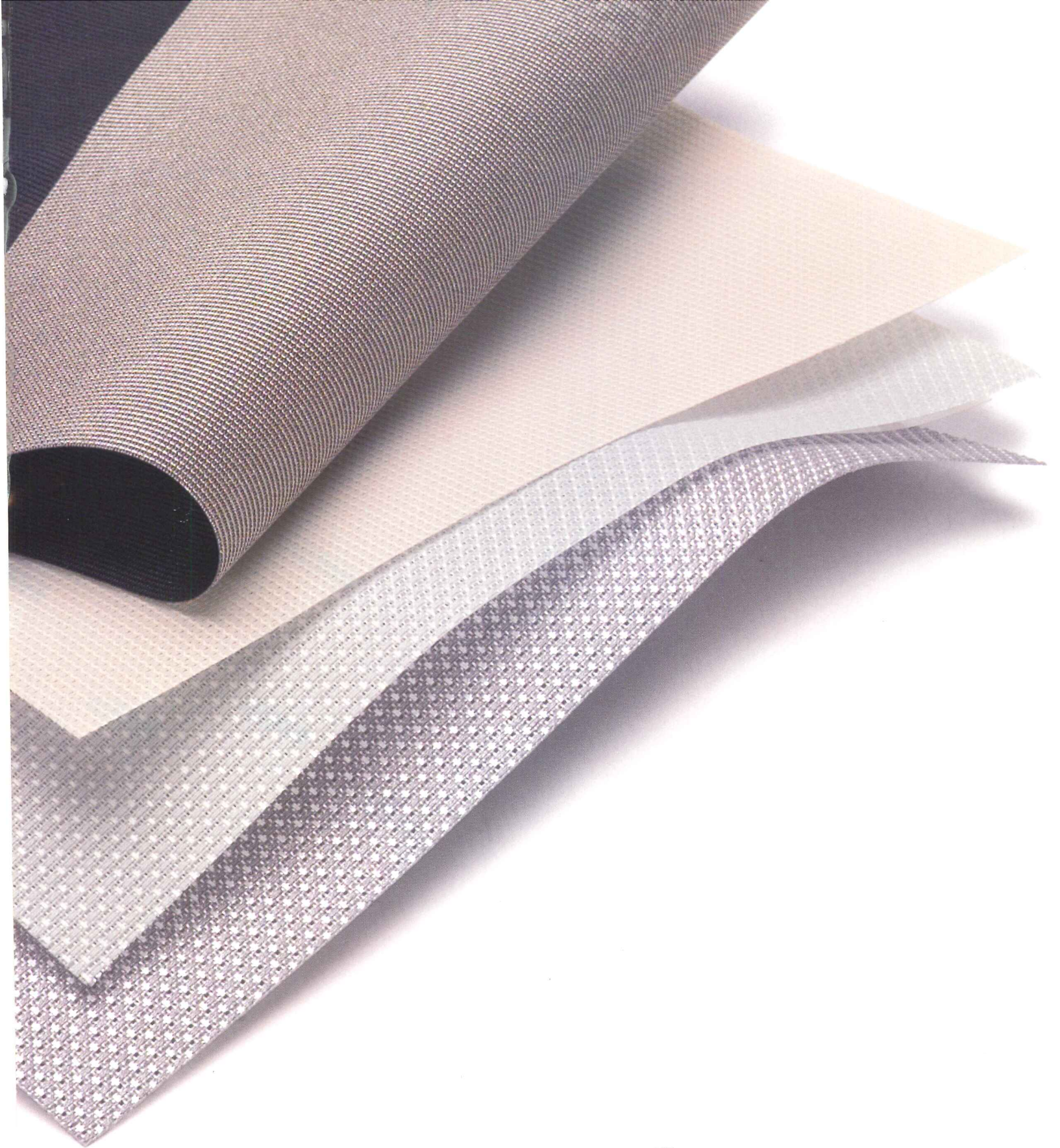
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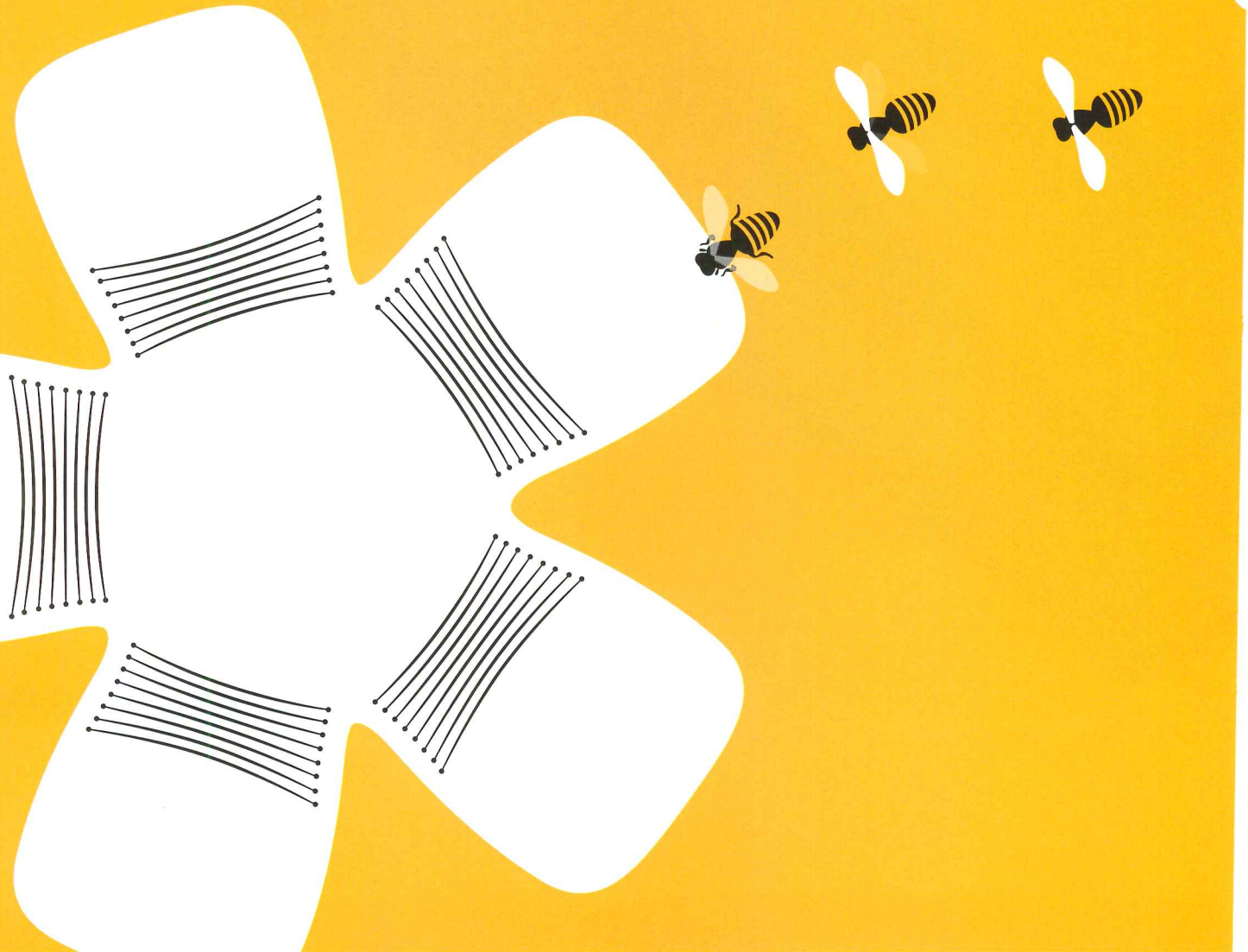
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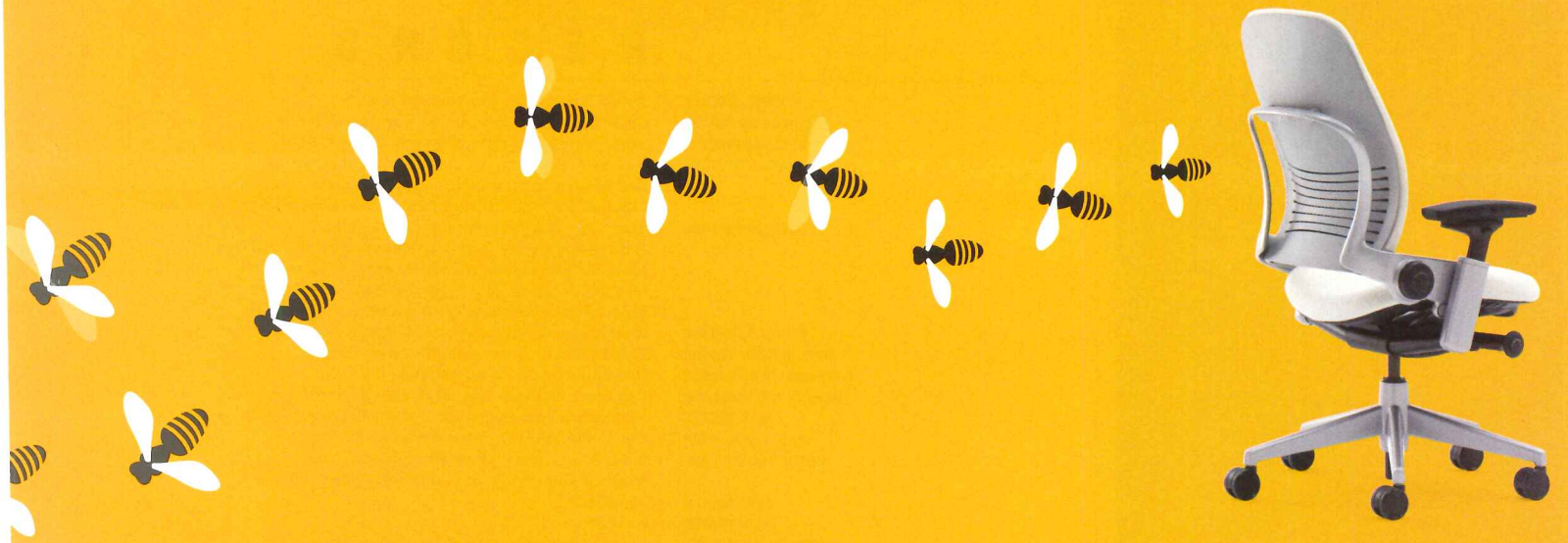
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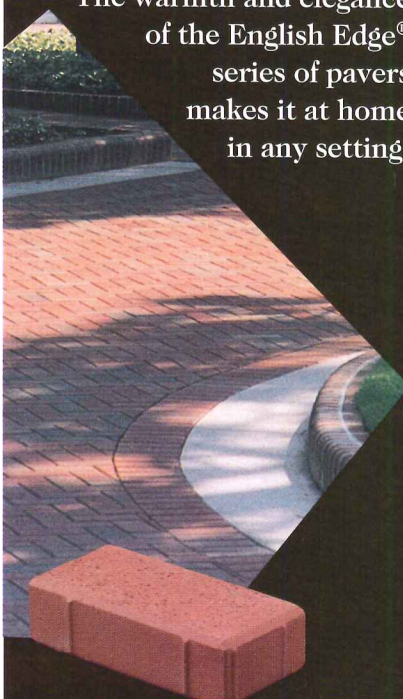
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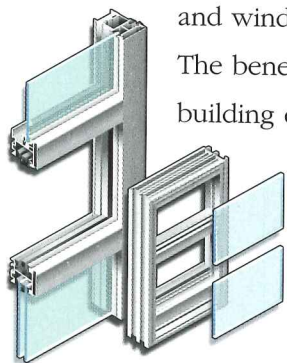
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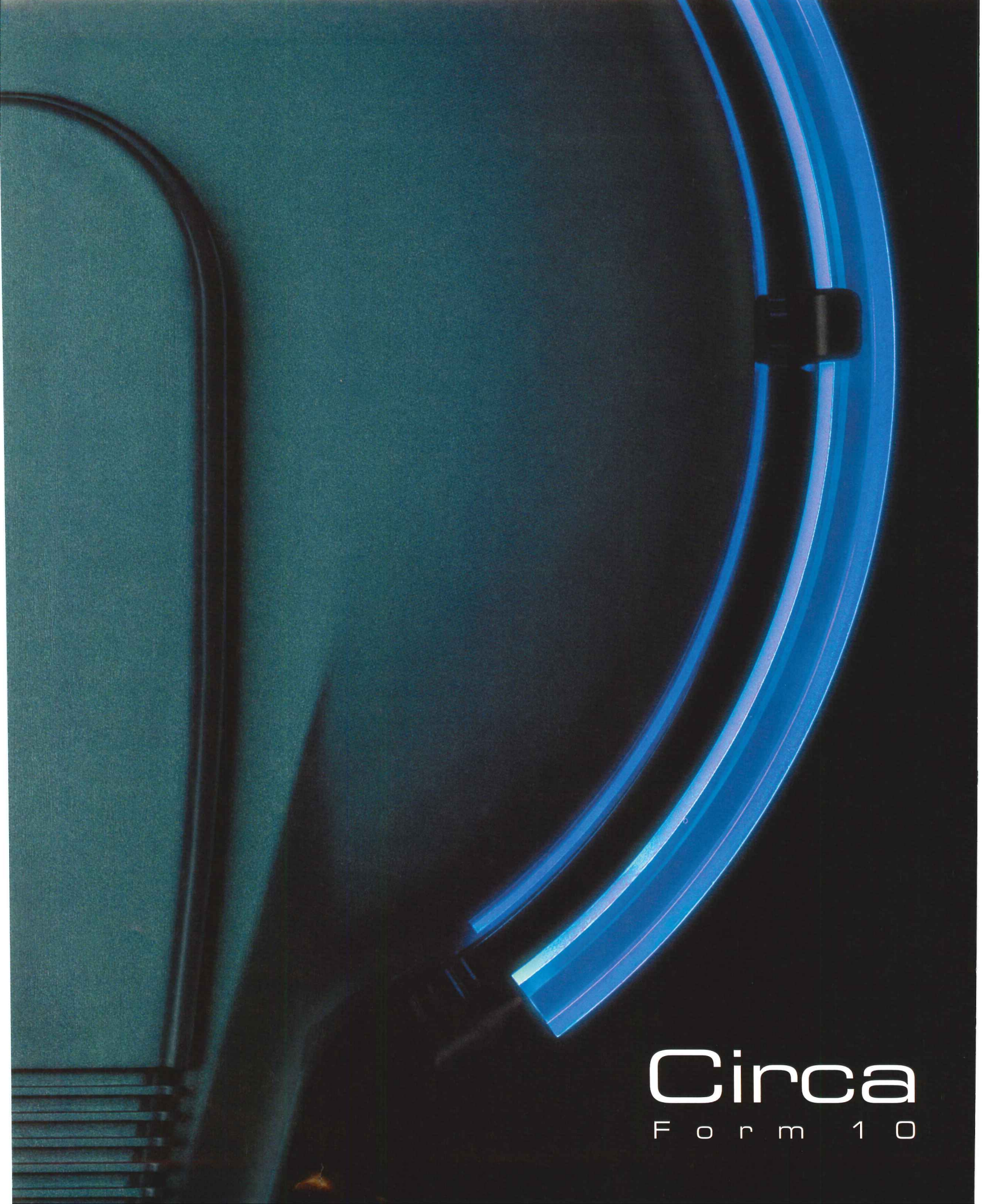
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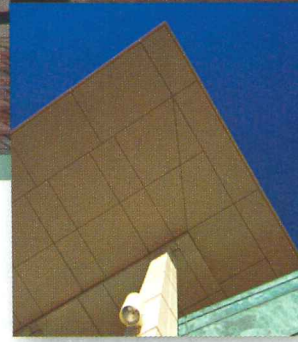
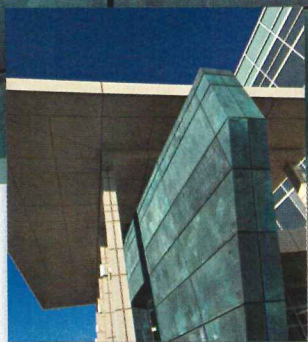
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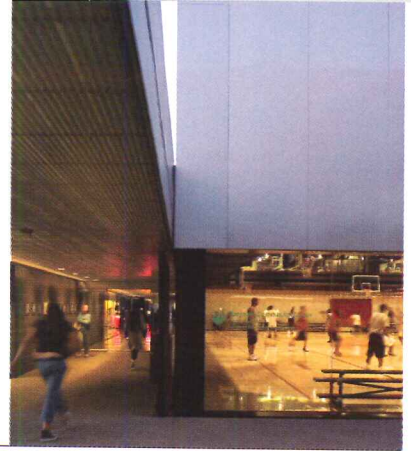
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On the Cover: University of Cincinnati Campus Recreation Center, by Morphosis. Photograph by Roland Halbe.

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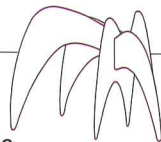
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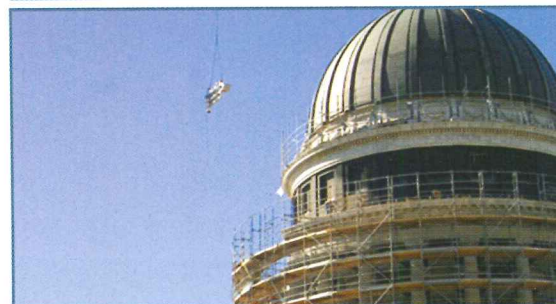
Designing for Fire Resistance with Gypsum Panel Systems
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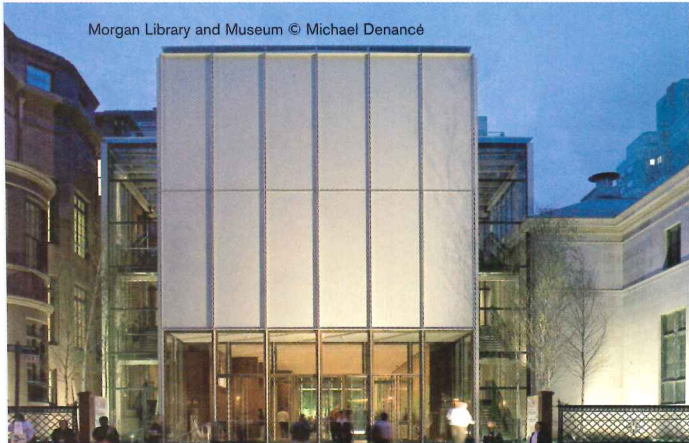
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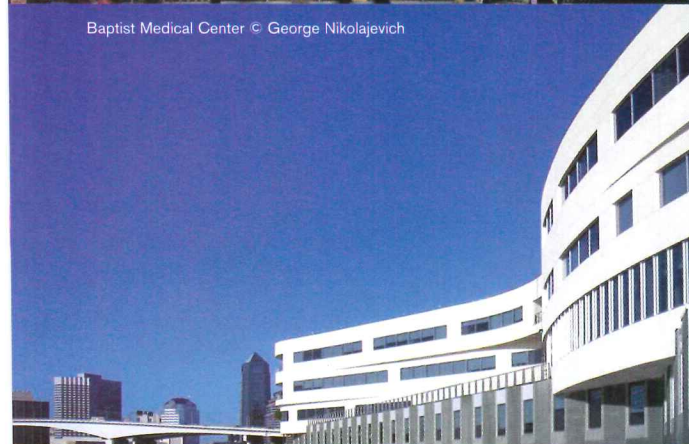
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Morgan Library and Museum © Michael Denacé



Baptist Medical Center © George Nikolajevich



Project Portfolio

Clearly, the North American continent has become more of a cultural crossroads than an insular village center, as sophisticated architectural projects regularly engage designers from outside our borders. As these five projects demonstrate, "American" architecture today represents a dynamic interpretation of tradition and an evolution of vernacular architectural language.

Building Types Studies: Health Care

Big is back in health care, and architects are reinventing big hospitals with consideration for patient outcomes and staff satisfaction. As these projects prove, clients value buildings that offer access to exterior views and daylight, encourage sociable staff exchanges, and are easy to navigate between departments and public areas.

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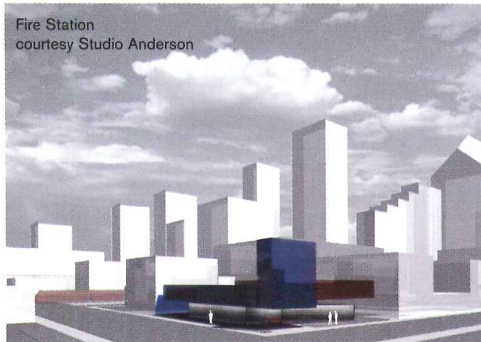


Residential Section: Elongated Houses

Long and narrow houses ventilate well, maximize views of scenery, and provide easy circulation. This month's special residential section celebrates rectangular-shaped homes. Also, check out our Web-exclusive House of the Month for a taste of a home that finds the perfect happy medium between nostalgia and modernity.



Rankin Creek House



Fire Station
courtesy Studio Anderson

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Aaron Anderson of San Diego-based Studio Anderson takes a love of storytelling and a background of film enthusiasm into his practice, and comes up with some very revealing designs. Also, see how a group of students came together to design a New York City restaurant's rainwater collection system.

Continuing Education Opportunities

Sleuthing the mundane and the catastrophic, forensic architects and engineers employ investigative techniques not to point fingers, but to find the root cause and recommend solutions for problems that plague buildings. Read this article and others at archrecord.com/resources/conteduc/ for health, safety, and welfare credit.



Checking for water damage
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Editorial

By Robert Ivy, FAIA

Community. Building community. Those buzzwords are flowing through the halls of corporate America with the ubiquity of the latest flavor of Starbucks. Architects seem to have already forged the bond: By virtually any standard, we form a tight-knit community. We have a language in common (who continually refers to “space” the way we do?). Our education bears striking similarities, including the design laboratory and the juried system of critique. As we progress in our careers, our bank of experiences may vary in scope or scale, yet the commonalities outweigh the differences. We even dress alike. So why do we need or want to build community even further?

The ways we already share this common culture seem well established: Hardly a week passes without another professional panel or symposium, whether held formally through the local chapter of the AIA or as sponsored by the universities or the civic arts organizations. We drink in the latest ideas, and share means and methods with remarkable freedom. Publications like this one expand the dialogue, offering points of view on the best books to read or the exhibitions not to miss. If you want to be a real architect, down to the round glasses, the opportunities for development surround you wherever you live.

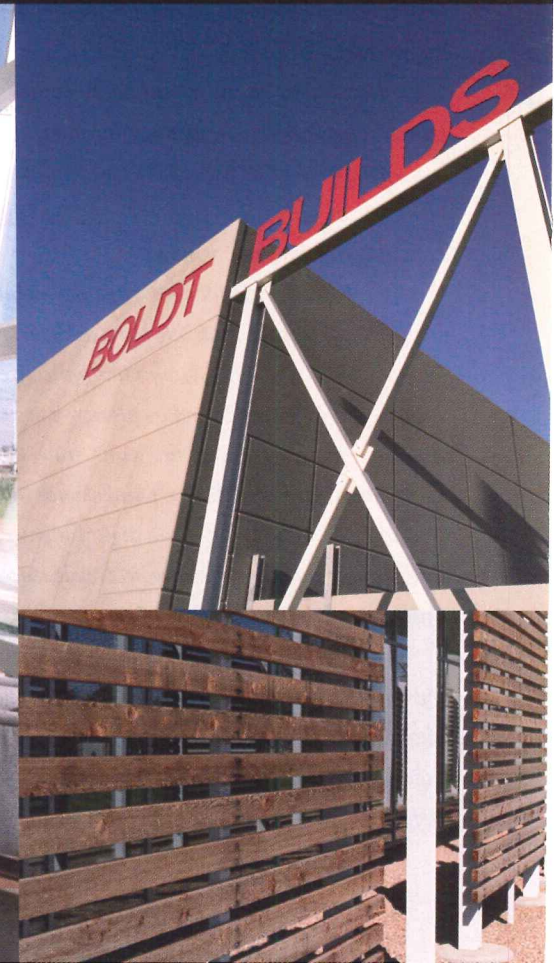
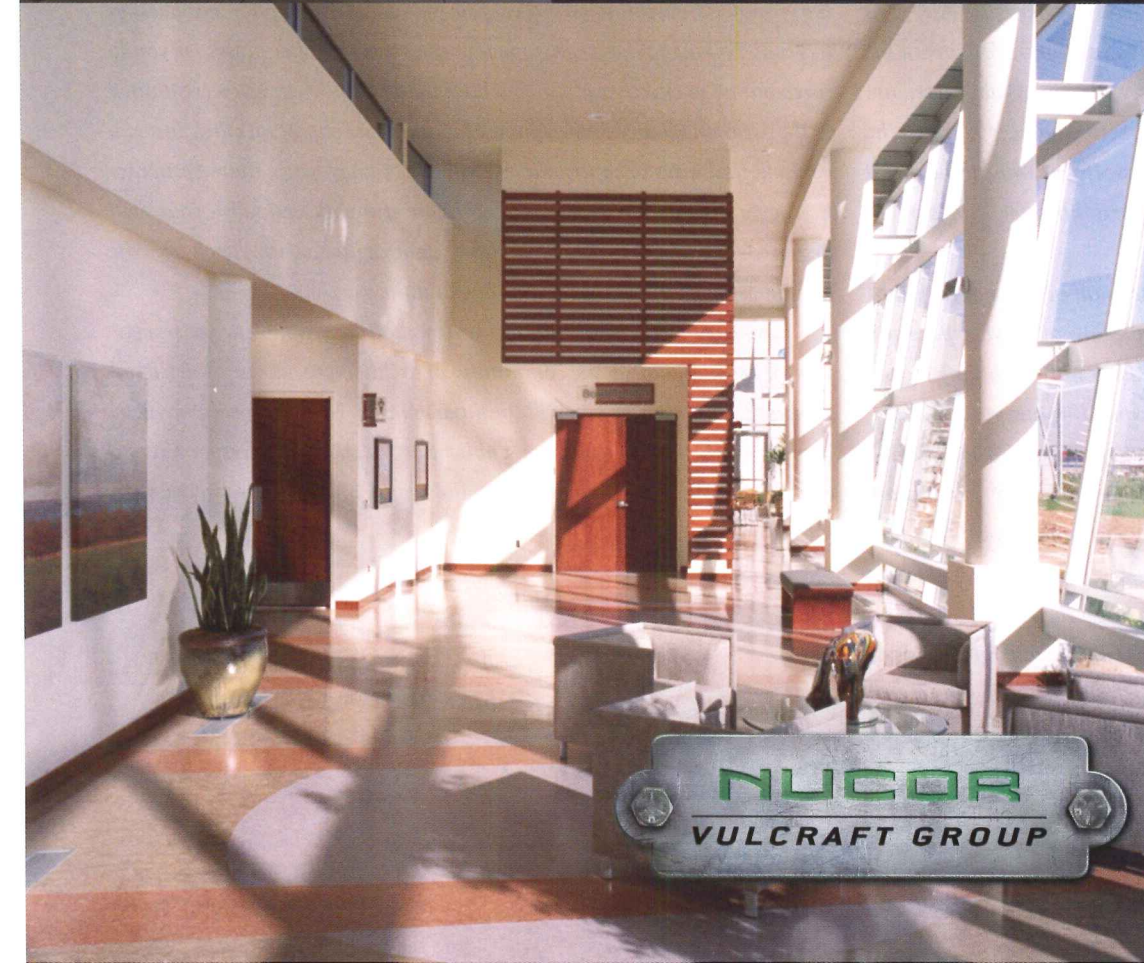
Enter the digital age. While the architectural culture has remained fairly intact for more than one hundred years, the advent of cyberspace and the free flow of electronic systems has radicalized our world, cracking it open like an egg. No longer bound by place, we are expanding our practices literally around the globe, at the same time that opportunities for sharing information have exploded. In parallel with the development of new software tools and the rolling out of the digital highway has come the concomitant need for information—we have become learners, whatever our age or station within the practice, as well as talkers to clients and to each other.

Even the language is changing. In the past, the individual experts and consultants we worked with, including our partnering engineers and other consultants, spoke their own lingo; now the nature of design demands a lingua franca, in which every team member can point to the same basic data, perform its own calculations, and bring its own experience to the evolving

project, while contributing to a cohesive, comprehensive whole. Organizations such as the International Alliance for Interoperability have reached out to all those who are engaged in the construction process, seeking common ground. Today, building information modeling carries this idea to a kind of logical conclusion, in which all attributes of a project are represented in three-dimensions. Powerful software is bringing this expectation to reality.

Such a global explosion, and such a need for knowledge, demands more intense communication. In the next months, ARCHITECTURAL RECORD and McGraw-Hill Construction will be introducing tools that will allow our communities of architects and others in the professional design world to reach out to each other through the Web. Initially, you should look for two forums—one concerned with building information modeling, and the second with sustainability. Everyone should have an opinion or a lesson to share. Following these early opportunities, we will offer places for you to reach out more effectively than you have in the past, when you were limited to the occasional letter to the editor, or a rant at a chapter meeting. Instead, you will find ways to contribute to the body of knowledge, share best practices, give your opinions on works of architecture, and establish your own design persona more effectively in a new digital space. Look for the announcements as they roll out throughout the year.

Ultimately, you will become as vital a contributor to ARCHITECTURAL RECORD, and to the community of architecture, as our professional writers (whom we trust you will continue to read). Now the medium will be in everyone’s hands. And this publication, rather than responding to our community, will be connecting the world of architects by giving it the spark to grow.




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Letters

Man and nature

Your August 2006 "Green by Design" issue contained a review of James Steele's latest book, *Ecological Architecture: A Critical History*, that ended with quoting a phrase from him: "... the final distancing from nature is under way." As an architect who has been trying, with little success, to encourage and instill environmental design for over 30 years, it is a sad moment, indeed, when I have to agree with Mr. Steele. Sadder still is my firm belief that man is signing his own warrant for self-destruction. I have witnessed my world dissolving before me my entire life, and architects—generally puppets of the money people and society at large—are a big part of this dissolution. Even so, the final say on what goes onto the canvas is in the hands of the artist—the architect. We, as architects, have failed both man and nature to this point in man's evolution (devolution?). Can we save ourselves from this "global debacle" we have created? I sincerely doubt we will be able to change our ways in time to reverse the "distancing from nature" that is seemingly speeding up in our techno world.

On a related note, your August issue had many positive articles on the greening of our thought processes. However, this process is not a "once-a-year thing." It is a lifestyle and a living process that works with nature in everything we do. Until we totally rework our life's thoughts and styles, our decline will steadily and rapidly continue.

—Gary Barr
Las Vegas

Alarming, not charming

As a graduate of Tulane, class of 1976, and a former resident of New Orleans, the results of ARCHITECTURAL

RECORD and Tulane's High Density on the High Ground and New Orleans Prototype House competitions disappointed me [June 2006, page 112]. None of the winning projects capture the charm of applied ornament, which is but one very visible example of the subtle playfulness of embellishments that makes this city's architecture so pleasing. The solutions all appear rather socialist, more suited to the elites of Europe's trendsetters than the relaxed and almost tropical New Orleans.

This banal "less is more" approach to design is neither needed nor desired in the New Orleans of today or in the future city. Tulane can do far better and should.

—John Powell
Via e-mail

Poetic space

We would like to clarify some points made in John Gendall's article about the renovation of Alvar Aalto's Woodberry Poetry Room at Harvard [August 2006, Record News, "Controversy over plans to renovate Aalto interior," page 28], that we feel can too easily lead to a misinterpretation of our intent. First, we note that the adaptations described to the phonograph consoles yield no damage to the original fabric; the original pieces are left intact and fitted with two-part tables that are pressure fitted with no fasteners, and can easily be removed if desired. They are being adapted to allow the students to listen to poetry in a wider variety of media and to facilitate the use of laptop computers at these locations.

We also note that the statement concerning Aalto's attitude against "freezing the room in a historic moment" is taken out of context—it refers to conversations that I have had with various Aalto scholars over the years who suggest that Aalto was "unsentimental" about

retaining the pure original character of his work, and that he believed that design should remain flexible to accommodate necessary change. It is not meant to suggest that we are using this knowledge as a license to take a cavalier attitude toward an important work of interior architecture. We thoroughly researched the available archival material, and have tried wherever possible to conserve original fabric and to treat the room with due respect while accommodating the present needs of its users. Most of the room is remaining intact—we note that it will look the same as it does in the photograph that accompanies the article (except for the side chairs in this picture, which are not Aalto pieces) once the renovation is complete.

—David N. Fixler, AIA
Einhorn Yaffee Prescott
Architecture & Engineering
Boston

Renovation concerns

The Woodberry Poetry Room in Lamont Library at Harvard University, which you covered in a recent news item, reopened in early September. Despite the international protest, the library went ahead with its renovation plans. The result is evidence that our concerns were valid. At least half of the room is no longer recognizable as an Aalto design. Seating was removed, or replaced by chairs and seating with no resemblance to the original. The lighting plan was altered, and original record consoles were converted into study carrels.

The original manufacturer, Artek, offered to repair, remake, and replace all of the interiors and furnishings. At least 60 drawings of the original room exist, proving that Aalto designed the room in its entirety and in detail. Due to Artek's continued existence and ample archival material, in addition to the small size of

the room, it would have been so easy to do it right. Instead, the result is an ill-conceived intervention.

The library and its architect maintain that the process is reversible to meet the preservation standard. If that is true, modification must be made immediately to correct the serious mistake being made and restore the room as closely as possible to the original design of Alvar Aalto.

—Toshiko Mori, FAIA
Professor in Practice and Chair
Department of Architecture
Graduate School of Design
Harvard University

Where is the justice?

I am writing to respond to Raphael Sperry's letter to the editor concerning Richard Rogers's involvement with both the Javits Center expansion and his association with a political organization [RECORD, June 2006, page 31]. What I find astonishing is the naïveté of Mr. Sperry, who called Rogers's dissociation from Architects and Planners for Justice in Palestine an "embarrassment" and a "powerful blow to the profession of architecture." Politics, personal associations, and other subjective factors have always determined the selection of architects and other professionals. Regardless of where Mr. Sperry was born, voters and taxpayers in New York have a right to make any choice they wish without Mr. Sperry's blessings.

While I share Mr. Sperry's concern for the plight of innocent Palestinians, I hope he is also concerned about the welfare of innocent Israeli civilians who are not safe to frequent pizza shops and nightclubs due to terrorist bombings by Palestinians.

—David Werber
New York City

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Big Dig snafu delays Boston Greenway projects

Engineering and safety concerns threaten to slow the surface development that will cap Boston's 15-year, \$15 billion Central Artery/Third Harbor Tunnel project.

The Rose Fitzgerald Kennedy Greenway, the 27-acre crescent freed by the Big Dig with the removal of the elevated portion of Interstate 93, is zoned for parks, civic structures, and private development. But the complex engineering required to build over the tunnel is a major hurdle, particularly in the aftermath of July's ceiling collapse in the Interstate 90 connector tunnel. Repair work, an engineering review of the Big Dig tunnels, and a reassessment of the Greenway could lead to further changes and delays.

Safety concerns and politics delayed the development agreement for the first major Greenway project, the New Center for Arts and Culture, designed by Daniel Libeskind, FAIA.

With the development agreement in hand, the developer would need six months to assess "all the things necessary to construct our building on that site," says New Center chairman, developer Ronald Druker. "We don't know what we're building on."

Building on such extensive and varied underground structures will test designers and puts the onus on Big Dig officials to relay mountains of engineering data to developers.

To support above-ground structures, tunnels need an additional load capacity of about 150 pounds per square foot per floor, plus bracing for wind and seismic loads, says



The Safdie-designed Boston Museum (left) and Libeskind's New Center for Arts and Culture (above) are both Greenway projects.



Moshe Safdie, FAIA, whose firm is handling the \$90 million Boston Museum project tentatively slated to open in 2012. "The existing [tunnel] structure has been designed to take certain loads, and there are two

waffle slab," he says. "We're going to do some as-built probes. We have all the construction documents, but was it actually built at that height?"

This summer, Governor Mitt Romney appointed a new chairman of the Massachusetts Turnpike Authority, which oversees the Big Dig and controls the Greenway real estate. The move effectively realigned the agency with the Massachusetts Highway Department, which as of press time was still grappling with tunnel closures and repairs and had yet to fully address the engineering of above-ground projects, according to spokesman Jon Carlisle.

Ted Smalley Bowen

James Lambrechts, professor of civil engineering at Wentworth Institute of Technology in Boston. As-built drawings, concrete core samples, and ultrasonic readings can provide critical information, such as the spacing and size of rebar, he adds.

"We've never built over anything that complex," says architect

major exits right under our building."

The \$4.5 million Harbor Islands Gateway Pavilion, which is expected to open in 2009, has a proposed grade just 3 feet above the Central Artery tunnel, according to designer Stephen Yablon. "We proposed a lightweight glass box for an even distribution of the load and explored a

Beyer Blinder Belle cofounder Richard L. Blinder dies at 71

Richard L. Blinder, FAIA, founding partner of Beyer Blinder Belle and a champion of historic preservation, died on September 7 in Shanghai. He was 71.

As design director of the firm's Beijing office, Blinder was visiting China for the competition for the Shanghai Cultural Plaza. John H. Beyer, FAIA, says that Blinder was

"dedicated and completely focused on his work in China. He was just beginning to realize what his architecture could be—he was at the pinnacle of his career."

Blinder's major works include the renovation of New York City's Grand Central Station, the Rubin Museum of Art, the Japan Society, and the Hilton Theatre. According

to John Belle, FAIA, Blinder was inspired by social concern, service to the performing arts, and Asian culture.

Blinder was elected to the College of Fellows in 1979 and received numerous awards, such as the AIA New York Chapter's Medal of Honor



in 1991. A New Yorker, he was closely involved with many community and nonprofit organizations. In 1989, he founded the James Marston Fitch

Charitable Trust, which gives grants to American historic preservation projects. *John Gendall*

IMAGES: © STUDIO DANIEL LIBESKIND (TOP RIGHT); FRANK CONSTANTINO (TOP LEFT); © ALAN S. ORLING, 1999 (BOTTOM)

Record News

With the help of Architecture for Humanity, Biloxi families to choose new homes

For three hours on a Saturday in August, several hundred residents of East Biloxi, Mississippi, visited the local Salvation Army, where, in an air-conditioned tent, Architecture for Humanity (AFH) had created its own version of a science fair. Twelve architecture firms had arranged maquettes and drawings of sustainable, code-compliant homes that could replace what Hurricane Katrina destroyed. And for select families in attendance, five of those concepts will become reality.

The fair marked the second stage of AFH's Model Home program, in which the nonprofit group and a partner community development corporation will build new residences for hurricane victims.

AFH initially solicited house

designs from local and national architects, including MC2 Architects, CP+D Workshop, Gulf Coast Community Design Studio, Huff + Gooden Architects, Building Studio, Studio Gang Architects,



Brett Zamore Design, Rockhill and Associates, Guild Hardy Architects, Marlon Blackwell Architect, PHATT Collaborative, and JBHM Architects.



Two of the AFH-commissioned house concepts include designs by Studio Gang (above) and MC2 Architects (left).

Next came the weekend "House Fair," where the public could see the projects and meet the architects. While community members got an education about green design,

new building codes, and the potential of architecture, five prescreened families selected the designs that appealed to them most. "We wanted

the public to be able to come in and ask questions, to let them take the lead," says Kate Stohr, cofounder and director of domestic programs for AFH.

Of the entries, Stohr says, "At first we thought the designs might be too out-of-the-box, but the architects and the clients

really connected on a one-on-one level, so the designs were really embraced by the clients." Although case managers are still finalizing the clients' eligibility, construction of their five choices is set to begin this winter and will be funded by forgivable loans. Stohr says she hopes to realize some of the other plans at a later date. *Alan G. Brake*

High-profile New Orleans competition names winner

It pays to listen. Workshop/apd principals Matthew Berman, Assoc. AIA, and Andrew Kotchen, Assoc. AIA, attribute their win in the Sustainable Design Competition for New Orleans, announced August 31, to insights they gathered from locals.

The competition, cosponsored by actor Brad Pitt and the nonprofit Global Green USA, invited designers to propose a building complex with a 12-unit multifamily building, six town houses, and community and day-care centers for a 1.5-acre site in the Holy Cross neighborhood of the Lower Ninth Ward. More than 160 designers submitted proposals, and on July 17, six finalists were chosen to proceed through the competition's second phase.

Before deliberations by the jury—members of which included Pitt as well as architects Marion Weiss, AIA, and Thom Mayne, FAIA—the finalists met with the Holy Cross community.

Meeting in a neighborhood church, the teams were directed to take residents' comments into account as they prepared final submissions. "The community at large initially was against anything outside their vernacular," Berman recalls. Over the course of dialogue, though, "the more we and the other finalists talked about the need for change, and not recreating an older language, the more open they were."

Workshop/apd adapted its entry, called Greenola, to popular perceptions, too. "Our design evolved from the first phase to the

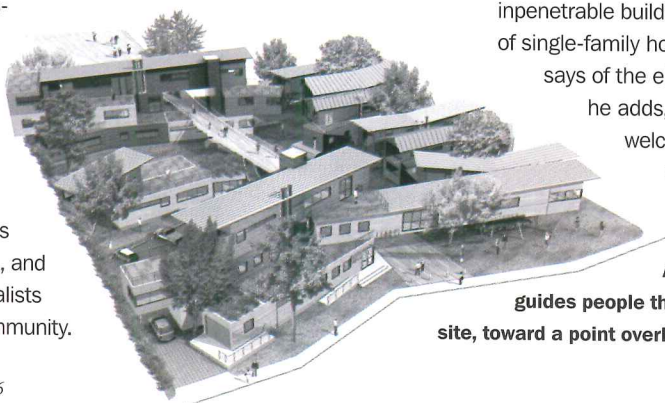
second phase fairly dramatically in its aesthetic," Kotchen says. Unique vegetative screens and stylish horizontal-fin scrimms were made less prominent, and roofs with deep overhangs were added to acknowledge traditional methods of passive cooling. "We felt it was our responsibility to look into the historic context a little more, and try to respect some of the key elements. We reinterpreted that in a more modern way."

Underlying principles, such as the slender, shotgun-inspired massing and modular construction, persisted. "You don't sense a large, impenetrable building, or even a wall of single-family houses," Berman says of the elements, which, he adds, were crucial for welcoming the community to use the site.

Matt Petersen, president of Global Green USA, adds that the tack ensured "that each single-family home had commonality but weren't cookie-cutter," a heterogeneity the jurors praised. To encourage further movement through the site, the architects devised a farmers' market as well as a unique, elevated walkway that terminates at the levee.

As per contest rules, Greenola is also a showcase for sustainability. Photovoltaic panels produce 10 percent excess electricity; cisterns collect rainwater for toilets and irrigation; vegetative screens reduce heat gain and purify air; exteriors are composed of recycled wood and plastic.

Global Green USA will buy the site with the help of a recent \$100,000 donation from Trizec Properties. Petersen estimates the construction, which will start in January, will cost approximately \$6 million. His group will work with nonprofit partners to develop and operate the buildings. *David Sokol*



A "land bridge" guides people through Greenola's site, toward a point overlooking the levee.

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Record News

Florida Southern College begins large-scale restoration of Wright campus

Frank Lloyd Wright classics are a mainstay at Florida Southern College. Twelve structures stand at this largest single-site collection of his works. Although their geometrical exteriors dazzle with colored glass, and daylight floods their interiors, budget restrictions have caused the historic buildings to lose their luster.

Now, Florida Southern president Ann Kerr is leading the charge to restore Wright's designs, and even complete some plans the college couldn't afford to implement during the school's construction from 1939 to 1958.

"One of the most wonderful aspects of Wright's work is his use of indigenous materials. Here, he used sandstone and coquina shells to create cement blocks to build the facilities, but these porous materials resulted in water damage," Kerr explains. The bricks have been maligned by a slapdash caulking job. Modern adaptations, such as air-conditioning and extra bathroom facilities, have been rudely retrofitted atop building shells.

Restoring the facilities to endure Florida's harsh weather and introducing amenities without destroying

Wright's aesthetics are two key challenges outlined in the master plan to restore the buildings and landscape. The Getty Foundation has given the school a \$195,000 Campus Heritage Grant to complete that outline. Kerr has said that the restoration itself may cost \$50 million.

Government and foundation grants and private gifts will fund work once the scope is determined. The college has already received \$1.6 million from the state of Florida to restore Wright's esplanades, and \$700,000 in public and private funds to restore the Water Dome. The esplanades, a 1.5-mile network of partly covered concrete walkways that resemble abstract trees, are cracked with sagging roofs, and the iron supports are rusted. The Water Dome, designed as a centerpiece of the campus in 1948, was originally supposed to shoot water 75 feet into the air to form a hemispherical, 160-foot-diameter dome; anecdotal evidence suggests the feature never operated properly for long periods.

The challenge is balancing Wright's design with recent building codes and technologies, says Jeff Baker, a preservation architect hired



While Florida Southern College is restoring Wright-designed structures like the esplanades (left), it has also commissioned new buildings from Robert A.M. Stern, FAIA (above).

to help restore the two elements. "Wright was often ahead of the technologies of the day. Fifty years later, the technologies, materials, and systems are catching up to him."

For the esplanades, for example, new expansion joints will "mimic Wright's expansion joints in appearance but will outperform the original materials and assemblies," while the original surface color will be restored. With the Water Dome, Baker and two companies are using computer modeling and mock-ups to prepare the jets to flow properly.

Florida Southern is also investing \$10 million to hire Robert A.M. Stern, FAIA, to design new buildings that complement Wright's original designs. Stern has said that the buildings, which include a series of three dormitories that are Y-shape in plan, will honor Wright's intentions.

Response to the pending overhaul has been overwhelmingly positive. Jose Gelabert-Navia, managing director of the Miami office of Perkins+Will, says restoration of Florida Southern "gives us an idea of what Wright would have envisioned if he had a chance to design a sustainable city. His ideas are worth preserving." *Jennifer LeClaire*

Sullivan-designed department store to be converted

Bon-Ton Stores, the department store operator that owns Carson Pirie Scott, announced in late August that



Carson's will vacate its flagship Chicago store in the landmark building on State Street designed by Louis Sullivan (whose 150th birthday was celebrated in the city last month). The move, scheduled for March 2007, is blamed on increasing operating costs and changing shopper habits.

Originally named the Schlesinger and Mayer Department Store, Carson's has been the only tenant in the building, which is considered to be one of the most important works of early Modern architecture. The Sullivan design is noted for its modular construction,

"Chicago windows," and cast-iron ornament. It was built between 1899 and 1904 and expanded by Daniel Burnham in 1905 to 1906 and Holabird & Root in 1960.

The building's owner, Joseph Freed and Associates, is planning to court new retailers for the lower two floors and office users above. "All of the historic elements will be maintained, preserved, and utilized, including stairwells as well as the columns and capitals," says Paul Fitzpatrick, managing director in the developer's Chicago office. "The limited number of entrances dic-

tates the redevelopment schemes. We're currently evaluating many tenant options."

The Carson's move is another sign of the ever-changing character of State Street, where the nearby Marshall Field's flagship became a Macy's in early September. Once the thriving retail heart of the Loop, State Street suffered as a forlorn pedestrian-only thoroughfare beginning in the 1970s. It owes its renaissance this past decade to an urban design plan by Skidmore, Owings & Merrill and an infusion of new retailers. *John E. Czarnecki, Assoc. AIA*

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Record News

Floating pool to be reintroduced to New York waterfront

In New York in the early 1900s and again in the 1930s, floating swimming pools made of wooden slats dotted the riverfront where tenement residents bathed. A next-generation floating pool, suited for more recreational purposes and reconstituted from a steel fishing barge, will open next year.

The project began seven years ago under Anne Buttenwieser, who founded the Neptune Foundation to build these public amenities as an antidote to the city's shortage of swimming facilities. In collaboration with the Department of Parks and Recreation, she commissioned architect Jonathan Kirschenfeld to design the pool as a migrating pier that docks at different underserved locations along the East River each summer. The Floating Pool Lady, formerly the barge The New Orleans, is slated to open at a not-yet-disclosed



The reconstituted barge is a self-contained public park, featuring a swimming pool, changing pavilions, and zones for socializing.

site in 2007 and will move to Greenpoint's new 16-acre park when it opens in the summer of 2008 or 2009.

The swimming pool includes

seven 25-meter lanes; its floor is made out of the original steel floor of the fishing barge, and the sides have been reinforced with new sheets of steel. The barge is more than three

times wider than the pool it contains. "I was not just designing a pool, but a public park space," Kirschenfeld says. With electrical, water, and waste systems, the barge also features a raised court and dining terrace, as well as locker rooms, showers, and a snack bar.

Steel work refurbishment was completed in Louisiana this September. Buttenwieser now is searching for a winter home for the barge before a tugboat escorts it to the East River this

March, she says, adding that she hopes the project will have a permanent warm-climate winter home to guarantee continual use.

Dianna Dilworth

Hariri sisters take Salzburg

Residents of Salzburg, Austria, birthplace of Mozart, will soon experience a harmonious composition of a different sort: a cutting-edge architectural addition from Hariri & Hariri. In August, the New York-based firm won the commission for a mixed-use urban development in an invited competition. The project will rise on the former site of Salzburg's Stern Brewery and create approximately 100 mixed-income housing units, facilities for a postgraduate school, and a large gallery. The jury unanimously praised the design's "clear urbanistic tenor" and its integration of new and old structures.

Where other proposals called for tall towers, the winning design spreads a cluster of angular buildings, none more than eight stories tall, over the 5-acre, hourglass-shaped site. "Scale was a major issue because the city is already so dense and has a scale of its own," says Gisue Hariri,

who founded the firm with her sister Mojgan. "It's very different from most of the larger cities we know."

Rainberg Mountain hems in one side of the site with a vertical rock face. Inspired by the quarrying that took place there, the Hariris placed rectangular volumes around a shared garden that are reminiscent of stacked blocks of stone. "We proposed blocks that looked like they were chiseled from the rock face, which gave us the opportunity to form each one differently," says Gisue. "Even though it may look a bit random, the planning of each one was done very carefully in terms of location and angle to take advantage of views and light."

A new canal will be cut between the mountain and the site, with a public promenade snaking along its route. The upper floors of the buildings are designed to can-



The Hariris' design nestles up to one jagged side of Rainberg Mountain.

tilver over the footpath to preserve privacy for apartment dwellers and create dramatic spaces at grade for a spa and restaurant.

On the eastern section of the site, an existing brewery building will be renovated to house classrooms and residences for the school. Behind it, sculptural skylights will

pierce a grassy public square to bring sunlight deep into the old brewery's underground vaults, which will contain the House of Architecture, a gallery and lecture space to be run by Initiative Architektur Salzburg. Construction of the \$57 million project is scheduled to begin in the spring of 2007. Tim McKeough

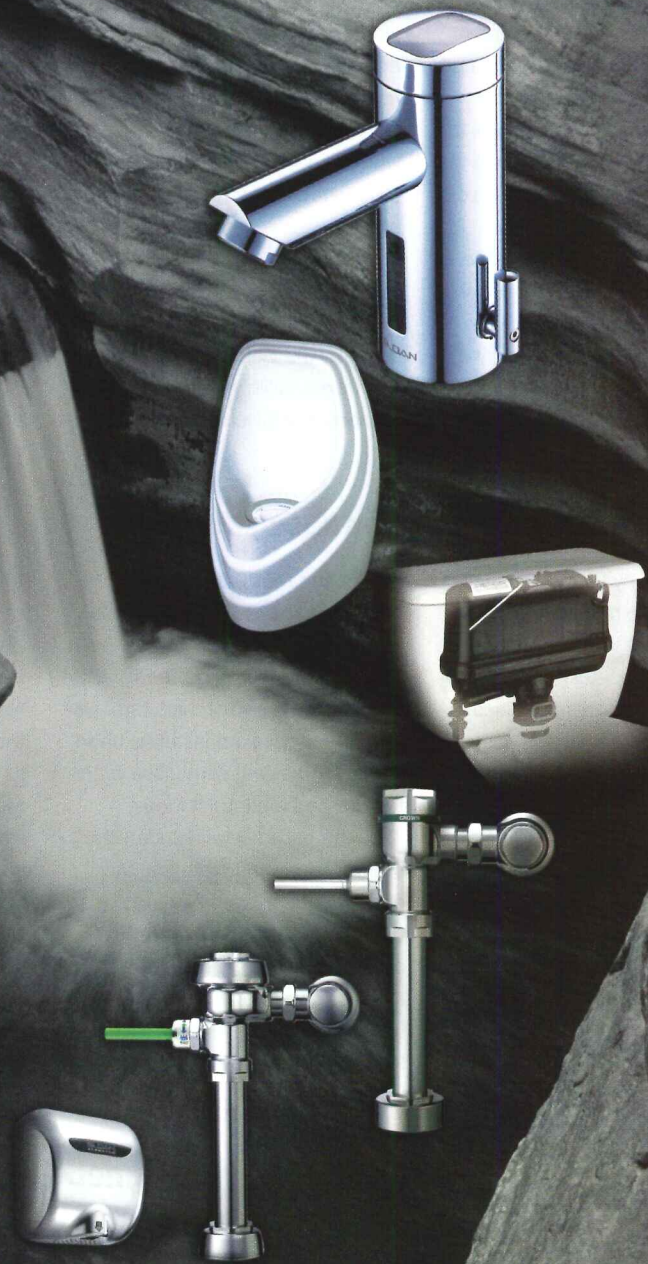
IMAGES: COURTESY JONATHAN KIRSCHENFELD ARCHITECTS (TOP); HARIRI & HARIRI ARCHITECTURE (BOTTOM)

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Record News

Vietnam interpretation center will give voice to memorial

Maya Lin's Vietnam Veterans Memorial represents an understanding that the war's fallen are better honored by silence than explanation. Yet this self-restraint has led the Vietnam Veterans Memorial Fund, the organization that funded and built the Memorial, to lobby for some exegesis: the Vietnam Veterans Memorial Center. Legislation authorizing the 25,000-square-foot center—which would include a collection of artifacts, an interactive exhibition, and a resource library—passed in 2003, and a site was approved in August.

"The Wall doesn't tell a story about individuals or about the larger war," says James Polshek, FAIA, the architect enlisted to design the new museum. "More than anything, that justifies the creation of this center, which is not necessarily for all of us alive today. It's for future generations and younger generations."

Although design plans have not yet been made public, the proposed structure will be placed underground between the Vietnam and Lincoln Memorials, fulfilling Congress's specifications that it wouldn't compromise

the National Mall. Ralph Appelbaum Associates will be responsible for the exhibition design, and Hargreaves Associates will handle landscape.

Lin was involved with the committee that chose Polshek Partnership Architects, and she has offered her support for the project in statements. Yet the decision to build the center has prompted opposition from the National Coalition to Save Our Mall, the National Trust for Historic Preservation, and others. Critics are worried that the impact of the memorial will be lessened by the

museum, and that it may inspire other groups to lobby for structures that will further crowd the Mall.

Jan C. Scruggs, founder and president of the Memorial Fund, says veterans support the plan. He also points out that Lin's memorial, though initially excoriated, is now the most visited site on the Mall, adding, "Anyone who would have quit the [original] project because someone criticized it does not have the vision. We have the vision, and we have some of the country's finest minds involved." *Jeremy Lehrer*

Louis Kahn–designed bathhouse saved

The bathhouse by Louis I. Kahn was once among the most endangered architectural sites in New Jersey. But after a half-century of deterioration, municipal officials promised in August that they would purchase and restore the historically significant structure.

The Trenton Jewish Community Center (JCC) commissioned Kahn to design its suburban headquarters in the township of Ewing in 1954. While the bulk of Kahn's master design was never built, the bathhouse was completed three years later. Made mostly of raw concrete

blocks, the 6,000-square-foot building features pyramidal roofs and a cruciform layout of interlocking partitions, evoking the Brutalist style. According to architectural historian Susan Solomon, it has been hailed for melding vernacular architecture and Modernist ideas.

The bathhouse included the shower room and changing facility of the center's swimming pool until the crumbling pavilions were considered a safety hazard. The structure was nominated in 1984 to the National Register of Historic Places, but by 1997, a plan by JCC

to demolish the buckling pavilions prompted the organization Preservation New Jersey to name the bathhouse to its endangered list. Mercer County, which is considering converting the bathhouse into a senior citizens' center and preserving the surrounding lands, will buy the property with Ewing Township for \$8.1 million; restora-



The bathhouse is a series of pavilions in which pyramidal roofs balance on concrete-block bases.

tion costs are expected to exceed \$1 million. *Violet Law*

Abu Dhabi announces its own Gehry-designed Guggenheim

With neighboring emirate Dubai gaining global attention for luxury tourism and eye-catching architecture, Abu Dhabi, the capital of the United Arab Emirates, is aiming to use culture to engage travelers' imaginations. As part of that effort, officials are seeking to recreate the "Bilbao Effect" there: The emirate has signed deals with the Guggenheim Foundation and Frank Gehry, FAIA, to build a new branch of the Guggenheim Museum, to be designed by the architect.

While Dubai's development has

been rapid and spectacular, Abu Dhabi is planning its future carefully, and envisions the Guggenheim within a larger cultural district on Saadiyat Island. This natural landmass, located 1,640 feet offshore, will also be home to national, maritime, and Classical art museums, a performing arts center, and an art park. "They are transforming themselves into a Western-oriented cultural destination," says Anthony Calnek, deputy director of communications for the Guggenheim Foundation.

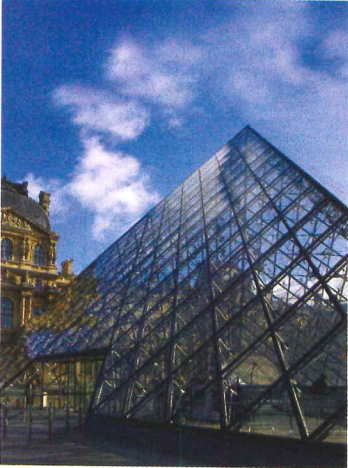
Under a memorandum of understanding between the government and the Guggenheim Foundation, the emirate will build, own, and maintain the building. It will acquire its own permanent inventory of contemporary art, with Guggenheim curators programming the building and guiding acquisitions. The New York-based museum will also lend pieces from its own collections. The government has separately contracted Gehry Partners to design the building.

The project would once again

unite Gehry and the foundation after a planned museum in Lower Manhattan was shelved in 2003. (Later that year, a Brazilian court blocked the Guggenheim's plans to build a satellite in Rio de Janeiro.) According to Calnek, the Abu Dhabi branch is more of a sure bet than any of the other Guggenheim projects in development because the money is coming from one source with very deep pockets, the Emir, rather than from municipal or provincial governments. *A.G.B.*

Record News

Citing airportlike conditions, Pei Cobb Freed to renovate its Louvre addition



I.M. Pei, FAIA, has confirmed that Pei Cobb Freed & Partners is developing a solution to manage overcrowding in the Louvre's entrance. Pei and museum officials agreed to move forward in mid-September.

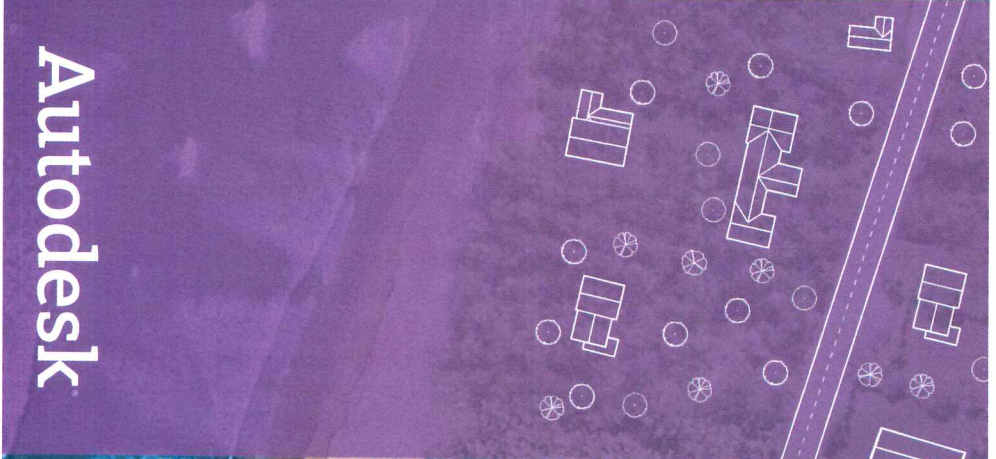
The New York firm completed the 70-foot-tall Pyramide du Louvre and 665,000-square-foot underground entry and concourse in 1989. Pei says attendance at the Louvre has increased almost 70 percent since the popular project was completed, and now hosts 7.5 million visitors each year.

Consequently, the public space has become crowded and noisy, and has lost much of the peaceful aura the architect originally intended. "It's a real concern for me," says Pei, who had anticipated a less dramatic jump in attendance after his "Grand Louvre" project was completed. "If we don't do it, the place is going to look like an airport."

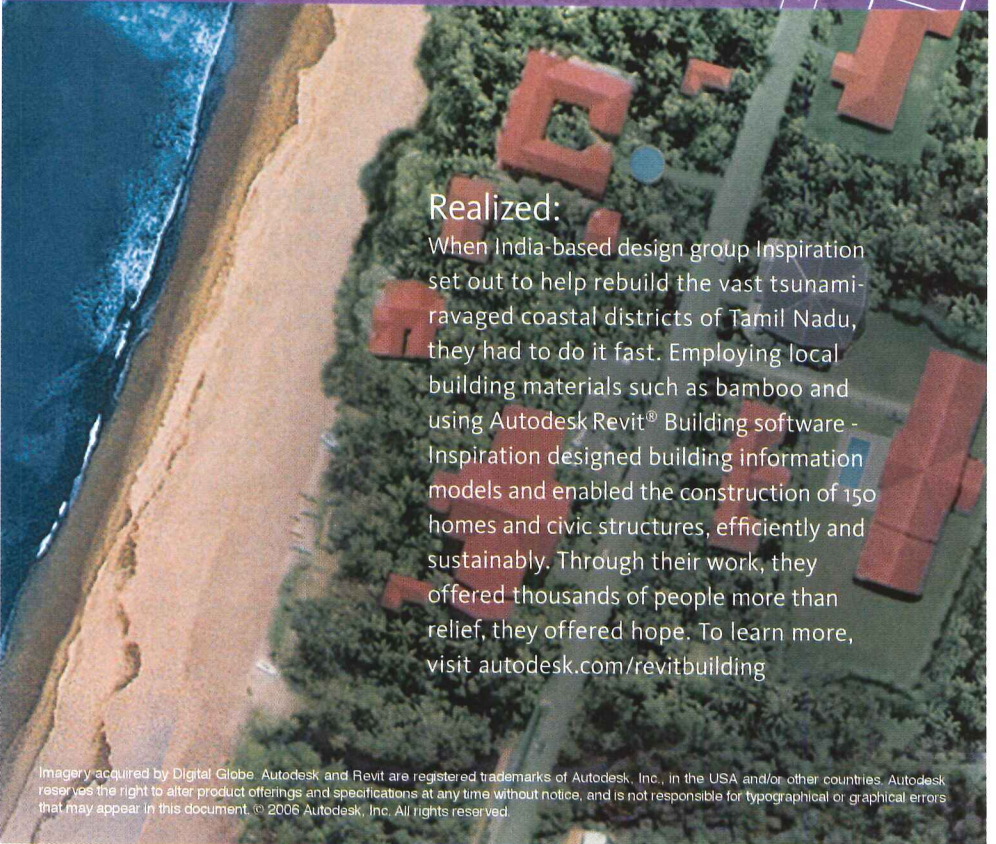
Pei does not yet know the specific measures his team will carry out, but he says that a resolution should be sympathetic to the surrounding architecture. He adds that it should also allow visitors to access the collections despite construction. *Sam Lubell*



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Record News

Sheldon Silver stalls Moynihan Station proposal

The Public Authorities Control Board (PACB) rejected a \$900 million redevelopment scheme for New York City's Pennsylvania Station, the nation's busiest passenger facility, on August 17.

The plan, drafted by Skidmore, Owings & Merrill, called for substantial changes to the adjacent Farley building, a McKim, Mead and White design that currently serves as the city's main post office. Reconceived as the Daniel Patrick Moynihan Station, the 300,000-square-foot transportation hub would be pierced by two immense vaulted skylights and include as much as 750,000 square feet of private, mixed-use space. New York's Empire State Development Corporation (ESDC) appointed the development companies Related and Vornado to control the commercial spaces.

To go forward, the project would have required the unanimous consent of the PACB, the body responsible for approving state-financed projects. But State Assembly Speaker Sheldon Silver, one of PACB's three voting members, refused to endorse the plan. Silver's spokesperson, Bryan Franke, says the speaker's reservations were based on a letter written by State Comptroller Alan Hevesi to the ESDC.

In his letter, Hevesi raised concerns about the adequacy of the project's financing. But Hevesi most harshly criticized the developers for not presenting the PACB with its ambitious plans

to relocate Madison Square Garden across Eighth Avenue into the Farley building and to redevelop most of the block the Garden currently occupies. Hevesi's letter states, "Perhaps the most fundamental question is, how is it possible to approve part of the project when the new Madison Square Garden proposed for the western half of the complex will probably require that the whole plan be revised?"

While redeveloping the Farley building would provide the developers with 1 million square feet of air rights, winning approval to relocate Madison Square Garden would add 5 million square feet of developable space.

A concept that follows this recalculation envisions, in place of the current Garden, three large towers surrounding a giant skylit pedestal that would raise the ceiling of Penn Station. The developers have shown the plan to various stakeholders, but they would not share it with RECORD. Bud Perrone, a spokesperson for the developers, refused comment.

The ESDC says it will have another try with the PACB. Jessica Copen, communications director of the ESDC, adds that the corporation addressed concerns about Moynihan Station and Madison Square Garden in a recent letter to the comptroller. In June 2005, Silver had used the PACB as a vehicle to kill the New York Sports and Convention Center. *Alex Ulam*

In Las Vegas, W Hotel project favors the little guy

Lacina Heitler Architects recently won the competition to design a new \$2.5 billion W Hotel, Casino and Residences in Las Vegas. It is the largest project to date for the small New York firm, which until now had been best known for designing boutique stores in Manhattan, such as Galo and Searle. It beat out Carlos Ott of Uruguay, Swiss architects Herzog & de Meuron, and the London office of HKS Architects to win the job.

The new W will be located on a 24.5-acre site just east of the strip. Plans call for two 50-story Modernist glass towers combining 4,000 hotel and condo-hotel units, plus 20 restaurants, bars, and lounges. There will be a Bliss spa, fitness center, and 75,000-square-foot casino; and Fred Segal, the Los Angeles retailer, will also open a 100,000-square-foot store. The complex is being developed by a joint venture between the Las Vegas-based



investment company The Edge Group and Starwood Hotels and Resorts Worldwide.

"Lacina Heitler's design was elegant and timeless, as well as realistic to build," says Adam Frank, a development team principal. "Also, as a smaller firm, they were hungry. We would be dealing with the company principals as opposed to a large design team whose names aren't on the wall." Ground breaking is set for mid-2007, with completion anticipated by late 2009. *Tony Illia*

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Record News On the Boards

Weeksville Heritage Center by Caples Jefferson Architects

When the tenements surrounding the Weeksville Heritage Center came down, residents of Brooklyn, New York's Bedford-Stuyvesant neighborhood were "thrilled to see

seemed to return the houses to a more genuine agricultural context. A new, 23,000-square-foot addition designed by Caples Jefferson Architects will preserve that sensi-

the context and feel the magnetic draw of the houses," Caples says. The response: two low-slung volumes that kneel to the houses. The new buildings are connected by a glass breezeway so passersby can also view the historic Weeksville homes.

"We used a language that was very Modern," Caples explains, "but we were also asked specifically by the Weeksville Heritage Center to create an architecture that would include African echoes." While the tight geometries deferred to the Art Commission, patterns and textures embedded in the building surfaces pay respect to community pride. Cornrows and basket weaves subtly appear. "Even the frit is derived from Congolese fabrics," Caples says of the glazing. Similarly, green and purple Vermont slate correspond with color palettes in African and

African-American art, while unpainted ipe cladding symbolizes the community's modest fortunes.

Among other references to the past, Caples Jefferson placed the building entrance asymmetrically on the 1.5-acre site, and widened it to 50 feet: The measurements correspond to the now-extinct Hunterfly Road, an important avenue in Weeksville's heyday. Meanwhile, landscape architect Elizabeth Kennedy has specified a combination of agricultural and decorative grasses for the complex's planted courtyard, which will be regularly mowed to invoke past agricultural practices. Community fruit and vegetable gardens are located behind the houses.

Construction documents are being completed. The two-year-long job will commence with a spring 2007 ground breaking. *D.S.*



the center's historic houses—it was a big deal," says Sara Caples, AIA. The artifacts of a community founded by free African Americans in 1838 reminded the largely black neighborhood of its roots. Caples also notes that the resurrected vista

bility while providing the center with much-needed interpretation space.

The client, the Art Commission of the City of New York, favored a Modern, abstracted language. "Our challenge was not to recreate a 19th-century building, but celebrate

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Buffalo Niagara Medical Campus by nArchitects

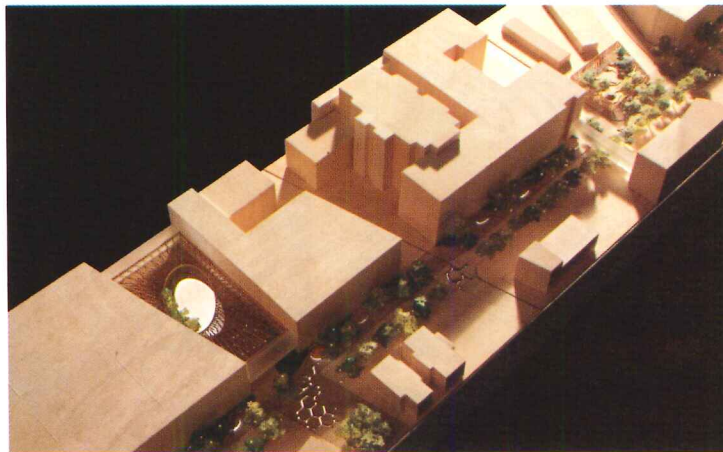
When the selection committee of the Buffalo Niagara Medical Campus requested proposals to redefine its 100-acre campus, most of its 70 invitees were artists. One of the few exceptions, the New York architecture firm nArchitects, won the commission by revealing to the jury that the site's urban design was a terminal patient.

Cofounders Eric Bunge, AIA, and Mimi Hoang, NCARB, quickly identified the problems burdening the series of hospital facilities: that it lacked a campus identity, dynamic pedestrian life, and clear edges. "We spent a lot of our presentation on how we thought that public art first needs a site," Bunge says, calling good urban design "public space as public art. Interestingly, the jury totally agreed."

Schematic design is scheduled

to begin shortly, with ground breaking in 2007. Work will proceed in phases. Beginning with the main thoroughfare of the campus, nArchitects will transform Ellicott Street into Ellicott Park. The narrow, linear space will host a variety of experiences and maintain "some kind of identity from south to north that is continuously recognizable—a legible spine, a legible piece of art," as Bunge puts it.

The west side of the park will be devoted to creating social vignettes. Oval benches containing raised planters as well as undulating islands will draw pedestrians' attention away from passing cars. The poured-in-place concrete seating elements will integrate lighting in order to give the appearance that they are hovering, and invite use at night. On the opposite side of the street, the architects



plan to underscore the park setting by uplighting trees with more standard fixtures, for example.

Between the two zones, the architects have devised so-called "vitamin crossings," crosswalks in which luminous tiles alternate with opaque pavers in the pattern of the molecular drawings of vitamins. "It's a device so that people

can walk the whole street and learn something about health and science," Bunge says. In the spirit of fun that's good for you, nArchitects has proposed quickening pulses, too. For the passages between the buildings lining Ellicott Park, the design team has imagined a skating rink and a trampoline park. *D.S.*

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An advertisement for the LONSEAL Collection. The background is a warm, orange-brown gradient. On the left side, there is a collage of various fabric swatches in different colors and textures, including blue, green, red, and white. A black and silver pen is positioned diagonally across the collage. On the right side, the text "The LONSEAL Collection" is written in a white, sans-serif font. Below this, the word "LONSEAL" is written in a larger, bold, white, sans-serif font, followed by the website address "www.lonseal.com/ar2" in a smaller, white, sans-serif font.

CONCRETE THINKER ANNE SCHOPF

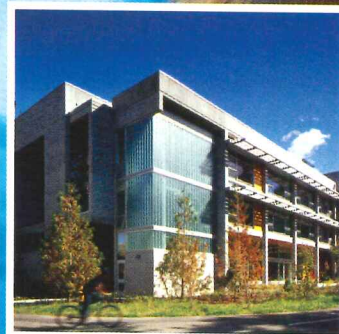
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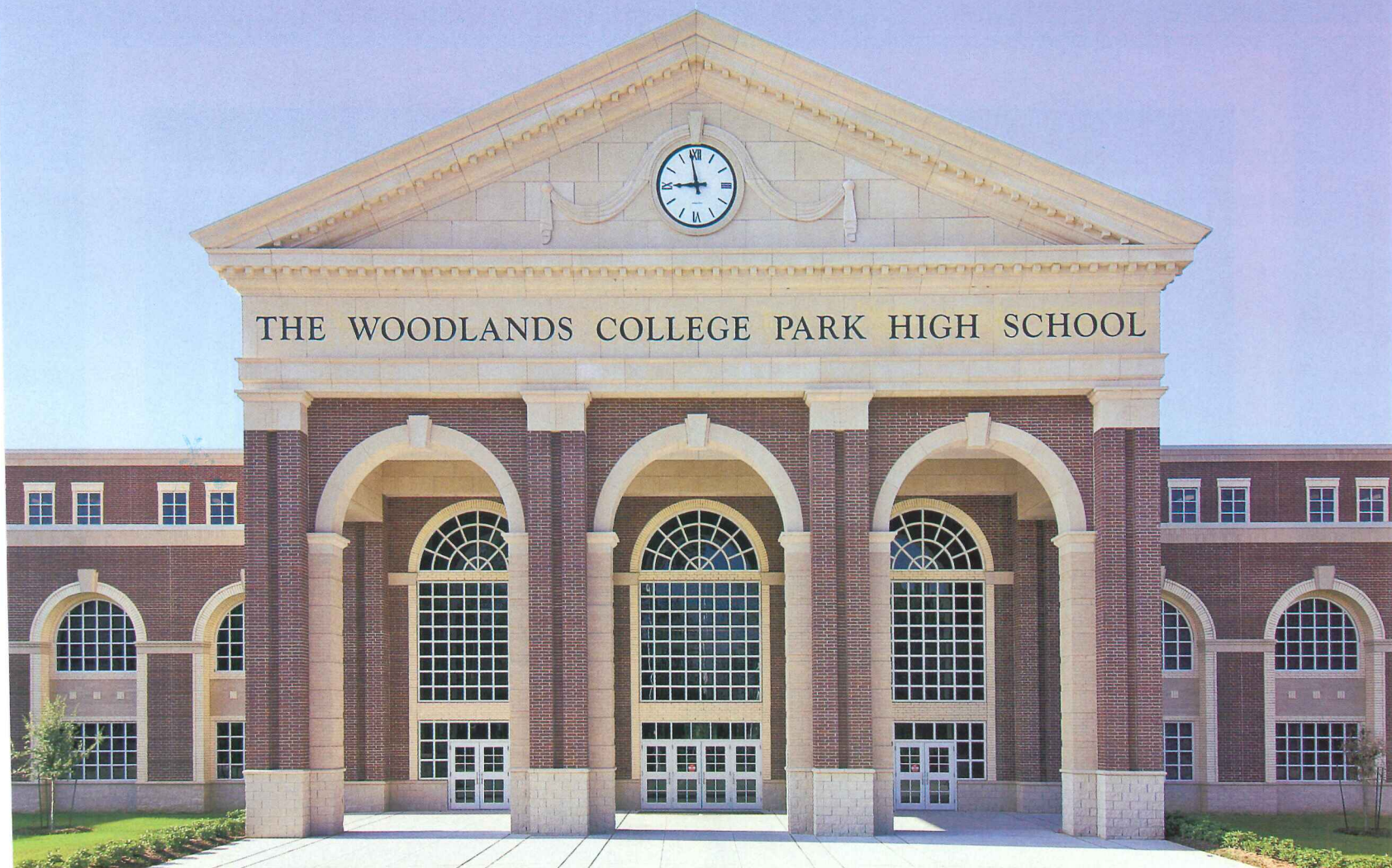
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For and about the emerging architect

archrecord2

DEPARTMENTS

From the West Coast to the East Coast, architects and architecture students are finding ways to let their clients express themselves through design. In San Diego, Aaron Anderson explores materials and ways to disclose the underlying narrative of his projects with his clients, while USBK, a group of New York City architecture students, comes together to help a restaurateur catch the rain. For more about these young architects and others, go to www.archrecord.construction.com/archrecord2/.

Design

Studio Anderson: Turning tales into design



Aaron Anderson, principal of San Diego-based architecture firm Studio Anderson, likes telling stories. That's why he couldn't decide if he wanted to be an architect or a filmmaker. After receiving his B.Arch. from Arizona State University, he moved to L.A. to give the film world a try. "I was so naive," he says. "After a while, I came home to San Diego, and to architecture, with a vengeance."

Anderson worked for a San Diego firm that specializes in entertainment retail design before deciding to set up his own shop. But then one day he walked by the office of Jennifer Luce and her firm Luce et Studio [RECORD, Design Vanguard, December 2005, page 78]. "I thought, 'If there's anyone I'd want to work for, it's Jennifer,'" he says. Anderson walked in and got a job. Working with Luce before establishing his own firm gave him the opportunity to flex his creative muscles with such projects as the Nissan Design America corporate offices in Farmington Hills, Michigan. "One important thing I learned from Jennifer was the love of new materials," says Anderson. "She has a team of people constantly researching such things as plastics, resins, rubber, coatings, and new techniques for cutting metal. I've taken that with me."

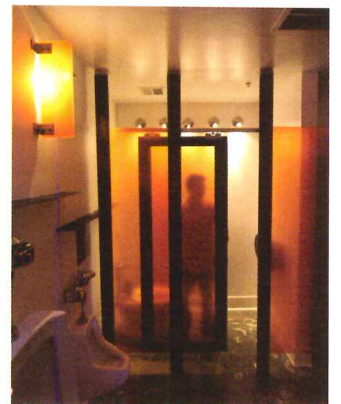
Anderson says his three-person practice has been given projects that he calls "little miracles"—a showroom for a high-end Italian kitchen design company, a collaborative renovation for a 10,000-square-foot restaurant in San Diego's Gaslamp District, a space dedicated to the serious (and soapy) business of dog washing. "City Dog is in an area where all the old industrial buildings are being renovated," says Anderson. "The area is an eclectic mix of artists, young professionals, homeless shelters, affordable housing, and rehab centers. It is so diverse that there was a lot to draw on in terms of narrative ideas. The space is literally 12 inches from the trolley tracks, so there is always a dynamic mix of people milling around the front door. That energy definitely defined the industrial, artistic direction of the space."

Born and raised in San Diego, Anderson says he's encouraged by the new construction. "San Diego has always been a developer-run city," he says, "but things are becoming less cookie-cutter."



Arclinea Showroom, San Diego, 2006

Stainless steel, aluminum, gray oak veneer, acrylic, and resin were used in a spare design for this 1,400-square-foot showroom for Italian kitchen design company Arclinea.



Aubergine, San Diego, 2005

Anderson used the metaphor of a man's suit (with boutonniere, left) in the design of the women's room, and resin panels and colorful lighting in the men's (above) to invert typical gender representations in the social architecture of this restaurant.



PHOTOGRAPHY: COURTESY STUDIO ANDERSON

archrecord.construction.com/archrecord2/

While Anderson has fewer projects in this, his second year on his own, he says they're more substantial, such as the house he's designing for San Diego dessert-maven Karen Krasne, and a potential gig in Thailand. He's also teamed up with fabricator Chris Puzio for a proposal to design a fire station in San Diego's Little Italy, a design that uses the elements of air, fire, and water as metaphor to tell a tale about the building and those who will work there. "These aren't my stories," says Anderson, "they're about the clients, or the spaces, or the purpose. Everything gets boiled down to purpose and meaning. I thought that if you wanted to connect with people and tell a story, you had to do it through film. But architecture accomplishes that too." *Ingrid Spencer*

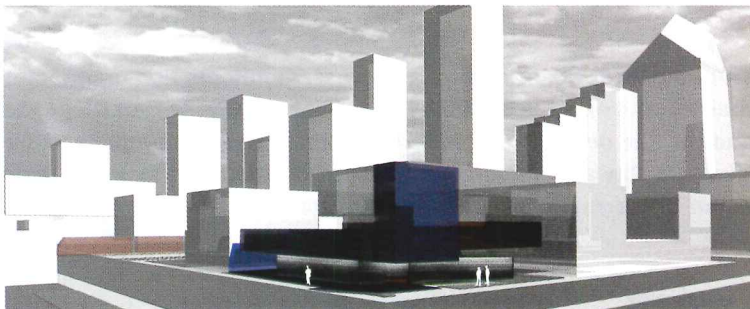


City Dog, San Diego, 2005

Located at the edge of a light-rail station, this new, 2,000-square-foot space provides pet-washing facilities for a budding urban neighborhood. Defined by finely crafted metals and resins, the project embodies the lighthearted nature of the business and the community's progressive artisan culture.

Fire Station, San Diego, unbuilt

This proposal for an ecofriendly fire station uses the elements of air, fire, and water—related to the work of firefighters—as metaphors for the design of areas for equipment, office, and living.



For more photos and projects by Studio Anderson, go to archrecord.construction.com/archrecord2/.

Work

New York City students catch rain and experience



FXFowle architect Peter Olney takes Habana Outpost's owner Sean Meenan and USBK's Dave Liatti and Lori Gibbs through N.Y.C.'s Helena building (above). Habana Outpost's rainwater-collection system (right).



Just around the corner from the Pratt Institute in Brooklyn, New York, Sean Meenan, an eco-conscious restaurateur whose Café Habana is a hit with Manhattan hipsters, opened a branch of that restaurant, Habana Outpost, in May 2006. And as a way of combining his interests in community involvement and being as green as possible, Meenan and his intern, Lori Gibbs, came up with Urban Studio Brooklyn (USBK), a design-build collective that would attempt to bring together students from all of New York City's accredited schools of architecture to build a rainwater collector that would catch the runoff from the courtyard's solar panels to water the restaurant's plants.

Gibbs, a B.Arch. student at Pratt, brought together the student participants by contacting the various schools' career services departments. She eventually rounded up five: Chris Wu, from the New York Institute of Technology; Janet Yee, from Parsons: the New School for Design; Seth McDowell from Columbia University; and Stanislav Vinokur from Rensselaer Polytechnic.

The students spent a week and two weekends working with Meenan as their client. Yee, who had just graduated from Parsons, said that she liked the design-proposal phase of the week best. "Of course, our proposals were a lot more grandiose than we had time for," she says. Yee and Gibbs both emphasized that not all their time was spent designing or building, so they got more from the program than just practical experience. They were also given the opportunity to tour a building with FXFowle Architects, and architects from several firms—including Steven Winter Associates, Atelier Ten, Thread Collective, Big Sue LLC, and Kontent Real/Design E2—volunteered to lecture to the group.

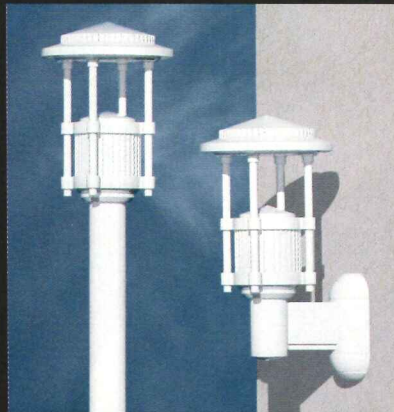
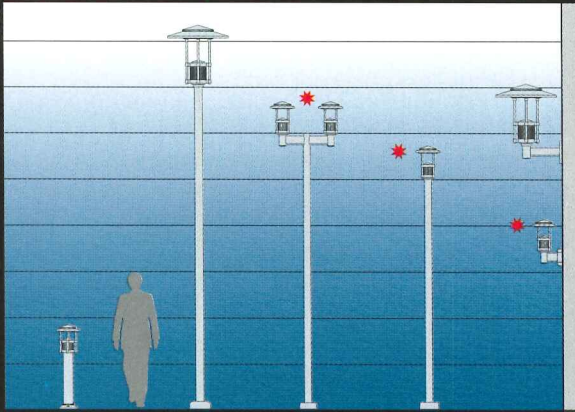
Amid an atmosphere created by late-summer sun—as well as grilled corn and frozen mojitos—the students showed off their design, aiming a hose at the solar panels. The water sluiced off, hit the gutters, and ran through PVC pipes to two clear tubes meant to flush out dirty water. Dave Liatti, the project manager, explained that the tubes caught the first couple of gallons of water on the assumption that those would be the dirtiest. Small holes in the bottoms of the flush tubes allowed the water to slowly run back into the ground. The clean water ran into the collector itself, which was designed to look like a water tower on the top of a New York apartment building. "It's not world changing, but now that it's established, maybe we can do something bigger next year," says Meenan. He's thinking a rainwater collector again—this one to flush the toilets. *Kevin Lerner*

For more information on USBK's Habana Outpost project, go to archrecord.construction.com/archrecord2/.

IMAGES: COURTESY STUDIO ANDERSON (TOP TWO); USBK (BOTTOM LEFT); PAUL BASCIANO (BOTTOM RIGHT)

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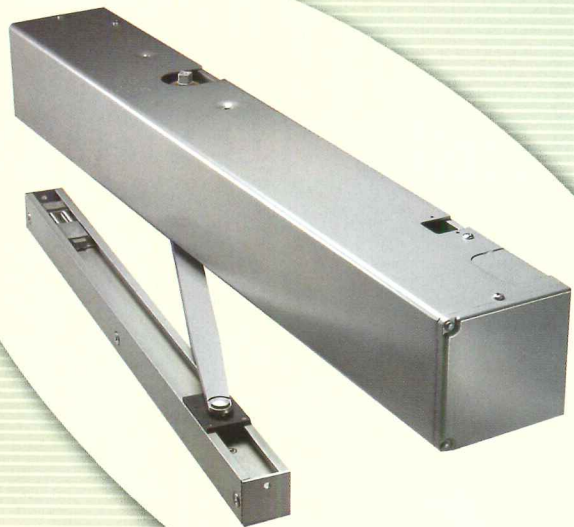
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Is Classicism the style that will not die or the habit architects can't kick?

Critique

By Martin Filler

A once-unimaginable role reversal has occurred in architecture over the past three decades. Modernism, originally seen as the end of historical styles, now is widely considered just one more phase in the unending transformation of the building art. Classicism, deemed defunct as the dodo for many years, is now believed by some to be the true faith of architecture, rightfully restored after the heresy of Modernism.

Why the resurgence of Classicism now? Its enduring, perhaps eternal, appeal is not hard to fathom. Classical revivals recur during periods of social, political, or economic upheaval, when the most familiar of architectural forms offer a comforting sense of continuity. That was true in 18-century England at the onset of the Industrial Revolution, and in late-19th-century America at the onset of our rise to world power.

Classicism can also imply order in times of chaos. During the turbulent 1930s, the true international style was the stripped Classicism favored for government buildings in Hitler's Germany, Roosevelt's United States, and Stalin's Soviet Union, often indistinguishable from one country to the next save for a nationalistic symbol.

The unprecedented magnitude of today's convergent world crises says much about Classicism's resurgence, but the ancient tradition is more than the ultimate architectural

Martin Filler is the architecture critic for House & Garden and a longtime contributor to The New York Review of Books.



The Classical survival: Allan Greenberg's Huckleberry House, 1985 (above), and Edwin Lutyens's Viceroy's House, 1930 (right).

security blanket. Classicism has won many new adherents as a result of what might be termed "style burnout."

Architectural fashions have always changed, but never as rapidly as in the late 20th century, when Postmodernism lasted little more than a decade, and Deconstructivism even less. Since then, the wild proliferation of new architectural modes, none of which will attain the dominance of Modernism, has made some see Classicism as the best guarantee of passing the test of time.

One of the most conspicuous Classical buildings of recent years is the Schermerhorn Symphony Center in Nashville by David M. Schwarz. As Schwarz's project architect explained,



"They were looking for a building that would appear timeless and not dated 10 years after opening."

Revealing its age

This notion ignores an inevitable aspect of Classicism. Far from being timeless, the style inevitably reveals its age, no matter how faithfully practitioners believe they are following earlier models. A Classical building of

the mid-18th century can never be confused with another of the late 19th century. That's especially true today, although advocates will try to explain away the awkwardness of so much new Classical design as a result of the style's 50-year hiatus in architectural education.

It's not a question of improving skills, however. Buildings look the way they do to a great extent

PHOTOGRAPHY: © TIM BUCHMAN (TOP); JEREMY HORNER/CORBIS (BOTTOM)

DEPARTMENTS

Critique

because of the way they are built. Classicists today think that if they return to traditional materials and crafts techniques they will achieve results indistinguishable from the work of their 18th-century forebears. The antiquarian obsessions of Classical fundamentalists such as British architect Quinlan Terry prove it is delusive to think that two centuries of technological change will not have an impact on any building, of any style, made in today's world.

In fact, the rejection of Classical principles in American architecture schools was never as absolute as some allege. In the 1920s, America's greatest postwar architect, Louis Kahn, studied under the Classicist Paul Philippe Cret at the Beaux-Arts-based University of Pennsylvania. Kahn's Classical streak became more pronounced as his career progressed and he tried to recapture the powerful essence of Classicism by rejecting what he considered the tradition's superficial trappings.

Back to the past

At Princeton after World War II, Robert Venturi and Charles Moore were influenced by the Beaux-Arts-trained architect Jean Labatut, who gave them the courage to expand the vocabulary of Modernism by embracing Classical concepts and expressing them more overtly than had been done in decades. Those architects' witty Classical references were hugely influential in two very different ways: They unleashed a slew of crude Postmodernist imitations and prompted a return to the methodical reinvestigation of the real Classical thing.

One influential early activist was Henry Hope Reed, who in 1968 founded Classical America, the advocacy group that republished out-of-print Classicist texts and established the Arthur Ross Award to encourage Classically minded practitioners, pedagogues, and patrons. That prize has since been eclipsed by the Richard Dreihaus

Award, set up in 2003 as the Classicist parallel to the Pritzker Prize, with a \$100,000 purse signifying higher stakes. At the same time, the burgeoning New Urbanism movement gives further credibility to the American Classical tradition.

Useful as publicity can be to a cause, Classicism would have continued to languish without its reestablishment in academia. A decisive turning point came in 1989, when a dedicated Classical revivalist, architect Thomas Gordon Smith, became dean of the architecture program at the University of Notre Dame, in Indiana. Though Notre Dame students are expected to master the polished draftsmanship that typified Beaux-Arts training, they also use computers in the design studio, if less so than their contemporaries elsewhere.

The other major center for Classical architectural education in America today is the University of Miami School of Architecture, whose dean, Elizabeth Plater-Zyberk, runs a thriving private practice and is—with her husband and partner Andres Duany—one of the central figures in the New Urbanism movement. There seems to be less emphasis on pure Classical form at Miami than at Notre Dame, but there is no lack of tradition at either school, whether Mediterranean references that play so well in the Sun Belt, or American Classical reminiscences that make New Urbanism attractive to so many.

Books don't necessarily help

Has the return of formal education in Classical architecture improved the quality of traditional design? A flood of new books celebrating the new Classicism—many brought out by Rizzoli under the editorship of David Morton, whose efforts were recognized with a \$25,000 Dreihaus Award earlier this year—testifies to the subject's profitability at a time when most publishers are slashing their architecture lists. Yet the buildings depicted in these glossy

volumes do not raise hopes that a new Golden Age of Classicism is upon us.

True, few of the works shown in these books are by architects versed in the full Classical curriculum now offered at Notre Dame and Miami. Yet long before the establishment of formal architecture schools in the mid-19th century (excepting the 17th-century Ecole des Beaux-Arts), most Classicists were self-taught through pattern books and few saw ancient examples they could emulate. So how did they create designs so superior to most Classicism today?

Along still-unspoiled back roads in New Hampshire and Virginia, you can drive for miles and see not one bad building in the American Classical vernacular, which began to flourish in the mid-18th century and persisted in some places until the early 20th century. Now you can drive through expensive neighborhoods throughout America and can find scarcely a Classically inspired building that gets it right.

The design-build model

One reason for the disconnect is that architectural design and construction are no longer the inseparable activities they had been before industrialization, mass production, and prefabrication altered things irrevocably. The recent proliferation of design-build firms in America nonetheless pales in comparison to prevailing practice in Japan, where project managers for construction firms are qualified architects who improvise and adjust specifications and detailing on-site with an expertise and authority unheard of in this country. Although some new American traditionalists (particularly residential specialists) cultivate artisanal teams they can carry from job to job, the far-flung legions of workmen who understood the Classical vocabulary as if by osmosis no longer exist.

Educators always say there are things that can be taught and others that cannot, and among the latter is an innate sense of proportion, the soul of Classicism.

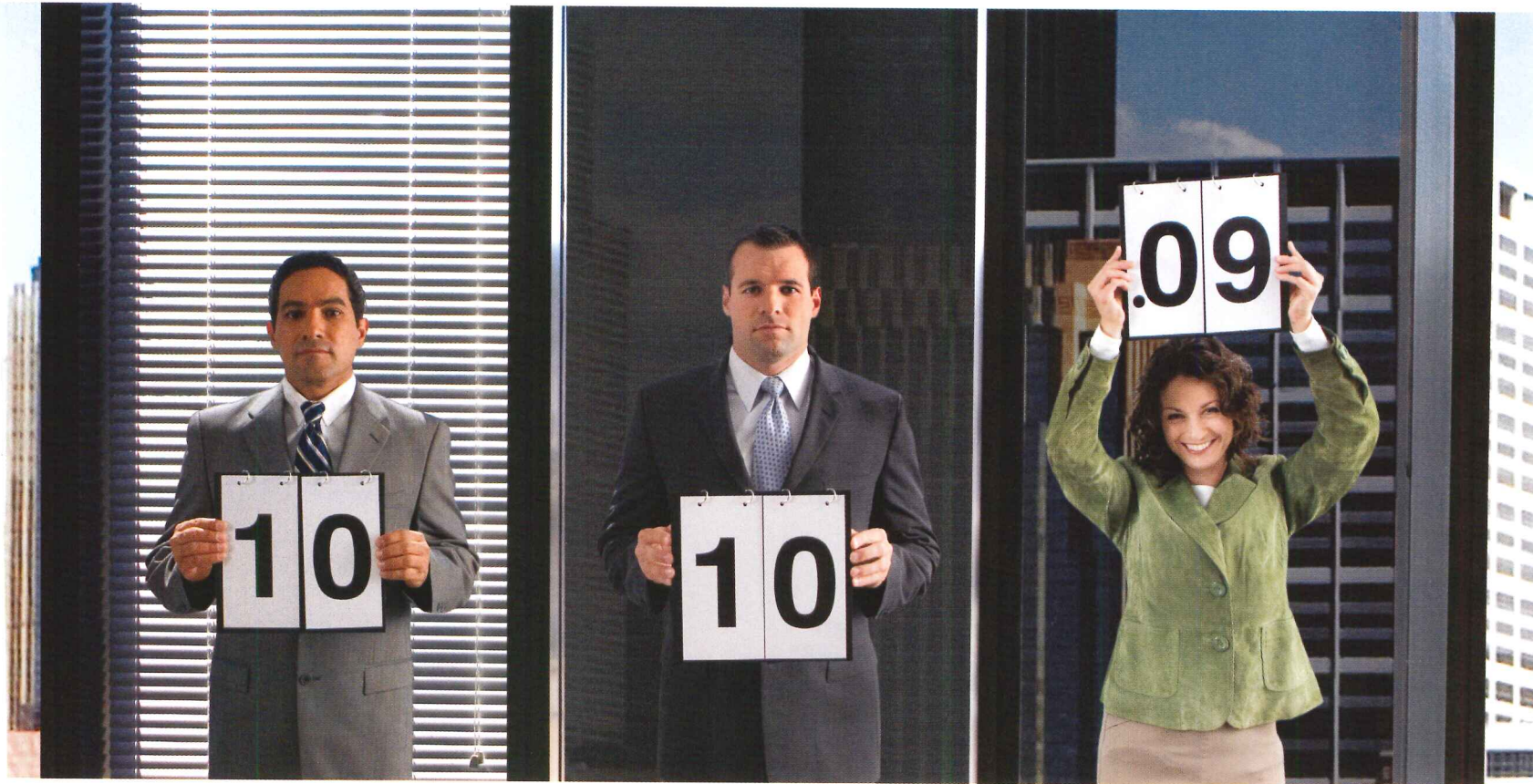
Although there are many proportional formulae that can be applied to creating a Classical design, an architect must combine a head for numbers with an eye for beauty.

I have never doubted that the Classical tradition can be given new life if handled with the learning and daring shared by its greatest exponents over the past 200 years. The incomparable trio of early-19th-century Classicists—Thomas Jefferson, Sir John Soane, and Karl Friedrich Schinkel—designed buildings that made Classicism contemporary in ways it had not been for centuries.

The last Classical hero

Their only true modern-day successor was Sir Edwin Lutyens, who, after specializing in scenographic country houses, somehow evolved into a Classical master equal to the finest of any age. The greatest Classical public building—perhaps the greatest public building, period—of the 20th century was Lutyens's Viceroy's House in New Delhi. Purists may sniff at its freewheeling blend of Mogul and Western motifs, but Lutyens's multi-cultural masala is incontestably Classical by any plausible definition, and not only because of its bilateral symmetry, endless colonnades, and panoply of arches. Lutyens's astounding sequence of perfectly proportioned indoor and outdoor spaces leads visitors through a procession of such drama and surprise that the typical Beaux-Arts *marche* by contrast seems, well, pedestrian.

After three decades of Classicism on the rebound, there is no practitioner remotely approaching Lutyens's ability to recast Classicism for a new age. Classical architecture at best might persist like other anachronistic art forms—grand opera, for example—but seems most unlikely to thrive as it once did, despite the passion of its present-day proponents. One thing is certain, though. The near-religious fervor of its proselytizers insures that Classicism will always be revered in some circles as the one true architectural faith. ■



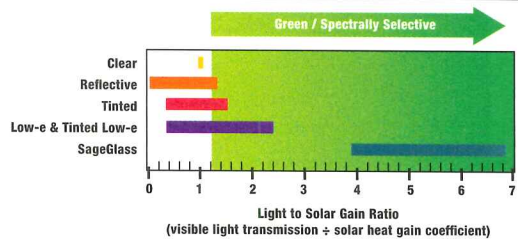
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When buildings fail: ethics for the worst-case scenario

Practice Matters

By Eugene Kremer, FAIA

Few architects are unaware of tragic building failures during recent decades. Perhaps best known is the July 1981 Kansas City Hyatt Regency skywalk collapse that took the lives of 114 during a Friday evening tea dance. The loss of life was limited to four in the May 2004 roof collapse at Charles de Gaulle Airport only because it occurred in early morning. It is still anguishing to contemplate the chaos, vast destruction, and massive loss of life that would have resulted had a potential collapse of the 59-story Citicorp Tower in Midtown

In the course of routine professional practice, as we deal with apparently mundane problems—code interpretations, zoning variances, roof leaks, budget overruns, fees—we recognize the necessity to serve interests that are often in competition, if not at odds, with each other. We are charged to serve clients; the public health, safety, and welfare; to advance the usefulness of the profession; and, of course, fulfill obligations to partners, employees, consultants, and creditors, as well as to our families and ourselves. Charting an

ARCHITECTS CONTINUE TO VISCERALLY RESPOND TO CRISES BECAUSE, AS WE ALL RECOGNIZE, DESIGN AND CONSTRUCTION UNAVOIDABLY INVOLVE RISK.

Manhattan not been averted during the summer of 1978.

Understandably, these and many other building crises warranted extensive media attention, as well as detailed investigations that sometimes yielded significant advances in building codes, techniques, and design practices. Beyond these rational explorations, however, architects continue to viscerally respond to such crises because, as we all recognize despite impeccable care, the design and construction of even the simplest building unavoidably involves risk.

Eugene Kremer, FAIA, is professor emeritus of architecture at Kansas State University. He lives in Arlington, Virginia.

ethically sound path through this thicket is often daunting.

Regrettably, there has been scant systematic study of professionals' ethical decision-making in the face of crisis. Although few of us will directly encounter disastrous events, if we do, we will be under great stress and enormous time pressure to make thorny ethical choices. Those decisions are ever more difficult and the stakes are by definition far higher for everyone involved when structural collapse and loss of life are threatened, or when a disaster has occurred. There is rarely opportunity to mull what actions to take in these circumstances. Yet we can find little or nothing in the way of explicit counsel for codes of professional ethics.

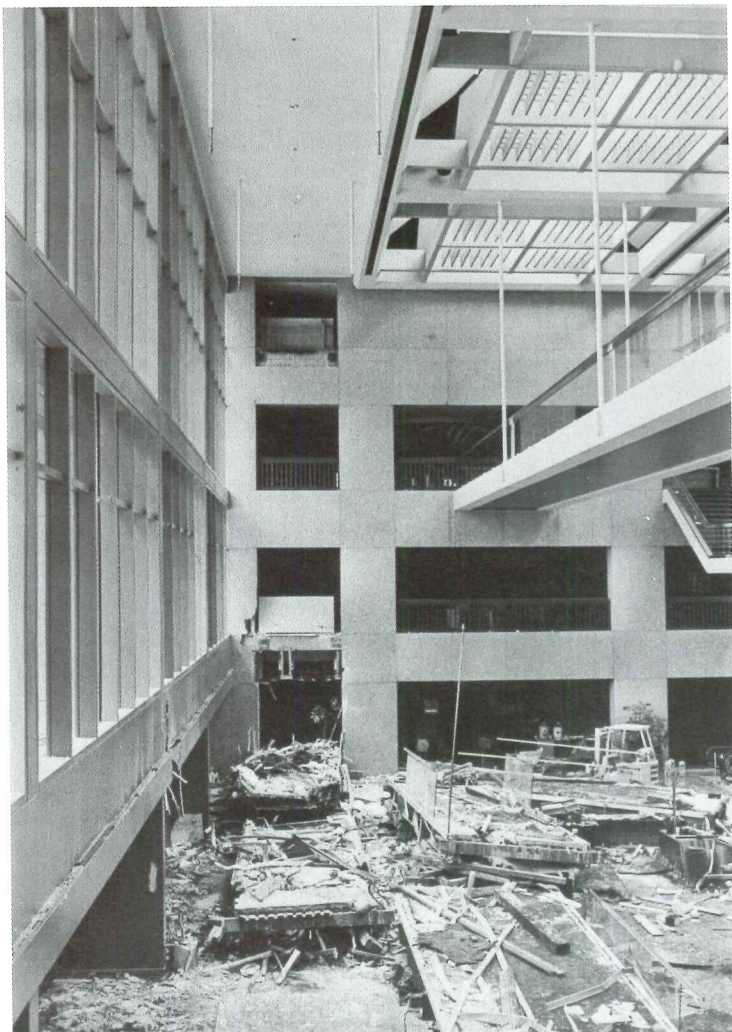


The Citicorp Center opened with an inadequate structure which could have failed in a severe storm. It was repaired at night over several months, unbeknownst to the building's occupants or people living in the neighborhood.

Resources such as *The Architects' Handbook of Professional Practice* characteristically focus on risk management, risk avoidance, and conflict resolution rather than offering advice on dealing with disaster. Drawing upon the thinking of

people within and beyond our profession, this article offers ideas for preparing to deal with crisis, and explores alternate strategies for responding to looming disaster and to the aftermath of tragedy or its avoidance. It concludes with a gen-

Practice Matters



On July 19, 1981, the collapse of two bridges in the lobby of the Hyatt Regency in Kansas City, Missouri, resulted in the death of 114 people. The tragedy was the result of a construction change to the original hanger design.

eral framework for professional ethics decision-making in crises.

How we deal with disaster

Unfortunately, the AIA ethical standards, largely based on the NCARB Rules of Conduct adopted by most state licensing boards, do not establish ethical norms that might serve as helpful guidelines for architects encountering building disaster.

Acknowledging the scarcity of resources available to architects faced with crisis, Victoria Beach, AIA, of the Harvard Design School, observes that the profession “seems to retroactively adjudicate rather than proactively solve ethical

matters.” Recognizing that the majority of ethics complaints involve petty turf wars, she initiated the Boston Society of Architects Ethics Forum to focus on more profound ethical quandaries. The lack of published information often leads architects to turn for counsel to trusted members of their firm. Bob Berkebile, FAIA, a participant in the joint venture that designed the Kansas City Hyatt Hotel, recalls, “I found the most valuable [ethical] advice came from family, spiritual and mental health counselors, and attorneys not involved in the failure.” In his experience, counsel offered by his

lawyers and insurance company, the AIA, and fellow professionals was shaped by their perceived roles in the crisis at hand, or it was largely based on incomplete, often misleading media reporting.

Preparing for the worst

Your firm should create a plan for dealing with disaster and familiarize every member of the office with it. Several contributors advocate integrating structured ethical dialogue into office routines or designating an ethics officer within the firm. “Lack of preparation is what is unethical,” says public relations professional

observing that the era in which paternalism by professionals was normative has passed. If the professional’s role is that of honest collaborator, he believes remaining silent when others mislead the public “is simply not an option.” Others embrace less forthright approaches. In an effort to reduce the likelihood of false public statements and avoid panicking the public, Berkebile advocates opening dialogue about the danger with a limited group of stakeholders, progressively widening that circle as the situation is clarified and as a collaborative approach to its solu-

“IN GOVERNMENT, WE DON’T HAVE ‘SECRET’ AS AN OPTION,” SAYS NEW YORK CITY BUILDINGS COMMISSIONER PATRICIA LANCASTER, FAIA.

Joan Capelin, Hon. AIA, who calls for “vigilant scrutiny of work and work relationships at the partner level that bespeaks quality procedures and mature acceptance of responsibility.” She insists that every office ought to develop and maintain an up-to-date crisis plan incorporating 24/7 contact information, a prepared first responder and staff designated to ensure effective communications internally and externally. Such a plan can cover several stages of a disaster event.

In the face of looming disaster

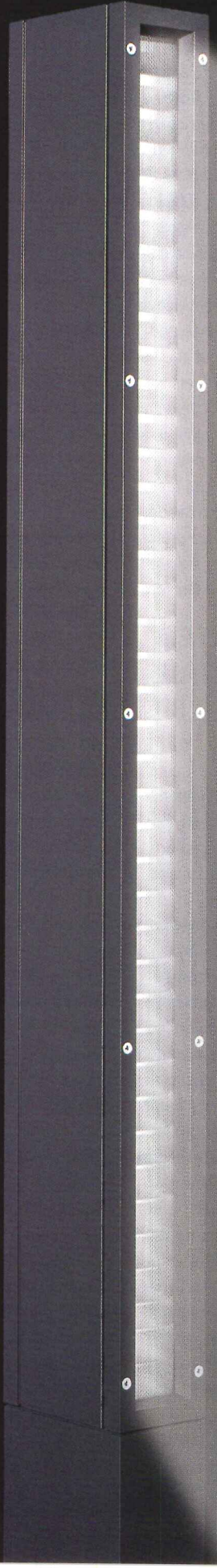
Avoid public panic. One of the most difficult decisions for an architect when there is evidence that a design or construction fault could cause a building collapse is how much to tell the users and the public and when to tell it. The implications can be serious. Do you avoid creating panic by remaining silent, or by making ambiguous or false statements while focusing on mitigating or resolving the problem? Should you remain silent when others—owners, professionals, public officials—make misleading or untrue public statements?

“No matter what, tell the truth in real time,” argues writer and educator Andrew Pressman, FAIA,

tion is developed. Only then would the larger public be informed.

“In government, we don’t have ‘secret’ as an option,” says New York City Buildings Commissioner Patricia Lancaster, FAIA, but she acknowledges that timing is important when it comes to informing stakeholders. To avoid making actively misleading comments, she advocates responding with “no comment”; and to challenge false comments from others, answering, “We question the validity of the statement.” The AIA’s Code of Ethics is clear: “Members speaking in their professional capacity shall not knowingly make false statements of material fact.” While ambiguous or false statements may not violate the law, countenancing them heightens the risk of harm to people and property if a failure occurs. Professional status carries the obligation to openly acknowledge problems and give priority to actively rectifying the fault wherever responsibility for the crisis may lie.

Actively inform owners and users. Deciding to inform building users and the public of a looming disaster so they may act in what they perceive to be their self-interest engenders another set of issues.



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This strategy risks unnecessary disruption of personal, civic, and business activities, as well as additional public safety agency expenditures. It also increases the likelihood of damage claims and public relations debacles for owners, design professionals, localities, and others that would have been avoided if the danger had not been disclosed and the problem were safely resolved. Management consultant Peter Piven, FAIA, warns that concerns about potential business disruption, additional government expenses, and damage suits must yield to the obligation to protect public health, safety, and welfare.

Cautioning against acting precipitously without sufficient information to substantiate a safety

the consequence of maintaining a secret for a time only to have it revealed and to be accused of a cover-up, which, when combined with the initial problem, can transform a public relations problem into a debacle, stimulate a suit, or sully reputations. Even when a secret is maintained, "Success does not make a moral wrong any more right—even as it makes it seem more attractive," says Davis.

Once disaster has struck or has been averted

Avoid public comment. After resolution of a crisis or in the aftermath of a disaster, design professionals must again weigh the potential consequences of ethical choices they confront. Is it best to evade, avoid, or

professionals and thereby lessening risk in future buildings.

Structural engineer Matthys Levy, co-author with Mario Salvadori of *Why Buildings Fall Down*, a book that lucidly explains to lay readers the causes of many major building collapses, has apparently changed his thinking, stating, "If a problem has been resolved, even after a disaster, there is no reason for public disclosure in more detail than to indicate that the problem has been resolved." In discussing his present view, Levy cites contemporary insurance and litigation concerns as well as the risk of "confusing" nonprofessionals with more technical information than can be absorbed. Berkebile conjectures that "delaying the release of information to the public might in fact improve the quality of information, which in turn would improve professional insight and reduce risk." He points out that early public disclo-

porate architect-client privilege and Rule 3.401 of the AIA Code of Ethics permits the professional to "reveal a confidence that is contrary to other ethical duties ... or to applicable law." In considering a client's demand for a confidentiality agreement, attorney Carl Sapers, Hon. AIA, believes the architect must consider whether disclosure would advance the profession's knowledge base "and is therefore worth fighting for."

Quatman states emphatically, "The client does not dictate ethics to an architect." Viewing damage claims in such cases as unavoidable, he advocates early public disclosure since delay is likely to engender charges of a cover-up, thereby compounding the public relations damage for all involved.

A conceptual framework

Victoria Beach offers a conceptual framework for engaging professional problems that should provide a useful starting point as we grapple with vexing ethical choices in crises. Employing the rubric "Others First," Beach proffers a hierarchy of professionals' responsibilities: "Always serve the public first, then client, then craft and colleagues (the latter two perpetuate the professional's capacity to serve the former two)." By definition, professional careers are focused on service to others rather than on self-interest, which is therefore assigned the last position in the hierarchy. It follows then that "if keeping a professional secret serves only yourself and harms others, you should tell." Pursuing that logic further, "You should tell if your client's interest endangers the public interest."

It may be inevitable that even among experienced, thoughtful professionals and academics there will be disagreement on the ethical appropriateness—and potential consequences—of alternate courses of action when architects are confronted by crises. Or, perhaps the diversity of views we encountered affirms not only the difficulty of the issues but the need for continued dialogue that might help move our community toward shared ethical understandings. ■

"IF A PROBLEM HAS BEEN RESOLVED, EVEN AFTER A DISASTER, THERE IS NO REASON FOR PUBLIC DISCLOSURE IN MORE DETAIL THAN TO INDICATE THAT THE PROBLEM HAS BEEN RESOLVED," SAYS STRUCTURAL ENGINEER MATTHYS LEVY.

risk, attorney Bill Quatman, FAIA, affirms the ethical duty to inform. He recalls a court case involving the failure of an engineer to report an unshored trench that collapsed, killing a worker. His defenses—that construction site safety was not in his contract and that the worker's supervisor saw the trench—were rejected by the court. As a professional, the engineer was obliged to act when he recognized the safety risk. Faced with a known risk to safety, Quatman counsels that the professional should inform the client that the danger will be made public and invite the client to issue a joint disclosure or otherwise collaborate in revealing the problem. Ultimately, a client's desire for secrecy cannot override the obligation to disclose.

Professor Michael Davis, of the Center for the Study of Ethics in the Professions at the Illinois Institute of Technology, declares, "Candor is not cost free. If it were, our moral life would be much easier." He warns of

refuse public comment or to share the information—complete or not—that is presently available? What consideration is merited by the possibility of legal action arising from the crisis or the disaster? What if silence heightens the likelihood of denying the lay public access to information of value in protecting itself from risk; denies design professionals of insight that might advance their knowledge and skill; or denies regulatory agencies of understanding that might lead to useful reform?

Observing that demand for information varies directly with the significance of the threatened calamity or the disaster, long-time executive editor at the AIA Joseph Demkin, AIA, acknowledges the risks of sharing information before all the information is at hand. But he also points to the likely risks of withholding information: suspicion and diminished confidence, loss of future commissions, legal challenge, and the inability to educate other

sure can elicit insurance claims and lawsuits resulting in delays in the dissemination of information needed for reform of professional practice and regulation.

Share available information. The architect who decides that quickly and forthrightly sharing information is the sound ethical choice might encounter objection from the client demanding confidentiality in order to avoid a public relations disaster. Technology journalist Kenneth Jacobson argues that, aside from the primary responsibility to ensure public safety, sharing information "should be the basic goal, keeping in mind that speed can be the enemy of accuracy and that forthrightness, when offered up thoughtlessly, can lend itself to being sensationalized."

If a disaster results from a known design flaw, Joseph Demkin asserts that a client's desire for secrecy cannot prevail. He points out that our legal system does not incor-



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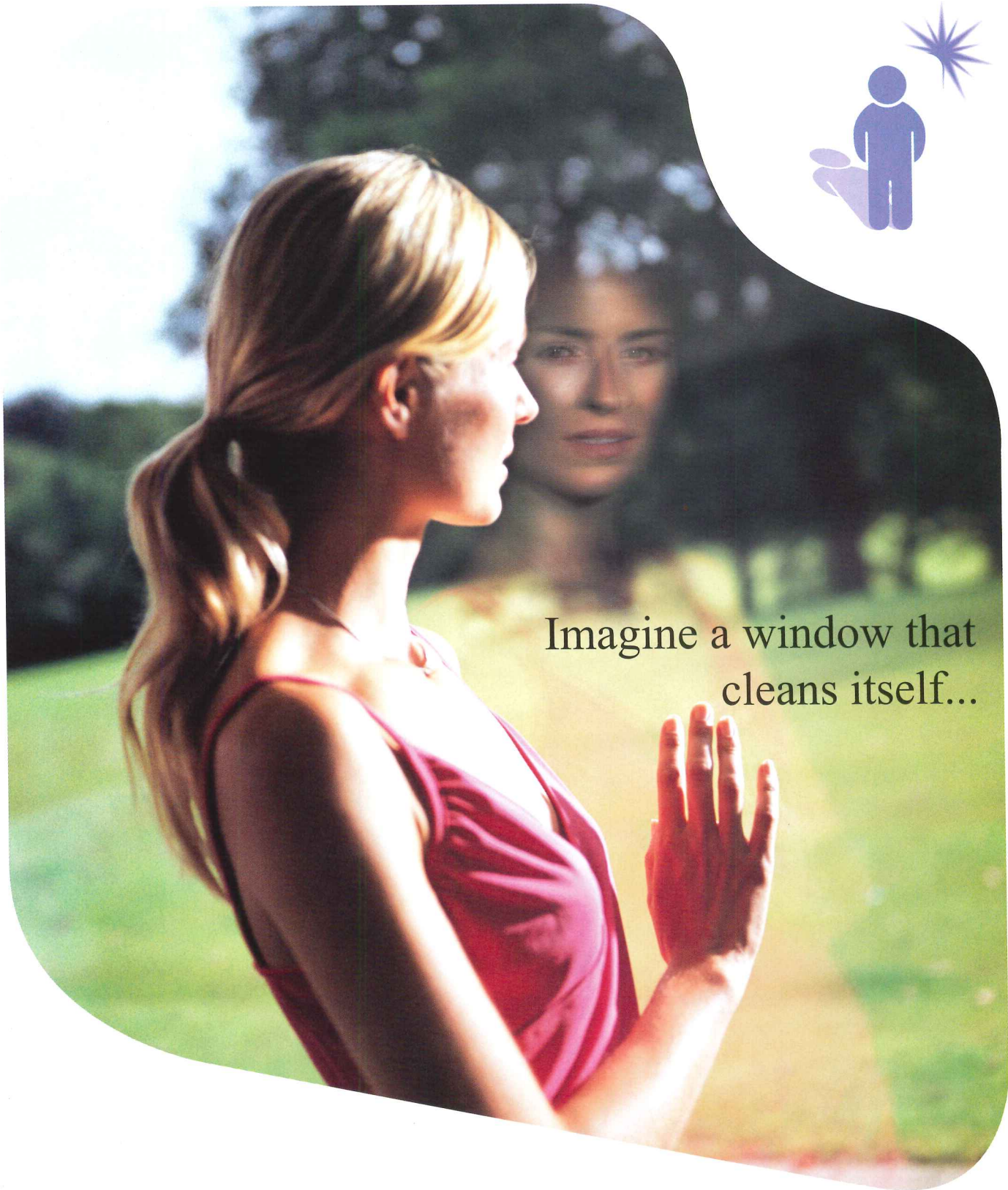
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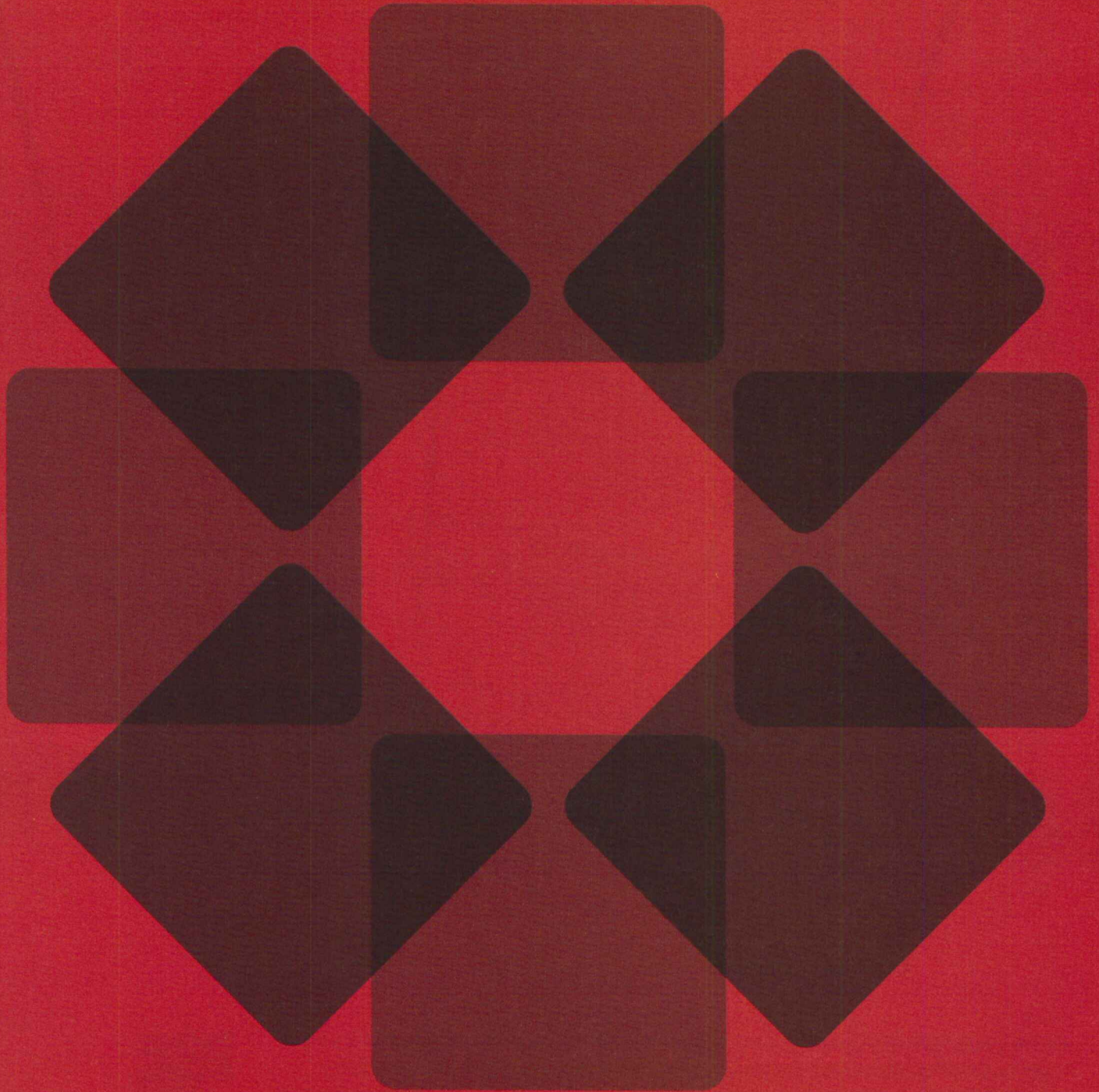
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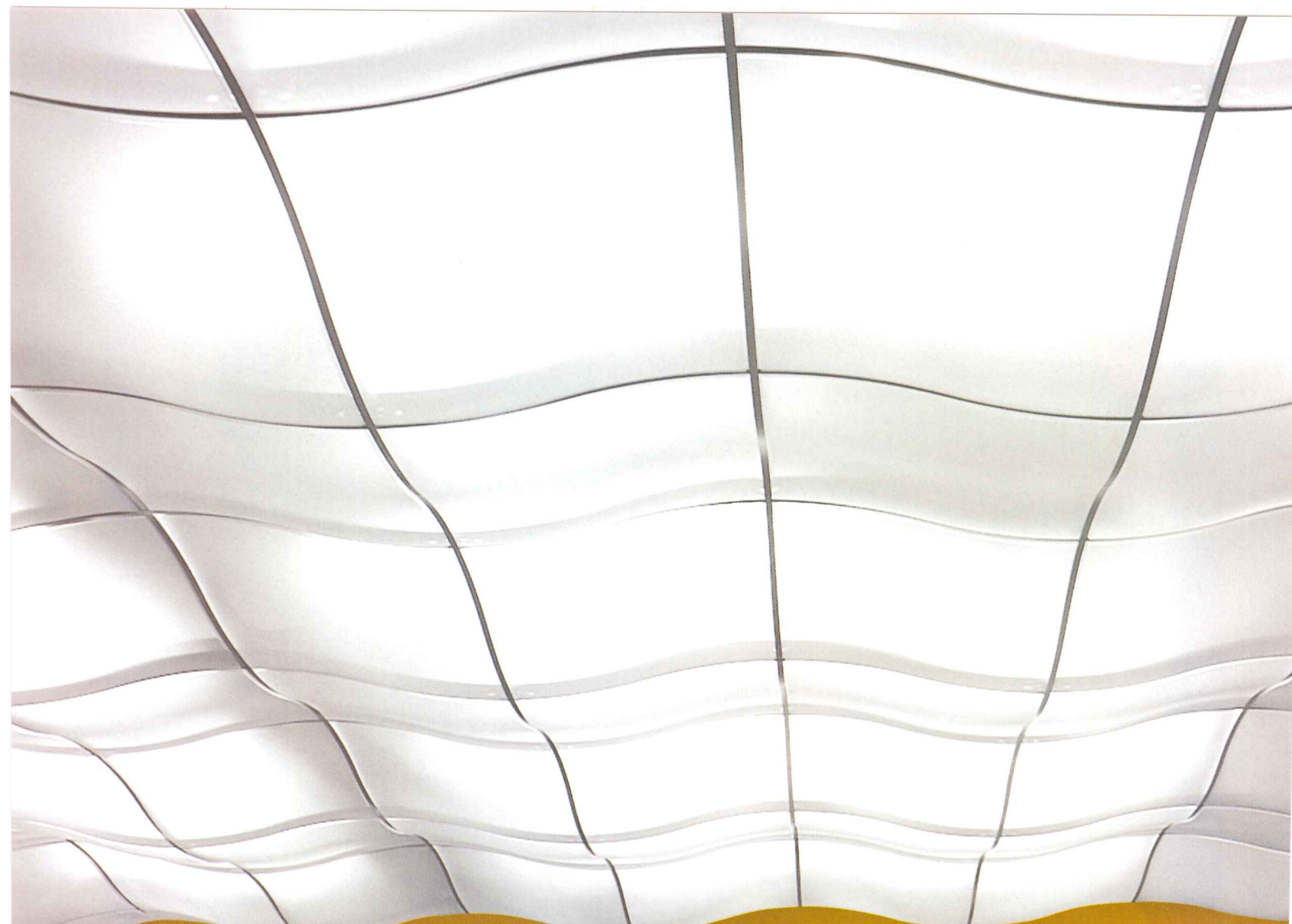
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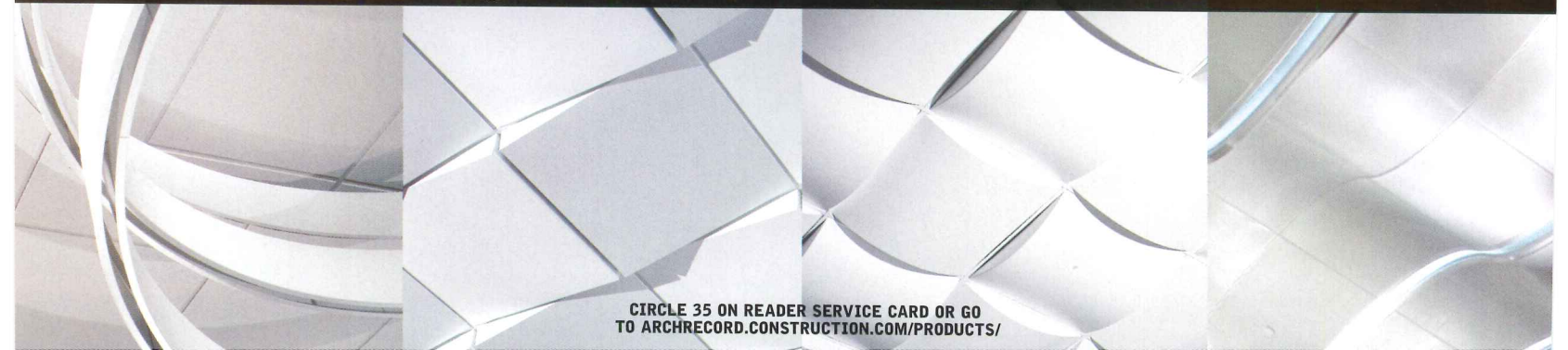


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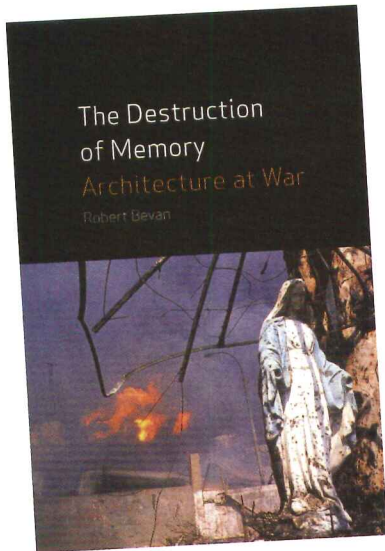
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Rising from the ashes: How war and destruction shape the places we live in

Books



The Destruction of Memory: Architecture at War, by Robert Bevan, London and New York: Reaktion Books, 240 pages, 2006, \$25.

In the very first paragraph of this forceful, meticulous book, author Robert Bevan concedes that the fate of buildings might seem trivial compared to other victims of conflict. "Dwelling even for a moment on the shattered remains of museums and churches felt, at best, self-indulgent and, at worst, an indication of warped priorities," he writes of his reaction as a child to the cultural and physical carnage of World War II.

But as Bevan, the former editor of England's *Building Design* magazine, makes all too clear in the pages that follow, the destruction of a society's landmarks often is a brute show of force that says nothing is sacred, or a warning of worse

things to come. The book circles back repeatedly to the 1990s strife in the former Yugoslavia, where the ethnic cleansing pursued by Serbian leader Slobodan Milosevic included the destruction by shelling of Croatia's National Library. But Bevan's reach is much more extensive, establishing a historical context that shows how Serbian transgressions are echoed by too many others: from the torching of 267 Jewish synagogues by Nazis on Kristallnacht, in 1938, to communist China's systematic and ongoing replacement of traditional Tibetan buildings with "crude concrete boxes"; from the carpet bombing of Dresden in World War II to the terrorist attack on the World Trade Center five years ago.

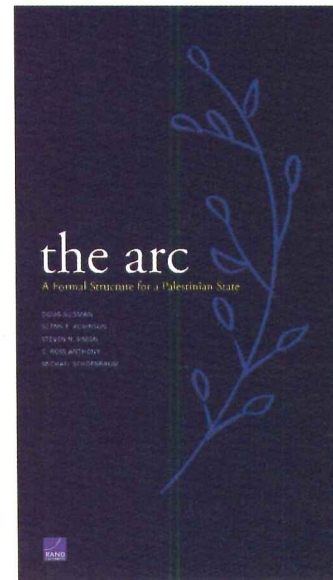
Bevan concludes by calling for a new international war crime classification, "cultural genocide," when buildings and landmarks are singled out for destruction because "the erasure of the memories, history, and identity attached to architecture and place—enforced forgetting—is the goal itself." Even enacted, such a law would have little effect; the only tyrants who tend to be judged are the losers, and they're judged for other actions first. But the thoroughness and passion of Bevan's survey is itself an act of remembering—and for that precise reason, it has value that will endure. *John King*

The Arc: A Formal Structure for a Palestinian State, by Doug Suisman, Steven N. Simon, Glenn E. Robinson, C. Ross Anthony, and Michael Schoenbaum. Santa

Monica, California: RAND Corporation, 2005, 93 pages, \$33 (paperback with DVD).

The Arc, a 140-mile, north-south corridor proposed by the Rand Corporation and the authors of this book, would connect nine of 11 West Bank urban centers with four in Gaza. As a path for large-scale infrastructure development, it could direct Palestine's anticipated rapid population growth and promote economic development and national stability. Conceptually, the Arc is a bold and simple—even elegant—solution.

This study of the Arc emerged from recent RAND initiatives that developed policy options aimed at ensuring a successful Palestinian state. The study is directed to the international community and stresses that Palestine, to be successful, must be integrated into its



region, in addition to being internally cohesive.

So far so good, but the text skillfully sidesteps areas of potential conflict and minimizes obstacles to the Arc's implementation, and the authors accept as reasonable the low projected cost of \$8.14 billion. The report fails to comprehensively explore environmental, social, and cultural factors that will determine Palestine's future. Too often, the authors make recommendations that "would require careful study," and their suggestions aren't supported by evidence. They write, for example, "A national linear park could weave back and forth across the line [of the Arc] as influenced by the landscape." How, where, why? We're not told.

Site maps, often without scale or appropriate keys, are usually too small for meaningful analysis. Images accompanying the text are often generic and unenlightening. In the end, the report is more an extended executive summary for politicians and entrepreneurs than a realistic planning study. The solutions seem to have prefigured the analyses. It's a worthy beginning, the middle and end of which remain to be written. *Lake Douglas*

Structure and Meaning in Human Settlements, edited by Tony Atkin and Joseph Rykwert. Philadelphia: University of Pennsylvania Press, 2005, 384 pages, \$60.

It's a given that social conventions help shape settlement forms. Less

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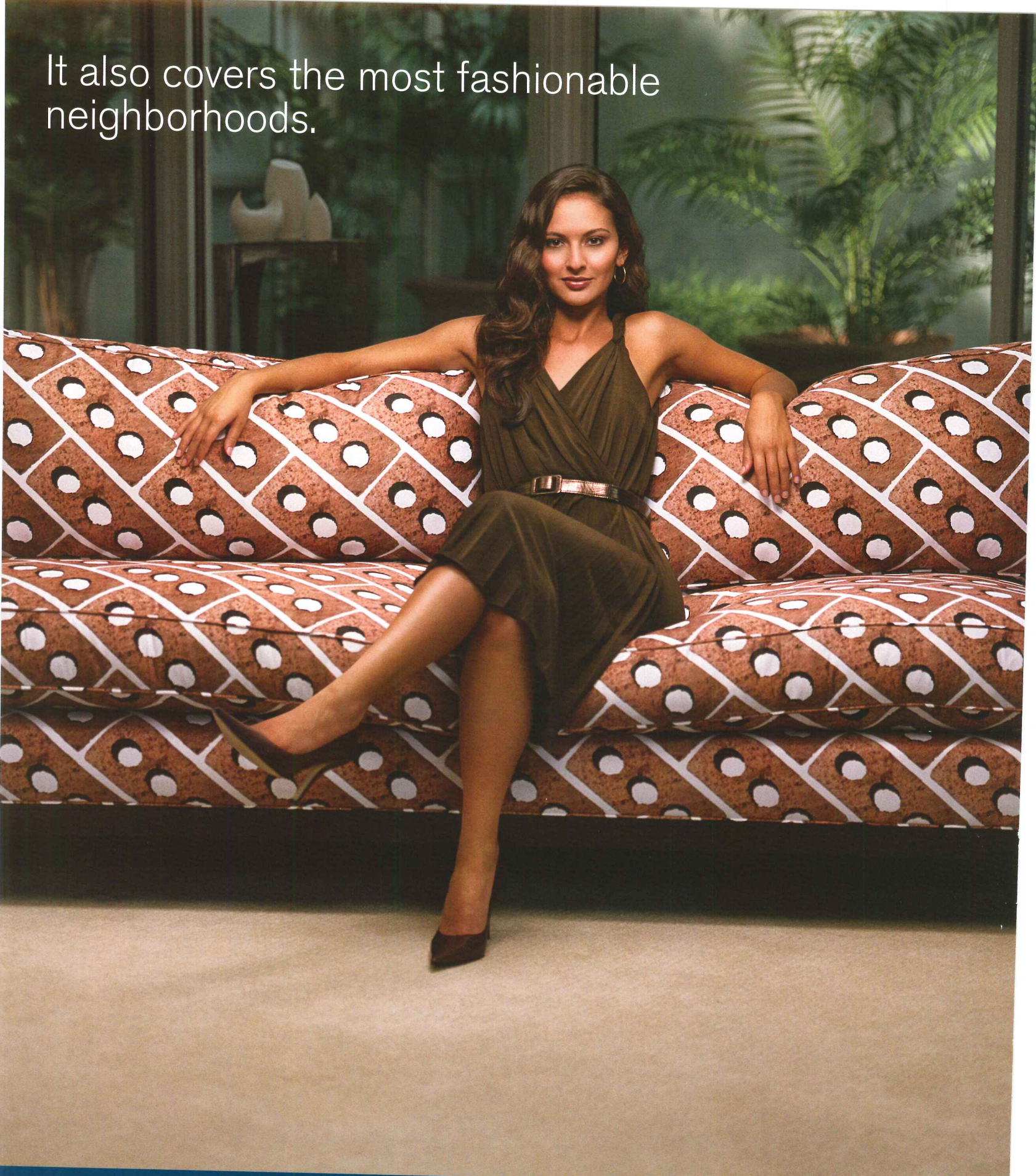
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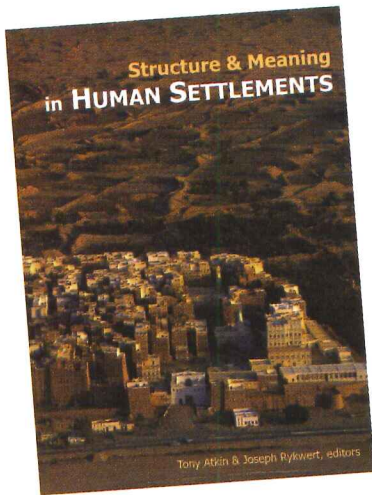
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Books



obvious, perhaps, is that the pragmatics of designing and building a settlement can yield insights into a society that go well beyond its infrastructure or built fabric. "We might then learn to see architecture as not just a possibly desirable aesthetic supplement, but as the embodiment of social intentions and

cultural meaning," write editors and contributors Atkins and Rykwert.

This notion is the springboard for most of this volume's 24 widely ranging essays by archaeologists, classical scholars, geographers, architects, landscape specialists, and urban and regional planners. In early chapters, written by different authors and bearing such titles as "Cosmological Structure of Ancient Egyptian City Planning," "The Ideas of a Mayan town," "Holy Mountains," and "The Language of Memory in Chinese Gardens," you learn about ancient and early settlement patterns.

More interested in contemporary settlements? You'll find analyses of their patterns and problems in the book's final eight chapters. Among them are M. Christine Boyer's "The Primitive Origins of Modern Architecture (Le Corbusier's Voyage to the East)," Thomas J. Campanella's "Transplanting the New Jersey

Turnpike to China," Laurie Olin's "Landscape Ecology and Cities," Michael Sorkin's "Settlements After Now," and Denis Cosgrove's "21st Century Nomadism and Settlement."

Olin reminds us that in the recent past the study of ancient sites and primitive societies "was an attempt to make a break from the perceived formal traditions and habits of the moment," and that these efforts rarely produced models useful for coming to grips with problems of highly evolved contemporary cities.

Today's major cities, Olin writes, are not coherent single structures; they are "too extensive, too polyvalent, too multilayered, and too multicentered." He views cities in terms of the new discipline of landscape ecology, which sees landscapes as collages or palimpsests of patches, corridors, and matrixes formed by dynamisms and instabilities, energy flows, and interactions between populations. Cities, he thinks, are no different.

In discussing prospects for the future, Sorkin notes that because the world annually adds the equivalent of 50 cities of one million inhabitants, "the press is above all quantitative." He writes that creating new meaningful settlements will "rely—more intrinsically than ever—on frankly artistic strategies" and on the accidental. He brings the book full circle by writing that while these new cities will be global, "bio-regional character and necessity inflected by the daily habits of citizens have always lain at the heart of settlement form. Here we can really learn from the millennia." *Andrea Oppenheimer Dean*

Informal City: Caracas Case, edited by Alfredo Brillembourg, Kristin Feireiss, Hubert Klumpner. New York: Prestel Publishing, 2005, 360 pages, \$60.

Shantytowns, squatter settlements, slums, bidonvilles, favelas, and barrios are some of the names for spontaneous, unplanned collections

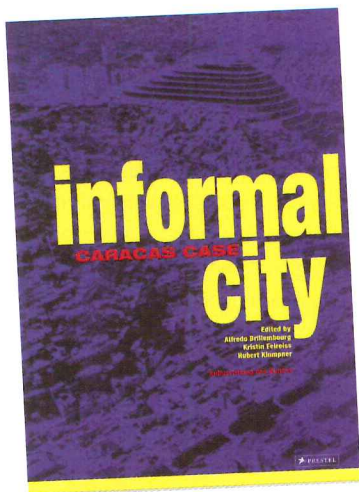
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Books



of habitations that sprawl around ever-growing cities found for the most part today in developing countries. These settlements house as much as 80 percent of the world's population.

"Informal city" is what Alfredo Brillembourg and Hebert Klumpner

choose to call this expansive urban phenomenon. And a good term it is—neutral, value free, and lacking the negative connotations of names from the past. They have chosen Caracas for investigating the "informal city," and this book, coordinating the research of the Caracas Urban Think Tank team, is a Herculean group effort involving 10 international teams that included photographers, visual artists, architects, planners, writers, ethnologists, and social and cultural scientists.

Informal City is information-dense, packed with documents selected from volumes produced by the teams. Texts, photographs, diagrams, charts, drawings, and various forms of mapping by more than 40 participants fill pages that almost vibrate with energy. The primary text is English, accompanied by German, but curiously and inex-

plicably there is no text in Spanish. The research project was sponsored by the German Federal Cultural Foundation.

Informal settlements respond to the primal human urge to dwell as a community. They are the fundamental vernacular. By the end of the 1950s, there was much disillusionment about Modernist planning's ability to house the masses, and those like Team Ten, who sought solutions outside Modernism, looked to both traditional and contemporary vernacular settlements for new insight.

For 1960s architects who abandoned design for political activism, informal cities, especially those in Latin America, such as the infamous favelas of Rio de Janeiro and São Paulo, became exemplary "peoples architecture." They were to be celebrated and learned from, especially their bottom-up design. Caracas Urban Think Tank follows in this tradition. The group is hesitant to offer solutions but exhaustive in offering documenta-

tion and analysis.

Caracas Urban Think Tank departs from its forbears in situating the informal city within the context of globalism and in its understanding of how the informal city participates in the dynamics of the megacity. Because of globalism, the scale and unrestrained growth of most informal cities today surpasses anything experienced in the 1960s.

One of the features of advanced capitalism in today's developing world is the polarization of two modes of appropriating urban space, one formal and one informal, reflecting economic and social polarization and the extraordinary pressure that internal migration places on the city. Caracas Urban Think Tank has devoted enormous energies to understanding the spatial consequences of these pressures on Caracas and on life there. And while understanding is important, *Informal City* demonstrates that solutions are still far beyond reach. *John A. Loomis, AIA*



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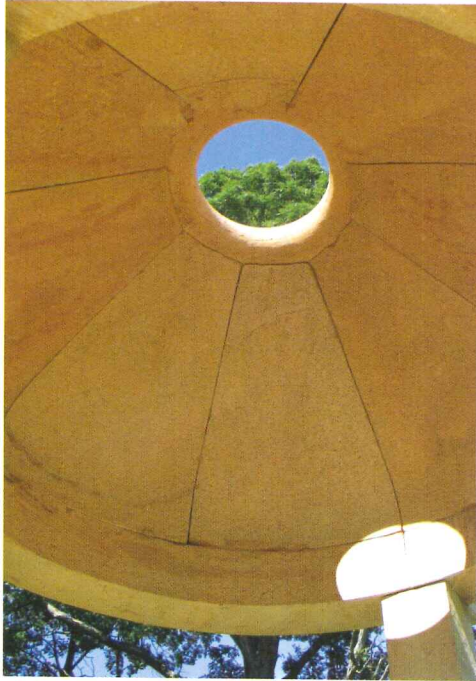


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The dome features a round skylight (top) that lets in both light and rain. The lotus flower rain catcher sits under the oculus, with the moon screen behind it (below). The observatory (right) stands on four pillars and is constructed without mortar.



PHOTOGRAPHY: COURTESY MICHAEL FREDERICKS

By Rita Catinella Orrell

Described by the Prism Stone in Architecture Awards jury as “a wonderful garden folly that proves simplicity can be satisfying,” the Rain Catcher observatory was presented with a Prism Award of Merit at this year’s Coverings trade show (reviewed this month on page 228).

Designed by Tarik Currimbhoy of Currimbhoy & Co., in New York City, and handcrafted by its affiliate Sana Stone, Rain Catcher faces west on the highest point of a residence in Ghent, New York. “It’s poetry in stone,” says Currimbhoy. “We want to bring stone back into the American vocabulary.” Made of yellow limestone, the 20,000-pound modular structure was fabricated in India and transported in sections, with interlocking pieces assembled on-site. Built without mortar (copper pins were used for additional security), the collar of the dome works as a keystone, locking the dome into place. Set along the cardinal points of the compass, the structure is rich with details: A central oculus pierces the dome and lets in light and weather; hand-carved screens support the benches and show the phases of the moon; and a carved lotus flower on the floor is both the eponymous rain catcher and also functions as a compass. Sana Stone, New York City. www.sanastone.com **CIRCLE 200**

East meets West in a modular stone observatory

NY Towers Kirkor Architects & Planners, Toronto Photo courtesy of Dryvit Systems, Inc.



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Snapshot

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By John Gendall

No one is eating oysters naked, but a recently revived plaza in New York City has been sent skyward. On the edge of Manhattan's Wall Street area, Rogers Marvel Architects and landscape architect Ken Smith have transformed a drab, windswept corporate brickscape into an acre of vibrant public space.

In his seminal 1978 book, *Delirious New York*, Rem Koolhaas famously imagined a point where New York's culture of congestion results in a condition where the entire city grows vertically. Everything, up to and including "eating oysters with boxing gloves, naked," will take place high above the street.

To a small extent this has happened at 55 Water Street. Above the parking garage for the largest privately owned office tower in New York, 55 Water Street Plaza holds the distinction of being the city's only elevated public plaza. Opened in 1972, the area soon fell into disrepair. "What existed on the site before was dead space," explains Rob Rogers, AIA, principal of Rogers Marvel Architecture, which, with Ken Smith, won the 2002 competition spon-

Beacon signals the arrival of revived public space



Snapshot

Visible from the FDR Drive and parts of Lower Manhattan and Brooklyn, the beacon is a new landmark designed to give visibility to an elevated public plaza.



sored by the building's landlord and the Municipal Art Society to resuscitate the plaza.

Because the park is largely hidden from street-level, the architects wanted to create an element that would announce the plaza as public space. "You can't simply be invited up," says Rogers, "you have to be enticed." The plaza's lanternlike "beacon" serves as this enticement.

A 60-foot-high tower of laminated-glass panels with custom fittings and backlit with color-changing LEDs, the beacon advertises the plaza whose northeast corner it occupies. Its 1,000 feet of custom-made linear LEDs are fully programmable and set the tone as they change color throughout the day and across the seasons at an imperceptible rate.

The park itself is composed of three elements. A "Long Island dunescape" creates a sense of intimacy with

its native grasses and plants. An event lawn with surrounding amphitheater seating manages heavy traffic by incorporating artificial turf. And the East River boardwalk, a prototypical design, is elevated more than 30 feet above South Street.

The plaza's gentle grade, which rises from the main Water Street entrance up to the boardwalk, builds up anticipation for the East River view and helps reduce city noise. The sounds of crickets chirping and the grasses swaying in the wind make this culture of congestion seem decidedly uncongested, while the boardwalk on the park's eastern perimeter reveals a more urban vista, with the traffic of the FDR and the nearby helicopter pad, the New York Harbor, the Brooklyn waterfront, and the Brooklyn Bridge.

The architects designed the space for year-round use by both the tenants of 55 Water Street and by the general public. Future events planned for the park include film screenings, company picnics, and any other activities that are suited to a public space—perhaps even some involving boxing gloves and oysters. ■





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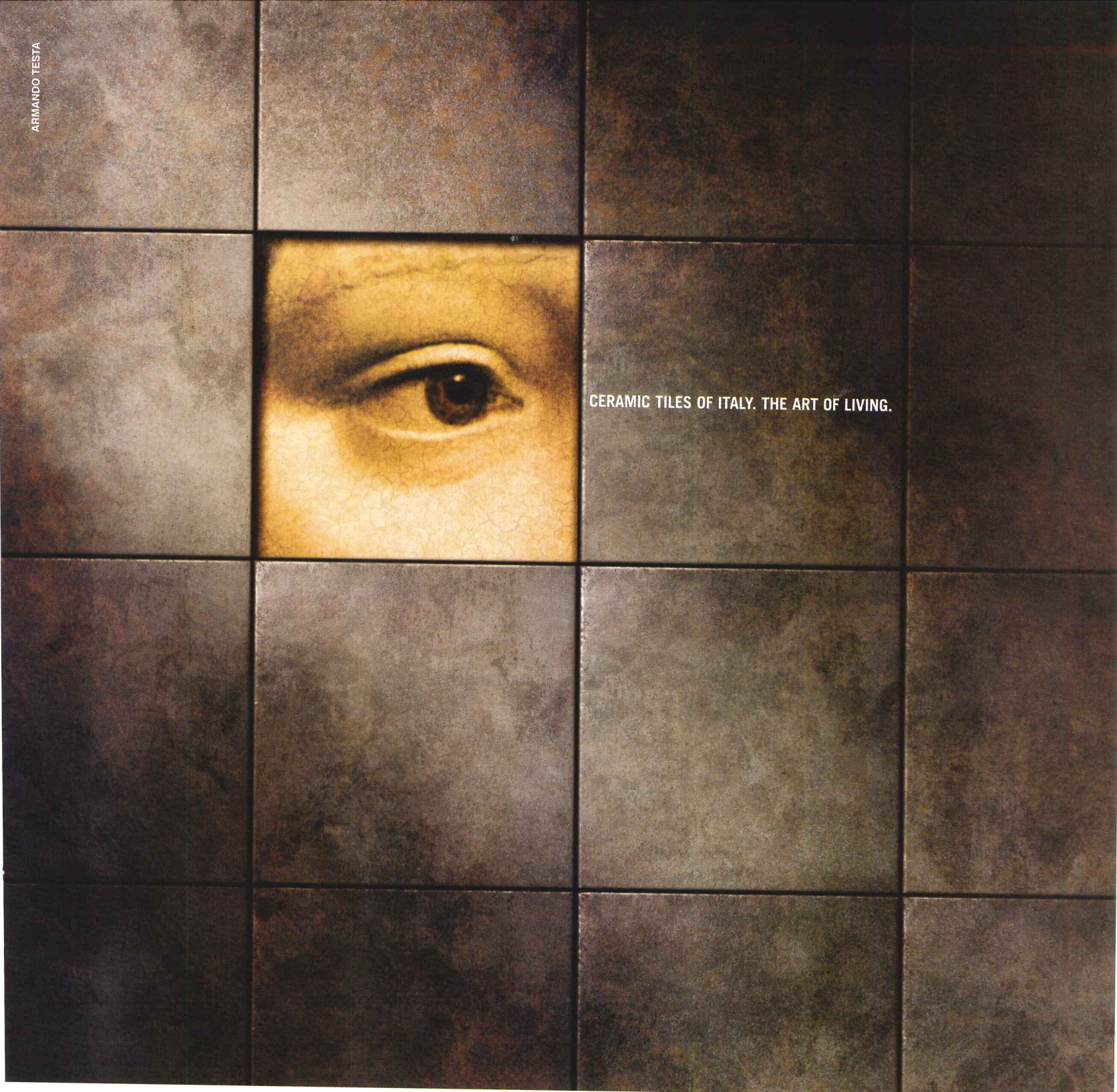
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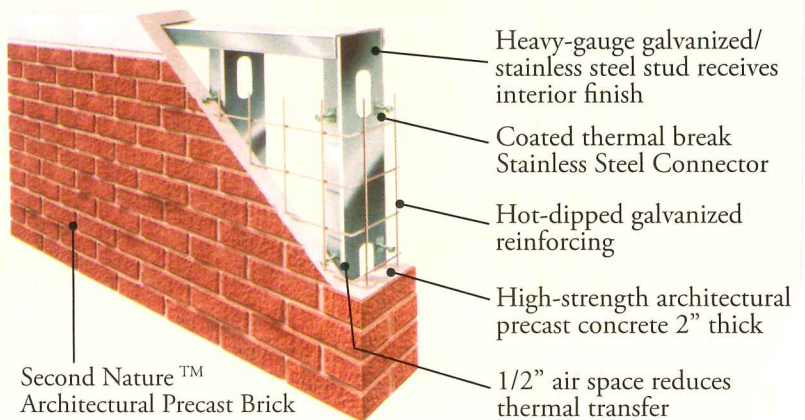
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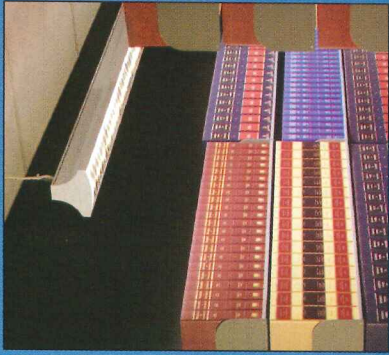
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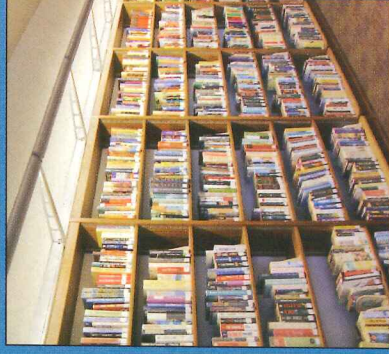
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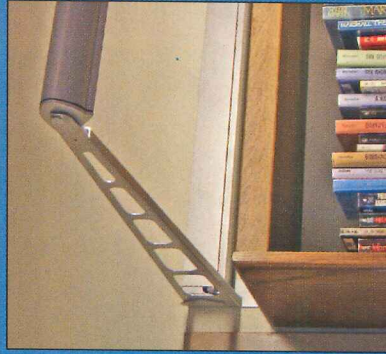
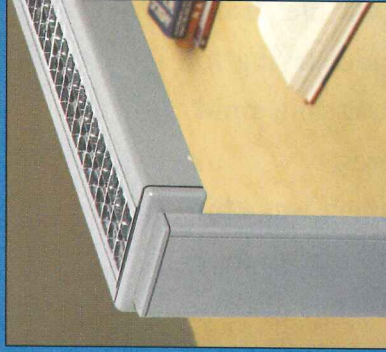
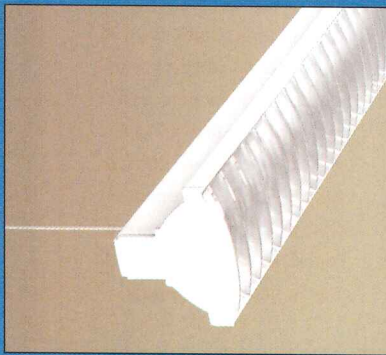
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Prêt-à-Cité

By Thomas Hine

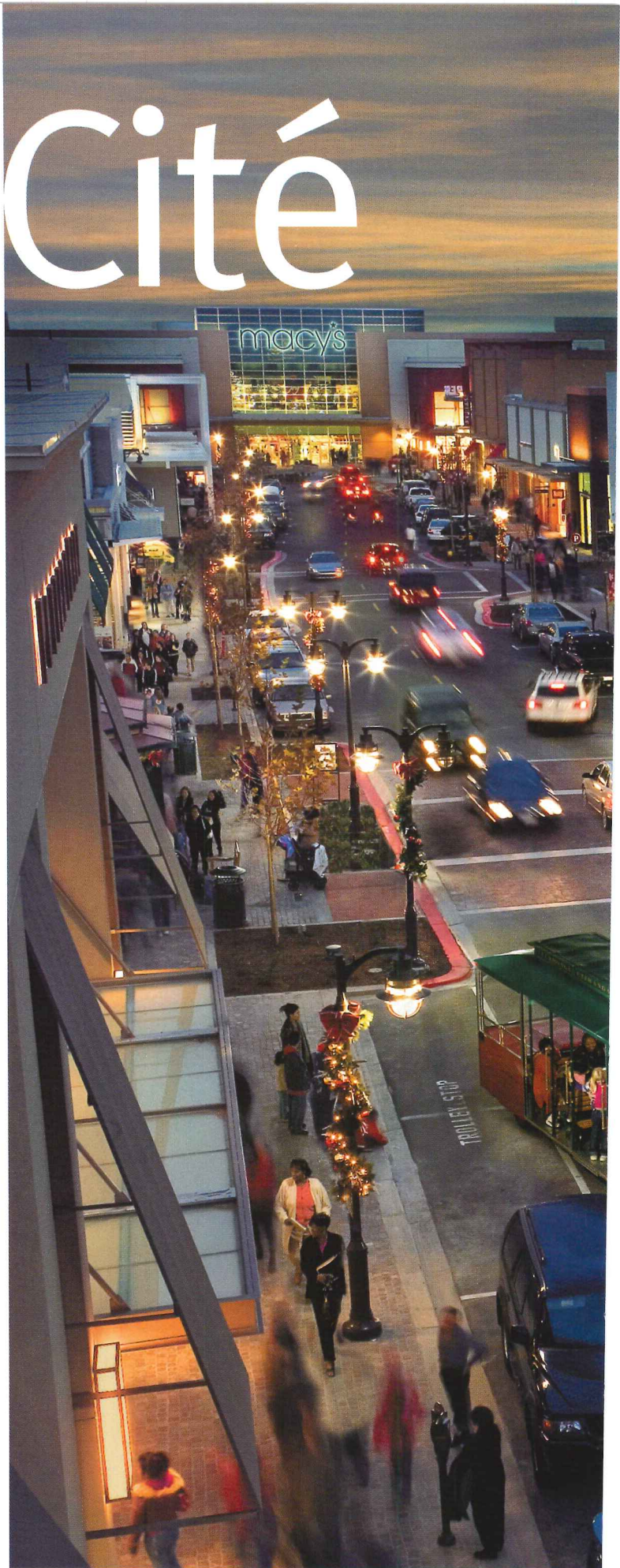
Back in the 1970s, there was a lot of talk about how shopping malls had become the new downtowns. Civic life, from which Americans had spent decades trying to escape, was blossoming anew, it was said, amid the plastic plants and the shoe stores.

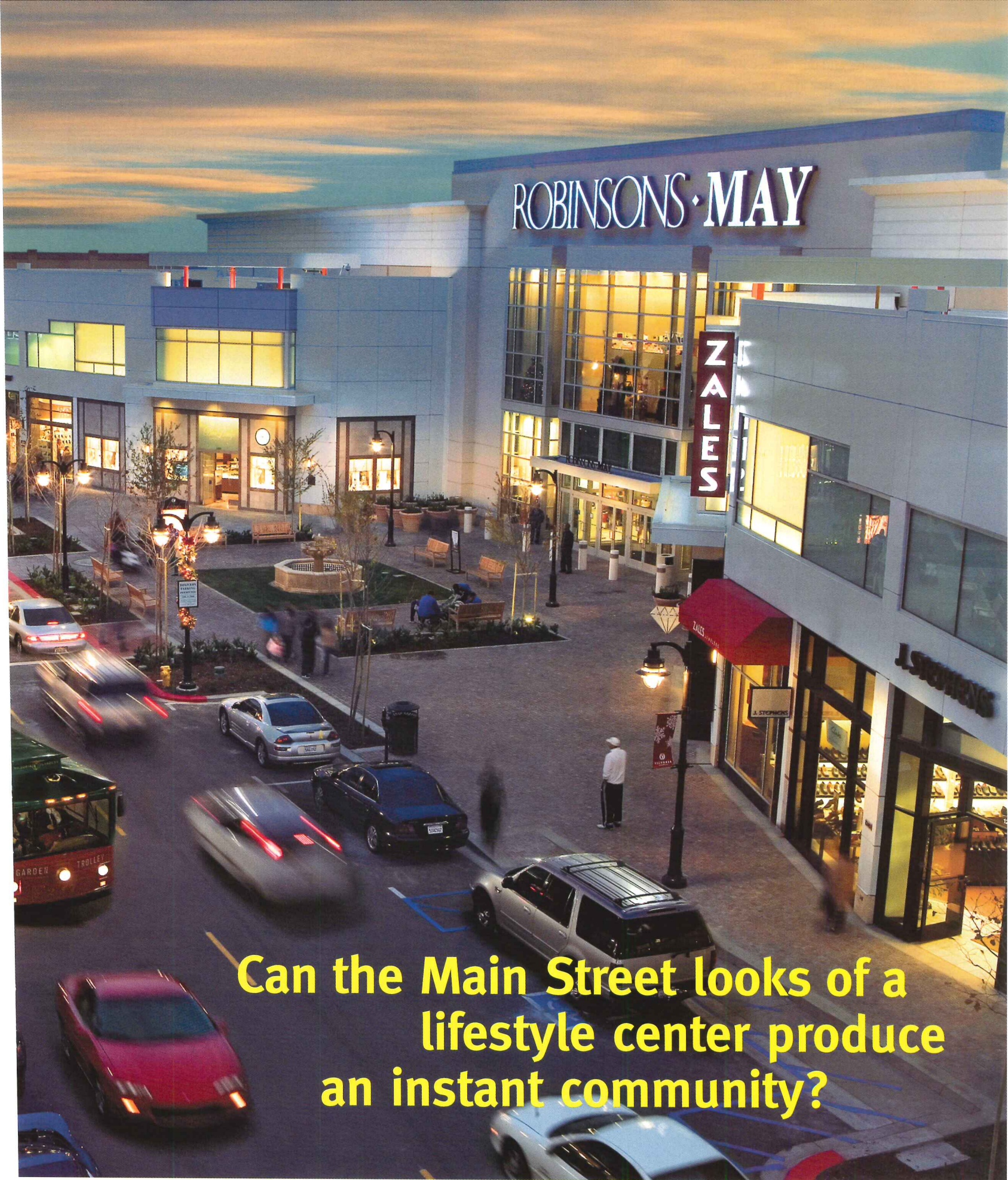
Even at the time, the argument was a bit ridiculous, as anyone who tried to distribute a pamphlet or advocate a position soon discovered; retail developers suppressed the substance of public life as relentlessly as they removed old chewing gum. As for aesthetics, anyone could see that putting a fountain in front of J.C. Penney didn't make it into the Piazza Navona.

Nowadays, many people are harboring some of the same idealistic—or nostalgic—hopes for the fastest-growing retail format of the moment, the lifestyle center. This is a sort of hybrid of a strip center and a mall, with Main Street overtones. It is outdoors, with varied, yet carefully regulated, building profiles, materials, and signage that are intended to evoke a sense of organic growth over time. Parking is abundant, but usually interlaced

Victoria Gardens opened in 2004, giving Rancho Cucamonga, Calif., an instant town center, replete with streets for cars and pedestrians. Designed by Altoon + Porter Architects, the 150-acre site encompasses 1.3 million square feet of shops, offices, and eventually town homes.

Thomas Hine is the author of I Want That! How We All Became Shoppers and The Rise and Fall of the American Teenager, among other books. He was architecture critic for The Philadelphia Inquirer from 1973 to 1996.





Can the Main Street looks of a lifestyle center produce an instant community?

with the stores and punctuated by landscaped walks. The projects have names such as “The Shoppes at Grand Prairie,” which is located near Peoria, Illinois, and touts its Georgian Revival architecture, or “Aspen Grove,” a center in Littleton, Colorado, that features an actual grove of aspens and whose buildings employ seemingly haphazard rooflines and patches of red wooden siding to resemble a cluster of barns.

Such developments usually lack department-store anchor tenants, but they give high visibility to nationally known chains—such as Williams-Sonoma, Restoration Hardware, Banana Republic, and Whole Foods—that offer distinctive products and experiences. They also include a wide range of restaurants, and sometimes nighttime draws such as multiplex cinemas and comedy clubs. Only a few years ago, lifestyle centers averaged 150,000 square feet, but those currently in development range from 500,000 to nearly 1 million square feet.

The building of new malls has come to a near standstill, while lifestyle centers have spread north from the sunbelt and are now operating, or in development, in every part of the country. Typically, they first appear in affluent, fast-growing exurban areas—one reason why per-square-foot sales at lifestyle centers average roughly 22 percent more than at malls, according to the International Council of Shopping Centers. With these numbers, it’s easy to see why new ones are springing up so rapidly, and developers are reconfiguring their existing malls according to this model.

The mall, the traditional shopping center form, was based on having two or more department stores at its extremities that would generate plenty of foot traffic for the smaller stores in between. Today, although department stores aren’t quite extinct, there are fewer of them, and those that remain

Crocker Park, a 1.75-million-square-foot development in Westlake, Ohio, contains 50 percent of housing paired equally with retail and office space. According to the master plan, designed by Bialosky + Partners Architects, apartments and condominium units occupy floors above ground-level shops—creating an active street life and increasing density in an otherwise centerless suburb of Cleveland.

The Camp features a rough-and-tumble aesthetic shared by the outdoors enthusiasts who shop at its 14 sports specialty stores. This 36,800-square-foot center occupies a brownfield site in Costa Mesa, Calif. Its architect, Bauer and Wiley, designed the project around a series of themed outdoor spaces with names such as Meadow and Arroyo, where customers can test products.



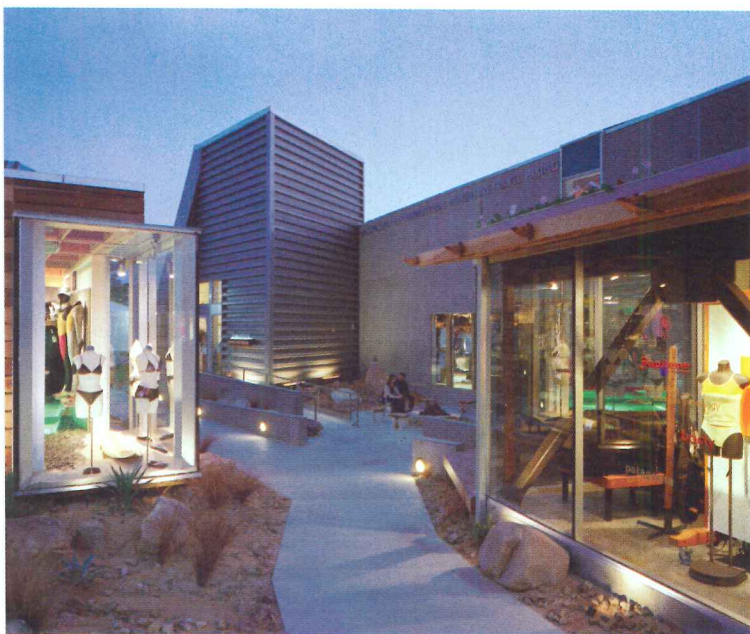
lack allure. Fortunately for retail developers, many other retailers are familiar and attractive to consumers, with brands that span catalogs and Web sites. An outdoor center gives these brands a visible presence, and it allows shoppers to park near their favorite stores, get what they want, and get out without enduring a forced march through Macy’s.

Efficiency seems to be a real advantage for shoppers. A recent study found they spend about \$84 an hour in lifestyle centers, compared to \$58 an hour at malls. They visit the same number of retailers, but they spend less time per visit: 56 minutes, as opposed to 76 minutes. The contemporary time-stressed consumer finds real value in being able to get what they want and get out quickly. This flies in the face of age-old retailing wisdom that says if people spend more time in a retail environment, they will spend more money. It also contradicts the rhetoric of lifestyle-center promoters who say that they are developing centers of community where people can gather day and night to enjoy unique, urbane places. The main attraction for shoppers, though, is that they can use these places like a real-world Internet that offers instant gratification.

There’s no reason, of course, why a shopping center can’t be both a pleasant place to linger and an efficient place to shop. Lifestyle centers offer consumers more freedom and flexibility than malls. It is up to those who design these properties, along with those who design the stores and merchandise them, to make places where people will want to spend more time.

Each lifestyle center claims to be unique, despite offering a familiar lineup of stores, so architects should benefit from greater opportunity to explore local traditions or express community values. Yet, aside from some very superficial

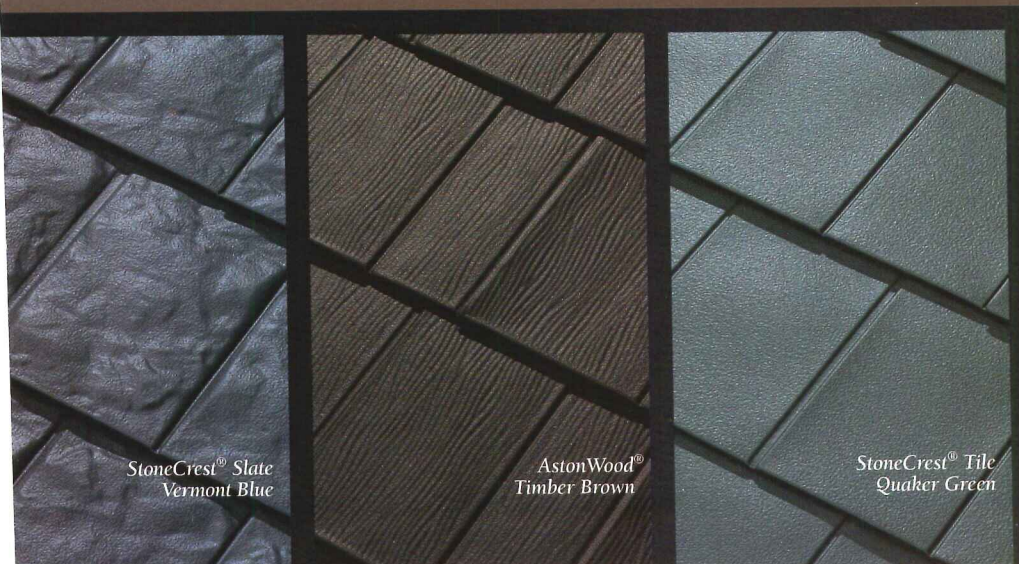
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Dallas experiments with instant urbanism at Victory

Victory is a new, \$3 billion community on the northern fringe of downtown Dallas, anchored by a sports arena and punctuated by high-rise condos, upscale hotels, boutique shops, and trendy eateries. This augustly named 75-acre project is neither a New Urbanist enclave nor a conventional mixed-use development, but an experiment in instant urbanism, Texas style.

"We wanted to create a place where people can live, work, and play, and never have to use an automobile," says Ross Perot, Jr., Victory's developer and son of the twangy, jug-eared presidential candidate of the 1990s. "Texans will never give up their cars completely, of course, but we've tried to create an attractive environment. It's going to be

on the high end. Even if you rent, you'll have to be a professional to live here."

Victory launched in 1999 with the American Airlines Center, a retro Art Deco home for the Dallas Mavericks and Dallas Stars designed by David Schwarz. This arena legitimized a gritty brownfield site and helped lure other developers into the project, to which the city contributed \$135 million in bond money. The initial scheme, by Palladium developers, proposed a series of low-rise buildings filled with traditional retail tenants. After Palladium bowed out of the project, Perot brought in Elkus/Manfredi, which proposed a new master plan that called for more height and more density—and not a big box among the 600,000 square feet of retailers and restaurants.



1. American Airlines Center
2. Victory Plaza
3. Cirque
4. W Dallas
5. Victory Tower
6. The Vista
7. The Terrace
8. The House

Perot wasted no time moving forward. Already complete is the W Dallas Victory and Residences, by HKS Architects, while Kohn Pedersen Fox's 43-story Victory Tower, containing a Mandarin Oriental hotel, is under construction. Rising nearby are a 28-story apartment tower called Cirque, by Gromatzky & Dupree, and two smaller apartment buildings. The House, a residential tower by Starck and Yoo, will break ground next year, bringing the total number of residential units to roughly 4,000.

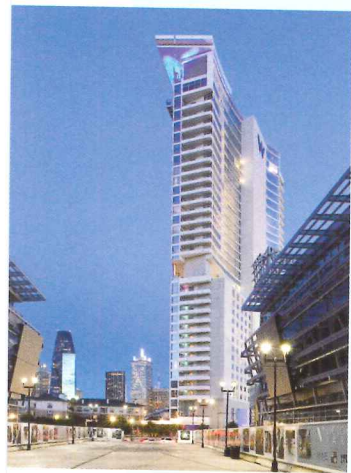
Instead of scattering Victory's program elements across the landscape like confetti, the usual Dallas way, planners grouped buildings into blocks that center around plazas or small parks—and they lined boulevards with ground-level shops and restaurants. These are basic urban concepts, yet so rare in Dallas as to seem exotic. The project's centerpiece is Victory Plaza, a large outdoor room in front of the American Airlines Center and framed by low, curving buildings covered with electronic billboards. Perot calls this space Victory's "Times Square," but its real lesson for

Dallas is that it's a public space created by buildings, not in spite of them.

Perot and his partners describe Victory as a new "city within a city," but some observers worry that the project might hurt fragile redevelopment efforts nearby in downtown Dallas. "There is obviously a lot going on," says University of North Texas economist Bernard Weinstein, "but how many destinations can downtown support? A lot of bets are being placed, yet it's still a thin market."

Indeed, what's most impressive about Victory is not its density, but that the majority of buildings are being constructed all at once, rather than trickling out over decades. Perhaps only someone with Perot's financial resources could take a chance that this Victory will not be Pyrrhic.

"Come back in 10 years and Dallas will be a whole new city," he predicts. "With the price of gas and increased congestion, it's going to develop an East Coast, European lifestyle, where people will walk back and forth to work and then go out to the country for the weekend. I can see it already." *David Dillon*



The W Dallas Victory and Residences (above left), by HKS, as seen from an outdoor plaza that developer Ross Perot, Jr., hopes will one day become Victory's "Times Square." **The House** (above), by Starck and Yoo, anchors a quieter square at Victory's southern end (left).

PHOTOGRAPHY: © HKS/BLAKE MARVIN (MIDDLE LEFT); RENDERINGS: COURTESY STARCK AND YOO (MIDDLE RIGHT); ELKUS MANFREDI (BOTTOM)

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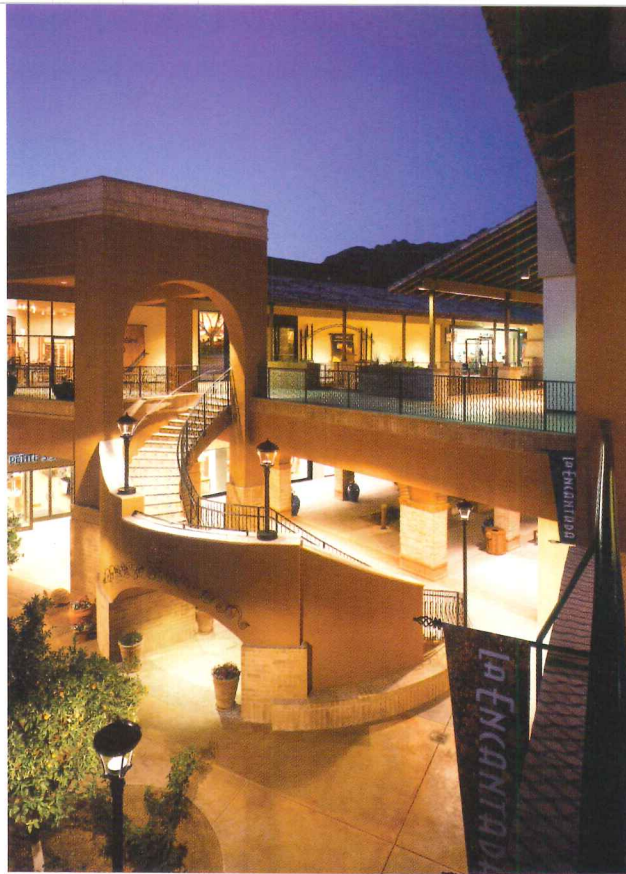
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regional differences in iconography—Wild West in Nevada, Mediterranean in Florida, or Ye Olde in Massachusetts—lifestyle centers nationwide resemble each other just as much as malls do. A big reason is that nearly all of these properties are molded by the same lifestyle: one that boasts above-average income, is footloose, and more influenced by magazines and television than by local factors.

There are a handful of exceptions. The Lab, located in a converted factory building in Costa Mesa, California, opened in 1993 and is often cited as a pioneering center. It remains atypical in courting young people as customers, and its edgy design features artfully broken pavement, weedy plants, and other markers of apparent abandonment that affirm its self-proclaimed ambition to be “the anti-mall.” This aesthetic is echoed across the street at The Camp, whose angular, metal-clad buildings and an irregular plan evoke the sense of adventure shared by the center’s sports-oriented retail tenants. But most lifestyle centers are aggressively genteel in their style, promising a shopping environment undisturbed by teenagers.

The traditional look of lifestyle centers means that they are far easier to plug into New Urbanist planning schemes than are inward-facing malls. Increasingly, developers are adding mixed-use components to these projects as later phases, or building apartments and offices above street-level retail shops. For instance, Crocker Park, in Westlake, Ohio, west of Cleveland, is currently operating as a 250,000-square-foot lifestyle center, with more than 60 stores and a

La Encantada, a lifestyle center in the foothills outside Tucson, contains only retailers. But as one of developer Macerich’s tony “Lumenati” properties—which supply shoppers with free bottled water as they stroll—its tenant roster includes upscale names such as Louis Vuitton and The Apple Store. Callison Architecture organized the 258,000-square-foot open-air property around a series of courtyards, while the architecture displays a Southwestern, Spanish-influenced vernacular.



dozen restaurants, all housed in buildings that share a watered-down Beaux-Arts aesthetic. But plans call for the development to grow to 1.7 million square feet, doubling its retail component and adding 250,000 square feet of offices and 900,000 square feet of houses and apartments. The premise, though largely untested, is that if you build the town center, then young professionals, boomer empty nesters, and others will arrive to create the town.

Santana Row, in San Jose, Calif., courts high-end retail tenants as well as upscale apartment dwellers and travelers. SB Architects designed a “neighborhood”—complete with streets, parks, civic plazas, shops, and apartment buildings—located above a 1,128-space parking garage. The project’s eponymous main street bisects the property, containing many of its retail stores, while residences, a boutique hotel, and parking lots line a grid of smaller side streets.

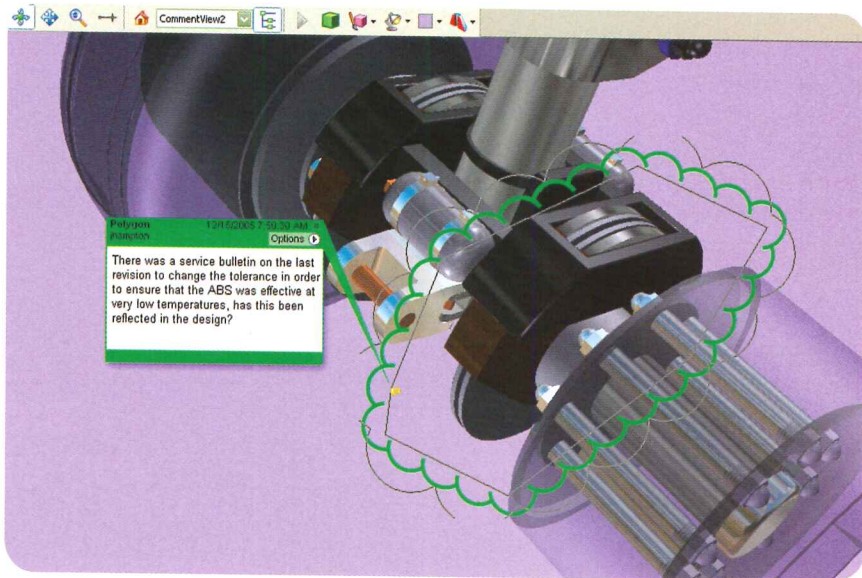
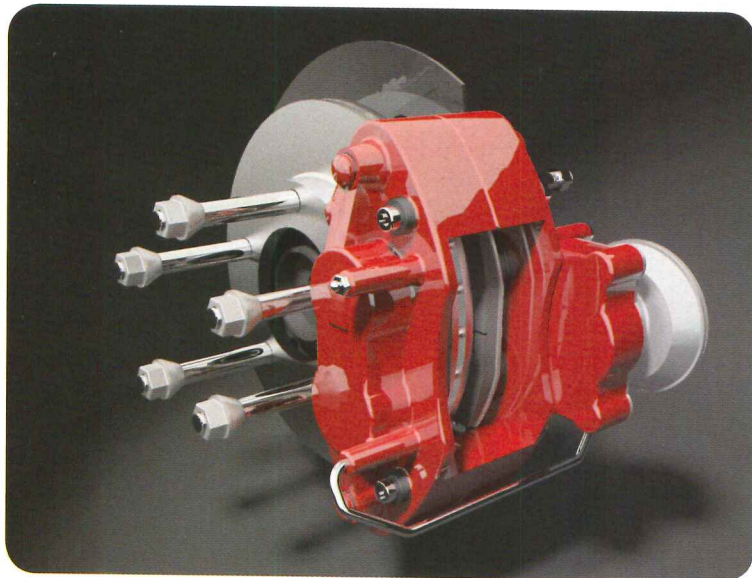
There’s no question that lifestyle centers look more like main streets, frontier towns, and village greens than traditional shopping malls did. Architects are becoming increasingly adept at making three or four big boxes look like several dozen smaller ones. And while malls often sought to replace the old urban downtown, lifestyle centers typically seek a cozy, small-town feel. This is an easier kind of urbanism to achieve and one that may be needed in many exurban areas that grew rapidly without any centers of civic or commercial life. Still, as lifestyle centers become ubiquitous, there will be many cases where they threaten real examples of the hometown American

urbanism they strive so hard to emulate.

For the moment, the lifestyle center is not necessarily a problem or a solution. It is little more than a winning retail development formula—one that solves problems for developers and tenants, and saves time for consumers. As long as its success is judged solely on sales, though, such a development can never be a real place, let alone a town center. Nobody can spend \$84 an hour forever. ■

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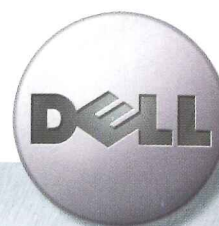
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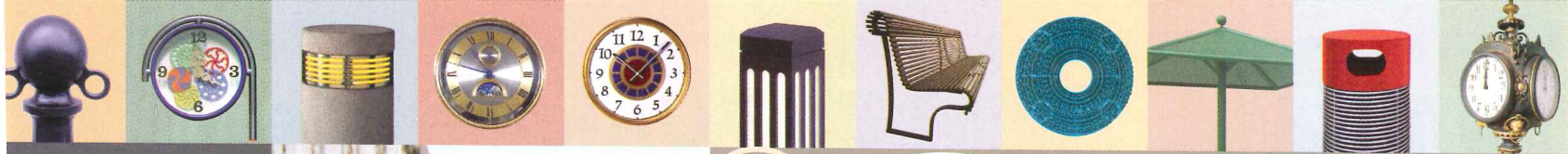
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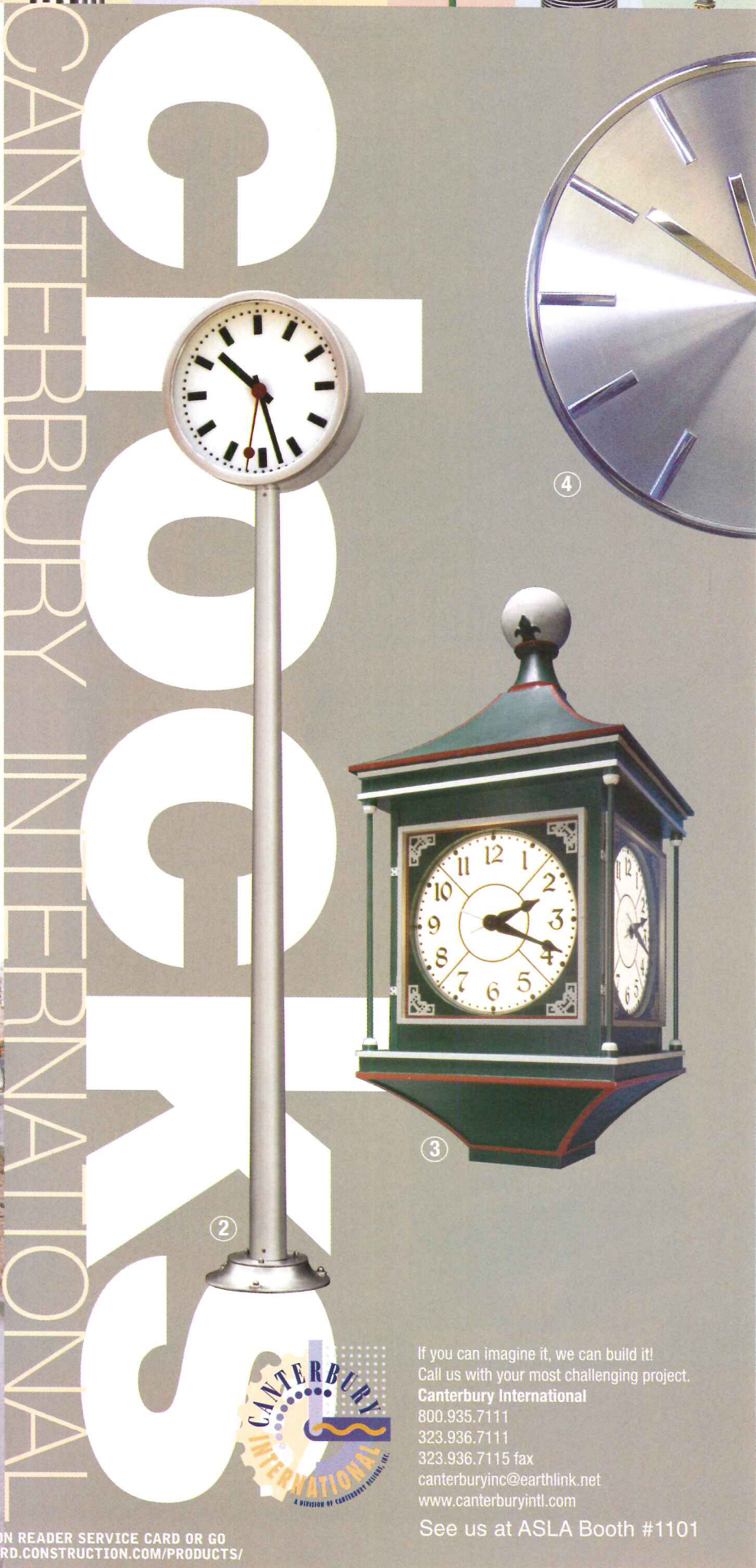
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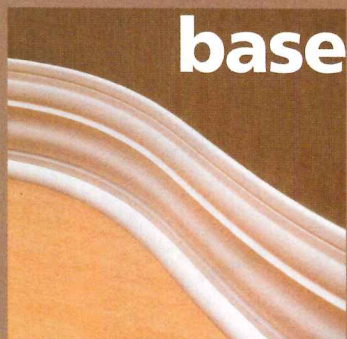
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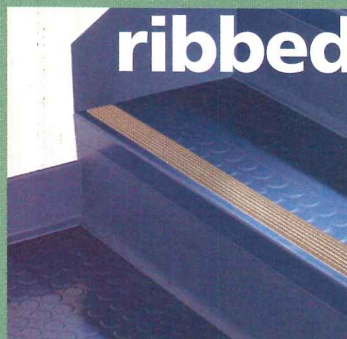
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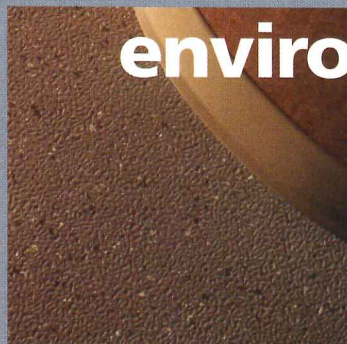
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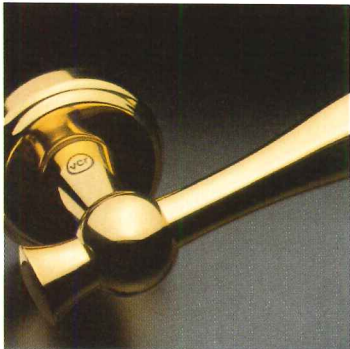
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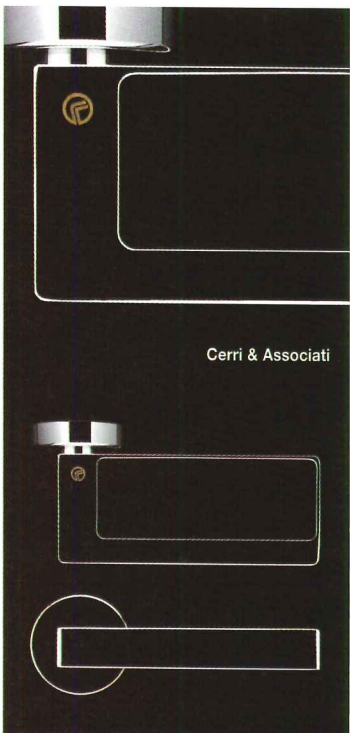
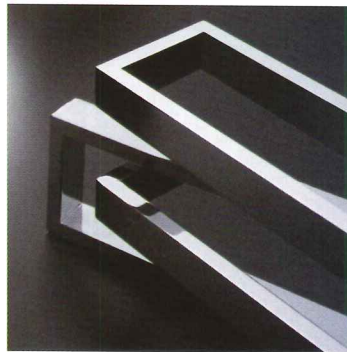


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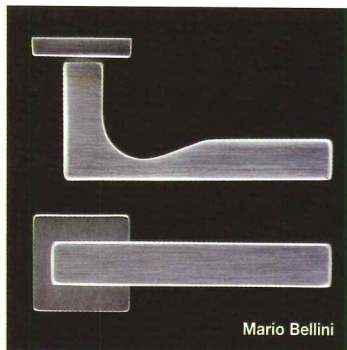
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The All-American Issue

The North American continent presents a crossroads of diverse people, places, and architecture

At one point in our collective lives, the term *All-American* meant specific, recognizable things: a saturated, mythic version of America, circa 1952, featuring Virginia Mayo (and football boyfriend, Ronald Reagan), working her way through college, set against the Georgian backdrop of a New England fallscape. Today, when the drive-in theater has closed and Apple is on the verge of announcing iTV, America refers to more than the United States. What meaning, in 21st-century terms, can we derive from the term *All-American*?

Clearly, the North American continent has become more of a cultural crossroads than an insular village center. As much as we might long for the prescribed village that formed the core of small-town life, the concept of a crossroads—digital, physical, cultural—might more aptly apply today to our contemporary civilization. Sophisticated architectural projects regularly engage designers from outside our borders, as did the expansion of the Morgan Library in Manhattan, which paired the European-based Renzo Piano Workshop with the New York firm Beyer Blinder Belle.

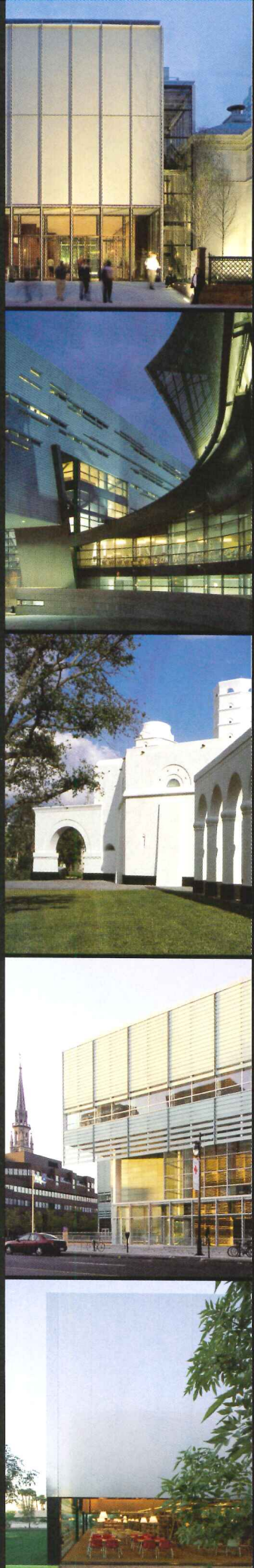
As strongly as in the 1950s, we still revere higher education. The University of Cincinnati features no stylistic hegemony, however, and its student center designed by Morphosis falls into no discernible style, serving instead as a nexus, anchoring the master plan of this ambitious urban campus. Situated adjacent to both stadium and student housing, the center thereby expands campus life for the university's polyglot, international student body. By contrast, the Luxembourg-born architect Leon Krier, with associated firms, expanded the University of Miami's stucco vernacular for a broader interpretation of the familiar South Florida language. The stability and continuity of older traditions thus evolves through architectural language.

Two libraries make radically different statements on continental American extremes: in Montreal, Patkau Architects led a team that created soaring interior space with simple concrete and wood, defining the rudiments of a Canadian (and, by extrapolation, larger North American) architecture. By contrast, the decidedly modest library and community center in Phoenix by Gould Evans and Wendell Burnette, set in a largely Hispanic, lower-income quadrant of Phoenix, declares that the continent remains big enough to accommodate all its citizens, whatever their origin or current status.

What does *All-American* mean today? Read the whole issue and you will encounter Hispanic and Canadian, plutocrats, and college students. We're all these things, and more: a continent at the crossroads. ■

1. Morgan Library and Museum
2. University of Cincinnati Campus Recreation Center
3. Jorge M. Perez Architecture Center
4. Grande Bibliothèque
5. Palo Verde Branch Library and Maryvale Community Center

PHOTOGRAPHY: © MICHEL DENANCÉ (1); ROLAND HALBE (2); STEVEN BROOKE STUDIOS (3); JAMES DOW (4); BILL TIMMERMAN (5)



The main entrance of the library and museum now opens onto Madison Avenue, where a steel-paneled pavilion is flanked by glazed stair towers.



Renzo Piano alters the character of New York's **MORGAN LIBRARY AND MUSEUM** with a new entrance and a skylit court

By Victoria Newhouse

Renzo Piano has become the architect of choice for art museums today. Since the acclaimed Centre Georges Pompidou in Paris (with Richard Rogers, 1977), he has completed 10 museum projects and has five more in progress. His exhibition spaces have been characterized as serene, never competing with the art in them, and his ability to control daylight has become near-legendary. Now the idiosyncrasies of museum expansion make it more difficult for the architect to live up to this standard.

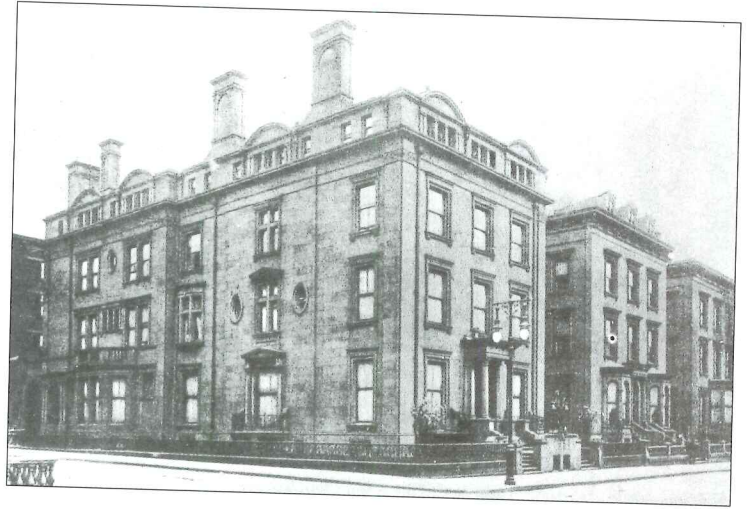
The recently opened Morgan Library and Museum in New York, with Beyer Blinder Belle as executive architect, and shortly before it the High Museum of Art in Atlanta, with Lord, Aeck & Sargent [RECORD, November 2005, page 130], are the first two major museum expansions by the Renzo Piano Building Workshop. The two projects demonstrate how varied the intentions for such undertakings can be, and consequently how different the results.

The Morgan trustees wanted the same kind of popular facilities currently favored by large, public museums, which in its case ended up occupying 75,000 square feet and costing \$106 million. In order to add a 280-seat auditorium, new storage vaults, more galleries, a new reading room, an enlarged store, a café, and a fancy restaurant, far too much was crammed into this tight, 42,314-square-foot site. Considering the trustees' reluctance to build a tower, Piano tackled the problem by excavating 65 feet below ground for the auditorium and new state-of-the-art storage. Above ground, Beyer Blinder Belle handled restorations and renovations; Piano executed the additions with his usual elegance, but in the process turned this historic house museum into a conventional, purpose-built museum.

In Atlanta, Piano responded to the High's request for an additional 177,000 square feet of galleries for contemporary art next to Richard Meier's 1983 Modernist building by producing a handsome new cultural campus at a cost of \$110 million. Piano's two pavilions for

Victoria Newhouse is an architectural historian whose revised and expanded 1998 book Towards a New Museum will be published by Monacelli Press this October.

Of the three brownstones on Madison Avenue J.P. Morgan acquired between 1880 and 1904 (right), only one, where his son J.P., Jr., lived, is still standing at the corner of 37th Street. By 1993, Voorsanger & Mills's garden court (below right) linked the brownstone to the annex, designed by Benjamin Wistar Morris in 1928.



Project: Morgan Library and Museum, New York City

Design architect: Renzo Piano Building Workshop—Renzo Piano, Giorgio Bianchi, Thorsten Sahlmann, Kendall Doerr, Yves Pages, Mario Reale, Alex Knapp, design team

Executive architect: Beyer Blinder Belle Architects—Richard Southwick, partner in charge; Michael Wetstone, project manager; Rob Tse, project architect (new building); Frank Prial, project architect (historic buildings); Yuri Suzuki, Joe Gall, Meghan Lake

Engineers: Robert Silman Associates (structural); Cosentini Associates (m/e/p)

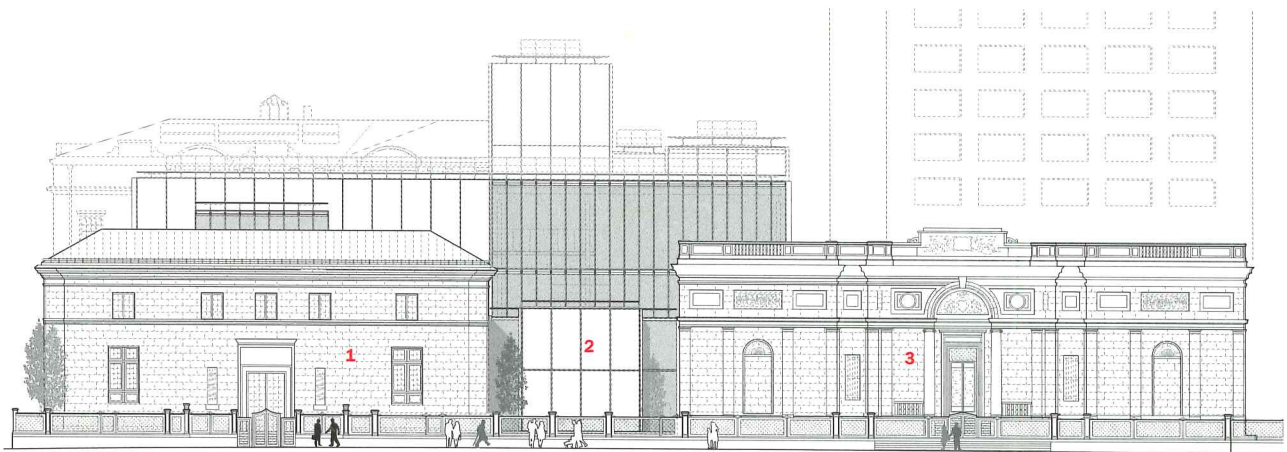
Consultants: H.M. White Site Architects (landscape); Ove Arup and Partners (lighting); Kahle Acoustics and Harvey Marshall Berling Associates (acoustical); Front, Inc. (exterior envelope); Jablonski

Berkowitz Conservation (conservator); Imbrey Culbert (exhibit design); Pentagram (signage and graphics)

Project director: Paratus Group
Construction manager: F.J. Sciame Construction Company

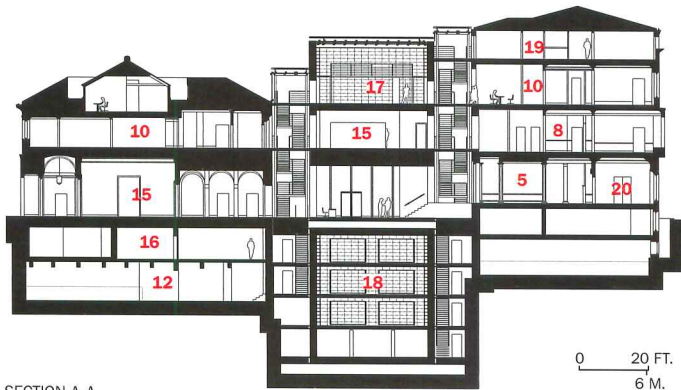
PHOTOGRAPHY: © MICHEL DENANCÉ, EXCEPT COURTESY MORGAN LIBRARY AND MUSEUM (THIS PAGE)



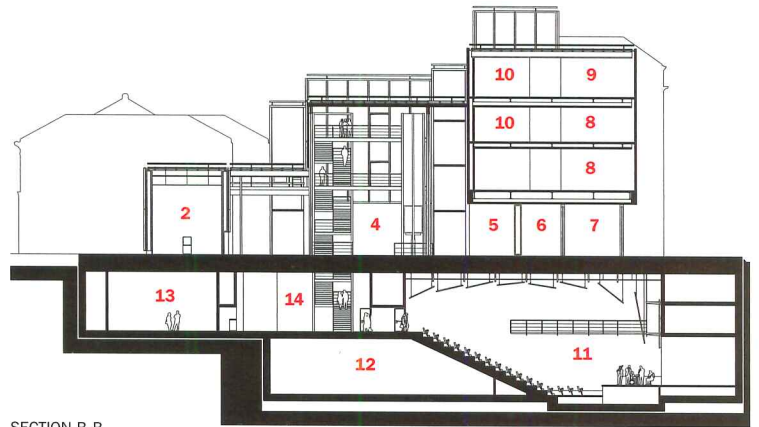


SOUTH ELEVATION

0 20 FT.
6 M.



SECTION A-A

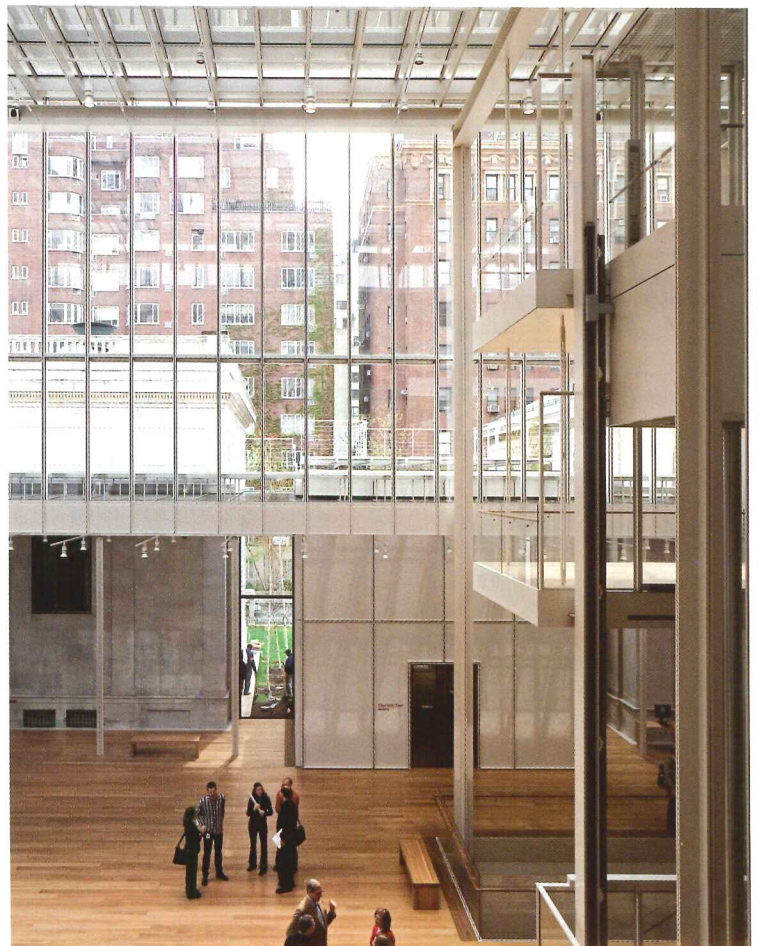


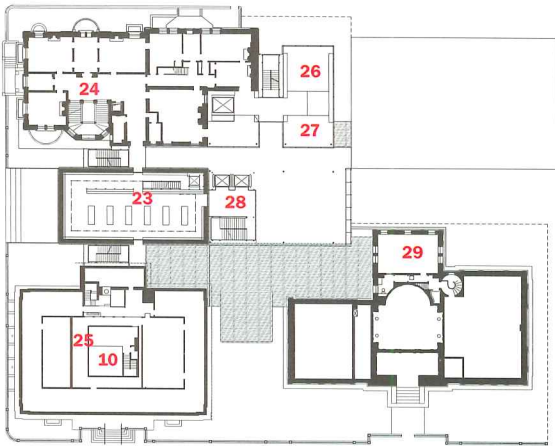
SECTION B-B

- | | | |
|----------------------------------|----------------------|--------------------|
| 1. Annex, 1928 | 7. Loading dock | 14. Lobby/gallery |
| 2. The exhibition "cube" | 8. Administration | 15. Exhibition |
| 3. McKim, Mead and White library | 9. Bindery | 16. Stacks |
| 4. Central court | 10. Offices | 17. Reading room |
| 5. Café | 11. Performance hall | 18. Compact vaults |
| 6. Staff entrance | 12. Mechanical | 19. Conservation |
| | 13. Public programs | 20. Retail |

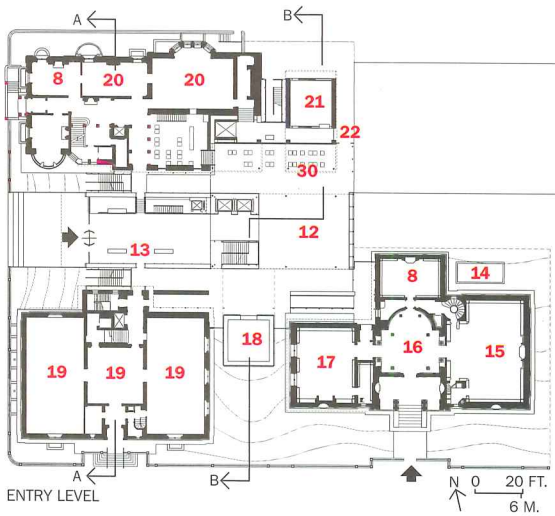
Piano designed a cubic exhibition space (at center of top elevation) to link the original library, by Charles McKim of McKim, Mead and White (right in elevation) to the 1928 annex, by Benjamin Wistar Morris (left in elevation). The use of

high-transparency low-iron glass in the center court (right and opposite) reveals glimpses of the historic structures. To keep from adding too much height to the complex, Piano placed the performance hall and storage 65 feet below grade (sections above).

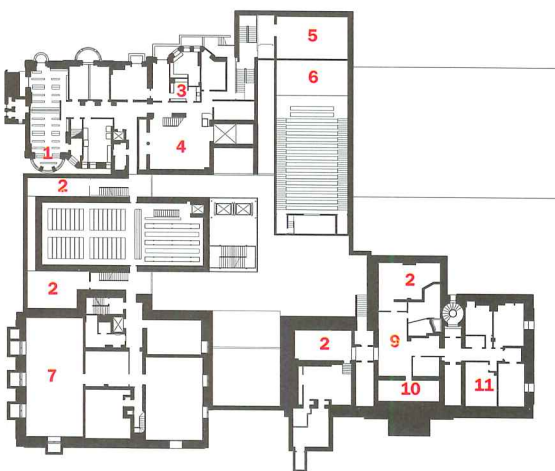




LEVEL THREE



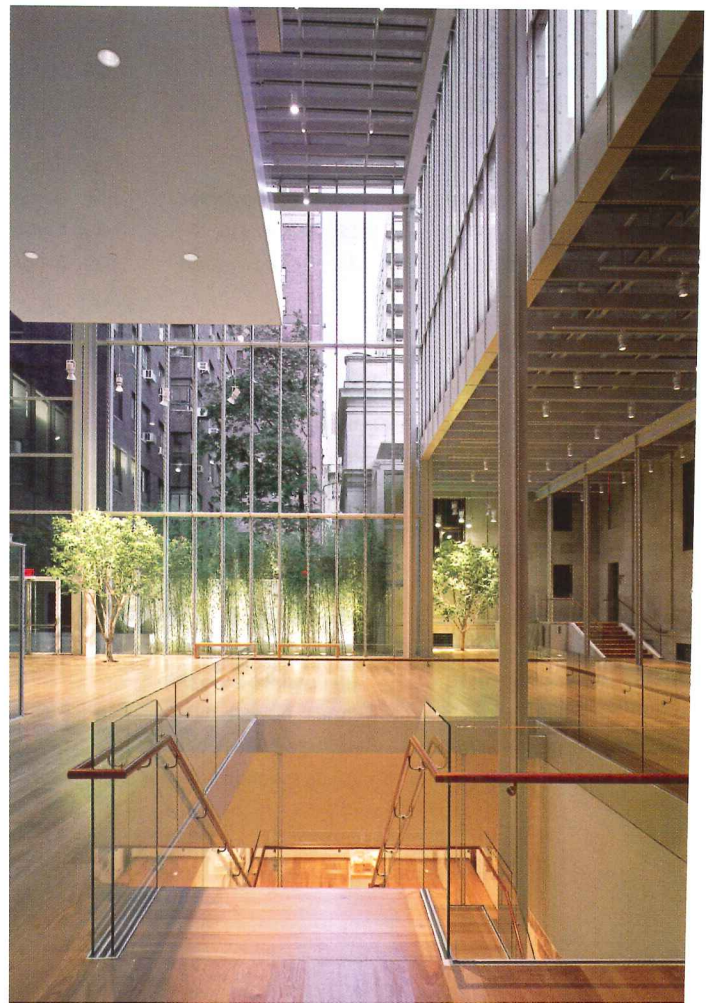
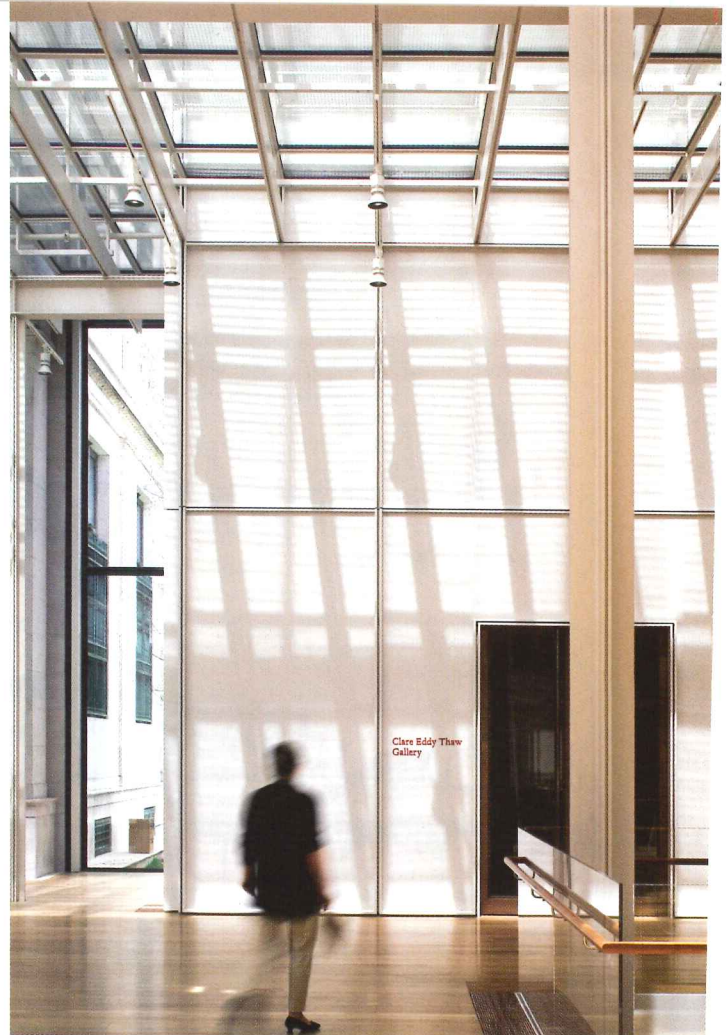
ENTRY LEVEL



BASEMENT LEVEL ONE

- | | | |
|-------------------------|-------------------------|---------------------|
| 1. Staff lockers | 11. Photography | 21. Loading dock |
| 2. Mechanical | 12. Central court | 22. Staff entrance |
| 3. Security | 13. Information/tickets | 23. Reading room |
| 4. Food service | 14. Emergency generator | 24. Cataloging |
| 5. Backstage | 15. McKim library | 25. Publications |
| 6. Performance hall | 16. McKim rotunda | 26. Registrar |
| 7. Reference stacks | 17. J.P. Morgan's study | 27. Computer office |
| 8. Public programs | 18. Exhibition "cube" | 28. Balcony |
| 9. Caterers/swing space | 19. Renovated gallery | 29. Retail offices |
| 10. Storage | 20. Shop | 30. Café |

Piano created a cubic gallery for an exhibition space to be entered from the central court (right). The court, like an Italian piazza, links the historic structures (below right), restored and renovated by Beyer Blinder Belle.





A new reading room now occupies the top (third) floor of the entrance pavilion, where Piano's well-known top lighting softly emanates through the wood-paneled space. The former reading room in the 1928 annex was turned into a gallery.

art and one for administration maintained, even strengthened, the High's identity.

In both cities, Piano linked new glass-and-steel structures with existing architecture, in each case reoriented around a central piazza. For both he used similarly scaled, rectangular, off-white metal panels for cladding. The material is an ideal complement to Meier's square, baked-enamel panels. It makes a less perfect marriage with the masonry buildings in New York.

The Morgan, located in a residential area near Midtown Manhattan, presented Piano with the challenge of accommodating three landmark buildings: the marble 1906 library designed for the banker J.P. Morgan by Charles McKim of McKim, Mead and White, which faces 36th Street; the more subdued 1928 marble annex modeled after it by Benjamin Wistar Morris on the corner of 36th Street and Madison Avenue; and the brownstone mansion on Madison Avenue and 37th Street built in 1852 by Isaac N. Phelps Stokes of Phelps Dodge & Co., where Morgan's son and his family later lived. Piano joined the three by means of a 52-foot-high enclosed central atrium, inserted a 20-foot-high cube between the two 20th-century buildings, added a four-story office building on 37th Street with a loading dock at its base, plus the entrance pavilion with exhibition space on the second floor and a new reading room on the top.

The Morgan's directors gave Piano permission to eliminate all post-1928 additions to the complex, notably those completed by

Voorsanger & Mills in 1991, which joined the old library buildings to the brownstone with a small garden court topped by a wave-shaped glass vault [RECORD, January 1992, page 98]. Although this court lacked the drama of Piano's atrium, it had considerable charm and the merit of retaining the museum's original entry on 36th Street, through the annex.

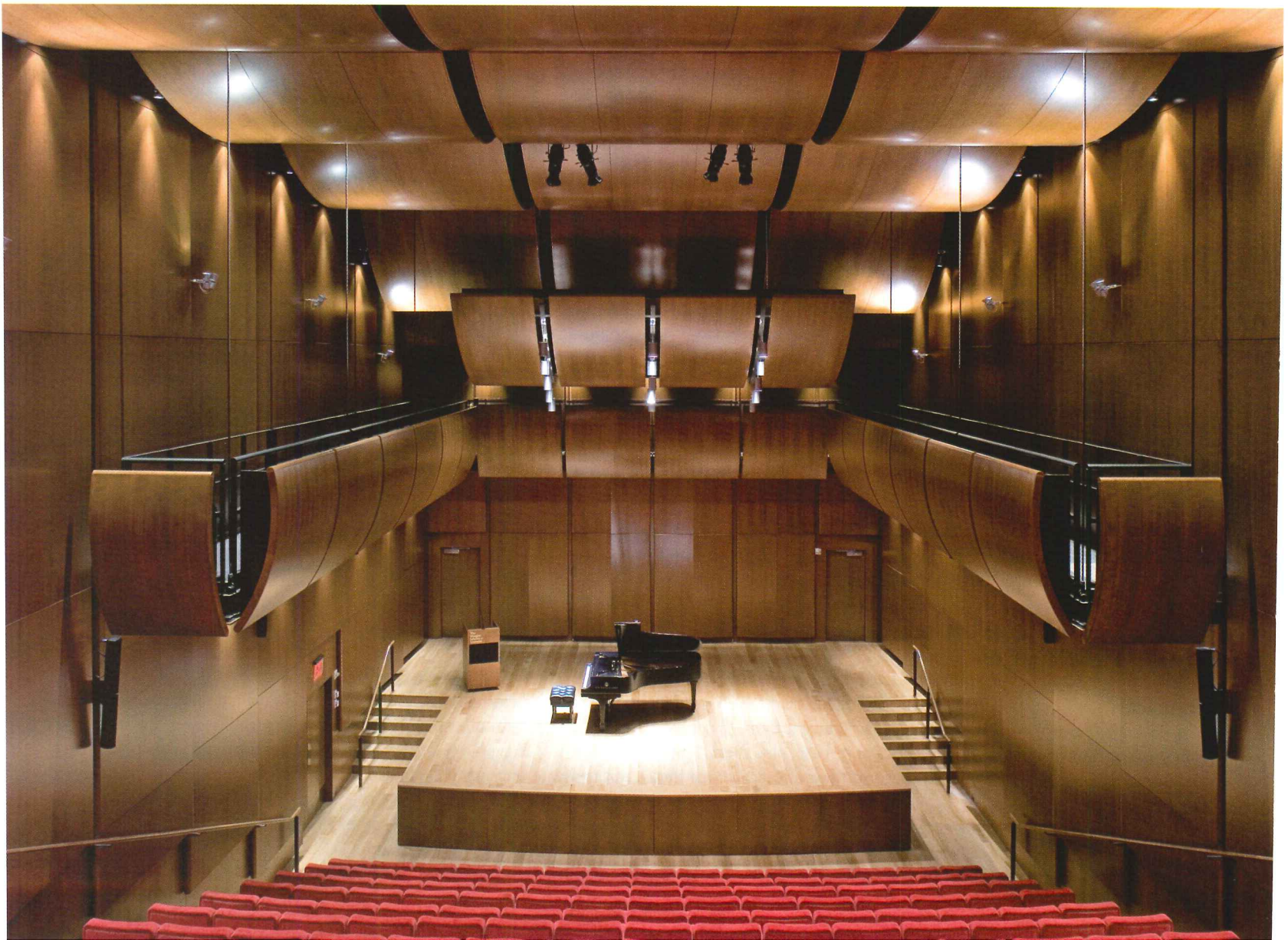
Piano's atrium holds the new complex together. Because most of the Morgan's possessions are sensitive to ultraviolet rays, daylight is limited to just one gallery: the small, top-lit cube. The library's collections of rare books, manuscripts, and drawings are shown in rooms suffused with subdued, electrically generated light. About all that can be said of them is

IT IS NOT A GALLERY, BUT THE LOFTY CENTRAL GATHERING PLACE THAT DEMONSTRATES PIANO'S SKILL WITH DAYLIGHT.

that they are well-proportioned and fulfill their function competently. More interesting is the new reading room with Piano's signature museum-type top lighting.

So it is not a gallery, but rather the lofty central gathering place that gives the best demonstration of Piano's skill in handling daylight and creating a memorable space. As stunning as it is, however, the atrium belongs to the typology of the Modernist museum and is alien to this once-private enclave. It is, in fact, just a smaller, although admittedly more accomplished, version of the endless series of mega-entrance lobbies, all inimical to art, that began in 1978 with I.M. Pei's East Wing of the National Gallery in Washington, D.C., and was repeated by Pei at the

The 52-foot-high central court makes the most of glass—including elevators, stair risers, and skylights (right)—in order to create a light-filled space with glimpses of the surrounding neighborhood, such as the 1950 apartment house by Emery Roth next door. The performance hall (below), lined in curved baffles of cherry wood, was created by blasting 65 feet into bedrock.



In the 20-foot-cube gallery between the old McKim library and the 1928 annex, Piano designed a top-lit gallery (right) for metalwork sculpture and enamels. It is characterized by the soft luminosity that distinguishes Piano's previous museums.



A new gallery for rare manuscripts is located on the entrance pavilion's second floor (above left). Architects Imbrey Culbert were in charge of exhibition design.

Louvre in Paris (1989), by Herzog & de Meuron at the Tate Modern in London [RECORD, June 2000, page 103], by Tadao Ando at the Modern Art Museum of Fort Worth [RECORD, March 2003, page 98], and by Yoshio Taniguchi at the Museum of Modern Art in New York [RECORD, January 2004, page 94]. Each one of these designs sets a corporate rather than a cultural tone and contributes to what threatens to become a homogenization of the art experience.

In the past, visitors to the Morgan entered through the main entrance of the 1928 annex on 36th Street and into its marble hall, immediately immersing visitors in Morgan's own special world and his legacy. Even the slight awkwardness of the entryway and of circulation generally within the complex made people feel they had privileged access to a highly individual inner sanctum of the legendary tycoon.

Now you enter from Madison Avenue, through a low-ceilinged entrance sheathed in warm cherry-wood and then into a cool, glass-and-steel box, one side of which is densely packed with the café's tables and chairs alongside two Portmanesque glass elevators. Thus, instead of the mysterious charm of a historic interior, museumgoers are greeted by the smell of food and the sight of a lot of people eating. Access to Mr. Morgan's study and library and to the galleries seems like an afterthought, almost hidden in two corners. Regrettably, the Morgan has succumbed to the current trend of allowing crowd-pleasing attractions like food facilities to upstage exhibition spaces, exemplified recently by the new wing at the Reina Sofia Museum in Madrid by Ateliers Jean Nouvel [RECORD, July 2006, page 84].



At the Morgan, scale is not the issue: Piano has proportioned the steel cladding panels and glass mullions of the inserts to discreetly integrate them with the historic architecture. And the three older buildings still read as separate houses thanks to the glazed open spaces between them and their new linkages. By substituting glass risers for the usual opaque ones on security stairs that would otherwise have blocked views into and out of the atrium, Piano preserves the transparency for which he is famous.

This transparency was especially appealing to the Morgan's board members who wanted to make the institution more welcoming. Charles E. Pierce, Jr., director since 1987, says that visitors were formerly "kept at arms' length." Now he feels that the new openness of the complex "makes it part of the life of the city." But in its effacing of the Morgan's historic identity by greeting the public in the manner of innumerable conventional museums, something of New York's institutional diversity has been lost. Hopefully there will be no similar loss of identity when Piano adds a freestanding wing (due about 2011) to the Isabella Stewart Gardner Museum in Boston. ■

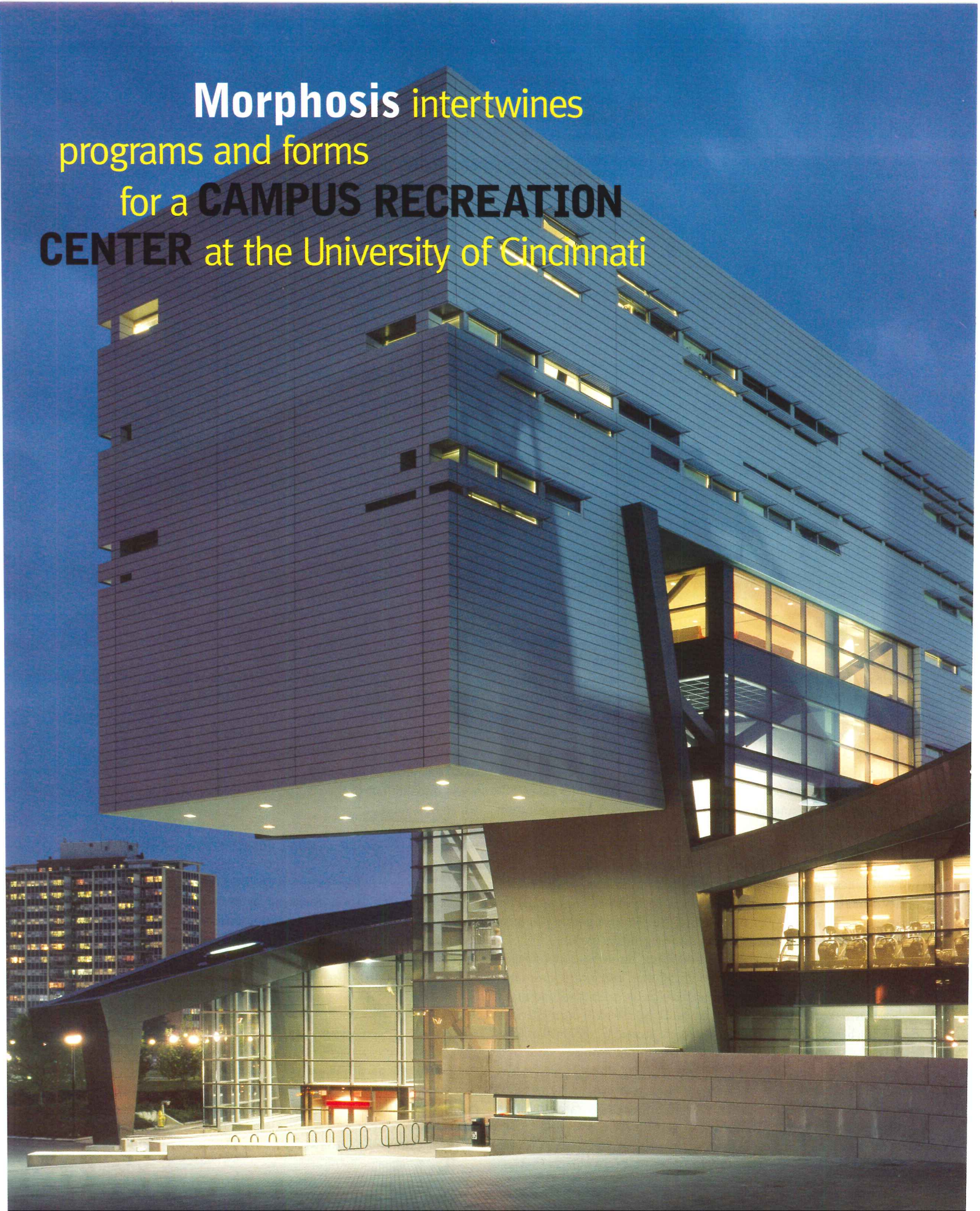
Sources

Steel cladding, curtain wall, skylight system: Josef Gartner & Co.
Fire-rated glass partitions, doors: Technical Glass Products
Demountable interior partitions: Tecno
Paints and stains: Benjamin Moore

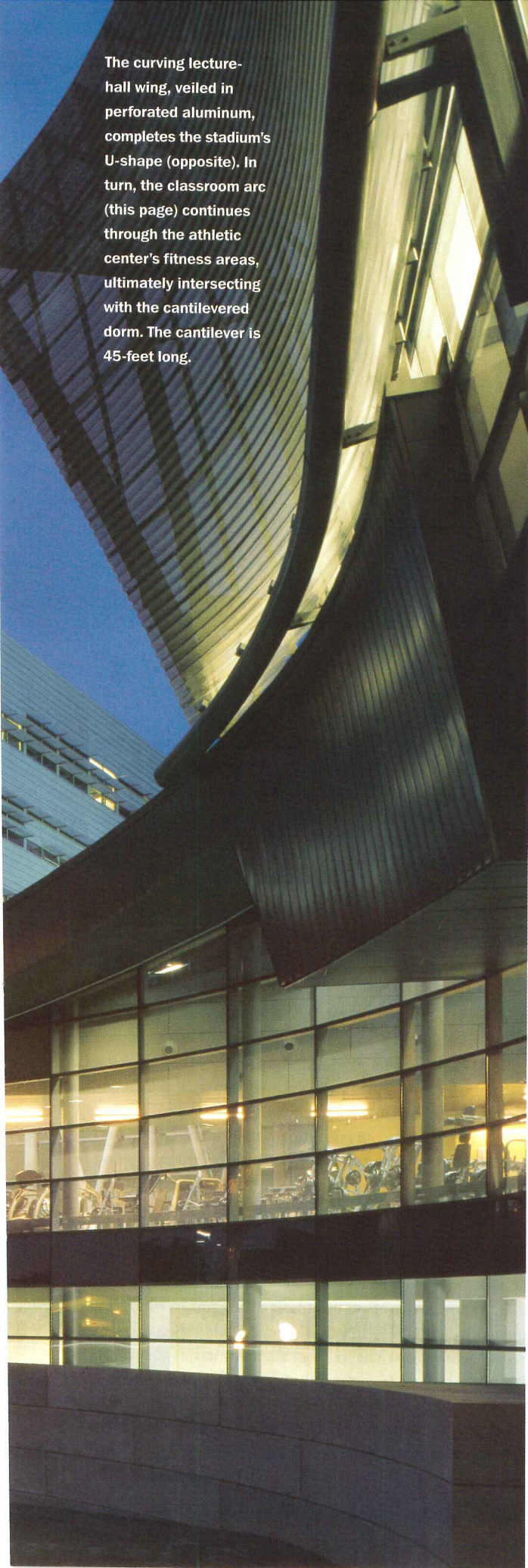
Wood doors, cabinet and custom woodwork: Bauerschmidt & Sons
Wood flooring: Haywood Berk
Lighting controls: Lutron

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

Morphosis intertwines
programs and forms
for a **CAMPUS RECREATION
CENTER** at the University of Cincinnati



The curving lecture-hall wing, veiled in perforated aluminum, completes the stadium's U-shape (opposite). In turn, the classroom arc (this page) continues through the athletic center's fitness areas, ultimately intersecting with the cantilevered dorm. The cantilever is 45-feet long.



By Sarah Amelar

With the muscular body of an athletics compound, the slit-eyed head of a dorm, the diaphanous wings of a swarm of lecture halls, and the robust belly of a food court, the University of Cincinnati's new Campus Recreation Center is a chimera of a building. And if that mix—with juxtapositions as unexpected as a Surrealist's "exquisite corpse"—were not complex enough, the 350,000-square-foot facility morphs slightly wherever its contrasting "body parts" touch one another or meet such adjacencies as, say, an existing football stadium wedged up against them.

"I've always needed contingencies to respond to," says architect Thom Mayne, who with his firm, Morphosis, designed the center. "Even in my earliest work," he adds, "I've been interested in attacking homogeneity." And here, more than in any of the studio's previous projects, the immediate surroundings—primed for the diversity, movement, and encroachments of city life—had an urban potential that Mayne not only helped define, but also deliberately intensified.

Six years ago, when Morphosis, along with the local firm of KZF Design, took on the commission, the site's urban character had not fully

Project: University of Cincinnati
Campus Recreation Center

Design architect: Morphosis—
Thom Mayne, FAIA, principal; Kim
Groves, project manager; Kristina
Loock, project architect;
Ben Damron, project designer;

Henriette Bier, Ted Kane, Silvia Kuhle,
Eric Nulman, Martin Summers,
Brandon Welling, project team

Executive architect: KZF Design—
Donald Cornett, AIA, principal;
William Wilson III, AIA, project man-
ager; Dale Beeler, project architect



Morphosis intentionally brought its structure close to Moore Ruble Yudell's Steger Center, a new sliver of a building, in order to pinch the street tightly, funnel pedestrian flow, and concentrate the urban density (left). Hargreaves's rhythmic lines of trees lead up to the aluminum-clad dormitory block (below). The housing bar's great folded plane—"augmented ground," as Mayne calls it—visually and conceptually extends the landscape's contours.



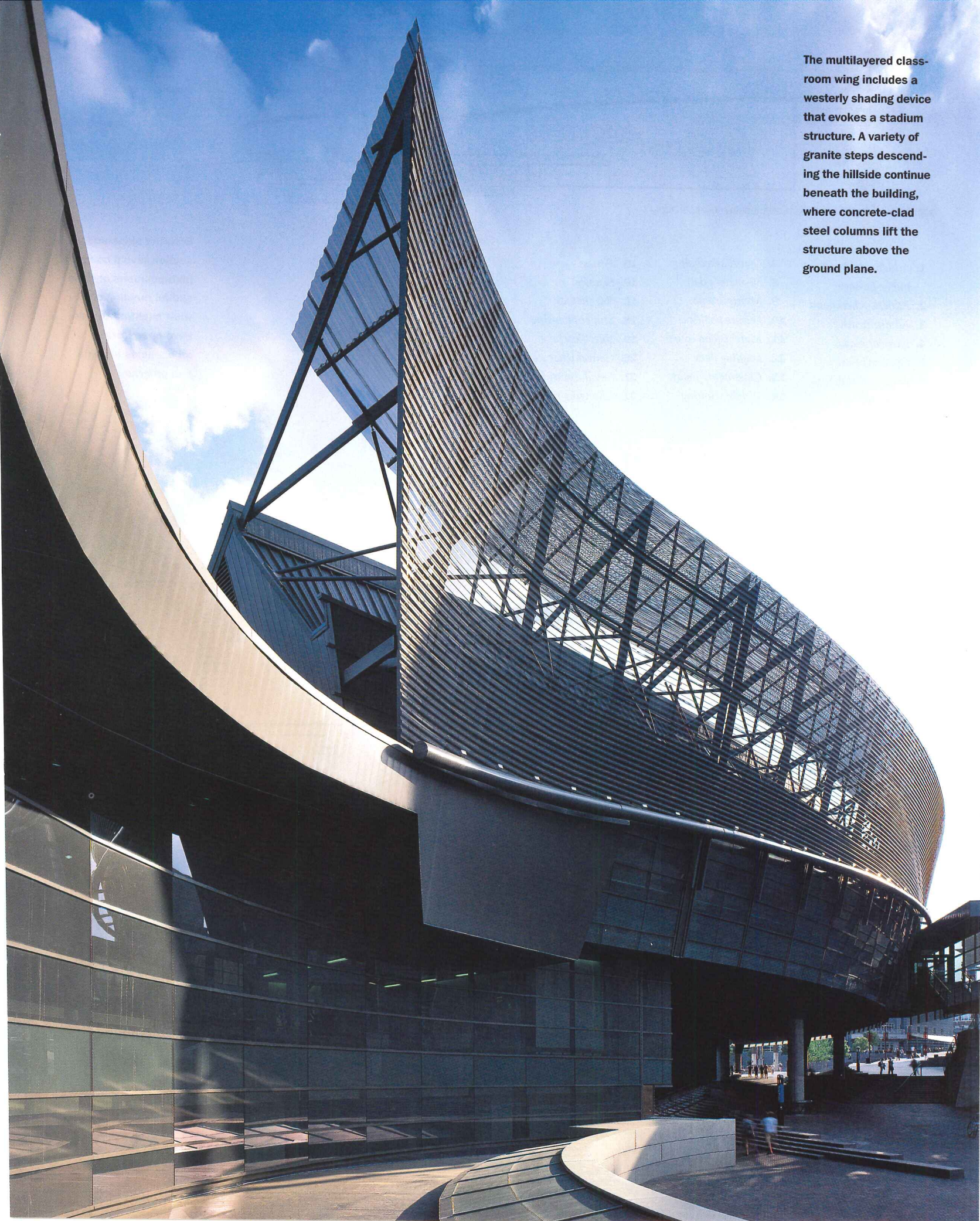
evolved, and the brief called for just an athletic center, without any classrooms, dormitory, or dining hall. But even then, this project was poised as a key piece in the 15-year campaign to remake the 200-acre campus and turn it from a lackluster commuter domain, overrun with parking lots, into a vibrant, architecturally distinguished, 24/7 student venue. (Today, the school, dating from 1819, has an enrollment of approximately 35,000.)

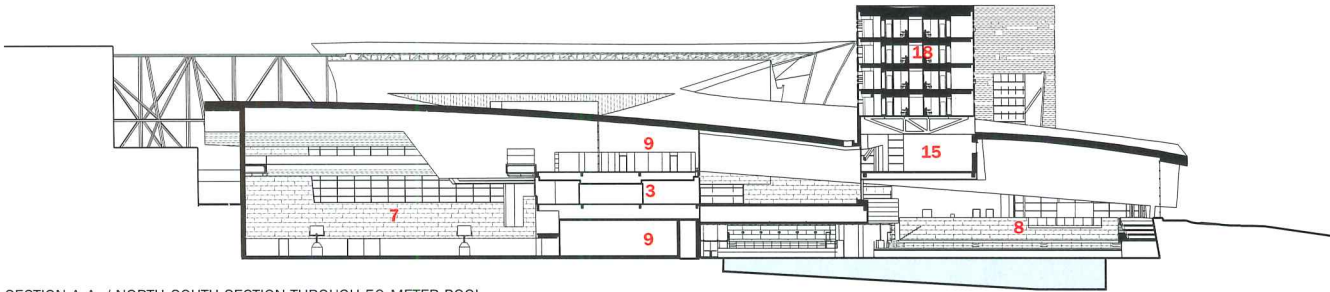
With such ambitions, the university gradually imported a cast of marquee architects, including Peter Eisenman, Michael Graves, Charles Gwathmey, and (for its adjacent medical campus) Frank Gehry, commissioning each to design a single building. While the desire to embrace strong design was laudable, the results of the first phases were mixed. Critic Blair Kamin of the *Chicago Tribune* recently wrote: "What this really produced was a lot of publicity and a kind of architectural petting zoo, in which buildings were plopped down, much as they would be in a suburban office park."

The threads that wove it all together came from the full realization of landscape architect George Hargreaves's master plan, and by no small measure, from Morphosis's interpretation of his larger concept. Not only does the building give the campus a nexus, but like much of the master plan, it provides what both Hargreaves and Mayne dub "connective tissue," drawing together disparate parts of a domain that developed piecemeal, if not

PHOTOGRAPHY: © ROLAND HALBE, EXCEPT AS NOTED; ALAN KARCHMER (THIS PAGE; BOTTOM)

The multilayered classroom wing includes a westerly shading device that evokes a stadium structure. A variety of granite steps descending the hillside continue beneath the building, where concrete-clad steel columns lift the structure above the ground plane.





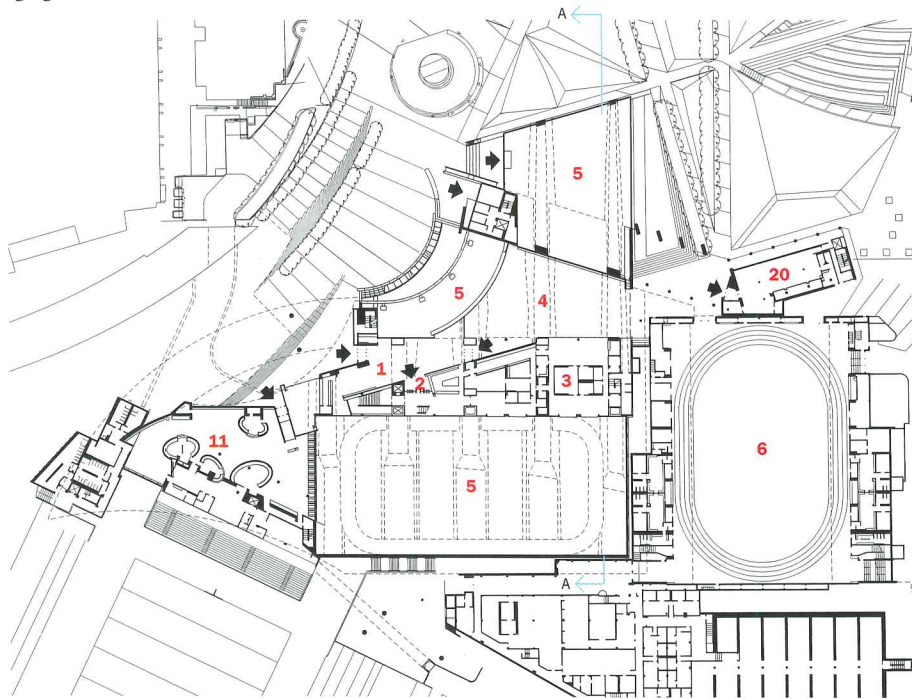
SECTION A-A / NORTH-SOUTH SECTION THROUGH 50-METER POOL

- | | | |
|---------------------------------------|-----------------------|------------------------|
| 1. Athletics lobby/ public passage | 7. Gym/basketball | 15. Fitness |
| 2. Athletics checkpoint | 8. 50-meter pool | 16. Squash |
| 3. Administrative | 9. Multipurpose | 17. Racquetball |
| 4. Exterior plaza | 10. Leisure pool/spa | 18. Student housing |
| 5. Open to below | 11. Marché food court | 19. New bleachers |
| 6. Armory Fieldhouse (existing) | 12. Loading dock | 20. Convenience store |
| | 13. Classrooms' lobby | 21. Small lecture hall |
| | 14. Weight training | 21. Changing rooms |

Both the plans and section reveal complex juxtapositions and the skillful melding of what might otherwise have been jarring adjacencies in scale and program.

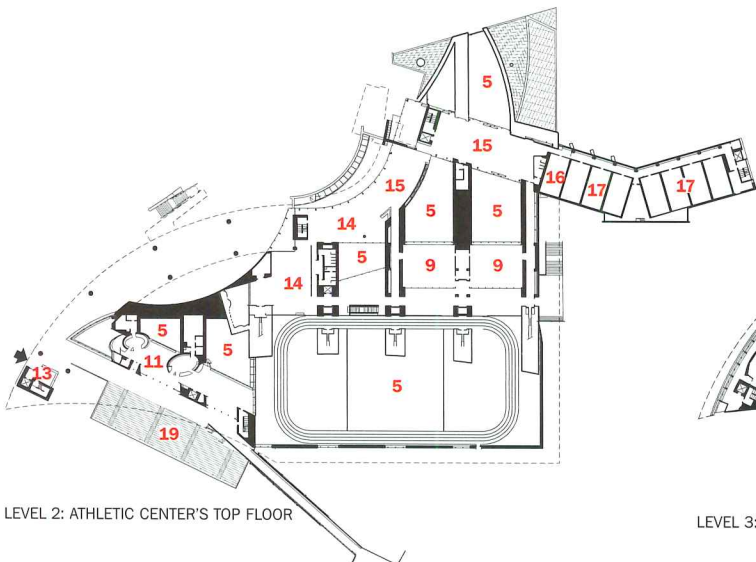


LEVEL 0: LOWEST FLOOR

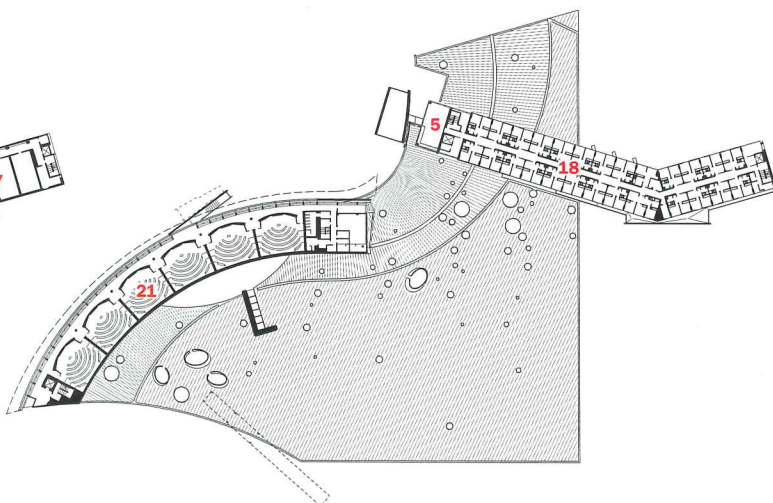


LEVEL 1: MAIN FLOOR

N
↑
50 FT.
15 M.



LEVEL 2: ATHLETIC CENTER'S TOP FLOOR



LEVEL 3: ATHLETIC CENTER ROOF



haphazardly. (As this curious campus grew, for example, the football stadium at its periphery came to occupy an oddly central position.)

Spanning a 53-foot grade change, the Morphosis project is a veritable freeway interchange of a building, with five major campus pathways running through it, as well as connectors bridging to other structures. Celebrating, even willfully exaggerating, the eclectic campus's ad hoc sensibility, this \$113 million compound fuses an aluminum-clad dormitory block with a curved classroom wing, veiled in perforated metal, and an almost amorphous athletic facility, beneath a contoured roof Swiss-cheesed with skylights. Mayne encouraged the university to amplify the original program, juxtaposing key components of student life—eating, sleeping, studying, exercising—at the very center of the campus (whereas housing, for example, was previously relegated to the fringes).

Unlike most of the university's signature architecture, however, this is hardly an object building, but what Mayne calls a "background" one on a "nonsite." As he observes, "Usually you think of iconic structures

The space beneath the building offers casual perches for "seeing and being seen" (above). The housing block's cantilever creates a monumental threshold (right).



PHOTOGRAPHY: © ALAN KARCHMER (TOP)

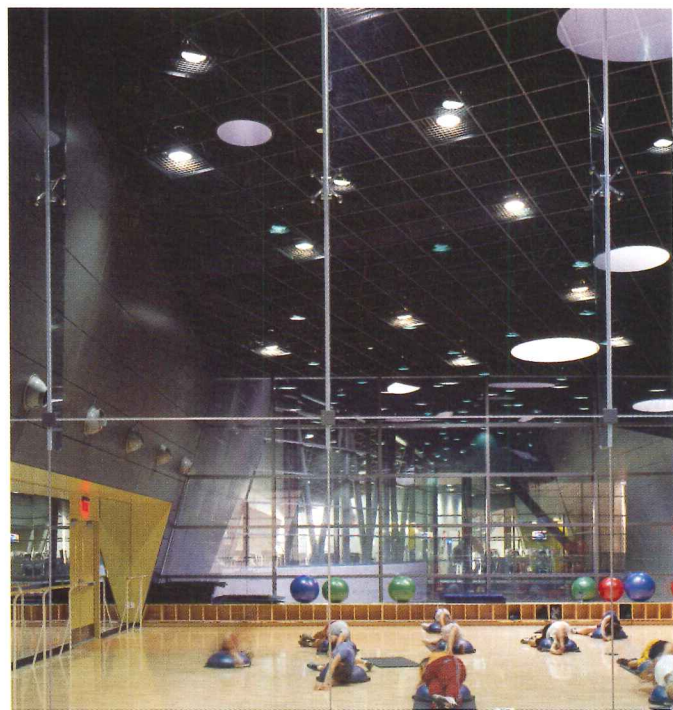
Overhead, round skylights of varied sizes poke through a diagonal grid of steel wire mesh. The track (top) weaves through trusses clad in perforated aluminum-polycarbonate panels, proportioned like heavy masonry. The sight lines allow people in the yoga studio (bottom) to glimpse onto the track and basketball courts—or if they prefer, exercise without distraction.



as muscular and background ones as neutral, even bland, but I contended that a connective building could have a powerful presence.”

The concept of interstitial tissue—at least in the overall terrain, if not in the buildings themselves—was always key to Hargreaves’s concept for unifying and revitalizing the campus. Put in less biological terms: Instead of treating the buildings as individual gems, his master plan attempts to enfold them into an overall fabric. And rather than impose a rigid ordering system on the existing collage, Hargreaves extends the lines (or “force fields,” as he calls them) of historic campus quads and other structures, creating overlapping patterns that define networks of pedestrian pathways and new building footprints. Open green space, like extensions of the adjacent woods, now interlace the campus, replacing parking lots with a sculptural, quasi-architectural topography of mini-mesas, rhythmic stands of trees, and twisted, or what the planner calls “braided,” footpaths.

“Main Street,” the last major piece of the grand plan, bordering the recreation building’s northwest edge, transforms a utilitarian access road into the campus’s central pedestrian corridor, stepping up the slope like an Italian hill town. As the name Main Street suggests, this thoroughfare came with aspirations for urbanistic compression, scale, and



In the Marché food court, the circular skylights morph into conical forms, bearing artist Rebeca Mendez's murals of superscaled vegetation.



around-the-clock buzz. Mayne calls the location the university “epicenter” and intentionally brought his structure closer to Moore Ruble Yudell’s new Steger Student Center there in order to pinch the street tighter at grade and concentrate the urban density. At the same time, Morphosis lifts its building on concrete-encased stilts, allowing the ground plane to descend beneath it and create a continuum of outdoor public space. Here, a variety of granite stadium steps—envisioned by Hargreaves as casual perches, “overlooks, seat walls, spaces for eating, studying, seeing and being seen”—flows under the hovering structure.

Meanwhile, on the complex’s north side, a muscular, awninglike zigzag echoes the contours of Hargreaves’s folded terrain, much as Morphosis’s previous work has evoked topography and shifting tectonic plates in, for example, Hypobank, in Klagenfurt, Austria. Though this element appears heavy from the exterior, it becomes light and luminous on the interior, floating visually above an Olympic-size pool.

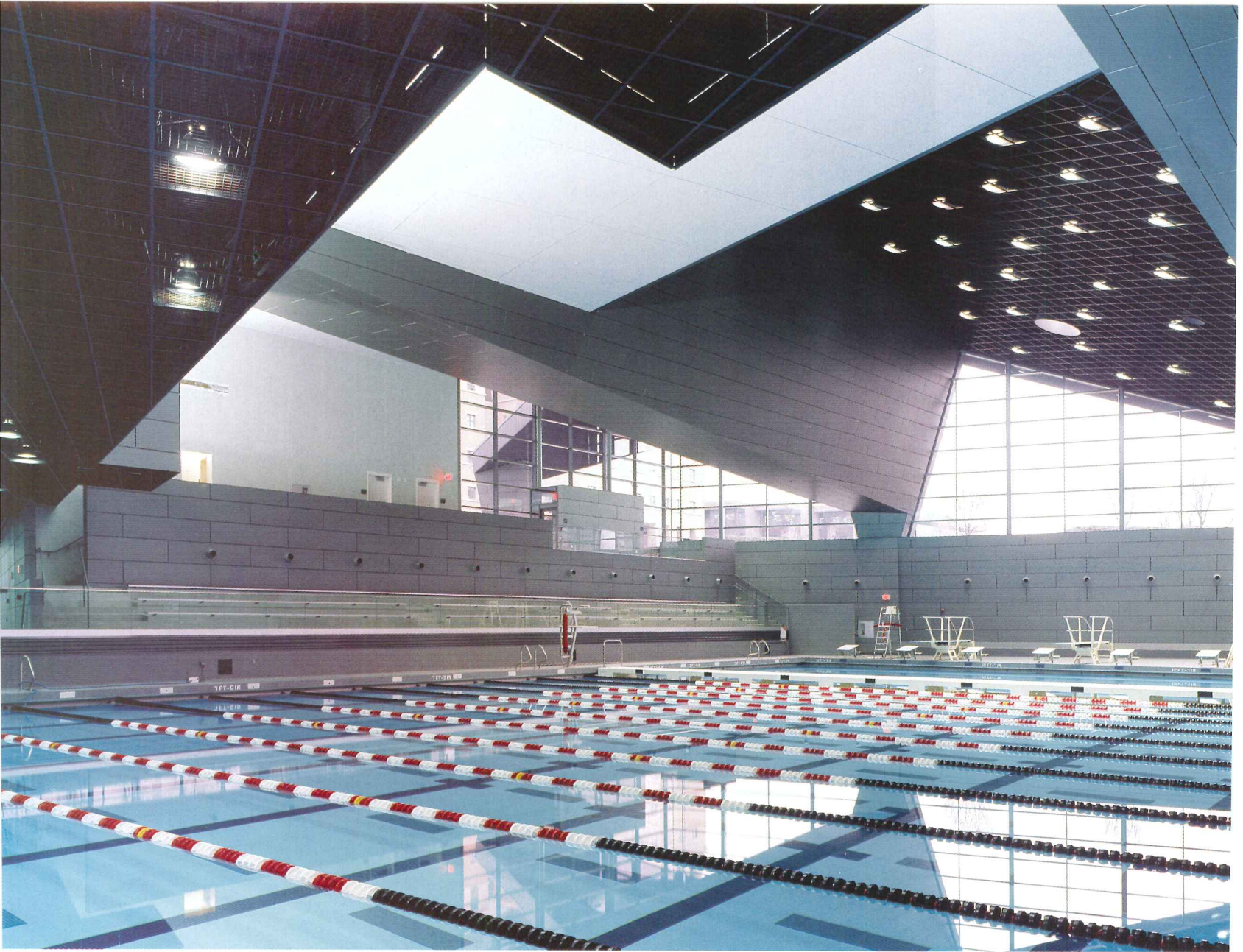
Over the zigzag rises the student housing, a bent, four-story bar with an imposing 45-foot-long cantilever and punch-cardlike elevations, reminiscent of the firm’s Caltrans building [RECORD, January 2005, page 120]. From the interior, the dorm’s graphic facade, slotted with thin hor-

izontal windows, translates into awkwardly view-blocking slits, some a mere 6-inches tall, many above eye level, and others below it.

On the compound’s southwest side, the unexpected arc of classrooms appears to masquerade as an arena. But, as you discover, the lecture-hall element morphs on its inner side, completing the stadium’s U-shape with a curve around the end zone, where Morphosis has provided new bleacher seating and a game-view dining terrace.

Just as the building’s exterior transmutes itself with each adjacency, its interior shifts constantly with programmatic and spatial contingencies. Every activity overlooks others, with transparencies and physical or visual interpenetrations opening up oblique glimpses or longer penetrating views. From the pool, for example, swimmers can see people milling about above them outside the building (and vice versa); and from an indoor track, runners can watch not only athletes on the climbing wall or basketball courts, but crowds some 250 yards away, clear across the football stadium.

The capacity of the building to accommodate so many diverse and simultaneously visible activities relies largely on the flexibility, multiplicity, and mutual independence of its organizational systems. Seven parallel steel trusses, each 12-to-15-feet deep and no two exactly alike, pro-



The 50-meter pool (above) is luminous, with high windows that allow views to the outdoors, and a soaring, complex ceiling, shaped by the housing block's zigzag element, and the building's deep trusses and outdoor plaza. The $\frac{1}{4}$ -mile indoor track threads in and out of the trusses as it encircles and hovers above the basketball courts (right).





The leisure pool and spa include a water-wall, as well as a curvy section where people using inner tubes can simply drift along with the gentle, mechanically produced current.

PHOTOGRAPHY: © ALAN KARCHMER (THIS PAGE)

vide the main structural supports, extending lines from one of the campus “force fields.” At the same time, the circular skylights, varied in size, generate a field condition of dots. These apertures not only offer views up from, say, parts of the athletics center toward the residence hall, but they occasionally become transformed into, for example, conical elements in the “Marché” food court. The building also includes a juice bar, campus store, areas for squash, racquetball, fitness and weight training, and a curvy leisure pool with a spa and water wall, in addition to the 50-meter aquatic facility.

In a space soaring to heights exceeding 60 feet, the ¼-mile-long indoor track hovers above six basketball courts, encircling them as it threads in and out of the trusses. For all the transparency, however, this focal area remains quite dark, with its massive structural members clad in perforated aluminum polycarbonate and walls in gray fiber-cement board panels, all proportioned like heavy masonry, giving this interior a brooding, dungeonlike quality, as if it were submerged underground.

Surely it is a building impossible to grasp all at once, with diverse and sometimes fragmented sculptural forms abutting one another and a panoply of surface treatments—from a diagonal ceiling grid of steel, buckshot with circular apertures, to flashes of chartreuse-

painted drywall to murals (in the Marché) of supersize blades of grass. But even with such formal and programmatic abundance, this building is not purely hyperactive—it offers many calm moments, in the pools, on the track, and elsewhere. The goal, says Mayne, was to model its environment on a biosystem, like a forest, that teems with variety and dynamic interaction yet hardly forms an overwhelming whole. While this architecture does not achieve the absolute subtlety of such an ecology, in which extraordinary levels of activity never seem busy, it succeeds in many ways.

A reactive and fluid rather than rigidly composition-driven solution, this building could have turned out as a monumental jumble or tangle, but its mastery lies in the weave—a strong mesh, inside and out, generating the new fabric of the campus. ■

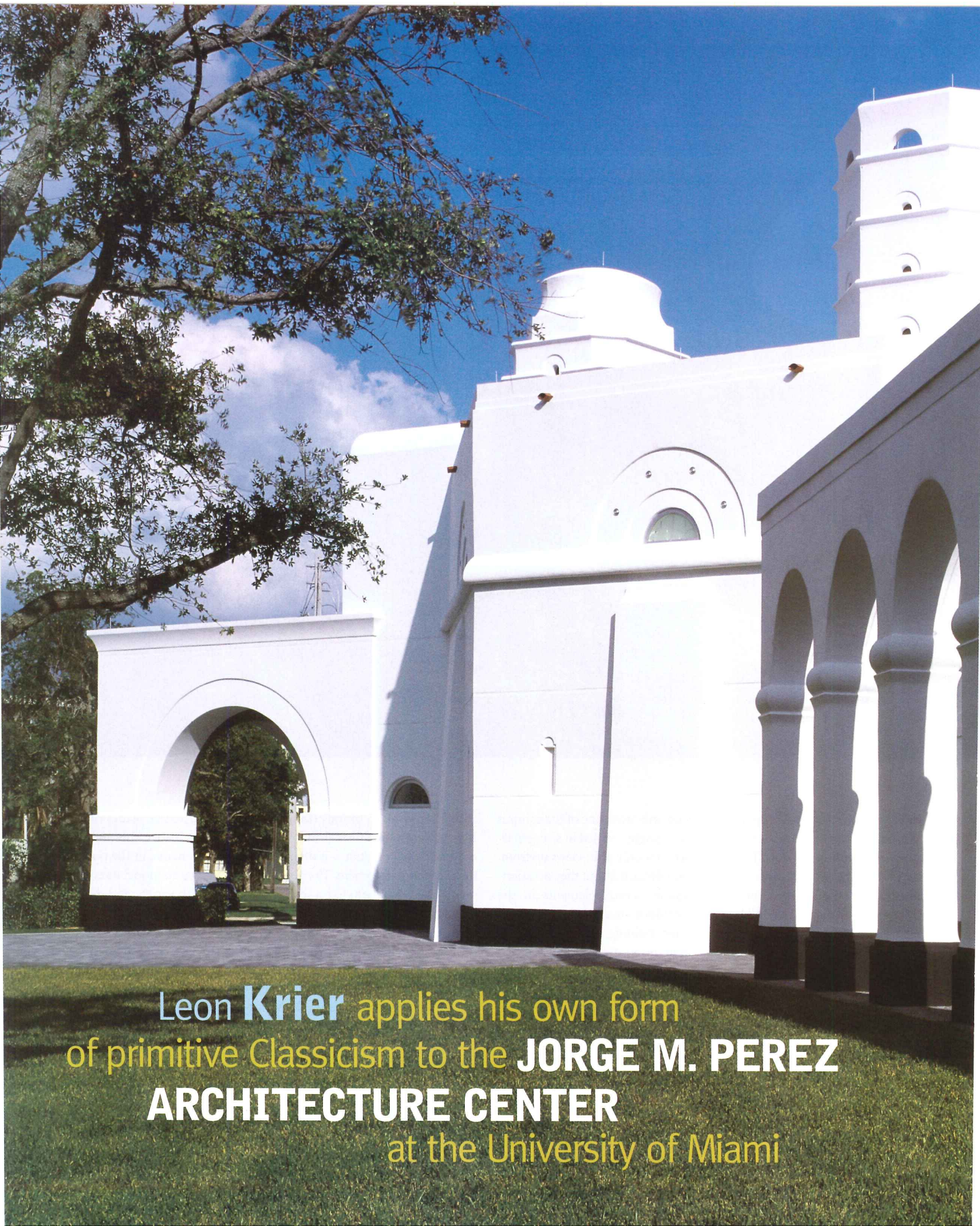
Sources

Exterior cladding: Waltek; Reynobond; Concrete Technology
Roofing: Bemo/USA
Glazing: Viracon
Ceiling grid: USG

Tile: Dal-Tile; American Olean

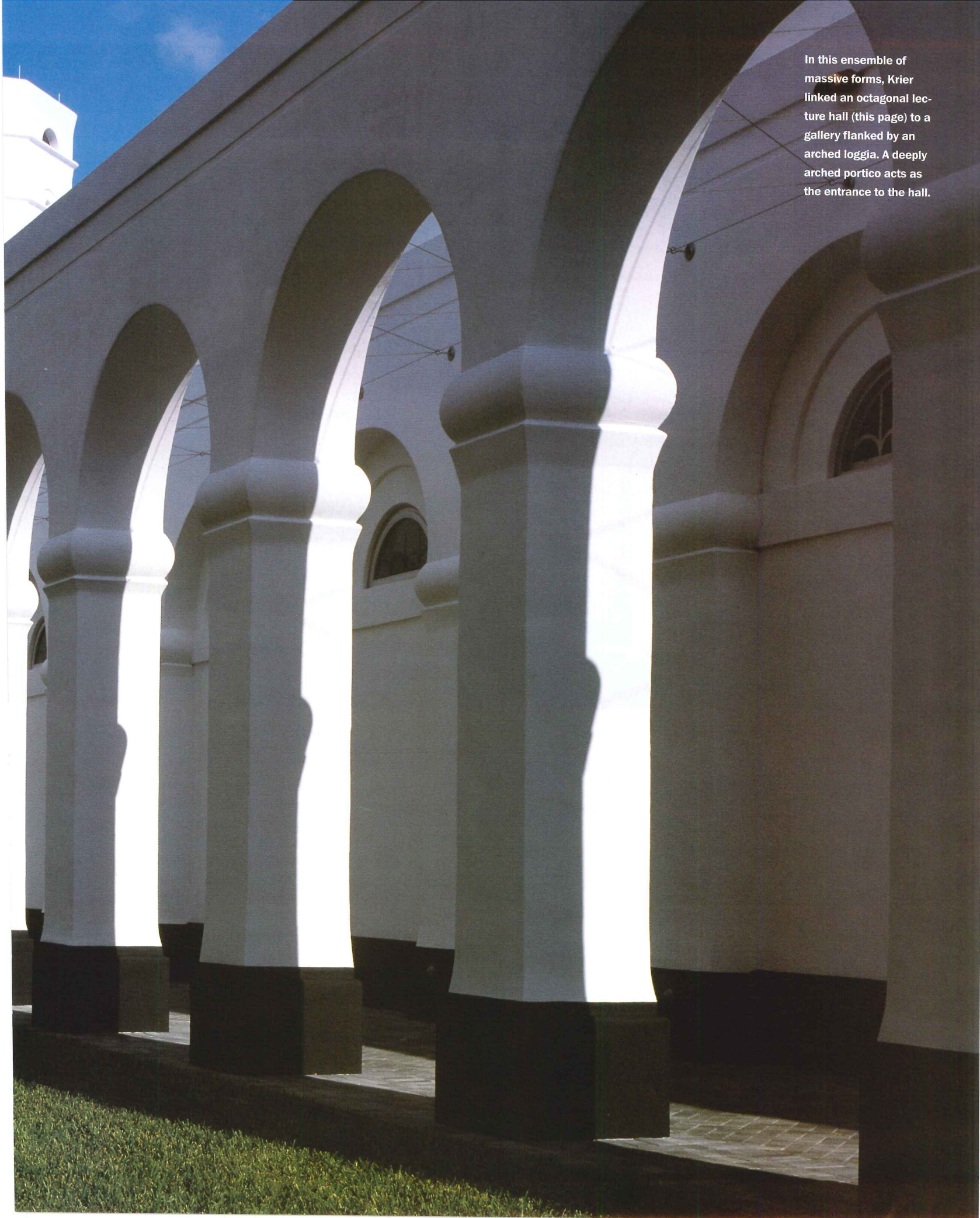
Furniture: Knoll; Vitra; Willy Guhl

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



Leon **Krier** applies his own form
of primitive Classicism to the **JORGE M. PEREZ**
ARCHITECTURE CENTER
at the University of Miami

In this ensemble of massive forms, Krier linked an octagonal lecture hall (this page) to a gallery flanked by an arched loggia. A deeply arched portico acts as the entrance to the hall.



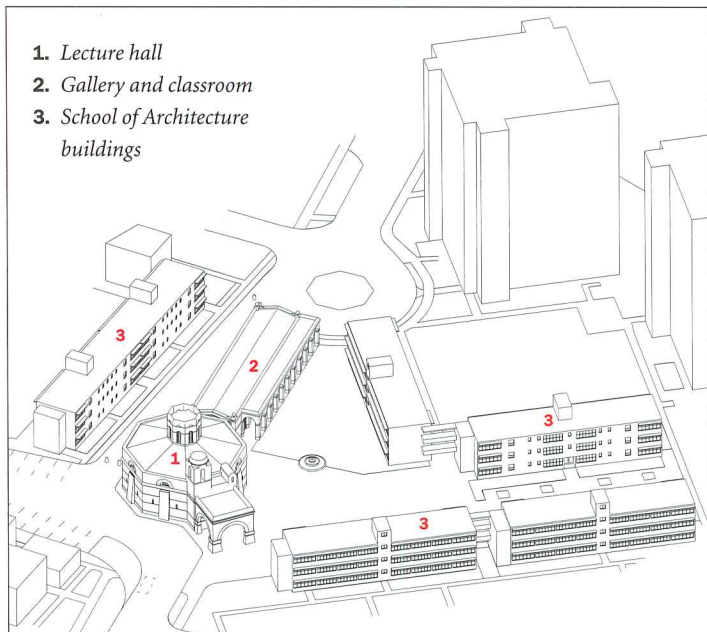


By Alexander Gorlin, FAIA

It seemed like a match made in Classical heaven: Leon Krier, the patron saint of New Urbanism, apostate of Modernism, and former protégé of James Stirling, is brought to the University of Miami in 2000 by the dean of the School of Architecture, Elizabeth Plater-Zyberk. Here he was to continue an earlier mission of Aldo Rossi, now deceased, to design a lecture hall and gallery as the focal point of the school, established in 1983, in Coral Gables. (Disclaimer: I donated a paltry sum to the building fund.)

With the full support of the dean, an eminently accomplished architect and urban planner, as well as the faculty, what could go wrong? This being Florida, the unexpected is the norm, whether in politics or architecture. As the irresistible force meets the immovable object, so did the legendary Krier have numerous plans rejected over the next two years by the staunchly Modernist Buildings and Grounds Committee, which was less than sympathetic to a traditional building of any kind on campus. Ironically, in this land of Mediterranean arches, Krier's final scheme was actually shelved until the founder and C.E.O. of The Related Group of Florida, Jorge M. Perez, donated \$1.5 million in 2002 on the condition

Alexander Gorlin has his own practice in New York City.



- 1. Lecture hall
- 2. Gallery and classroom
- 3. School of Architecture buildings

PHOTOGRAPHY: © STEVEN BROOKE STUDIOS

The freestanding loggia defines an open-air path alongside the gallery, which is trimmed with bold, rounded molding and simple Classical details.



that a specific design by Krier be built. With enormous effort, a version of this scheme opened a year ago, with the overall massing true to the original, but the details best viewed under an Impressionist lens, fuzzy and out of focus.

Part of the problem resulted from the fact that three architects were ultimately involved with the project. A donation of \$1.18 million by the alumnus Stanley Glasgow and his wife Jewell provided the seed money for the project. His architecture firm, Ferguson, Glasgow, Shuster, Soto, Inc., was named the architect of record, providing the construction drawings. (The sole surviving partner, Natividad Soto, organized all aspects of the project through construction.)

When Krier was chosen as the design architect, he brought in Merrill & Pastor (now Merrill, Pastor & Colgan) of Vero Beach, with whom he had previously worked on other Florida projects. While the firm translated Krier's hand sketches into design development drawings, all three firms stayed involved in every phase of the project—which may have meant too many cooks stirring up a not quite perfect bouillabaisse.

Urbanistically, the Jorge M. Perez Architecture Center is a powerful and mysterious work of architecture that gives coherence to a number of formerly gelatinously undifferentiated spaces and streets on

campus. A four-sided arched entry connects to a massive octagonal lecture hall, linked by an open breezeway to a basilicalike gallery with a freestanding loggia. Alone among architects working in a traditional syntax, Krier has extended the vocabulary of Classicism through a bold use of proportion, and a free interpretation of its tropes and motifs. A superb example of primitive Classicism, the center employs none of the expected ancient orders or moldings. Nevertheless, it embodies the gravitas and weight appropriate to a civic building at the center of an institution of higher education.

Two towers marking the building do not recall any specific precedents, although the lecture hall's cupola resembles a vernacular

Project: *The Jorge M. Perez Architecture Center, School of Architecture, University of Miami*

Design architect: *Leon Krier*

Design development architect:

Merrill, Pastor & Colgan

Architects—Scott Merrill, AIA,

principal in charge

Architect of record: *Ferguson Glasgow Schuster Solto, Inc.—*

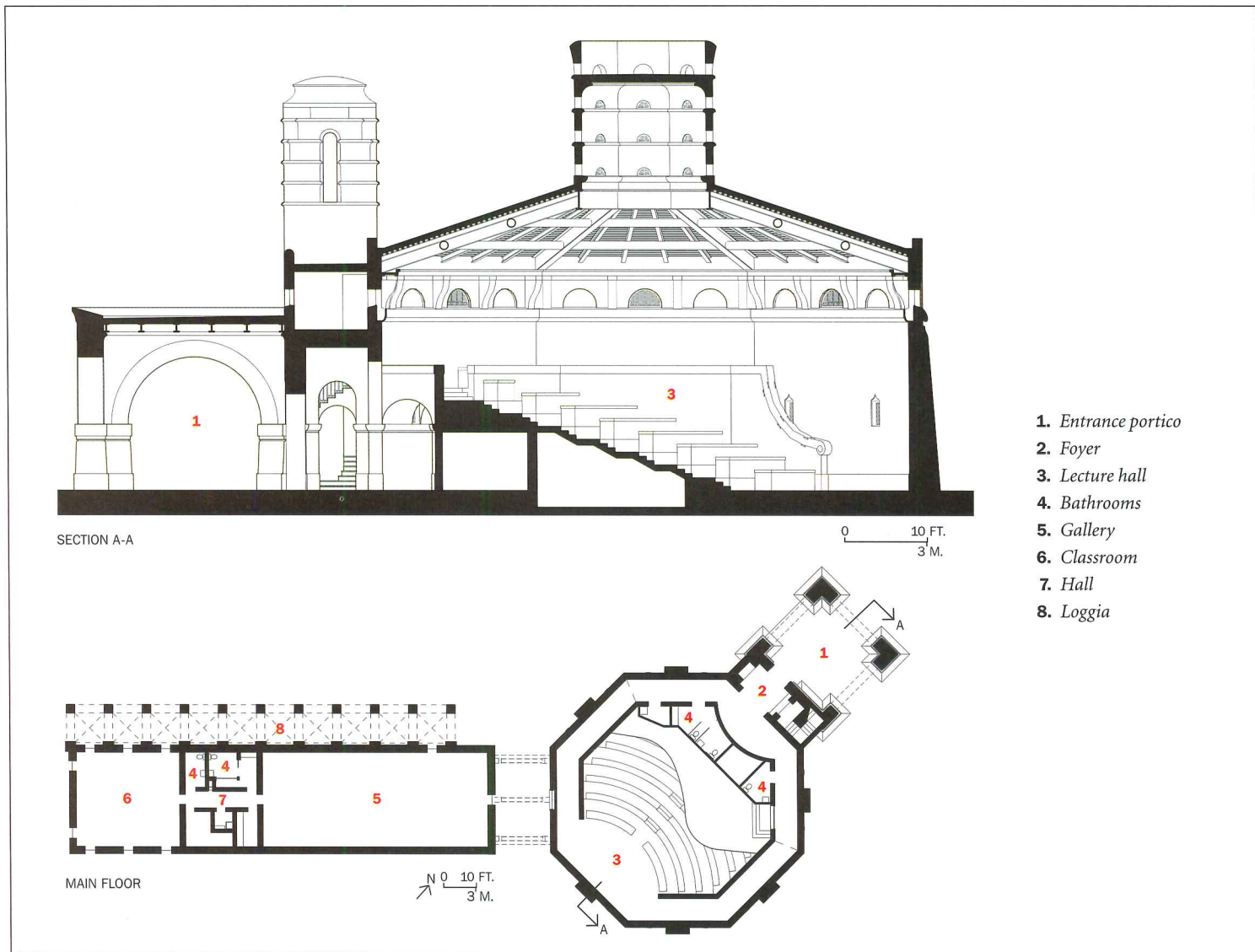
Natividad Soto, AIA, principal in charge; Andres Prieto, project manager

Engineers: *Brill Rodriguez Salas*

(structural); Post, Buckley, Schuh &

Jernigan (civil); Gartek Engineering

(m/e/p and fire)



The octagonal lecture hall features a domed roof with steel beams and wood decking (opposite). The room can be glimpsed through an oculus in the entry foyer (left), where an arch to the hallway frames a niche in the back wall.

dovecote or a Roman columbarium, and the other recalls a bell tower in a white-washed Greek village. Together, as the towers shift and align as one walks toward them, they bring to mind the twin steeples of St. Martinville in Proust's *Swann's Way*. Krier's architecture has this literary and memorable sensibility that defies an exact reference, in contrast to the more transparent allusions of, for example, Robert A.M. Stern Architects.

The interior of the lecture hall features an industrially detailed dome of exposed steel beams and decking that surmounts a steeply raked series of seats and desks for 145 students. The design elicits multiple readings, from Scamozzi's Teatro Ducale in Sabbioneta, Italy (1598), to a 19th-century dissection theater, and fosters the idea that education is a shared experience. Attached to the hall is the gallery, a long, open structure that functions as a multipurpose room, with half-round openings in the clerestory. Surprisingly, you find the interior spaces are much simpler than you would expect from the complex village of parts outside. The spaces throughout exude an industrial feeling, with exposed steel beams and ducts hovering above massive white walls: The mix is serene, but at times feels like a reinhabited ruin.

The fragmentation of the buildings' massing breaks up the scale of the center and creates a series of open spaces and terminating vistas



that organize a campus that was for so long a complete mess. The campus's low, horizontal, International Style buildings, designed in 1945 as student housing by the first woman architect in Florida, Marion Manley, are innocuous enough. Yet even painted white, with details in De Stijl black, red, blue, and yellow, they don't offer inviting places for students to congregate. Krier unified the existing plan by using a "knuckle and bar" diagram like that of the circular Island Enclosure of Hadrian's Villa in Tivoli and created a piazza, a central gathering space, for the school.

Constructing an 8,600-square-foot, concrete-block-and-steel building was another story, with Krier, full of sound and fury, in the end signifying a structure with built imperfections, albeit mostly in the details. Dean Plater-Zyberk states that because this is an educational building, even the problems are lessons. In that light, the project is a resounding success. But since donated funds, even from generous alumni, weren't enough, the school resorted to heavy "value engineering"—a euphemism for a slash-and-burn paring down of design elements. For example, a layer of stucco vanished for cost reasons, resulting in reveals that do not generate the intended shadow lines so dramatic in the strong, hot sun.

Krier contends that many details were not realized according to his plan (an impost was upside down), and some not at all. In great

measure, much of this is due to the low level of craftsmanship of the Miami builders. Of course, some of the details that Krier pointed out, such as the missing features of the intrados, or the absent fillets (a rectangular molding) and congé (a curved molding), may be due to the fact that the builders had no idea what he was talking about. Someone should have told Krier that southern Florida is not Switzerland.

In the end, Krier's work is radical in its rejection of the trend to reduce architecture to singular theoretical terms, encapsulated by such nouns as "sponge" or "rhizome." Ironically, it employs the full array of forms and ideas closest to Le Corbusier's "three reminders to architects" in *Towards a New Architecture* (1923)—mass, surface, and plan. The Jorge M. Perez Architecture Center is a flawed masterpiece; perhaps a future generation will restore or complete the work to its full glory of precise detail. ■

Sources

Concrete and masonry: *Rinker Materials Corporation*

Aluminum (windows): *CGI*

Metal: *Siplast*

Concrete floor stain: *Mineral Life*

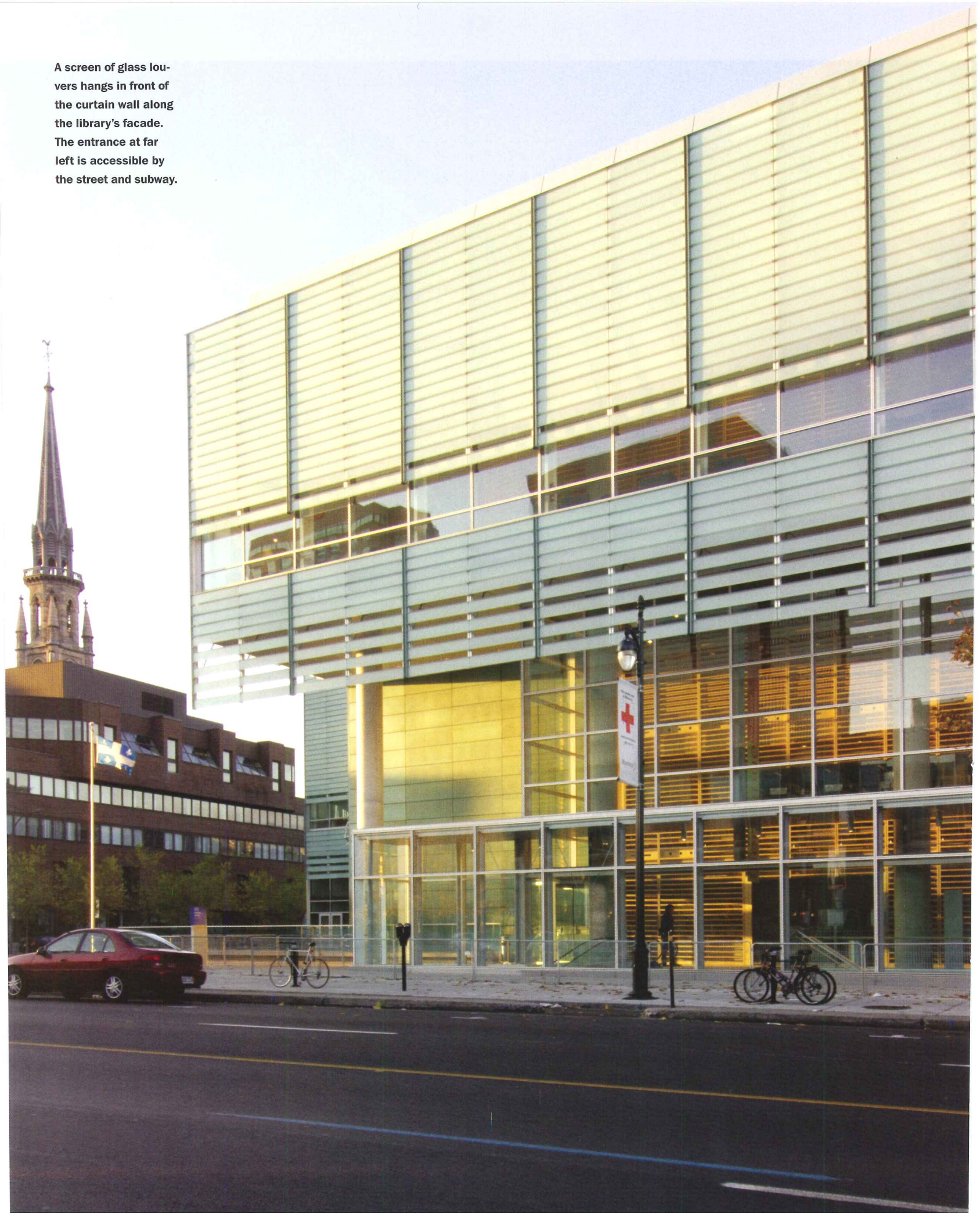
International

Paint: *Sherwin-Williams*

For more information on this project, go to Projects at

www.archrecord.com.

A screen of glass louvers hangs in front of the curtain wall along the library's facade. The entrance at far left is accessible by the street and subway.



Patkau leads a team of Canadian architects to create a cultural beacon at the **GRANDE BIBLIOTHÈQUE** in Montreal

By William Weathersby, Jr.

Critic Kenneth Frampton calls the Grande Bibliothèque in Montreal “one of the most cultivated public buildings to have been built in North America in recent years,” but the library’s cultural identity is even more specific to its place than continent or country. Quebec, the largest French-speaking society in the Americas and Canada’s largest province, has a strong heritage and identity; since the early 1970s, political factions have urged the province to secede as a separate country. The 400,000-square-foot library, designed by Vancouver-based Patkau Architects and a team of Montreal firms including Croft Pelletier and Menkès Shooner Dagenais Letourneux, houses both a general reference library and Quebec’s “national” heritage collection—the latter containing more than one million volumes published in or about Quebec since the 1760s.

The Grande Bibliothèque aims to be the central edifice reflecting the region’s literary culture. Occupying an urban site threaded with a complex program, the building is also spurring renewal in a downtown neighborhood moving toward change.

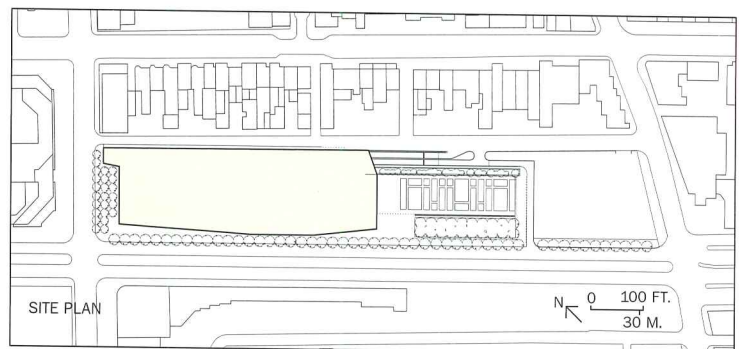
Unlike other regions in Canada, Quebec has not historically supported public libraries. Before the so-called Quiet Revolution, a period of government liberalization that swept the province during the 1960s, the strong arm of the Quebec Catholic Church had commanded censorship of many literary works and turned down grants by the Carnegie Foundation to construct neighborhood libraries. (In contrast, more than 100 Carnegie libraries rose across the province of Ontario.)

The vision to build a central Quebec library, spearheaded by former Quebec premier Lucien Bouchard and founding library director Lise Bissonnette, led to a limited international design competition in 2000. John and Patricia Patkau won the commission from a short list that included Zaha Hadid, Christian de Portzamparc, and Saucier + Perrotte.

The Patkaus are known for building expressive structures inspired by the natural materials and terrain of their home province, British Columbia—including private houses and community facilities such as the Seabird Island Elementary School. The Grande Bibliothèque is their largest civic project to date, and takes a more inwardly focused approach, enclosing dynamic spaces within an urban glass box.

Built on the site of the former Palais du Commerce, a trade-

The library is situated in the Latin Quarter, adjacent to the campus of the University of Quebec at Montreal and a block from the bohemian shops and cafés along Rue St. Denis (above and plan).



show pavilion, the six-level library is set within a city block between Boulevard de Masonneuve and Rue Ontario in Montreal’s Latin Quarter. The library sits diagonally opposite a green space, Parc Emilie-Gamelin, and connects below grade to the intersection of three metro transit lines. Across the street from a bus station slated for redevelopment and adjacent to the campus of the University of Quebec at Montreal, the complex was conceived as a bridge between civic and academic communities.

The team’s design for the library was inspired by “its complex program and need for efficient circulation,” says principal architect John Patkau, AIA. In addition to the circulating library and the historic Quebec collection, the building houses a children’s library, a 24-hour library, and

Project: *Grande Bibliothèque, Montreal*

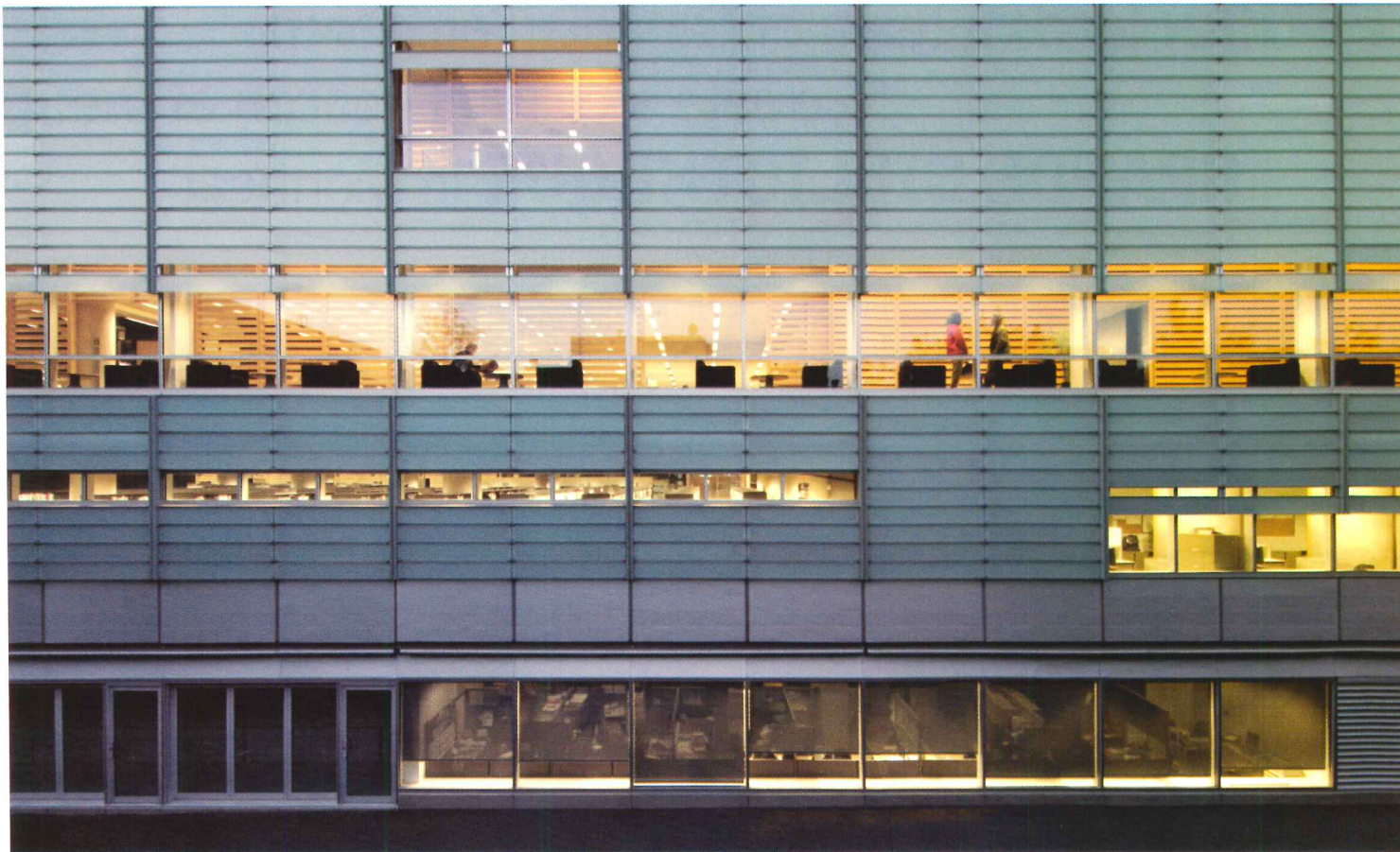
Architect: *Patkau/Croft Pelletier/Menkès Shooner Dagenais architectes associés, a joint venture—John Patkau, AIA; Yves Dagenais, principals in charge*

Engineers: *Regroupement Nicolet*

Chartrand Knoll Limitée; Les Consultants Génipius (structural); Regroupement Bouthillette & Associés; Groupe HBA Experts-Conseils (mechanical/electrical)
Consultants: *Scheme Consultants (landscape); NBBJ (lighting); Legault Davidson (acoustic)*

PHOTOGRAPHY: © JAMES DOW

PROJECTS



Sections of the glass-louver screen are cut away to create apertures that frame views of the city (above) and a sunken garden (left). The asymmetrical arrangement of clear glazing creates a syn-copated pattern.

public amenities including a lecture theater, café, art gallery, and stalls for booksellers. The tight budget of \$70 million (U.S.), allocated by the province, allowed no concessions for potential cost overruns. “The construction budget came to about \$110 per square foot, about a third of the construction cost of the Seattle Library,” John Patkau notes. “Those were very austere parameters to work with for a library this size. Rather than use the entire block-long site, we decided to compress the library at the south end near the

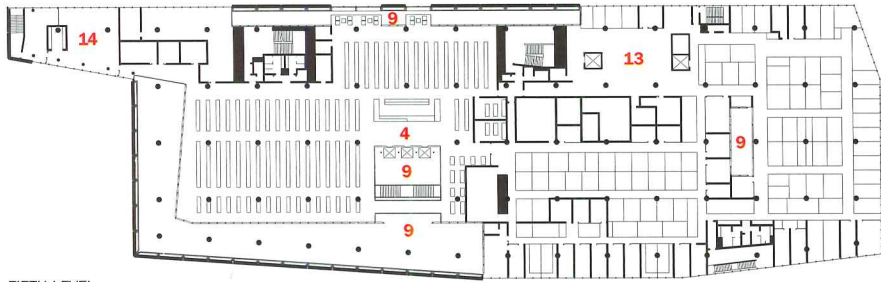
metro station. The rest of the block was given over to a public garden and a site at the north end that could be used later for another civic building. Our strategy was to keep the interior functions compact while enclosing as much volume within the minimum envelope. It became a challenge of mapping circulation and connectivity between spaces.”

Though Patkau had designed a small library in Surrey, British Columbia [RECORD, June 1995, page 94], he says that addressing the complexities of this larger project called to mind a project he admires, Will Bruder’s Phoenix Central Library. “Phoenix has a central circulation core that works very well in getting people moving through the building to various levels,” Patkau says. “We kept that in mind for Montreal.”

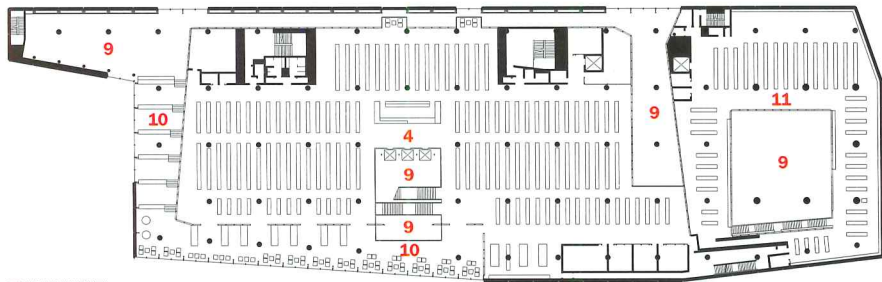
The structure of the Grande Bibliothèque was also influenced by studies for the Patkaus’ unbuilt health science center at the University of Texas at Houston. The earlier project’s horizontal thrust is translated as the library’s facade along Rue Berri, with a screen of green-glass planks hanging

The library's central atrium is a circulation spine with stairs and elevators connecting six levels. From the main entry level (foreground), terrazzo stairs on the far right lead directly to the historic Quebec collections.

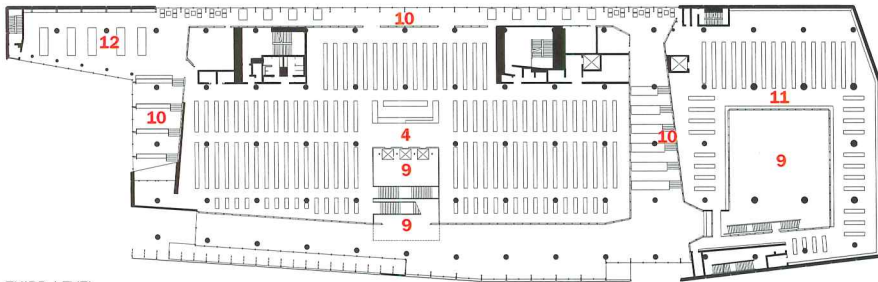




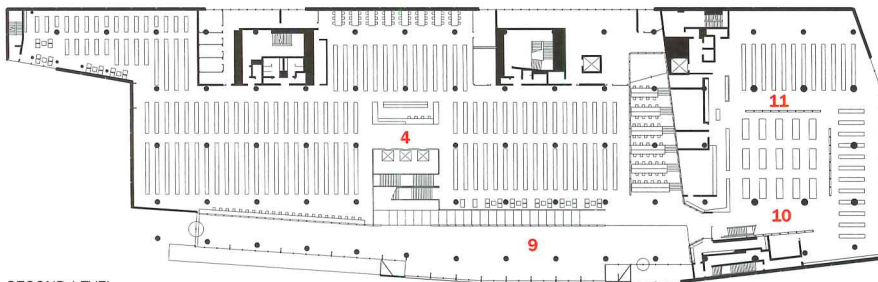
FIFTH LEVEL



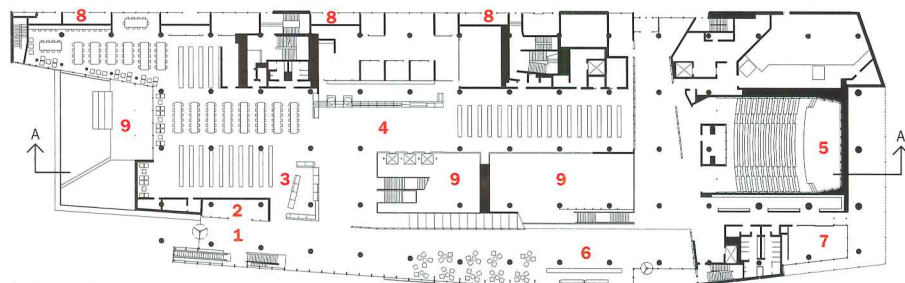
FOURTH LEVEL



THIRD LEVEL



SECOND LEVEL



STREET LEVEL



The triple-height promenade serves as an interior street on the main level that connects the library's primary components (above). The wood-slatted enclosures visually recall the horizontality of the facade's glass-louver screen.

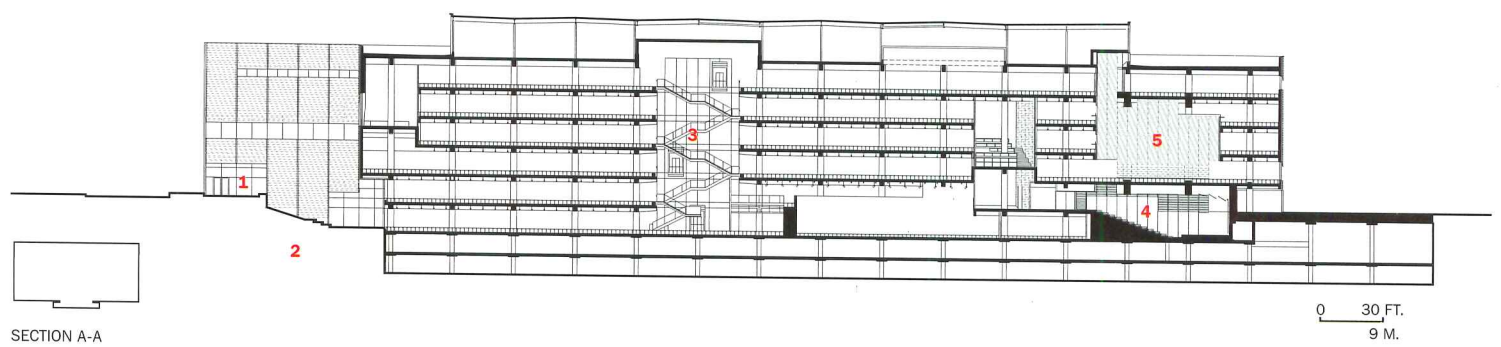
1. Main entry
2. Bookstore
3. 24-hour library
4. General library
5. Auditorium
6. Café
7. Meeting room
8. Booksellers' stalls
9. Open to below
10. Reading room
11. Collection
Québécoise
12. Map room
13. Administration
14. Staff room



The library's central circulation core creates an open, democratic feeling. Staircases and glass-fronted elevators connect the six levels. The walls of birch lou-

vers allow daylight and air through the spaces while creating secure enclosures for general books as well as the Quebec national collections.

1. Entry
2. Subway
3. Circulation atrium
4. Auditorium
5. Collection Québécoise



SECTION A-A



The reading room of the Quebec collections (left) is enclosed by birch louvers, which separate it from stacks while keeping sight lines open (below).

in front of a curtain wall. Although the louvers diffuse light and give the facade a highly crafted, streamlined quality, the Grande Bibliothèque is best judged aesthetically by its contents, not its cover. The Patkaus' competition-winning design called for cladding in horizontal copper panels that proved to be too costly; the few copper panels that remain near the entrance don't deliver

the same visual impact. Though a welcome respite from the glum brick facades of its neighbors, the glass-wrapped facade appears anemic in contrast to the dramatic interiors that await inside.

The main entrance overlooks a sunken terrace that carves away a corner of the rectangular structure. At street level, visitors enter a monumental, triple-height promenade that runs the north-south length of the library and connects its principal functions: main reception, central stair/elevator core, 300-seat lecture theater, and meeting rooms. Running parallel to the street, this internal corridor imparts a sense of procession while orienting library patrons to their surroundings.

The building's compelling centerpiece is the dramatic network of circulation at its core. Cantilevered staircases with terrazzo treads ascend through the library's six levels. Within the same volume, glass-fronted elevators quietly transport patrons while affording glimpses of activities taking place on each floor. An atrium within the reinforced concrete structure, this vertical spine is bordered by reading rooms, reference desks, and stacks, evoking a town-center effect as people move throughout the building.

Two major collections—the general circulating library and the Collection Québécoise—are housed within a pair of large boxes framed by slats of yellow birch, the official tree of Quebec. The louvered walls allow light, sound, and air into each interior, while lending an open, democratic air to the library. Each area, however, is infused with a different character. The Quebec collection envelops a triple-height reading room with media stored behind the screens along the perimeter. With green glass reading lamps set atop birch tables, this grand, central space allows readers to view the seemingly infinite rows of stacks which surround them. The general collection, the larger of the two slatted boxes, reverses the layout. Here, the central space is a “storage container” for media materials housed in stacks. A variety of reading rooms and areas encircle the wood-slatted enclosure.

Between the two wood-slatted boxes and the exterior skin, a necklace of diverse spaces—from intimate balconies to informal seating areas—offers spatial variety and unexpected juxtapositions. At opposite ends of the building, for example, two reading rooms composed of stepped study carrels traverse the width of the block, creating terraced pathways as additional circulation routes. Meanwhile, below grade, the daylight-filled children's library opens onto a landscaped courtyard.

Although veiled by a subdued facade, the library may soon weave a closer connection to the fabric of the city: A proposed café within the entry promenade would open onto the street, while not-yet-occupied commercial booksellers' stalls at ground level could attract pedestrian traffic along the narrow alley behind the building. With its interior landscape already displaying a complex topography of functions navigated via well-planned circulation options, the Grande Bibliothèque is a beachhead in Quebec's quest to preserve and share its revered culture. ■

Sources

Concrete: LaFarge; Groupe Tremca; Sorel Tracy Ciment

Glazing, curtain wall: Vitrierie Surmesure; Vitrierie Vertech 2000

Woodwork: Beaubois

Raised floors: ASP Maxcess

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

Cantilevered stairs with terrazzo treads gracefully connect the six levels of the Grande Bibliothèque. Daylight passes through the triple-height entry promenade to enhance the central core. In-floor mechanical systems, including ventilation, keep sight lines clean within the open plan.





Opening views into the library (this page) makes it a safer place. The new buildings align with an existing swimming pool and bathhouse (opposite).

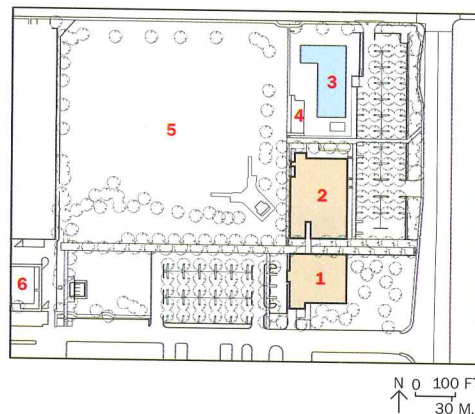
Gould Evans and Wendell Burnette make urban and social connections at the PALO VERDE LIBRARY AND MARYVALE COMMUNITY CENTER in Phoenix

By Clifford A. Pearson

Just as balancing the mind and body can create a healthy person, integrating learning and physical activity can produce a successful community hub. Such was the thinking behind the Palo Verde Branch Library and Maryvale Community Center, which opened in January on the west side of Phoenix and represents an unusual collaboration between two city agencies, the library system and the parks and recreation department, and two local architectural firms—Gould Evans and Wendell Burnette Architects. While the Phoenix office of Gould Evans—headed by Jay Silverberg, AIA—and the architect Wendell Burnette, AIA, had both established reputations for inventive responses to the desert environment, the city agencies had pursued very different approaches to architecture in the past, with the library system hiring innovative Modernists such as Will Bruder and Richard + Bauer [RECORD, May 2006, page 152, and January 2006, page 96], and the parks department viewing building in a more utilitarian way.

Bringing different people and functions together served as an essential theme running throughout this \$5.8 million, five-year-long project, and in the process helped link two distinct eras. Like Leavittown on Long Island, New York, Maryvale started as a post-World War II suburb fueled by easy automobile access and low-interest G.I. loans. In Phoenix, developer John F. Long built not only affordable houses for returning veterans, but worked with California architect Victor Gruen to create a hospital, post office, shopping center, library, community center, swimming pool, and public park. But unlike its eastern cousin, Maryvale grew up to become a troubled community, as middle-class families moved farther out and crime moved in. Long, however, didn't give up on Maryvale. He pushed the city to reinvest in the struggling neighborhood and helped pass a bond issue to pay for the new branch library and community center to replace inadequate existing facilities.

Gruen's master plan for Maryvale featured a park, around which stood the hospital, shopping center, library, pool, and community center. When the city began work on the new library and community center, it planned to retain the swimming pool but use some of the parkland for the new buildings and extra parking. Silverberg and Burnette, however, argued for keeping as much of the park as possible while retaining its baseball diamond and playing fields. "This was the green heart of Maryvale," says Burnette, "and we wanted to keep it that way." To do that, the architects lined up the new buildings on axis with the existing pool along the east side of the site and convinced the city to grant a variance reducing the number



1. Library
2. Community center
3. Swimming pool (existing)
4. Bathhouse (existing)
5. Playing fields
6. Old library

N 0 100 FT.
30 M.

Project: Palo Verde Branch Library and Maryvale Community Center, Phoenix

Client: City of Phoenix

Architect: Gould Evans and Wendell Burnette Architects—Jay Silverberg, AIA, Wendell Burnette, AIA, principals in charge of design; Ron Geren, project manager; Patrick Magness, project architect; Jenell Bass, Shawn Croissant, Jennifer Little, Jose Pombo, Scott Roeder, Matthew Trzebiatowski,

design team

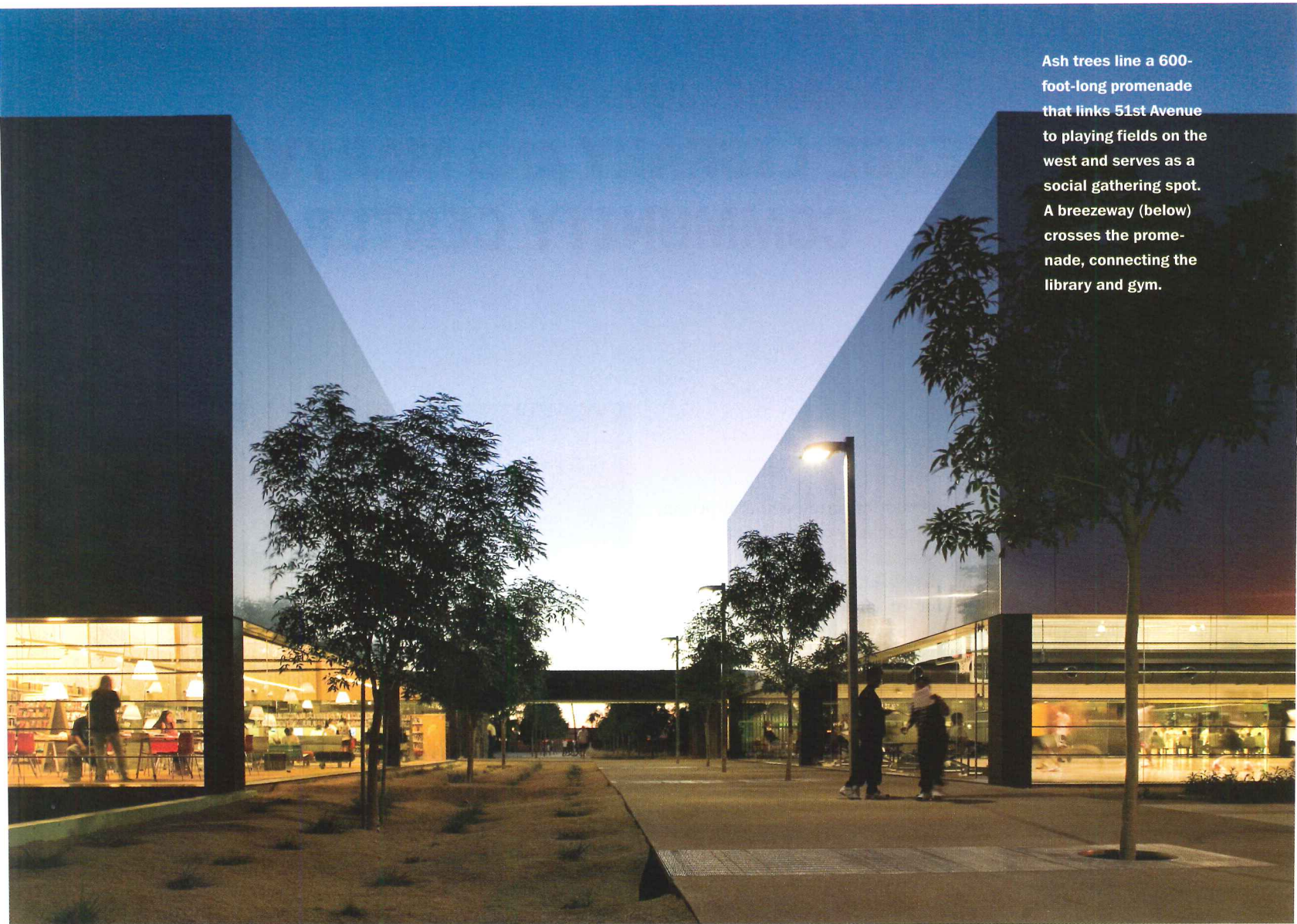
Engineers: Rudow + Berry (structural); Kunka Engineering (mechanical, plumbing); Associated Engineering (electrical); WRG Design (civil)

Consultants: Ten Eyck Landscape Architects (landscape); Horton, Lees and Brogden (lighting); Wardin Cockriel Associates (acoustical); Thinking Caps (graphics)

General contractor: Smith Construction Management

PHOTOGRAPHY: © BILL TIMMERMAN

PROJECTS



Ash trees line a 600-foot-long promenade that links 51st Avenue to playing fields on the west and serves as a social gathering spot. A breezeway (below) crosses the promenade, connecting the library and gym.



of parking spaces from 700 to 240. By establishing an intergovernmental agreement allowing nearby school parking to be used by the library and community center in evenings and on weekends, the architects showed how parking could be handled without destroying much parkland.

Lining up the new buildings on the east edge of the site facing 51st Avenue (a major north-south road) also gave the project a strong public presence, something the city had requested. But Silverberg and Burnette didn't want to create a wall of buildings separating the park to the west from the thoroughfare on the east, so they explored the issue of transparency in their architecture, eventually developing a design that rests a pair of metal-clad blocks on 8-foot-high bands of clear glass. "We wanted to pull the park through the buildings," says Silverberg, "so you could see the playing fields from the road." This strategy not only established an important urban link but created a sense of security by opening up views into and out of the buildings. "The old library and community center were solid masonry buildings that felt like cell blocks," recalls Burnette. "We wanted our buildings to feel open, transparent."

A tree-lined promenade also links 51st Avenue to the park and serves as a linear plaza connecting the two buildings: the 16,000-square-foot library to the south and the 27,000-square-foot community center to

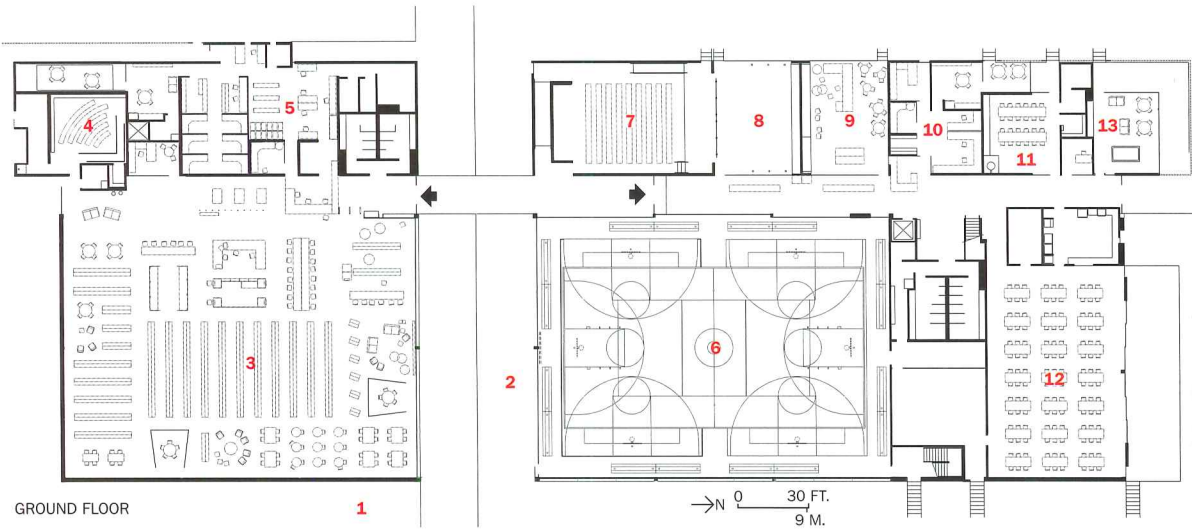


Horizontal louvers shade glazing on the gym's east side (above). The breezeway turns into a corridor inside the building (right).

the north. A second circulation spine running perpendicular to the promenade serves as an 8-foot-high corridor inside the two buildings and as a covered breezeway between them.

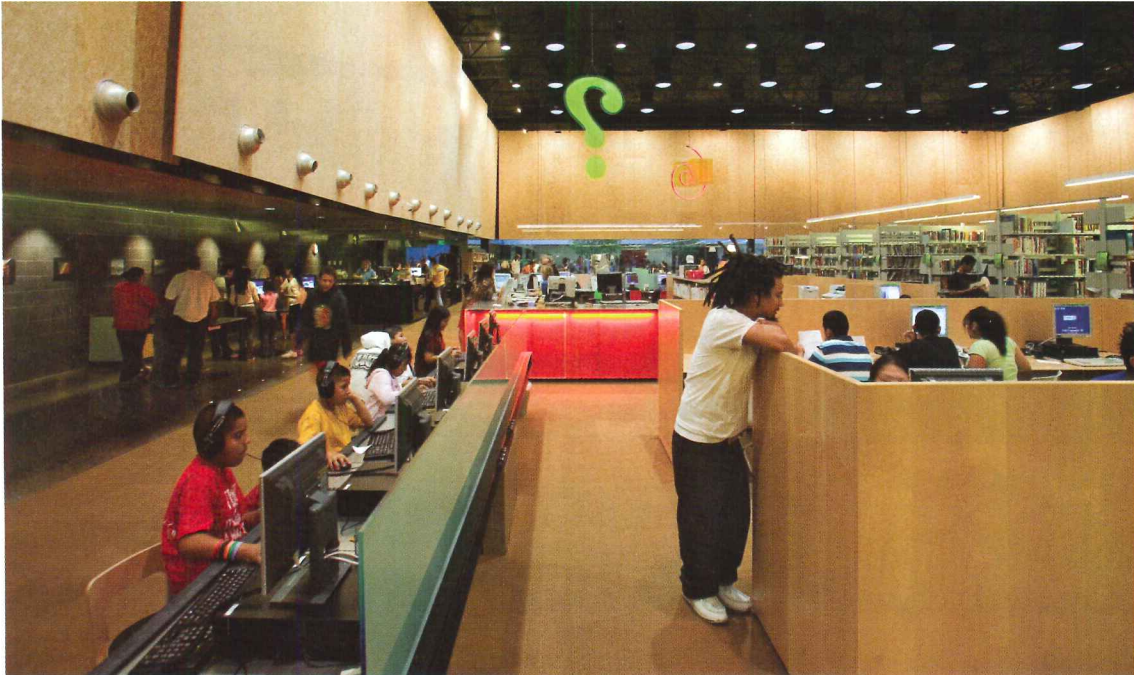
Although simple in layout and construction, the steel-frame, metal-clad boxes that house the library and community center deliver a memorable architectural experience by balancing opposing elements—exercise for the mind on one side and for the body on the other; 8 feet of glass curtain wall on the bottom and 16 feet of mill-finish stainless-steel panels above; and a low-ceilinged corridor that compresses space as you enter and 24-foot-high volumes that shoot up as you arrive in the two main function areas. To make the library and gym feel as big as possible, the architects designed them as clear-span spaces with steel joists that work as roof trusses. Another key part of the architectural balancing act was bringing daylight into the buildings from above and below—from tubular skylights reaching down from the roof and from the band of 8-foot-high glass wrapping around three sides of each building's base. Orchestrating daylight in this manner not only reduced the need for electrical lights, but eliminated glare for people reading in the library and playing basketball in the gym.





GROUND FLOOR

- 1. Garden
- 2. Promenade
- 3. Library collections
- 4. Children's room
- 5. Administration
- 6. Gymnasium
- 7. Auditorium
- 8. Dance
- 9. Teen lounge
- 10. Administration
- 11. Crafts
- 12. Multipurpose
- 13. Senior lounge



Although essentially one large, column-free space, the library offers a variety of different areas. Computer bars (left in photo at left) provide a communal experience, while workstations with higher partitions offer more privacy. Creating visual connections between the gym (bottom) and other parts of the complex was important to the client.





The architects created balanced daylight with a grid of tubular skylights and glazing at the base of the library.

In addition to daylighting, the architects incorporated a number of green design strategies in the project. To reduce the impact of the sun on the west side of the complex, they specified post-tensioned masonry blocks with a high-insulation value. On the transparent band around the other sides, they shaded the glass with horizontal metal louvers projecting from the curtain wall. Inside each of the main volumes, they created an interior skin (made of oriented strand board for the library and perforated metal panels for the gym) that provides a gap between the buildings' exterior metal envelope and lets hot air rise and escape through vents. A water-cooled heat-pump system and below-floor air distribution around perimeter glazing also reduce energy use. Outside, landscape architect Christine Ten Eyck planted Arizona ash trees along the promenade to shade the buildings, and a grove of palo verde trees in the parking lot to reduce the heat-island effect. Throughout the project, the architects specified environmentally responsible materials, such as formaldehyde-free batt insulation, recycled rubber flooring, and mill-finish stainless steel that requires less energy to produce (and costs less).

By designing the two buildings as inexpensive "big-box" structures, Silverberg and Burnette saved money for extra elements, including a mezzanine-level running track around the gym and separate teen and

senior lounges. In the library, they warmed up the space with casework made of medium-density fiberboard coated with a satin-lacquer finish and accents of bright red chairs and a glowing red circulation desk.

Although modest in scale, the Palo Verde Library and Maryvale Community Center is helping to reactivate the heart of Maryvale. According to the architects, library usage is up more than 65 percent, and the gym and community center are now drawing people from both the African-American and Hispanic communities, the two largest groups in the area. Keeping architectural and social elements in balance, Silverberg, Burnette, and their team have created common ground for a community on the mend. ■

Sources

Mill-finish stainless-steel rain screen: Elward Construction
Post-tensioned insulated masonry: SuperLite Block (Integra wall system)
Interior millwork and casework: Custom by ForeSite Construction
Tubular skylights: Natural Light

Acoustical ceilings: Alpro
Raised flooring: ASM (FS series)
Exterior lights: Lithonia; Winona
Interior lights: Lithonia; TPG; elliptipar

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

PRESCRIPTION: PRECAST



Architect: Pratt Design Studio Ltd.

Precast was the right prescription for the award-winning Condell Medical Center in Libertyville, IL. Architects chose High's precast because the uniquely articulated, stacked architectural panels were self-supporting, with vertical loads carried directly by foundation walls, which reduced structural steel framing costs significantly. And since designers were not sure when the facade would be constructed, precast ensured it could be done in any weather. High's unparalleled commitment to new technology and innovation has led to solutions like this and advancements including carbon fiber reinforced CarbonCast™—

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Grand Statements

Three large hospitals serving major cities employ contemporary architecture to present a welcoming face for the increasingly technologically complex business of health care.



ANADOLU HEALTH CENTER

Gebze-Kocaeli, Turkey

Rees Associates and HAS Architects create a seismically sound hospital for offering state-of-the-art medical care in a restrained atmosphere of space and light.



BANNER ESTRELLA MEDICAL CENTER

Phoenix

NBBJ poetically transforms a desert greenfield site into an acute-care hospital to serve a rapidly growing collection of communities.



BELLEVUE AMBULATORY CARE PAVILION

New York City

Pei Cobb Freed & Partners adds a glass-enclosed atrium and patient facilities to the front door of one of New York's oldest and busiest hospitals.

By Russell Fortmeyer

Ten years ago, hospitals shuffled toward outpatient care and off-site medical office buildings to disperse patients, embracing a trend many thought would be the death knell of the sprawling acute-care hospital. How times have changed.

Big is back in health care. Doctors flock to big hospitals capable of shouldering the cost of keeping pace with technological change that seems to occur daily. Patients like the one-stop-shop mentality large medical campuses afford. And cities enjoy the economic engines of what are often the largest employers in town.

Architects have responded to this reemphasis on bigness by introducing a new vocabulary of design terms into health care in an attempt to prevent past mistakes—confusing floor plans, drab interiors, inflexible expansion capabilities, and inhospitable visitor accommodations—from branding another generation of hospitals as expensive eyesores. The industry's embrace of “evidence-based” design, which considers patient outcomes and staff satisfaction in determining environmental quality, has helped to nurture clients who value buildings that offer access to exterior views and daylight, encourage sociable staff exchanges, and are easy to navigate between departments and public areas.

The three projects we feature this month represent straightforward, restrained designs that position large hospitals as accessible, neighborly institutions in their communities. Anadolu Health Center, outside of Istanbul, establishes an outpost for the Johns Hopkins Medical Center in a region that will clearly benefit from an advanced level of health care in a building designed to withstand major earthquakes. Phoenix's Banner Estrella Medical Center represents a model for how a new hospital could be precisely planned to accommodate expected growth, while responding to the context of the Desert Southwest. The Bellevue Ambulatory Care Pavilion, on Manhattan's East Side, solves a common problem of older hospitals by embedding a stunning glass-enclosed atrium between a historic hospital building and new outpatient examination and treatment spaces.

These hospitals provide the proof that sometimes in health care less is more. Patients are tired of finding hospitals cluttered with the architectural wizardry of soffits, flimsy decoration, and multitudes of finishes and details. Owners are tired of operating hospitals that confine their plans for growth and leave no flexibility for new technology. Combined with an increasing awareness of sustainable design issues peculiar to health care and a still-burgeoning hospital construction boom, the evidence for good design is all around us. ■

PHOTOGRAPHY: © SERDAR SAMLI AND HASAN DENIZ (TOP); JOHN DURANT (MIDDLE); PAUL WARCHOL (BOTTOM)

For more information on these projects, go to Building Types Study at www.archrecord.com.

One: ANADOLU HEALTH CENTER

Gebze-Kocaeli, Turkey

Rees Associates and HAS Architects collaborate on a state-of-the-art hospital in a seismically sensitive site outside of Istanbul.

By Robert Ivy, FAIA

Architect of record: Rees Associates—Frank Rees, Jr., AIA, principal; Walter Gregg, project director; William Howell, AIA, director of design; James Gary, health-care planner; Sung Chia; Jerry Hovorka; Kathy Potts; Melanie Compton
Associate architect: HAS Architects—Ayse Hasol Erkin, principal
Client: Anadolu Health Care Foundation System
Consultants: Arup (structural); Gurdal (mechanical); Enmar (electrical); Rees Associates (medical planning); DS (landscape design); Tekfen Engineering (civil); VanStavern Design Group (interior); Siemens (medical equipment)

Size: 464,000 square feet (medical office building, 64,000 square feet)
Cost: \$50 million
Completion date: February 2005

Sources

Office furniture: Nurus
Reception furniture: B&B Italia
Carpets: Interface
Downlights: ERCO
Exterior, fountain lights: Bega
Corridor sconces: I-Guzzini
Patient rooms, surgery fluorescent troffers: Trilux

For more information on this project, go to Building Types Study at www.archrecord.com.



Set just off the axis of major highways connecting Anatolia and Europe, not far from a new airport in Istanbul, the strong, clear forms of the Anadolu Health Center project images of contemporary solidity to the surrounding countryside.

Located near Turkey's main industrial zone, which provides an automatic roster of patients, the hospital and health complex serves the immediate geographic area near the Sea of Marmara. However, its reputation as a health-care facility, coupled with its architectonic amenities, is drawing a clientele from throughout the Middle East and eastern Europe. The medical center, affiliated with Johns Hopkins Medicine, based in Baltimore, sits on a hilltop in Gebze, on an open site bordered by protected woodland, an experimental olive grove, and a clear view to the sea.

Program

The 209-bed acute-care hospital, medical office space, medical-related retail, and central plant form the initial investment in what will ultimately comprise a 2-million-square-foot campus outside Istanbul.

Although it includes the latest treatment facilities, the entire complex has been organized in six levels on its sloping site in recognition of the natural environment, and to highlight what its designers cite as "protective medicine" for healthy living.

A green space at the core, complete with water features, distinguishes and links the three primary zones of the master plan, including medical, residential, and educational areas. Ultimately, the ambitious program will include a rehabilitation center, nursing home,



and a hospice (a first for this part of the world). In addition, plans call for a 240-student nursing-education school, a 360-student allied health-education school, a student dormitory, and a 150-room hotel to serve patients' families and the residential needs of nurses.

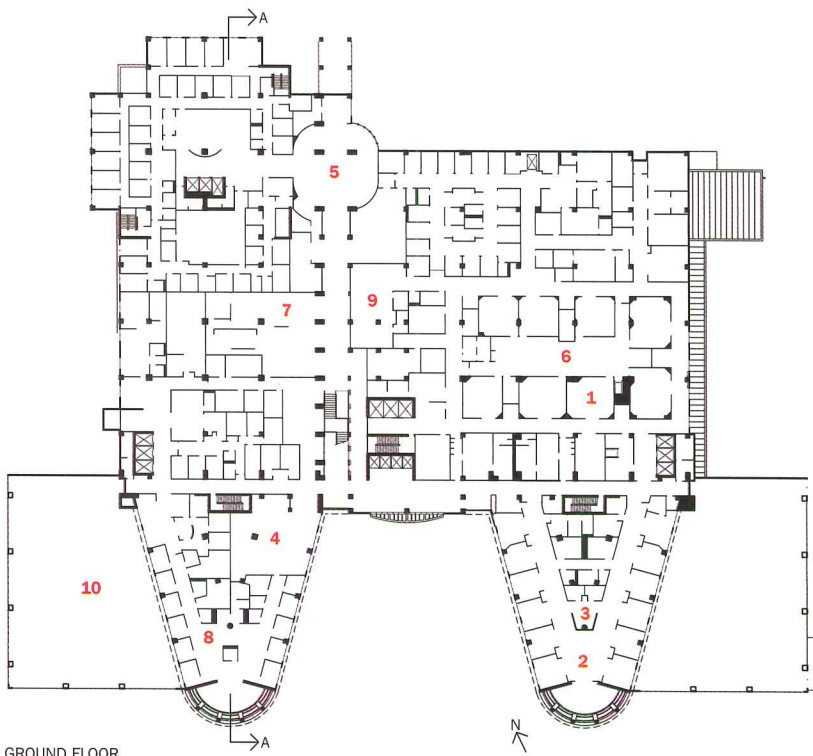
The program's complexity was compounded by the site's seismic sensitivity: Because of the high level of activity in the area, located at the epicenter of the 1999 earthquake, the hospital would have to

Patient wings (this page) provide access to views from individual rooms, as well as shading devices. The health complex (opposite, top) currently consists of the hospital tower (on the left) and medical offices (on the right), set on a site that slopes down to the sea. The site (opposite, bottom) will grow to include a full health center, with housing, a nursing school, a rehab center, and a hospice, a first for Turkey.





Patient rooms are divided between two main towers (above left). Circulation is segregated by function, such as the ER entrance (above) leading to a trauma area.



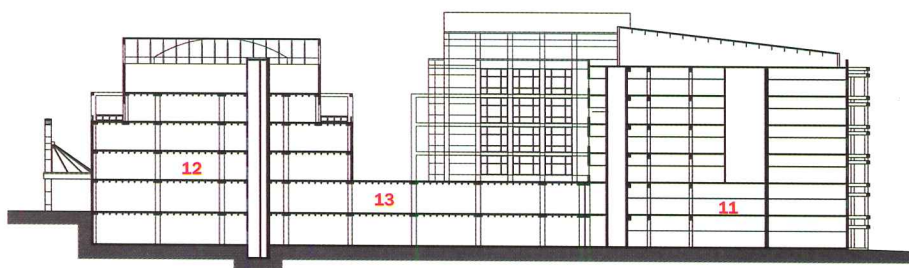
1. Surgery
2. Typical ICU patient room
3. Nurses' station
4. Waiting room
5. Main lobby
6. Clean core
7. Admitting
8. Outpatient cancer center
9. Surgical holding
10. Green roof
11. Medical office building
12. Patient tower
13. Ground floor

be designed for earthquake resistance, with a structure that could remain functional in the aftermath of a natural disaster. Foundations were required to rest 23 feet below grade, with waffle slabs capable of minimizing vibration levels in all surgical suites.

Although it is a sophisticated health-care project for Turkey, the combined resources of Oklahoma-based Rees Associates and HAS Architects, of Turkey, programmed and designed the initial facilities to allow a two-year construction period that met AIA and NFPA guidelines within a modest budget of \$50 million. Ayse Hasol Erkin, a graduate of the Istanbul Technical University and Harvard's Graduate School of Design, was the principal in charge with the Turkish firm, a situation that helped the team achieve clear communication and common goals.

Solution

Organization of the large facility achieves clarity of function for the building occupants. Bright corridors enlivened by sunlight lead to vistas overlooking the nearby mountains. In a variant from the normal hospital



SECTION A-A

0 30 FT.
9 M.

Public areas provide ample light and openness, as in the concourse leading to the lower level (right). Axial organization and skylights illuminate corridors, while vegetation softens institutional interiors.





The admitting area (above) and nurses' stations (below) feature muted palettes and wood finishes. The hospital employs

straightforward contemporary simplicity throughout in furnishings and appointments, eschewing the need for elaborate decoration.



room arrangement, all patient rooms include views of the Sea of Marmara, with due consideration for sun screening. In deference to the different communities that use the hospital, the design of circulation spaces allows for the separation of patients, visitors, and employees. Oncology patients, for example, have separate entrances, waiting spaces, and treatment rooms, providing them privacy from the general hospital population.

Constructed of 32-by-32-foot spans with reinforced-concrete columns, the solid structural system permits flexibility and functionality of spaces. Waffle slabs of concrete reach between spans to disperse loads and minimize vibration for demanding surgical and treatment procedures. Polished local stone flooring lines spare interior corridors in primary public areas—a hard, reflective surface that mirrors the brightly lighted passageways. Patient rooms include a combination of residentially scaled furnishings in muted colors and modern health-care systems that taken together evoke a pleasant hotel room.

Commentary

Many of the Anadolu Center's accomplishments exceed those of typical health-care projects. Turkey's health-care professional "brain drain" has been partially stemmed by the Anadolu Center and its designation as a cardiology and oncology specialty center. As a spur to further development in the region, the complex has stimulated the construction of new roads; additionally, the center's developers have underwritten a local primary school. In recent polling, the hospital reports nearly perfect levels of patient satisfaction. Projections suggested the hospital would break even by year's end.

For the country and the larger region, the hospital succeeds in meeting or exceeding international standards. Architecturally, the center employs a clearly contemporary vocabulary to signal that Turkey is changing, in tune with the broader currents in Europe and the rest of the world. ■



Patient rooms combine modern luxe with the needs of today's health care (above). Wood trim and furnishings soften interiors (below).

Bathrooms (right) contain amenities more commonly found in residential design, including elegant tiles and fixtures.



Two: BANNER ESTRELLA MEDICAL CENTER

Phoenix, Arizona

NBBJ designs a technologically advanced hospital with room to expand, at the crossroads of several growing cities.

By Ingrid Spencer

Architect of record: NBBJ—John Pangrazio, AIA, partner in charge; Rysia Suchecka, partner in charge of interior design; Christian Carlson, AIA, design principal; Scott Dunlap, lead designer; Robert Norwood, lead interior designer; Charles Martin, AIA, lead medical architect; Nancy Lim, project manager; Stanley Palmer; Hau Vong; Brian Uyesugi; Tammy Felker; Robert Smith; Ruben Gonzales; David Huang

Associate architect:

Orcutt/Winslow Partnership

Client: Banner Health

Consultants: Syska Hennessy Group (m/e/p); Paul Koehler (structural); CMX (civil); Steve Martino and Associates (landscape); NBBJ/Syska (lighting)

Size: 452,238 square feet

Cost: \$91 million

Completion date: November 2004

Sources

Glass curtain wall: Wausau

Copper cladding: Kovac

Doors: VT Industries

Office furniture: Herman Miller

Patient room seating: Nemschoff

Patient beds: Hill-Rom

Elevators: Kone

Lighting: RSA; Bruck; Lithonia; Guth; Gotham; Bega

For more information on this project, go to Building Types Study at www.archrecord.com.



When officials at Banner Health asked designers from NBBJ's Seattle office to create their new, 452,238-square-foot hospital in west Phoenix, they said they wanted the place to be "warm." But NBBJ design principal Christian Carlson, AIA, disagreed with the term. "What does 'warm' mean in Phoenix?" he asks. "How about cool? A cool white tent in the desert." The folks at Banner were soon convinced, and the design team began their research. "It's rare to build a hospital from the ground up," says Carlson about the site—a 50-acre stretch of undeveloped desert that sits at the crossroads of



two major freeways and is surrounded by the growing communities of Avondale, Buckeye, Glendale, Litchfield Park, Peoria, Surprise, Tolleson, and west Phoenix. "Our thought was, if we really got to do it right, what would we do?"

Program

As well as a soothing, healing place for people in a vulnerable state, the client had several other mandates for this medical center, which was meant to serve as a template for future Banner hospitals. Because of

PHOTOGRAPHY: © JEFF GOLDBERG/ESTO, EXCEPT AS NOTED; JOHN DURANT (OPPOSITE)

The six-story patient tower (opposite, top) looms dramatically above the main lobby entrance (this page). Banner stands on a desert site in Phoenix with a backdrop of mountains (opposite, bottom).





A two-story building houses conference space and classrooms (top). The women's center, in the nursing tower, has its own entrance (above).

the rapidly populating communities it served, Banner Estrella was to be built for fast-track growth, with an almost Lego-like plug-and-play design that would accommodate two additional towers and a total of 600 beds on its campus. Upon opening, the hospital would comprise a full-service, acute-care, 170-bed tower, medical office buildings, and an outpatient surgery center. Next, this hospital of the future needed to be technologically and architecturally advanced, and virtually paperless. Also, as a work place, the architecture would have to show that staff was nurtured as well as patients and their families. It had to attract and keep the best doctors, nurses, and hospital administrators.

Solution

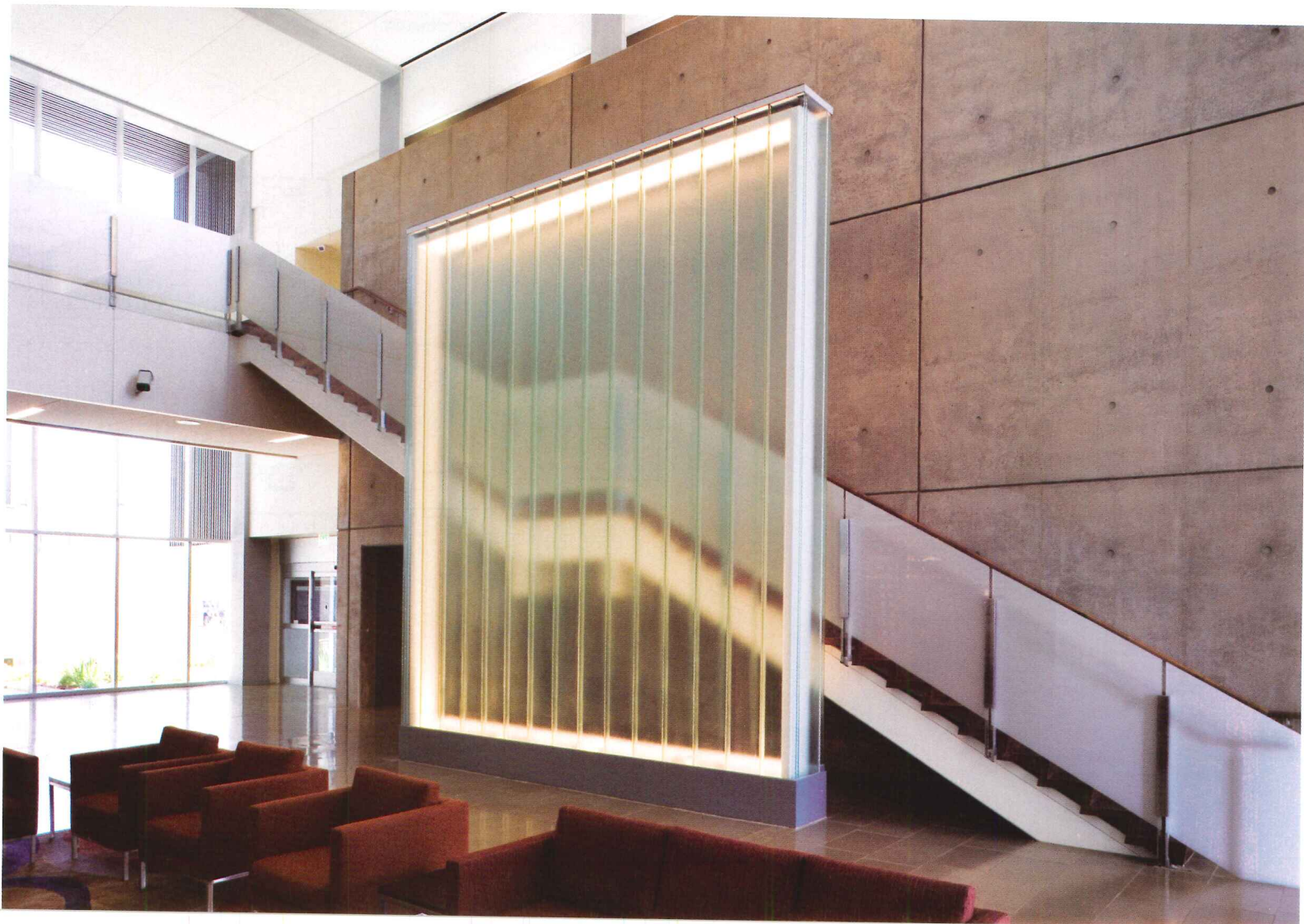
Simple tectonic forms make up the mass of the campus, which is structurally composed of only a few materials—tilt-up concrete, copper, glass curtain walls, and galvanized aluminum siding—to hide its weight, and to allow for systematic growth. Circulation and utilities are arranged along an interconnecting spine, where modular pieces can be added without moving the physical plant, the medical office buildings, or the lobby. Locating the central plant and loading dock 300 yards east of the main campus means that noisy coolant towers and emergency generators as well as supply trucks are away from patients. “Having a remote plant, two different growth axes for the campus, and locating infrastructure at the perimeter of the diagnostic and treatment building and in the center of the patient tower ensures that expansion won't be in conflict with patients now, and when renovation happens,” says Bill Scrantom, senior vice president with the m/e/p engineering firm for the project, Syska Hennessey. “This hospital will not have to close for business while it's expanding.”

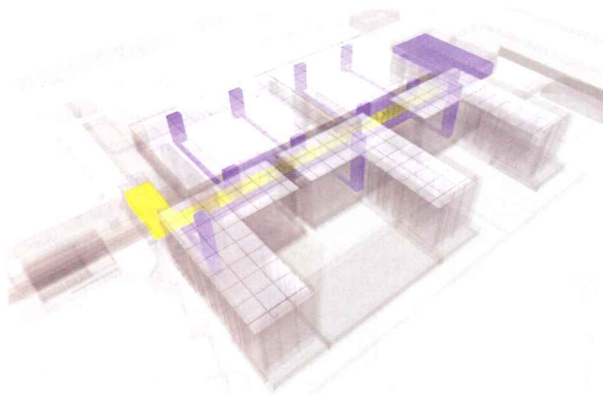
Carlson and his team designed a building using passive solar techniques, to create a connection to the dry canyons and mesas of the region, and to follow through on the “tent in the desert” metaphor.

PHOTOGRAPHY: © JOHN DURANT (OPPOSITE, TOP LEFT)



The double-height lobby (left two), which features a gift shop, is flooded with indirect, floor-mounted lighting in the polished concrete floor. LED pendant lights are on an alternating sequence to produce a variety of colors (far left). The staircase is faced with a glass installation (below) that will eventually be fully engraved with the names of financial donors.



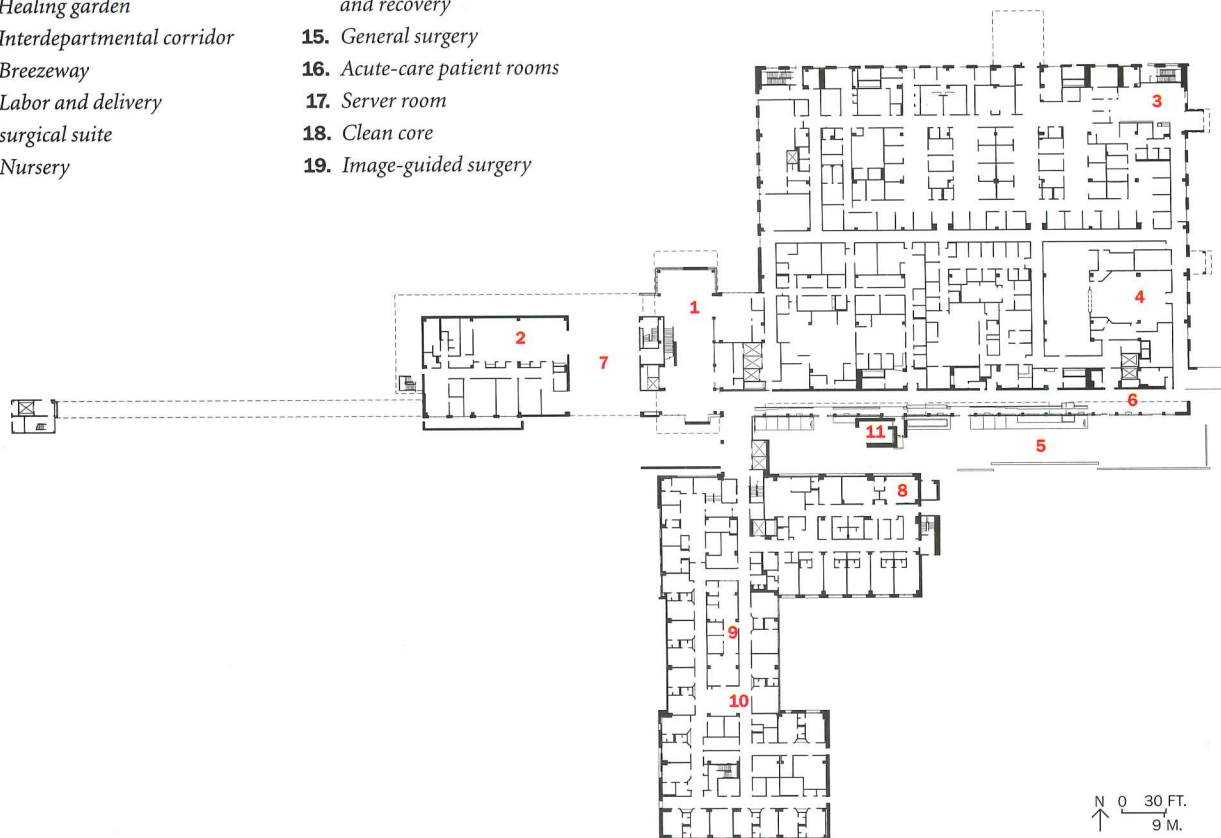


Banner Estrella was designed to be expanded along a main spine between the hospital and the central plant. Each new nursing tower or added component of the diagnostic and treatment building would be "plugged into" the spine (above).

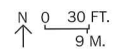
- | | |
|--------------------------------------|--|
| 1. Lobby | 10. Postpartum patient rooms |
| 2. Conference center | 11. Chapel |
| 3. Emergency department waiting room | 12. Adaptive-care patient rooms |
| 4. Cafeteria | 13. Radiology department |
| 5. Healing garden | 14. Pre-op, post-op holding and recovery |
| 6. Interdepartmental corridor | 15. General surgery |
| 7. Breezeway | 16. Acute-care patient rooms |
| 8. Labor and delivery surgical suite | 17. Server room |
| 9. Nursery | 18. Clean core |
| | 19. Image-guided surgery |



SECOND FLOOR

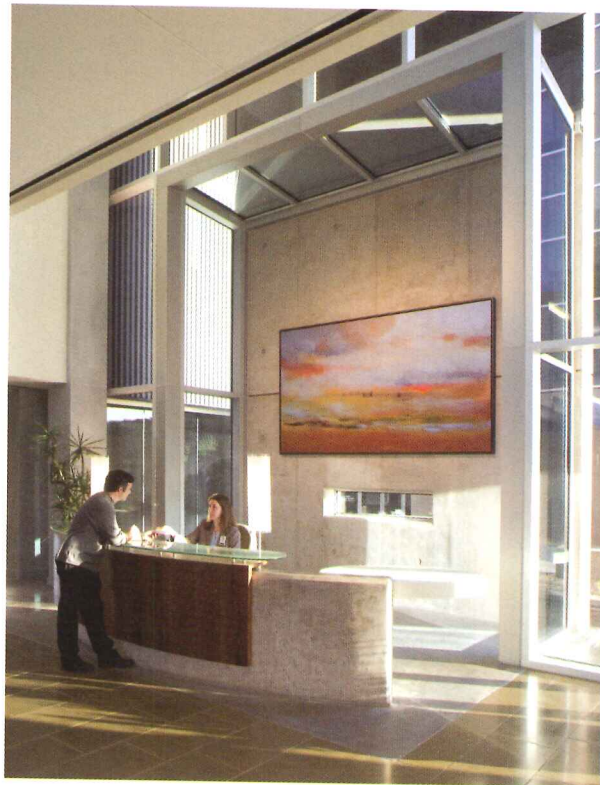


FIRST FLOOR



PHOTOGRAPHY: © MATT MILIOS/NBBJ (OPPOSITE, BOTTOM); JOHN DURANT (OPPOSITE, TOP RIGHT)

The lobby includes an information desk (right), which directs visitors to the main public corridor (far right) that leads to waiting rooms, the cafeteria, a chapel, and a healing garden (below). The corridor sits atop a basement and tunnel that leads to the detached central plant and contains the hospital's utility supply lines.





The main corridor (above left) includes spaces that encourage spontaneous staff conversations (above right). Postpartum patient rooms (below left) are larger and

include sofas that convert to beds to accommodate visiting family. Pre- and post-surgery rooms (below right) offer patients privacy without sacrificing openness for staff.



PHOTOGRAPHY: © JOHN DURANT (THIS PAGE AND OPPOSITE)

"In the desert, anything that happens, either positive or negative, is a singular event," say Carlson. "With that in mind, we designed the building to act as a solar clock, with the sun playing a major role as it moves across the landscape." Degrees of transparency are determined by the sun, with vertical "eyebrows" shading windows on the west side of the patient tower, and horizontal hoods shading windows on the south and north sides. Like an oasis or a canyon, water runs sparingly along the length of the building. A chapel in the center of this "stream" opens into a garden with palo verde trees.

Inside the main lobby, the 35-foot-high space looks more like a hotel/spa than a hospital, with walls of concrete and cool white acoustic panels, Venetian plaster covering structural beams, and a mesquite wood staircase. A walk down the second-floor staff corridor reveals shadows dancing through skylights, and areas off the corridor that encourage spontaneous conversation among the staff—especially relevant, as this hospital is one of the first to eliminate departmental fiefdoms by efficiently combining surgery, radiology, and diagnostic areas. Connie Harmsen, the former Banner Estrella C.E.O. who saw the project through to completion, says efficiency is further realized in the elimination of traditional nurse stations, which give way to alcoves and gathering areas.

Commentary

Emerging from a rocky first year that required staff layoffs, as budget volume targets were too high for a nonreplacement facility, the hospital's finances have now turned around. Patient- and employee-satisfaction surveys indicate that the hospital's approach is working. The hospital is poised to begin expansion within the next 10 years, beginning with the emergency services area. NBBJ is already in the design phase of another new hospital for Banner Health in Arizona, using Banner Estrella's essential design, with some modifications, as a template. ■



The chapel occupies a central position in the healing garden, with large swinging doors that take advantage of Phoenix's better weather. The garden includes palo verde trees and desert roses.

Three: BELLEVUE HOSPITAL AMBULATORY CARE PAVILION

New York City

Pei Cobb Freed & Partners add a gleaming, dramatic atrium entrance pavilion to one of New York's busiest and most historic hospitals.

By Russell Fortmeyer

Architect: Pei Cobb Freed & Partners—Ian Bader, AIA, partner in charge; Richard Cutter, AIA, project manager; Bea Lehman, AIA, project manager; Andre Morawski, landscape architect; Deborah Young, AIA, interior designer

Client: New York City Health and Hospitals Corporation

Consultants: Cosentini Associates (m/e/p, lighting); Leslie E. Robertson Associates (structural); Mueser Rutledge Consulting Engineers (geotechnical); Cerami Associates (acoustics); Medical Planning Research International (medical planning); Turner (construction manager)

Size: 210,000 square feet

Cost: \$84 million

Completion date: March 2005

Sources

Masonry: Mt. Sinai Blend Face Brick

Glass curtain wall: PPG Solarban 60 clear

Skylight: Viracon VRE 1-46

Granite: Stony Creek Granite

Cubicle curtains: Carnegie Fabrics

Desks: Knoll

Reception chairs: Knoll (Life chairs)

Downlights: Kurt Versen; Lightolier

Wood window blinds: Capco Group

For more information on this project, go to Building Types Study at www.archrecord.com.

An estimated 10,000 people walk through the entrance to New York City's Bellevue Hospital every day, many of them surely unaware as they traverse Pei Cobb Freed & Partners' new glass atrium that the hospital is one of the oldest in the Western Hemisphere.

Bellevue has been caring for the city's people since 1736. Originally built as an almshouse at the Lower Manhattan site of City Hall, the hospital moved in 1794 to what was formerly an 18th-century farm, called "Belle Vue," along the East River between 25th and 30th Streets. The site today is a confusing complex of hospital buildings representing various design approaches, squeezed in the midst of a typically dense Manhattan neighborhood. McKim, Mead and White developed a master plan for the facility from 1908 to 1939 and gave the hospital a grand, stylized Romanesque administration building that acted as a front door for decades before disappearing behind a banal parking garage unceremoniously plopped onto First Avenue. Medical facilities continue north on First up to 34th Street, encompassing New York University's medical center. N.Y.U. operates Bellevue on behalf of the city.

Program

In 2000, the hospital charged Pei Cobb Freed with the design of a new 210,000-square-foot ambulatory-care pavilion and main entrance for



First Avenue. The five-story pavilion houses 270 exam rooms for noncritical hospital functions, such as dermatology, adult and child primary care, and a women's center, as well as an outpatient cancer center on an additional mezzanine floor tucked into the north side of the ground floor.

Initial plans called for placing the new building on the site of an adjacent garden, south of where the new building stands. Ian Bader, AIA, of Pei Cobb Freed, says that given Manhattan's lack of green space throughout the city, the design team felt it was important to preserve the garden and to open the ground floor to the public as much as possible.

By resituating the entrance back to the McKim, Mead and White building, the architects restored the original symmetry of the hospital's First Avenue front door. "The new building is lifted up on columns to encourage you to look underneath it to the stone portal of the existing building," Bader says. "At the heart of the dialectic between the two



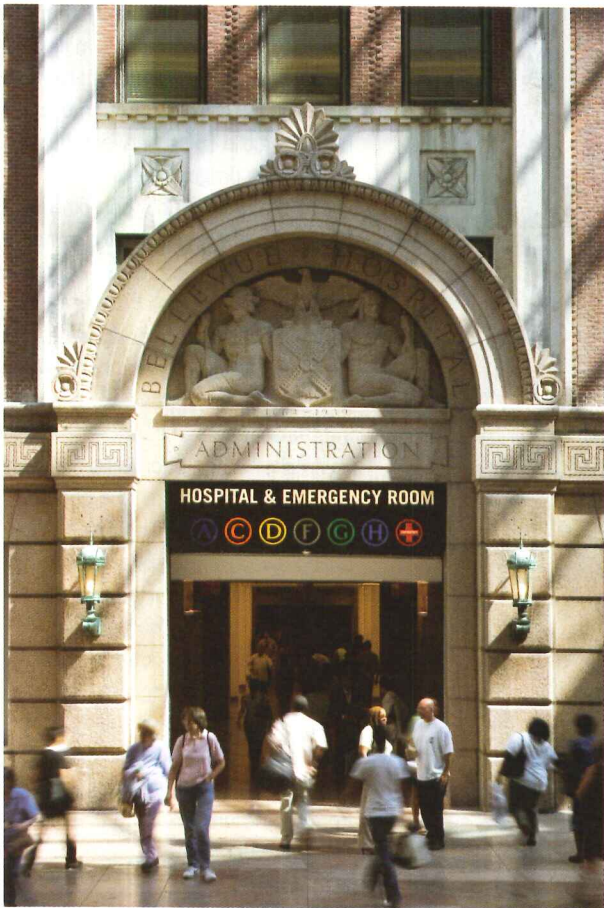
PHOTOGRAPHY: © PAUL WARCHOL (THIS PAGE, TOP, AND OPPOSITE); COURTESY BELLEVUE HOSPITAL (BOTTOM)

Indirect lighting washes the curtain wall at night, imbuing the original building (opposite, bottom) with new life.





Bellevue's atrium allows for temporary art exhibitions on the ground floor, as well as hospital events in an auditorium at the south end of the ground floor. Nearly 10,000 people pass through the space every day.



buildings, we were able to create a space for the public.”

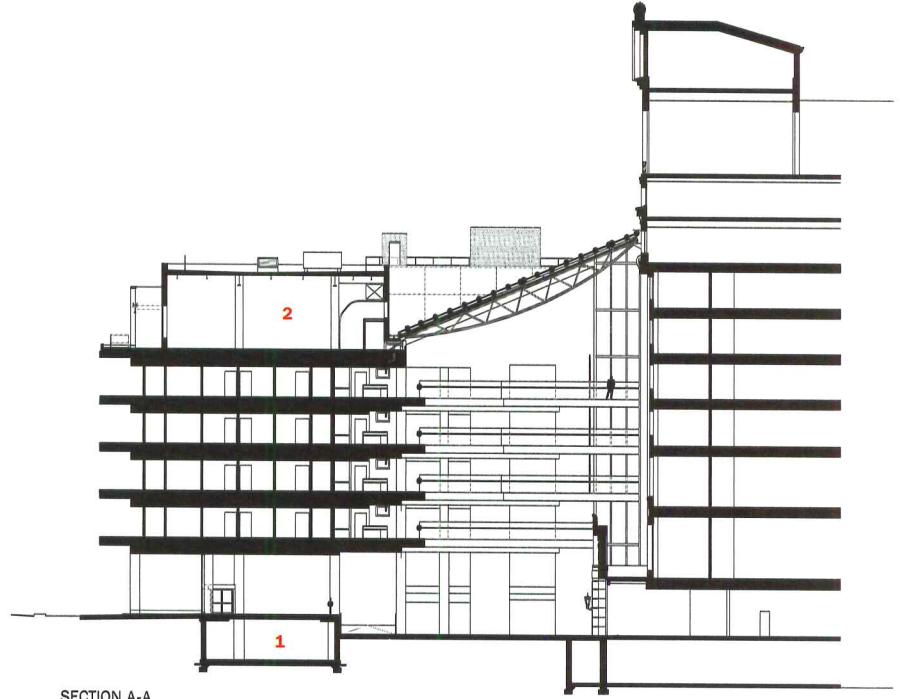
Solution

The new building’s ground-level transparency is achieved with 12-foot-high sheets of glass set in a channel and anchored to the ceiling all along the front entryway. A ramp takes visitors down the 5-foot elevation change from the street to the Connecticut granite floor of the hospital’s new atrium lobby.

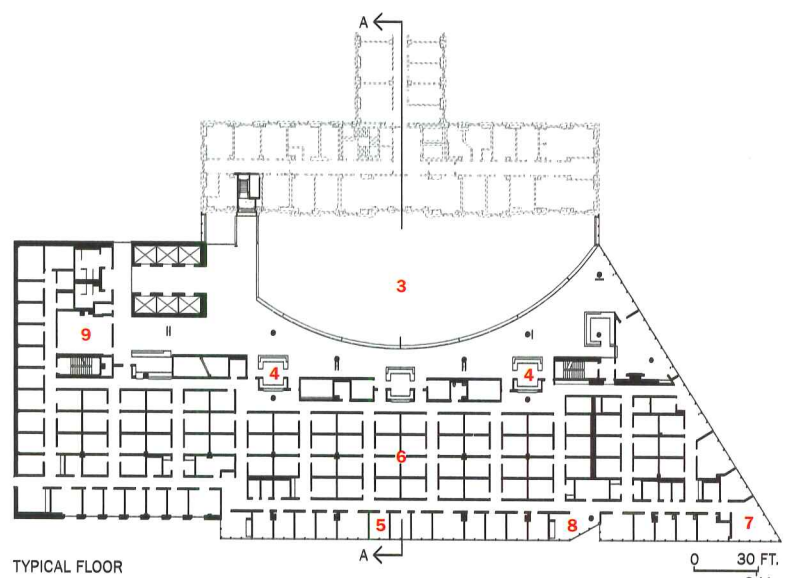
The atrium structure, consisting of 65-foot-long, 11-foot-deep, shiplike bowed steel trusses, rests upon a new structure inserted in the McKim building’s seventh floor just below the cornice line. The glass curtain wall abuts the brick building with an accordion joint, guaranteeing the new building could be removed without damaging the integrity of the McKim, Mead and White structure. Bridges to the existing building on the second through fourth floors are hung from the elevator core on the north side of the building, appearing to float,

Pei Cobb Freed developed the color-coded alphabetic way-finding system iconically displayed on Bellevue’s original entrance (top).

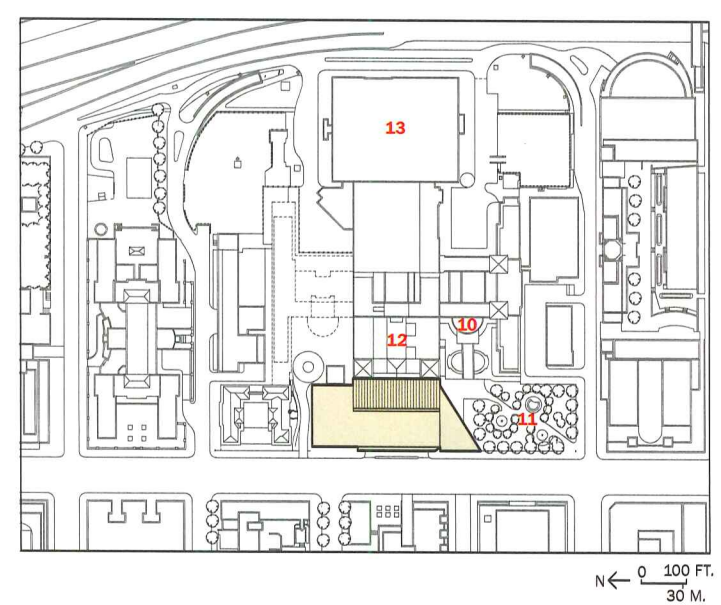
1. Mechanical room
2. Mechanical penthouse
3. Atrium
4. Typical check-in and check-out desk
5. Typical office
6. Typical exam rooms
7. Conference room
8. Staff lounge
9. Classroom
10. Previous main entry
11. Existing garden
12. Original administration building
13. Existing hospital tower



SECTION A-A



TYPICAL FLOOR



0 100 FT. 30 M.

PHOTOGRAPHY: © PAUL WARCHOL (OPPOSITE); JEFF GOLDBERG/ESTO (THIS PAGE)



thanks to a sophisticated system of steel struts. The entire atrium is isolated from the ambulatory-care wing by a two-hour fire separation occurring along the spine between public and private program areas.

Each patient floor combines a distinct color scheme with a mural developed by the architects using photographs from the hospital's rich historical archive. Color schemes for exam rooms vary and corridors terminate in daylight views, ensuring that patients encounter distinct environments on each visit.

The building acts as a beacon at night, with the ceiling plane pulled away from the slab edge along the exterior curtain wall to indicate the full 12-foot, floor-to-floor height so perimeter indirect T5 fluorescent lighting can illuminate the curtain wall. At night, lights installed in windows in the existing building reflect off mirrors hung from the atrium structure to wash the entire brick facade.



Bowed trusses set on the original brick building, with atrium smoke-purge fans tucked into a grille on the opposite side (above). Staff lounges afford views of the neighborhood (left), while examination rooms accommodate the conventional requirements of ambulatory health care (below left).



Commentary

Contrary to most contemporary health-care design, Pei Cobb Freed's scheme at Bellevue exhibits a welcome restraint in color, materials, and formal bravado. Public areas pulsate with light and activity, as vibrant as a New York street. Examination rooms and offices are clearly organized and accessible. Not only is the pavilion functionally successful, the atrium is a model of finely tuned scale, perfectly balancing the spatial interface of the new building and the imposing grandeur of the original.

It's no surprise that Pei Cobb Freed, one of the most prominent American firms, has secured several more health-care projects in New York. Examples of the firm's other work in the city are as close to Bellevue as I.M. Pei's Kips Bay Plaza apartments, a classic Modernist concrete complex from the 1960s, a mere three blocks away. The firm's continued success is not an accident. The reconfigured Bellevue adroitly realizes that most difficult of design problems: adding a thoroughly modern building to a landmark while preserving the dignity of both. ■

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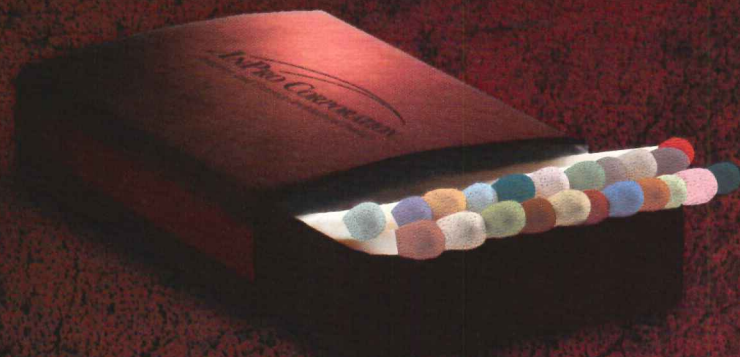


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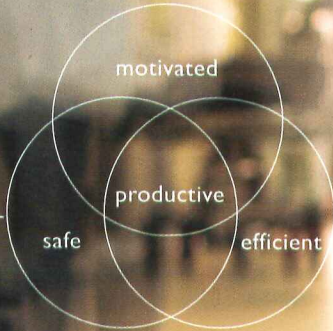
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Sleuthing the Mundane and the Catastrophic

FORENSIC ARCHITECTS AND ENGINEERS EMPLOY INVESTIGATIVE TECHNIQUES, NOT TO POINT FINGERS, BUT TO FIND THE ROOT CAUSE AND RECOMMEND SOLUTIONS FOR PROBLEMS THAT PLAGUE BUILDINGS

By Joann Gonchar, AIA

For the general public, mention of “forensics” most likely brings to mind television shows like the current *CSI: Crime Scene Investigation* or *Quincy, M.E.*, popular in the late 1970s and early '80s. For design and construction professionals, however, the word is associated with tragic collapses, such as the 1981 walkway failure at the Kansas City Hyatt Regency, or this summer's ceiling module collapse in a tunnel that is part of Boston's Big Dig.

It is no wonder that the term is associated with litigation. The Hyatt collapse, for example, which killed 114 people and injured another 185, is one of the most litigated building failures in history. At one time, the claims under review totaled more than \$3 billion, according to Kenneth Carper, professor at Washington State University's School of Architecture and Construction Management.

However, despite the protracted litigation surrounding some high-profile failures, architects and engineers who specialize in investigative work say they typically focus on less catastrophic building performance issues, like water penetration or poor indoor air quality, and that disputes are often resolved without lawsuits. Carper estimates that less than 5 percent of building failures end up in court.

In fact, many practitioners avoid the use of the term “forensic” simply because the dictionary definition “of or used in law courts” is not an accurate description of their primary goals—to find the source of the problem and propose a solution. “We call it ‘root cause investigation,’” says Robert Vecchio, principal of New York City-based Lucius Pitkin, Inc. (LPI), a firm that performs failure and material evaluation services. “We don't want to be considered hired guns,” he adds.

For the owner of a mid-1960s Midtown Manhattan office build-



A surveyor, suspended by a two-rope system similar to that used by climbers, evaluates and documents facade conditions of a historic building.

ing, litigation was “never really a topic of conversation” when a 30-by-30-foot section of louvered curtain wall fell from the upper floors of the 35-story tower in February 2003, says Gary Mancini, principal of Thornton Tomasetti, the New York City-based engineering and architectural consultants called in to investigate.

The curtain wall section fell during an intense snowstorm in the early morning hours of a public holiday and no one was hurt. The streets, which would have typically been coming to life at that hour, were deserted. And the team's first task, as it would be after any failure, was to make certain that occupants and pedestrians were not subsequently put at risk. The investigative team's top priority “is to make sure the situation doesn't get worse,” says Mancini. The police had cordoned off the street below, and Thornton Tomasetti, working with New York City-based contractor Structure Tone, used cables and netting to secure the failed area of the facade and the surrounding curtain wall.

Next, the investigators took a closer look at the remaining components at and near the area of collapse. They were particularly concerned about a concrete masonry block wall behind the section of failed curtain wall enclosing an elevator machine room. Typically, these types of walls are not reinforced and not tied to the building structure, explains Mancini. “It was never intended to be exposed to wind loads,” he

CONTINUING EDUCATION



Use the following learning objectives to focus your study while reading this month's ARCHITECTURAL RECORD/AIA Continuing Education article. To receive credit, turn to page 162 and follow the instructions. Other opportunities to receive Continuing Education credits in this issue can be found in the sponsored section beginning on page 169.

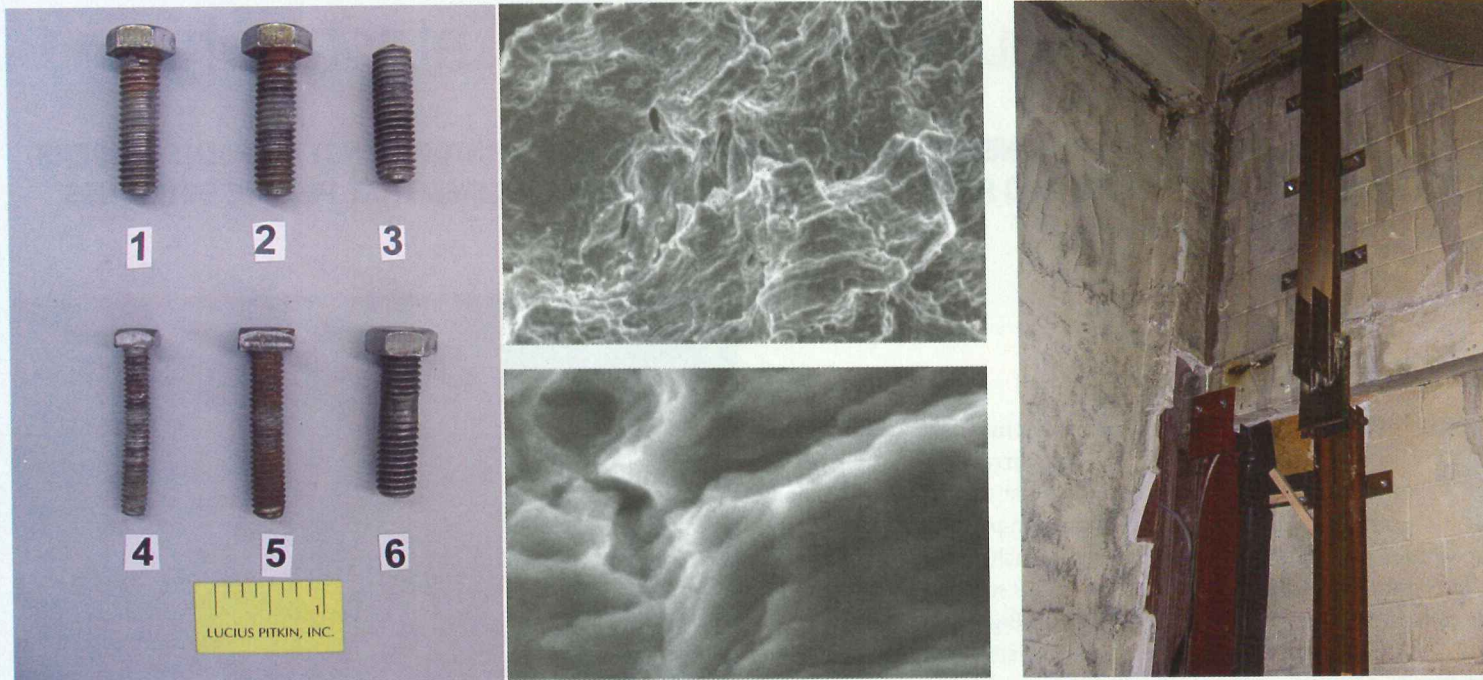
LEARNING OBJECTIVES

After reading this article, you should be able to:

1. Discuss causes of building failures.
2. Describe methods of investigating building failures.
3. Describe methods of investigating water problems in buildings.

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

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After a portion of louvered curtain wall fell from the upper floors of a Midtown Manhattan office tower (right), investigators braced a concrete masonry wall (above far right) and stabilized other surrounding construction. Debris was

cataloged (above) and tested. Magnification of the surface of a fractured bolt revealed a pattern of failure consistent with fatigue (two images, above middle). But this bolt was not ultimately considered to have played a role in the collapse.



says. Although it showed no signs of impending failure, engineers devised shoring from steel angles and channels that the contractor had on hand. In addition, the outside face of these walls was covered with plywood.

After completion of the stabilization process, the team was free to focus its attention on the rest of the building envelope. It began examining representative sections of the facade and the connections between the curtain wall and the building structure wherever these were not hidden by interior finishes, finding many locations where bolts tying the mullions to the building's structure at spandrel beams were missing. Wear on brackets and plates indicated that fasteners had been originally installed but had backed out over time. The building was a relatively early curtain-wall tower, and the facade system did not use fasteners with locking devices, explains Mancini. "It was not until the '70s or '80s that these curtain-wall systems were refined."

At the owner's urging, the inspection quickly expanded to examination of all of the nearly 2,000 connections between the facade and the tower's structure. In the case of curtain walls, "there is no textbook [formula] for determining how much investigation is enough," says Eric Hammarberg, Thornton Tomasetti vice president.

Over the course of the next six or seven months, during weekends and after normal working hours, the Thornton Tomasetti team and the contractor examined every mullion bracket and spandrel beam clip. These connections, hidden on both the exterior and interior, were accessed through the convection units within offices using a device called a borescope that links an objective lens to an eyepiece with a flexible tube.

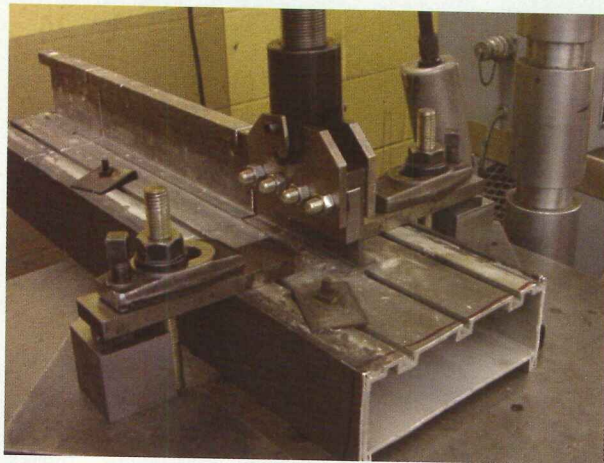
The investigators found that the locations with missing bolts were concentrated primarily at the corners and at the upper floors, the areas of the building subject to higher wind loads. When locations with missing fasteners were found, the contractor replaced them on the spot with new stainless-steel bolts and nylon threaded nuts.

Concurrent with the examination of the mullion-spandrel connections, Thornton Tomasetti was also trying to determine what made the louvered section that fell during the February snowstorm particularly vulnerable. Using methods not so different from those employed by plane-crash investigators, the team cataloged the recovered debris and reconstructed the facade in a vacant retail space on the building's ground floor.

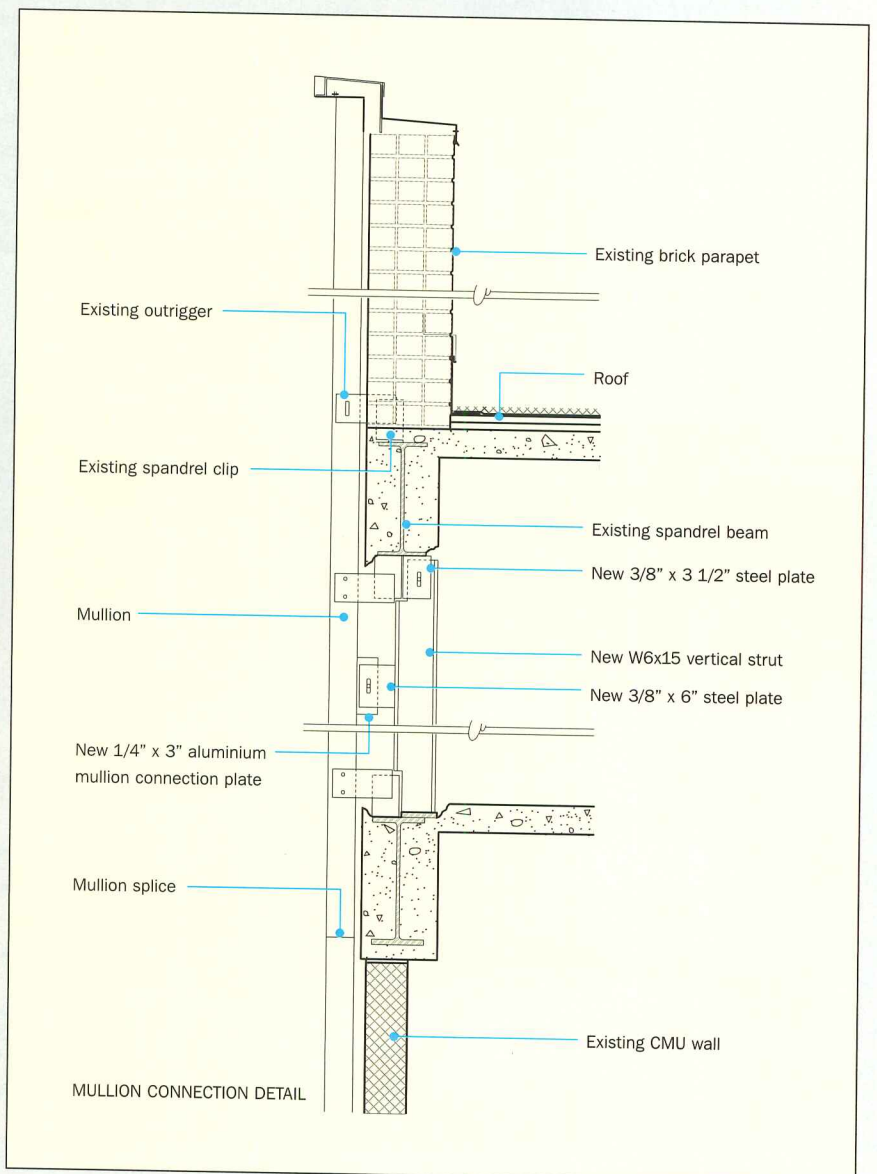
Some debris was sent for metallurgical testing and microscopic examination to Vecchio's firm, LPI. It tested the loading capacity of the

PHOTOGRAPHY: COURTESY LUCIUS PITKIN, EXCEPT THORNTON TOMASETTI (TOP RIGHT AND BOTTOM)

LPI tested a portion of recovered mullion (below) from the Midtown Manhattan office building's failed section of curtain wall to determine the load-carrying capacity of the weld holding the clip to the mullion. However, no deficiencies were found.



The specified repair for the failed area of curtain wall (right) included construction of the previously omitted connections between the mullions and the building's structure.



welds attaching the connection plates to the mullions, but no deficiencies were found. LPI also examined other recovered components, including the bolts used to secure the curtain wall to the building's structural frame. The majority of recovered bolts showed evidence of damage from wind loading. "The bolts had moved back and forth [within the clips and connection plates] to the point of rubbing off the threads," says Mancini.

One bolt with a missing head was recovered. Its surface, magnified 7,500 times, revealed a pattern of parallel bands—an indication of failure due to fatigue, explains Vecchio. But the Thornton Tomasetti team

FOR CURTAIN WALLS, THERE IS NO TEXTBOOK FORMULA FOR DETERMINING HOW MUCH INVESTIGATION IS ENOUGH.

could not link the bolt directly to the failed area and theorized that it may even have been a stray bolt broken during construction.

The final conclusion of the investigative team was that the louvered section of curtain wall had failed because spandrel clips had been omitted at three different locations. "The outrigger plate had been installed on the mullion, but there was no evidence it had ever been

attached to clips on the spandrel side," says Mancini.

The reason for the absence of these connections is still unclear. It may have been a result of a field change, or due to the elevation of the spandrel beam, which was higher in relation to the surrounding structure on this floor than on others. Because of the floor's unusual configuration, there may have been a misalignment of the tie between curtain wall and building structure, according to Thornton Tomasetti. Although the reason for the omission is a mystery, the repair was straightforward. This work, completed in late 2003, involved replacing the failed section of curtain wall and constructing the omitted connections.

Water woes

More mundane than falling facades, but still vexing to building owners and occupants, is the common problem of water infiltration. The owner of an early-20th-century warehouse discovered that his heavy-timber and masonry-bearing-wall structure had this problem in the summer of 2001, just a year after its gut renovation and conversion to a corporate headquarters was completed, according to Dean Vlahos, AIA, a principal and head of forensics practice at Santa Monica, California-based WWCOT.

The owner, who asked that neither he nor the location of his

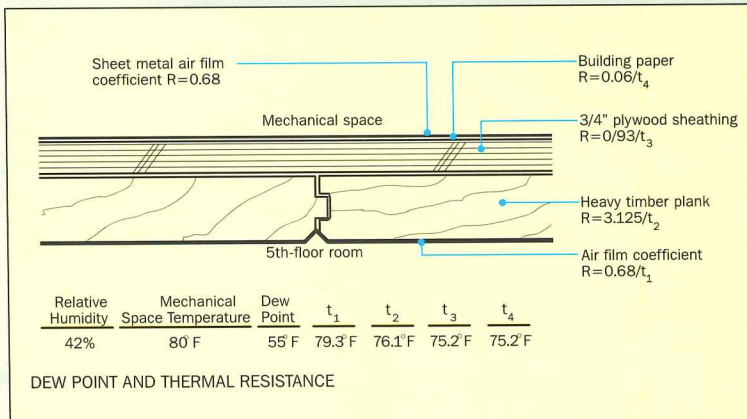
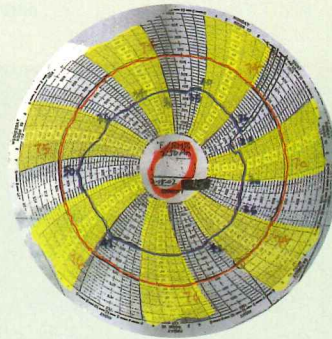
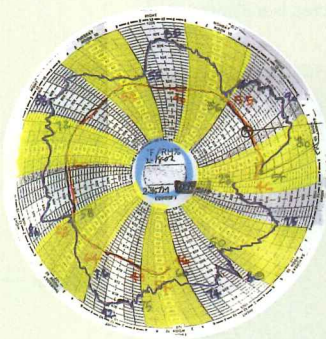
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The owner of a former warehouse found evidence of water penetration in the building's mechanical space (left middle and bottom). Water testing (left) ruled out leaks in

the enclosure as the source. Monitoring of temperature and humidity inside the space (below right) showed that both were constant despite fluctuations in exterior

conditions (below left). Calculation of the surface temperatures of each of the materials in the floor assembly showed that all were above the dew point (bottom).



building be identified, called in Vlahos after signs of water infiltration were found in a mechanical space located on the roof of the original five-story structure and below a new penthouse. During a routine inspection of the area, a member of the building's maintenance staff had noticed that the sheet metal covering the floor was buckling. Pulling back the metal revealed mold growth and deterioration in the floor assembly below. Although it was clear that water was the culprit, the source was far from immediately apparent. It took WWCOT a month and "a lot of head scratching" to determine the cause, says Vlahos.

WWCOT's investigation at first focused on the most likely suspects—the mechanical space's metal panel enclosure and the adjacent roof, where some evidence of moisture penetration had also been found. The firm water-tested these areas by saturating the surfaces and then applying food coloring, using different hues for each location to track the water's path. WWCOT tested roof penetrations and the heads of doors, windows, and louvers—wherever deficient flashing might lead to leaks.

Vlahos and his team conducted the water test twice. They performed the test once with the HVAC systems on, and again with them shut down. He had noticed that during normal hours of operation, the mechanical space was highly pressurized. He theorized that if warm air seeping out of the ductwork was causing this pressurization, then the negative pressure

created when the mechanical systems were turned off might be drawing water in through small gaps in the space's enclosure. But no sources of water infiltration were found. "We couldn't get the building to leak," he says.

The investigators next looked at condensation as a possible source. Fluctuations in temperature and humidity might cause moisture to condense on the surfaces within the mechanical space. But monitoring of both temperature and humidity for a week in early February showed that the space was roughly 80 degrees, with 42 percent humidity. The conditions did not vary with the exterior conditions and were relatively constant, whether the mechanical systems were in operation or shut down.

Although the temperature and humidity inside the mechanical space were constant, Vlahos thought that condensation might still be playing a role. At the prevailing environmental conditions, he calculated the surface temperatures of each of the components making up the floor assembly—sheet metal, building paper, plywood sheathing, and heavy timber tongue-and-groove planks. If the surface temperatures were below the dew point, condensation would form. Surface temperature is a function of each component's material properties, thickness, and thermal resistance, he explains. But this avenue of exploration also turned out to be a dead end. The analysis showed that the surface temperature of each of the layers of the floor assembly was above the dew point of 55 degrees.



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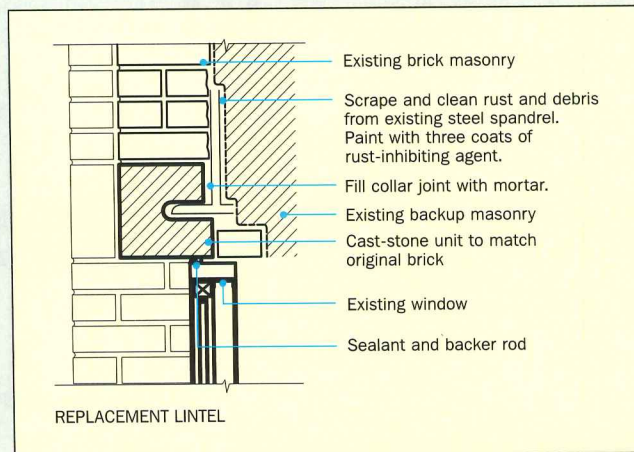


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A facade evaluation and restoration is part of a project to convert the Williamsburgh Savings Bank in Brooklyn, New York (left), into condominiums. Deteriorated

window heads (below) were one of many conditions revealed by the envelope-consultant's survey. Repair (bottom) will include replacement of specialized brick with cast stone.



The forensic team was stumped. “If the water is not from outside, and it’s not from the inside, where was it coming from?” asks Vlahos.

Core samples of new wood used in the floor assembly had ruled out the possibility that these materials were already moldy or had too much moisture content when they arrived at the site. “We could see that the mold was not within the wood but was more topical,” says Vlahos.

ALTHOUGH IT WAS CLEAR THAT WATER WAS THE CULPRIT, THE SOURCE WAS FAR FROM IMMEDIATELY APPARENT.

The clue that finally led to the source of water infiltration was vestiges of asphalt, found during destructive testing of the mechanical space floor and the adjacent roof. The asphalt, typically used to terminate completed areas of roof and prevent wind-driven rain from migrating underneath, was a sign of a wet construction season.

The asphalt, together with information from construction personnel interviews, refocused the investigation on the construction process itself. Intumescent paint, specified for the underside of the tongue-and-groove decking to increase the fire-resistant characteristics of the heavy

timber structure, was extremely difficult to apply, according to the contractor. In order to make the paint adhere, the construction crew applied two, and in some areas three, coats of the paint, even though only one was required. This difficulty was an indication that the wood was already wet.

An overlay of the construction schedule and precipitation data for the 210-day period when contractors were roofing the structure and building the mechanical space’s enclosure confirmed that 89 of those days were rainy. Through inspection of dated construction photos, Vlahos found that the decking and sheathing inside the mechanical space and on the roof were left largely unprotected and not given sufficient time to dry before encapsulation with other materials.

The layers of building paper and sheet metal on the mechanical-room floor, and insulation and built-up roofing on the exterior, trapped the water inside the organic materials, creating perfect conditions for mold growth and deterioration. The intumescent paint used on the underside of the tongue-and-groove decking further aggravated these conditions, forming a “sandwich,” says Vlahos.

Correcting the problem involved a phased, five-month reconstruction of the damaged areas, performed while the building was occupied. Resolution did not require litigation—the contractor acknowledged not protecting the roof and mechanical space adequately during



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construction and assumed responsibility for the approximately \$4 million repair. “The contractor stepped up to the plate,” says Vlahos.

Preservation pathologists

A building investigation need not be prompted by a design or construction misstep or a catastrophic failure. The renovation of historic structures, for example, often involves an investigation and evaluation phase. Thornton Tomasetti is performing such an evaluation in its role as building envelope consultant for the owner of the Williamsburgh Savings Bank in Brooklyn, New York. Developer Dermot Company is converting the late 1920s former office and bank building into condominiums.

The 35-story “early skyscraper” is supported by a steel frame but is clad in foot-thick brick—masonry as solid and substantial as though it were load-bearing, but without provision for thermal movement. “There were no expansion joints in this era,” explains Thornton Tomasetti’s Hammarberg. As a result, the skin has suffered extensive cracking.

In order to document these cracks and find the most appropriate locations for new expansion joints, the envelope consultants needed access to the entire exterior of the 512-foot-tall tower. On this project, as with many similar facade evaluations, Thornton Tomasetti used rope access rather than the more common swing stage or frame scaffolding. Rope access is typically less expensive and provides investigators with more flexibility because there are no platforms, outriggers, or counterweights, explains Kent Diebolt, president of Vertical Access, the building inspection

subcontractor. The system, which relies on two static ropes, one for fall protection and one for descent control, also intrudes less on the building fabric, he adds.

In an “almost real time” process, the Vertical Access surveyors documented their finds using hand-held computers, and sent the files to Thornton Tomasetti each night. The surveyors noted the cracks’ locations, width, and amount of displacement. “Then we identified areas where we wanted probes,” says Hammarberg.

The investigation also revealed a unique window-head condition. What looks like a soldier course of brick is instead a course of custom brick notched to hide a steel lintel. The shape is extremely vulnerable to thermal expansion and contraction, and many have cracked and broken. The consultants have specified cast stone as a replacement, primarily because of specialized brick’s long lead time and the tight construction schedule, which requires that facade work be completed by next summer.

Thornton Tomasetti’s recommendations include replacing elements that are broken, while salvaging those that are still serviceable. For the building’s terra-cotta decoration, the firm is recommending using epoxy to repair broken units wherever possible, and replacing those beyond repair with the original material. Terra-cotta is lighter than many substitutes, and its thermal performance is akin to the adjacent materials, explains Hammarberg. He is confident that this “surgical” approach will serve the building well, and that the work will be a “50- to 100-year repair.” ■



AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION

INSTRUCTIONS

- ◆ Read the article “Sleuthing the Mundane and the Catastrophic” using the learning objectives provided.
- ◆ Complete the questions below, then fill in your answers (page 257).
- ◆ Fill out and submit the AIA/CES education reporting form (page 257) or download the form at www.archrecord.com to receive one AIA learning unit.

QUESTIONS

1. In the Midtown Manhattan office building, what indicated that fasteners had originally been installed?
 - a. wear on brackets and plates
 - b. fastener locking devices were found
 - c. inspection of spandrel beam clips
 - d. location of the missing fasteners
2. The investigation of the Manhattan office building determined that the louvered section of the curtain wall failed because of which?
 - a. omitted mullions
 - b. wear on brackets and plates
 - c. metal fatigue
 - d. omitted spandrel clips
3. The team that examined the hidden connections in the Manhattan office building used what device?
 - a. convection units
 - b. a borescope
 - c. magnetic pliers
 - d. a fluoroscope
4. The WWCOT team conducted tests and performed analysis to check for which of the following?
 - a. water leakage with the HVAC systems on
 - b. condensation
 - c. water leakage with the HVAC systems off
 - d. all of the above
5. WWCOT’s calculation of the surface temperatures of each of the materials in the floor assembly ruled out which as the source of the moisture?
 - a. deficient flashing
 - b. roof penetrations
 - c. pressurization
 - d. condensation
6. WWCOT determined that the source of the water problem was which?
 - a. decking and sheathing were left unprotected during construction
 - b. the construction took place during a rainy season
 - c. water was trapped inside the wood by other materials
 - d. all of the conditions above contributed to the water problem
7. Which indicated to WWCOT that the wood was already wet during construction?
 - a. the finding of asphalt on the roof
 - b. the finding of intumescent paint on the underside of the decking
 - c. a report of difficulty in getting the intumescent paint to adhere
 - d. layers of sheet metal on the floor
8. The extensive cracking on the skin of the Williamsburgh Savings Bank building in Brooklyn is due to what?
 - a. terra-cotta ornament
 - b. thick brick cladding
 - c. no provision for thermal movement
 - d. expansion joints that are too deep
9. Access to the Brooklyn tower for evaluating the facade was accomplished by which method?
 - a. ropes
 - b. swing stage
 - c. frame scaffolding
 - d. outriggers
10. The custom-shaped brick above the windows of the Brooklyn building is being replaced by cast stone for which reason?
 - a. custom-shaped brick will take too long to produce
 - b. cast stone will be faster to produce
 - c. the notched brick is vulnerable to thermal expansion and contraction
 - d. all three of the reasons listed above

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New airport security technology is slow to be implemented, but developments abound

The arrest of 24 alleged terrorist conspirators in London on one day in August rippled through the airline industry and left passengers worldwide facing uncertain travel prospects. Within minutes of the arrests, airline passengers were being asked by airport security agents to discard liquids, gels, and creams prior to passing through

where GE has installed a security checkpoint of the future to test developing technologies. The checkpoint, which is not used for actual security operations, employs five newer and emergent systems: EntryScan3 trace portals that look like metal detectors, but detect for explosives; computer tomography (CT) scanners for carry-on bags;

millimeter wave portals to detect anomalies on a person's body; quadripole resonance used for scanning shoes without requiring their removal; and raman spectroscopy, which can detect explosives in a variety of substances, such as baby formula.

"We're trying to drive down the cost of security by automating it to lower the amount of people required to operate it, as well as get passengers through in around 30 seconds," Hill says. "Ultimately, we'd like to get all of this technology integrated into a seamless environment."

GE's project at SFO is in addition to a pilot air-cargo screening program instituted this summer by the Department of Homeland Security (DHS) at the airport.

Chris Kelly, spokesperson for the DHS, says the program will subject non-passenger-related cargo to explosive trace scanning and X-ray machines in an effort to establish a screening methodology based on existing technology for all airports.

The DHS's Transportation Security Laboratory in Atlantic City undertakes research into new technologies, and partners with companies to investigate advanced security systems. DHS then makes suggestions to the Transportation Security Administration (TSA) for final implementation.

While many of the test technologies are ready for implementation, but lack funding, some continue to pose problems. Millimeter wave devices have raised privacy concerns since the images produced of passengers walking

through the devices currently leave little to the imagination. Yotam Margalit, with GE Security, said it is their hope to completely automate these systems, so a computer would scan the image and only involve a human operator under an alarm condition. When asked if leaving airport security to a computer is a risk, Margalit says "machines, by and large, have a higher level of detection than operators. We're better off to have the two working in tandem."

TSA has installed nearly 1,400 Explosion Detection Systems (EDS) in commercial airports since 9/11. While the majority of these systems, which are basically CT scanners, have been placed near ticketing desks inside terminals, many airports are beginning to integrate them as "in-line" screeners as part of the overall baggage-handling system, which consumes a great deal of space.

"In a number of cases, we've had to come in and demolish profitable concession space that just happens to be next to the security area needed for processing and queuing," says Ron Steinert, AIA, of Gensler's Santa Monica office. Steinert has been involved in a number of Gensler's airport projects, including new terminals at Little Rock and renovations at LAX. He stresses flexibility in any new terminal design and points to the recent ban on liquids as a surprise that could now probably require an item-disposal station for each checkpoint that will require yet more space. He says one of the biggest challenges facing airports is finding the money to pay for security improvements, especially given the federal government's minimal funding levels, airport authorities that are already stretched tight, and airlines that continue to lose millions.

Russell Fortmeyer



security. The incident shed further light on the limits of airport security technology: Terrorists continue to pursue ways to skirt X-ray and metal-detector devices, as well as the "sniffers" used to identify explosive residue on baggage.

According to the Federal Aviation Administration, in 2005 passengers made approximately 730 million trips through airport security. Getting people through checkpoints quickly, without compromising security, is the chief concern of architects and technology designers involved in redesign of terminals throughout the world in response to post-9/11 concerns.

Steve Hill, a spokesperson for General Electric's security division, is involved in a pilot project at San Francisco International Airport (SFO),

Gensler's design of Detroit's new airport terminal emphasizes clarity and openness (above). GE's trace scanner (below) detects for explosives.



IMAGES: COURTESY GENSLER (TOP); GE SECURITY (BOTTOM)

Tech Briefs

LEED, green initiatives find widespread favor in energy-intensive airport terminals

With airports throughout the world undergoing massive improvement programs to respond to increasing security threats and record levels of passengers, architects are seizing the opportunity to implement sustainable design strategies into a building type that has received little

scrutiny for its energy performance in the past.

Kent Turner, AIA, was the project manager for HOK on the new Terminal A at Boston's Logan International Airport, which as of August was the first airport terminal in the world to achieve the U.S.

recycled materials. Turner says one of the challenges was integrating daylighting into the terminal, since expanses of glazing next to aircraft requires deluge sprinklers and costs more than a conventional blank wall.

Turner said HOK "had to get a lot of interpretations from the USGBC because LEED was originally developed for commercial office buildings, not airports." For example, Turner asks, how do you establish the occupants for a terminal where thousands of people are only passing through for a few hours at a time?

There is discussion within the USGBC to expand LEED as application guides—as opposed to entirely new programs—into a variety of other building types, including airports, but designers are forging ahead without it. Nellie Reid, with Gensler's Santa Monica office and a board member of the USGBC's Los Angeles chapter, has proposed that the USGBC consider introducing LEED for airports as part of her work guiding an expansion of San Jose's new airport terminal toward LEED certification.

"One of the difficulties with an airport is we have all of these different packages on their own schedules, like the foundation, structural steel, building enclosure, and building fit-out," Reid says. Still, Gensler has incorporated a number of sustainable strategies toward its goal of LEED Silver: displacement ventilation; glazings that minimize heat gain and loss; occupancy sensors for lighting; and a variety of recycled and sustainably produced finishes and materials. The

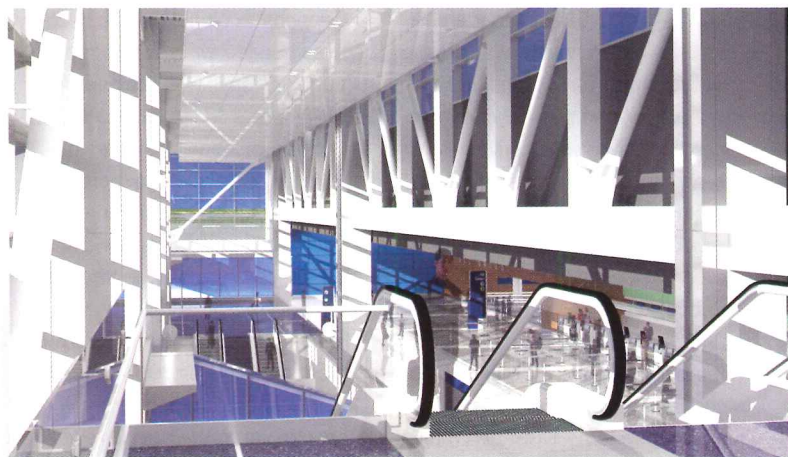
terminal is scheduled to open in 2008, though there have been some delays.

Airlines have lost billions since 9/11, which has made it difficult in the past to make the case for investing in green design strategies. "Airports have a tendency to emphasize initial cost rather than

long-term operational expenses," says Steven Howards, founder and administrative director of the Denver-based Clean Airport Partnership. "Furthermore, design guidelines don't provide any motivation to consider sustainable strategies. It's a major disconnect in the airline industry." Howards points to Seattle-Tacoma International Airport's implementation of sustainable strategies, such as lighting and HVAC control systems, as having saved that airport 25 percent in energy costs per year with comparatively little investment. "Airports can heighten the awareness of sustainability for what people could adopt for their own homes," he stresses. "People have time to kill, especially now with all of the security requirements." He thinks the public would favor it even more if energy saving could be passed onto them with lower ticket prices.

Howards says airports should include sustainable requirements in their design guidelines, as this will even the playing field for architects submitting proposals for new projects. "If the airlines wanted green building as part of the design criteria, it would happen," he says.

What's more, introducing sustainable design to airport terminals has fostered the implementation of cutting-edge technology. HOK and Syska Hennessy Group have designed a radiant cooling system into the floor of a grand public space for the new Indianapolis airport terminal now under construction. Robert Chicas, AIA, with HOK's New York office, says the floor is supplied with chilled water from the airport's central plant, leading to significant energy savings. A similar technique is employed at the new Bangkok International Airport by Murphy/Jahn Architects and Transsolar. Carl D'Silva, with Murphy/Jahn, says the radiant cooling slab will not only relieve the airport's more conventional mechanical system, it will also absorb solar load from the terminal's massive skylights and overhead trellis system. The airport officially opened in September. R.F.



HOK's design for Delta's new Logan International Airport terminal in Boston (top) recently achieved a certified LEED rating. Gensler's design for Detroit's new terminal (above) incorporates a variety of daylighting strategies in an effort to attain a LEED rating after it opens.

Green Building Council (USGBC)'s LEED certification for new construction. "We had LEED certification as a charter from the beginning, and we all agreed to it," says Turner. HOK incorporated such green strategies as energy-efficient HVAC equipment, construction waste and demolition recycling, and the use of

GPS SHOES.

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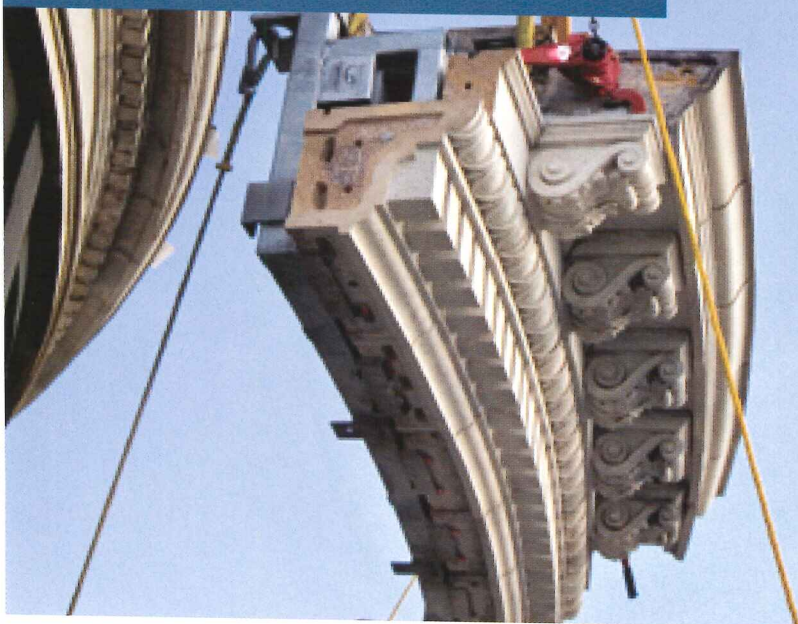
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171-175 Designing for Fire Resistance with Gypsum Panel Systems

Provided by Robert C. Grupe, CSI

Director Architectural and Technical Solutions
USG Corporation

Nestor G. Sanchez

Architectural Systems Manager
USG Corporation

LEARNING OBJECTIVES:

- Evaluate the elements in a fire-rated building assembly using gypsum panels
- Identify performance characteristics of different types of fire-resistant gypsum panel system
- Explain the testing procedures and standards used to determine fire-ratings of gypsum panel systems
- Design and specify fire-resistant gypsum panel systems for various applications



177-181 Wood Fire-Rated Doors Combine Safety and Aesthetics Advances

Provided by Artistic Doors and Windows

LEARNING OBJECTIVES:

- Discuss the recent trends in fire-rated doors
- Recognize the types of fire-testing that meet codes
- Analyze the requirements for fire-rated door glass and hardware
- Identify national codes and standards pertaining to fire-rated doors



183-191 Collaborating with Contractors for Innovative Architecture

Provided by C.C. Sullivan

Communications Consultant and Author

LEARNING OBJECTIVES:

- Explain the primary benefits of architecture firms collaborating with construction firms throughout the project life cycle
- Evaluate the pros and cons of collaborating with contractors, including insurance and legal issues
- Identify and describe at least four types of collaborative project delivery
- Describe anecdotal examples of how collaborative project delivery led to design innovations and/or client satisfaction



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Designing For Fire Resistance With Gypsum Panel Systems

Improving building safety through the use of fire rated assemblies

By: Robert C. Grupe, CSI

Director Architectural and Technical Solutions
USG Corporation

Nestor G. Sanchez

Architectural Systems Manager
USG Corporation

From high-rise commercial towers and institutional facilities to residences and virtually all types of occupied buildings, rapid and safe evacuation of building occupants during a fire or other emergency is of critical importance to life, safety and survival. As the events of September 11, 2001 at the World Trade Center illustrated, the location, materials and fire ratings of exit stairways, vestibule enclosures and corridors leading to them play an important role in ensuring that people can safely exit burning buildings.

Building codes address the need for fire-rated corridors, and fire resistance of materials in certain areas and public spaces within buildings, so that building occupants can reach exits and other means of egress. The codes typically dictate the level of fire resistance a building assembly, or group of components, must meet, and where each assembly shall be located to create the appropriate compartmentalization.

Most municipalities adopt a model code as the basis for their own code, making modifications that best meet their needs. Although many municipalities are switching to the newer International Building Code (IBC), which replaced the Uniform Building Code (UBC), Building Officials Code Administrators (BOCA) Building Code and Standard Building Code, some municipalities still follow one of the three older model codes.

These model codes establish the required fire resistance rating of an assembly based on the intended use of the building and its size. For example, hospitals and high-rise office buildings are considered high-risk structures.

Model codes are established based on the intended use.



The rapid and safe evacuation of building occupants during a fire is paramount to life, safety and survival. Model codes establish the required fire resistance rating of an assembly based on the building's intended use and size.

Buildings requiring the highest level of fire protection are classified as Type I or Class A. This means that the building must be constructed with non-combustible materials, and all finishing materials must have a limited index for the spread of fire on their surface and the amount of smoke they would emit in case of a fire. In addition, there must be a protected means of egress for building occupants. The means of egress requires that the walls surrounding the area must provide a specific level of fire resistance.

Single-family residences, where evacuation and rescue are generally considered easier to achieve, can be constructed with combustible materials. Multifamily residences typically have fire resistance requirements.

Testing for Fire Resistance

The fire resistance of assemblies is established in accordance with ASTM Standard E119, which is published by ASTM International. Formerly known as the American Society for Testing and Materials, ASTM International is a widely recognized standards development organization.

ASTM Standard E119 provides the ratings for walls and partitions, floor-ceiling and roof-ceiling assemblies, beams and columns. From this nearly century-old test standard, other test standards have been developed to evaluate the level of performance of through-penetration fire stop, joint and curtain-wall systems as they relate to the desired compartmentalization of buildings. The level of fire resistance is measured in hourly ratings: one, two, three, four and eight hours.

ASTM Standard E136 is employed to determine whether or not a given material is considered combustible. This standard measures a characteristic of the material itself, while the former standards evaluated the performance of the assemblies. The surface flammability and the amount of smoke produced by a given material are evaluated in accordance with ASTM Standard E84.

In establishing the fire resistance of an assembly, three factors are taken into consideration: the ability of the assembly to prevent the passage of flame, the capacity of the assembly to limit the heat transfer from the exposed side to the unexposed side and the

CONTINUING EDUCATION



Use the learning objectives below to focus your study as you read **Designing For Fire Resistance With Gypsum Panel Systems**. To earn one AIA/CES Learning Unit, including one hour of health safety welfare credit, answer the questions on page 175, then follow the reporting instructions on page 175 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:

- Evaluate the elements in a fire-rated building assembly using gypsum panels
- Identify performance characteristics of different types of fire-resistant gypsum panel systems
- Explain the testing procedures and standards used to determine fire ratings of gypsum panel systems
- Design and specify fire-resistant gypsum panel systems for various applications

assembly's ability to maintain its structural integrity for the classification period. Another consideration is the temperature of the structural steel, which may be used to establish restrained and unrestrained ratings.

Walls are required to be subjected to a hose stream test after a portion of the fire resistance test. The purpose of the hose stream test is to measure the relative integrity of the wall after it has been exposed to a fire. Water from the stream is not permitted to project through the wall assembly.

The walls that are to be tested are built within a steel and concrete yoke or frame. ASTM Standard E119 specifies that the area of the test specimen must be a minimum of 100 square feet, with no dimension measuring less than 9 feet. Typically, the test frames are 10 feet by 10 feet. Once the assembly is built within the frame, the frame is clamped in front of the furnace so that one side of the assembly is exposed to the fire.

The temperature within the furnace throughout the test is regulated in accordance with the standard time-temperature curve prescribed in the ASTM Standard.

Standard Time-Temperature Curve

| Temperature in Degrees Fahrenheit | Time |
|-----------------------------------|------------------|
| 1,000 | 5 Minutes |
| 1,300 | 10 Minutes |
| 1,550 | 30 Minutes |
| 1,700 | 1 Hour |
| 1,850 | 2 Hours |
| 2,000 | 4 Hours |
| 2,300 | 8 Hours and Over |

The temperature on the unexposed side is monitored at a minimum of nine locations using thermocouples, which are temperature sensors that can measure a wide range of temperatures. Five of these locations are defined specifically by the standard. One of the thermocouples must be located exactly in the center of the assembly, while the other four must be positioned in the center of the wall quadrants. The location of the remaining four thermocouples is left to the discretion of the lab conducting the fire test.

The average temperature rise on the unexposed surface is not permitted to exceed 250 degrees F, while no single thermocouple is allowed to exceed a temperature rise of 325 degrees F. Load-bearing walls are tested with a superimposed axial load simulating the maximum load condition. The wall must be able to sustain the superimposed load during the fire endurance and hose stream tests. The relative integrity of the wall after a portion of the fire endurance test is determined by the hose stream test.

A second wall is tested to half, but not more than one hour, of the intended fire resistance rating. The fire is shut off, and the partition removed and immediately hit with a specified pressurized stream of water from a distance of 20 feet for a specified period of time that depends on the fire resistance rating. The test requires that this hose stream must be emitted from a 2-1/2-inch hose with a National Standard playpipe nozzle with a 1-1/8-inch tip. If the water does not project beyond the plane of the wall, then the wall passes the hose stream test.

Hose Stream Test

The standards also permit the hose stream test to be conducted at the end of the fire endurance test. It is important to understand that the hose stream test is not intended to

| Resistance Period – Hours | Water Pressure – PSI | Duration of Application – Minutes |
|---------------------------|----------------------|-----------------------------------|
| Less than 1 (Optional) | 30 | 1 |
| 1 | 30 | 1 |
| 2 and 3 | 30 | 2-1/2 |
| 4 | 45 | 5 |

simulate what happens when the wall is actually hit with a stream of water from the firefighter hose. Instead, it is only intended to develop data about the relative integrity of the wall after a portion of, or during the entire fire endurance test, so that the design professional can make an accurate assessment of the building's safety.

Fire-Resistive Assemblies

A fire-resistant wall is composed of specially formulated fire-resistant gypsum panels, some type of framing (wood or metal studs), fasteners and a joint finishing system (if it is needed). Fire-resistant gypsum panels are classified as "Type X" in accordance with ASTM Standard C1396.

A fire-resistant wall is composed of specially formulated gypsum panels, framing fasteners and a joint finishing system.

A 5/8-inch gypsum panel is classified as Type X in accordance with ASTM Standard C1396 when it achieves a one-hour rating in accordance with ASTM Standard E119 as applied to both sides of 2-inch by 4-inch wood studs spaced 16 inches o.c. (on center), with the long dimension oriented parallel to the studs and attached to the studs with 1-7/8-inch-long, cement-coated nails spaced 7 inches o.c., with the joints treated with paper tape and joint compound.

Non-combustible walls have achieved one-, two-, three- and four-hour ratings employing steel studs and single or multiple layers of gypsum panels. The most basic one-hour wall is listed in Underwriters Laboratories' (UL) Fire Resistance Directory as Design No. U465. It is composed of a single layer of 5/8-inch Type X gypsum panels on both sides of 25 gauge (18 mil) metal studs spaced a maximum of 24 inches o.c.

Most of the gypsum panels covered in this design must be applied vertically and be attached to the studs with 1-inch-long Type S screws spaced 8 inches apart in the perimeter and 12 inches apart in the field of the panels. The use of thermal insulation for sound purposes is optional in this design.

A standard two-hour system is listed in the directory as Design No. U411. This design specifies a double layer of 5/8-inch Type X gypsum panels on both sides of 25 gauge (18 mil) metal studs spaced a maximum of 24 inches o.c. It is interesting to note that finishing of the joints is not required in this specific assembly. Once again, insulation is optional. An alternative to this is UL Design U412, in which the same two-hour rating can be achieved with two layers of 1/2-inch Type C gypsum panels on both sides of the studs in place of the 5/8-inch Type X gypsum panels.

By adding layers of gypsum panels, the fire resistance of virtually any wall can be increased by one hour.

By adding layers of gypsum panels to each side of the studs, the fire resistance of virtually any wall can be increased by one hour. Design No. U435 covers three- and four-hour ratings with three and four layers, respectively, of 1/2-inch Type C or 5/8-inch Type X gypsum panels.

Fire Resistance of Gypsum Panels

When it comes to fire-resistive ratings, the construction industry offers three different types of gypsum panels. Although all gypsum panel manufacturers make different types of panels for a multitude of applications, they all fall into three basic categories: Regular Core, Type X and Type C gypsum panels. The primary difference is in each panel's core composition. Regular core, as the name implies, is a standard or basic core that is non-fire-rated and generally used in a wide range of residential construction applications.

Reviewing the basic chemistry of the product provides a better understanding of the fire resistance of gypsum panels. Gypsum is a naturally occurring mineral and can be found

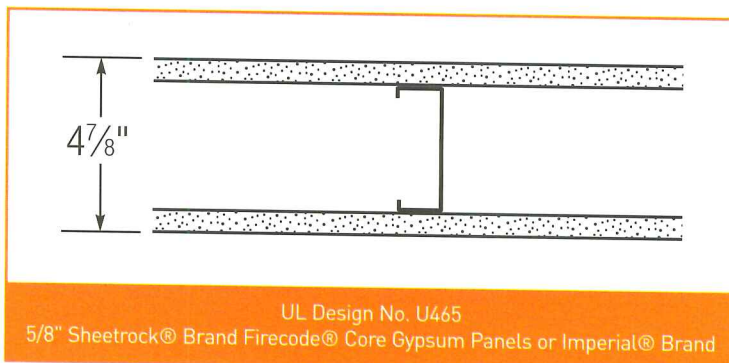
Gypsum is a naturally occurring mineral and can be found in great abundance around the world.

in great abundance around the world. In fact, White Sands, New Mexico, gets its name from the huge gypsum deposit that is located there. Gypsum is a very soft mineral composed of calcium sulfate dehydrate with the chemical composition reflected as $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$. When gypsum is subjected to heat, 1-1/2 molecules of water are emitted as steam, giving gypsum outstanding fire-resistant properties.

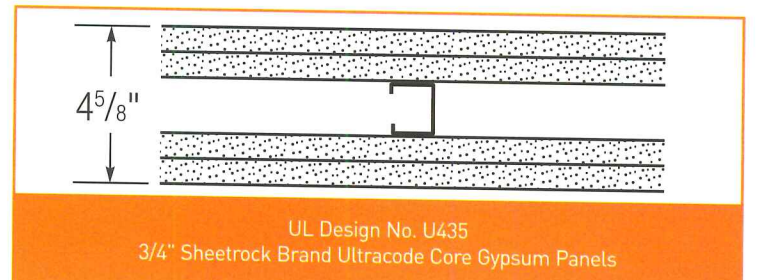
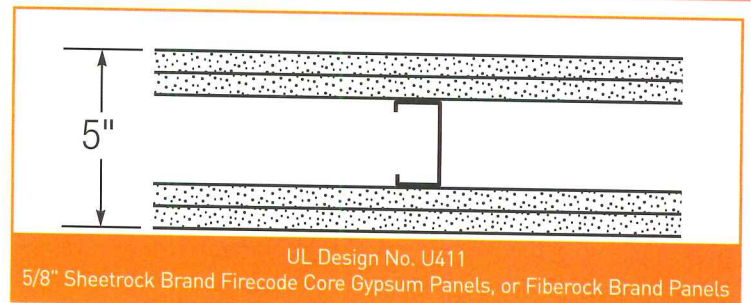
In the early 1950s, comprehensive testing was conducted on gypsum board to confirm that it would achieve the required fire ratings. The testing found that glass fiber strands, when introduced to the core, act as reinforcing bars and increase the product's structural capacity so that the panel can be used in fire-rated construction. Generally, these are known as Type X gypsum panels.

These strands can be exposed by abrading the gypsum core, and they will appear as hairs within the gypsum core. To further enhance the fire performance of the panel, unexpanded vermiculite is added to the core. When it is exposed to fire, the vermiculite will expand and fill the voids created by the departing water. Vermiculite is a natural, non-toxic material that expands with the application of heat, and is frequently used for fireproofing, especially for structural steel and pipes.

To prove the point, some simple comparative tests were conducted. This included taking 13-inch by 12-inch by 5/8-inch-thick samples of Regular, Type X and Type C gypsum panels and installing them in angled horizontal position. A superimposed load of 12 pounds, 9 ounces was applied over each panel. A temperature of 1,800 degrees F was maintained under each one of the samples for the duration of the test. The Regular panel failed only 12 minutes into the test. The Type X gypsum panel failed at 58 minutes, while the Type C panel did not fail during the test (which lasted two hours and two minutes). Upon close examination of the Type C panels, the paper on both the exposed and unexposed sides had disappeared.



To further enhance the fire performance of the panel, unexpanded vermiculite is added to the core.



Details Are Important

Details are extremely critical in maintaining the integrity of the system. As noted in the previously cited comparison of gypsum panel types, it is imperative to use the right core formulation for a given application. Type C gypsum panels generally can be used in place of Type X panels, but the opposite is not always true.

If the system calls for a single layer of gypsum panels and the assembly is a floor-ceiling (or roof-ceiling) assembly, it must be a Type C gypsum panel. A Type X gypsum panel likely will not provide the same level of protection. Consequently, it is imperative to specify and install the panel that was used in the test and specified in the individual UL design. UL is an industry-recognized testing laboratory that develops standards and test procedures for materials, components, assemblies and procedures.

Other important criteria include the panel placement and orientation. While it is generally good design practice to stagger the panel joints, it is absolutely imperative to do so in some cases. The intent is not to have a panel joint occur on both sides of the same stud. In addition, if the wall is multilayered, each layer of gypsum should be offset from the layer underneath.

Orientation is the direction in which the gypsum panel is installed relative to the framing. Historically, the panels had to be installed with the long dimension running parallel to the framing (sometimes called installed vertically), as the only data that existed had been developed with this specific panel orientation.

It was not until 1996 that the first successful fire and hose stream tests were conducted on steel stud walls, with the gypsum panels applied perpendicular to the studs (sometimes called installed horizontally), without any backing behind the resulting horizontal joints and without staggering the horizontal joints on opposite sides of the studs.

The primary reason for testing the horizontal application of the gypsum panels was to validate the option of installing the panels horizontally at the top of walls commonly found on commercial construction. Installing them in this manner permits earlier installation of the electrical, plumbing and air conditioning lines, as it is extremely difficult to build fire-rated walls around pre-existing mechanical lines.

The remaining section of the wall is typically finished with the gypsum panels applied parallel to the studs for easier finishing of the joints. The resulting horizontal joint toward the top of the wall (between the horizontally and vertically applied gypsum panels) is typically hidden behind an acoustical ceiling. The pre-installation of horizontally applied panels at the top of the wall is typically referred to as "top down" construction.

The successful test results with the unsupported horizontal joints also eliminated the need to back with framing any horizontal butt joints of vertically applied panels when the specific gypsum panels are used. Furthermore, since the horizontal joints on opposite sides of the studs were not staggered in the fire and hose stream tests, it could be implied that this procedure can be used to build fire-rated walls around previously installed penetrations by splicing the gypsum panels at the height of the penetrants. The resulting horizontal joints on the panels would not need to be staggered. This has been deemed an enormous benefit in retrofit and applications. Again, the specific tested panels must be used in the construction of the walls. The specific orientation of the gypsum panels is noted in the individual UL designs, with the name of the manufacturers and type designation of the panels, as in Design Nos. U419, U420, U423 and U465.

In the *Fire Resistance Directory*, published by Underwriters Laboratory, (www.ul.com) the Introduction Section, VI. Wall and Partition Assemblies, states the following: "Orientation, vertical or horizontal, of the application of gypsum board in walls and partitions is specified in the individual designs.

Except when gypsum board is allowed to be applied horizontally in the individual wall designs, horizontal butt joints of vertically applied gypsum board should be backed by the same type studs as specified in the design. Alternatively, minimum 25 gauge steel framing with a minimum attachment face of 1-1/4" may be used for the backing. Both edges of the gypsum board forming the horizontal joint shall be attached to the backing with the same screws and spacing as specified in the design for the attachment of the gypsum board edges, then finished as specified for the vertical joints.

Horizontal butt joints on opposite sides of the studs in single-layer applications should be staggered a minimum of 12 inches unless otherwise stated in the individual designs. Horizontal butt joints in adjacent layers on the same face of the assembly in multiple-layer applications should be staggered a minimum of 12 inches unless otherwise stated in the individual designs."

Earlier, several different UL designs were cited as references for the one- through four-hour partitions. Testing has greatly simplified the design and specification of fire-rated walls. As of fall 2006, several designs cover walls with ratings of one to four hours, such as Design Nos. U419 (conventional walls) and U415 (shaft walls).

Another important consideration for designing and maintaining the intended fire rating is to make sure the right fastener and fastener spacing are used.

Steel Stud Drywall Partition Screw Spacing and Location

It should be noted that Underwriters Laboratories provides technical assistance in the interpretation of conditions that are not specifically tested. This assistance is based on the enormous amount of data available to UL on a variety of materials and systems. Many of these situations may have already been reviewed by UL or may have been tested by UL under the so-called "Special Services Investigations."

Examples of these would be the evaluation of corner details that do not specifically fall under the scope of ASTM Standard E119 or the installation of recessed electrical panels in fire-rated walls. Architects and contractors should consult with the manufacturer of the gypsum panels being used in the specific project for assistance regarding special situations. ■

| Hourly Rating | Test Number | Face Layer Screw | | | Base Layer Screw | | | |
|---------------|-------------|------------------|--|--|------------------|-----------|-----------------------|---|
| | | Length | Type | Spacing and Location | Length | Type | Position | Spacing and Location |
| 1 hour | U419 | 1" | S | 8" o.c. on panel edges; 12" o.c. in field of panel | | | | |
| | U420 | 1" | S | 8" o.c. on panel edges; 12" o.c. in field of panel | | | | |
| | U448 | 1" | S | 8" o.c. on panel edges; 12" o.c. in field of panel | | | | |
| | U451 | 1" | S | 12" o.c. | | | | |
| 2 hour | U411 | 1-5/8" | S | 16" on edges and field; 12" along runner | 1" | S | | 16" o.c. on edges of panel; 16" o.c. field of panel |
| | U412 | 1-5/8" | S | 12" o.c. | 1" | S | | 24" o.c. on edges of panel; 24" o.c. field of panel |
| | U419 | 1-5/8" | S | 16" o.c. on edges and field | 1" | S | | 16" o.c. on edges and in field of panel |
| | U420 | 1-5/8" | S | 8" o.c. on panel edges; 12" in field of panel | 1" | S | | 8" o.c. on panel edges; 12" o.c. in field of panel |
| | U453 | 1-5/8" | S | Channel side: 12" o.c. | 1" | S | | Channel side: 24" o.c. |
| | | 1" | S-12 | Direct side: 12" o.c. | | | | |
| | U454 | 1-5/8" | S | Channel side: 12" o.c. | 1" | S | | Channel side: 24" o.c. |
| | | 1-5/8" | S-12 | Direct side: 12" o.c. | 1" | S-12 | | Direct side: 24" o.c. |
| U491 | 1-1/4" | S | 8" o.c. on panel edges; 12" o.c. in field of panel | | | | | |
| 3 hour | U419 | 2-1/4" | S | 12" o.c. on edge and field | 1" | S | 1st layer | 24" o.c. |
| | | 1-1/2" | G | Between studs at horizontal joint | 1-5/8" | S | 2nd layer | 24" o.c. |
| | U435 | 2-1/4" | S | 12" o.c.; 2" from top and bottom of stud | 1" | S | 1st layer | 48" o.c.; 4" from top and bottom of stud |
| | | 1-1/2" | G | Between studs at horizontal joint | 1-5/8" | S | 2nd layer | 48" o.c.; 3" from top and bottom of stud |
| | U455 | 1-5/8" | S | Channel side: 12" o.c. | 1" | S | | Channel side: 24" o.c. |
| | | 2-1/4" | S-12 | Direct side: 12" o.c. | 1" | S-12 | 1st layer | Direct side: 24" o.c. |
| | | | | 1-5/8" | S-12 | 2nd layer | Direct side: 24" o.c. | |
| 4 hour | U419 | 2-5/8" | S | 12" o.c. to studs | 1" | S | 1st layer | 24" o.c. |
| | | 1-1/2" | G | Between studs at horizontal joints | 1-5/8" | S | 2nd layer | 24" o.c. |
| | | | | | 2-1/4" | S | 3rd layer | 24" o.c. |
| | U435 | 2-5/8" | S | 12" o.c.; 2" from top and bottom of stud | 1" | S | 1st layer | 48" o.c.; 5" from top and bottom of stud |
| | | 1-1/2" | G | Between studs at horizontal joints | 1-5/8" | S | 2nd layer | 48" o.c.; 3" from top and bottom of stud |
| | U490 | 2-1/4" | S | 12" o.c. to studs | 1-1/4" | S | 3rd layer | 48" o.c.; 3" from top and bottom of stud |
| | | 1-1/2" | G | Between studs at horizontal joints | | | | 24" o.c. |
| | | | | | | | | |

CLICK FOR ADDITIONAL SUPPLEMENTAL READING

The article continues online at <http://www.archrecord.com/resources/conteduc/archives/0610usgypsum-1.asp>

AIA/ARCHITECTURAL RECORD
CONTINUING EDUCATION Series

LEARNING OBJECTIVES

After reading this article, you should be able to:

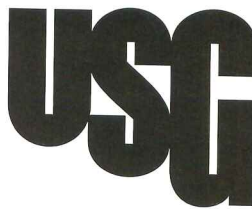
- Evaluate the elements in a fire-rated building assembly using gypsum panels
- Identify performance characteristics of different types of fire-resistant gypsum panel systems
- Explain the testing procedures and standards used to determine fire ratings of gypsum panel systems
- Design and specify fire-resistant gypsum panel systems for various applications

INSTRUCTIONS

Refer to the learning objectives above. Complete the questions below. Go to the self report form on page 171. 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. When establishing the fire resistance of an assembly, which of the following factors is not considered?
 - a. Capacity of the assembly to limit heat transfer from the exposed side to the unexposed side
 - b. Ability of the of the assembly to prevent the passage of flame
 - c. Amount of smoke generated by the assembly in one hour
 - d. Ability of the assembly to maintain structural integrity
2. The level of fire resistance is measured in which of the following?
 - a. One, two, three, five and 10 hour ratings
 - b. 60, 90, 240 and 300 minute ratings
 - c. 250 and 350 degrees Fahrenheit ratings
 - d. One, two, three, four and eight hour ratings
3. The basic categories of fire-resistant-rated gypsum board panel systems available within the construction industry are known as:
 - a. Type A, Type B, Type C, Fireproof Core
 - b. Type C, Type X, Regular Core
 - c. Type X, Type XX, Type Y, Smokeproof Core
 - d. Regular Core, Irregular Core, Vermiculite Core
4. The primary difference among the fire-resistant qualities of gypsum board panel types is which of the following:
 - a. Thickness of gypsum panels
 - b. Gauge of steel studs
 - c. Core composition
 - d. Rate of flame spread to wall thickness
5. Which is true about gypsum panel placement and orientation?
 - a. Some panel types are only available in certain sizes and orientations
 - b. Good practice is not to have a panel joint occur on both sides of the same stud
 - c. Staggering panel joints only applies to limited situations
 - d. In multilayered walls, panel joints should align within 1/2 inch
6. What is gypsum?
 - a. A man-made mineral fiber (MMMF) known for its fireproofing properties
 - b. A soft mineral found in large quantities around the world
 - c. A natural mineral found primarily in the southwestern United States
 - d. A synthetic substance manufactured without oil-based chemicals
7. Which of the following will enhance the fire-resistant qualities of certain types of gypsum panels?
 - a. High-gauge steel studs, spaced closely together
 - b. Unexpanded vermiculite added to the core
 - c. Spray-on fireproofing applied to the unexposed sides
 - d. Waterproof membranes applied to the inside face of the panels
8. True or false? A fire-resistant wall is composed of specially formulated fire-resistant gypsum panels, some type of framing (wood or metal studs), fasteners and a joint finishing system (if it is needed).
 - a. True
 - b. False
9. The fire resistance of almost any wall can be increased through which of the following?
 - a. Applying spray-on vermiculite
 - b. Using vertical orientation of gypsum panels
 - c. Not staggering horizontal joints on panels
 - d. Adding layers of gypsum panels to each side of the studs
10. Which of the following are important considerations for designing and maintaining the intended fire rating?
 - a. Fasteners and fastener spacing
 - b. Amount of vermiculite used in the core
 - c. Amount of smoke emitted during laboratory testing
 - d. Weight and orientation of the wall panel system



USG Corporation is a Fortune 500 company with subsidiaries that are market leaders in their key product groups: gypsum wallboard, joint compound and related gypsum products; cement board; gypsum fiber panels; ceiling panels and grid; and building products distribution.

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Wood Fire-Rated Doors Combine Safety and Aesthetics

Advances in fire-retardant technology offer alternatives to traditional steel fire doors

Provided by Artistic Doors and Windows

There is no doubt that a fire can be a devastating experience, resulting in loss of life and property. According to the Federal Emergency Management Agency, each year more than 4,000 Americans die in fires, and more than 25,000 are injured; property loss caused by fires exceeds \$8.6 billion annually. The U.S. Fire Administration, which calls America's fire death rate one of the highest per capita in the industrialized world, presents some startling facts. In less than 30 seconds a small flame can burst into a major fire. Heat from the fire is a bigger threat than its flames: In a fire situation, room temperatures can rise to 100 °F at floor level, and soar to as much as 600 °F at eye level. Inhaling the superheated air will scorch the lungs. In addition, fire uses up oxygen and produces smoke and poisonous gases that cause drowsiness, disorientation and even death.

Fortunately, architects have several tools in their arsenal to retard fires, saving lives and property in the process. Fire-rated doors are one such element. Used in both commercial and residential applications, fire-rated doors can be made of steel, wood, or a combination of materials, which together form a door system. In addition to the door leaf itself, there is the doorframe, hardware, including manual or automatic closing devices, locks, and latches, and sometimes internal windows, all of which are subject to product certification and must meet requirements of the local building code.

Technological advances have enabled fire doors to take on a sleeker, more refined look befitting up-scale residential and commercial projects that require a high degree of architectural detailing. With the variety and sophistication of fire-rated doors on the market, architects can add a safe, aesthetically pleasing element to their visual palette.



Photo courtesy of Artistic Doors & Windows

New Trends in Fire-Rated Doors

Thanks to new technology in compressing the fire retardant component of the door, fire-rated doors can be made of wood and offer an attractive solution to creating barriers against fire, passing recognized tests such as those by the National Fire Protection Association (NFPA) 252, "Standard Methods of Fire Tests of Door Assemblies," and top independent fire-rating agencies. Manufacturers are increasingly offering a plethora of fire-rated wood doors in an array of hardwoods and finishes; many of the doors can also be specified with glass features in differing textures and surfaces.

"Over the past ten years there has definitely been an increase in the selection of attractive fire-rated wood doors, both commercially available and custom-made," says Helge Fuhrmann, Associate, Dipl.-Ing. Architect, SBA, Frederic Schwartz Architects in New York. "I am nearing completion on a project where I specified four doors leading from the public corridor into a high-end floor-through apartment in a high rise building in midtown Manhattan. For code reasons we have to have these doors fire rated. That required custom-made walnut fire-rated wood doors to match the non-rated doors on the project. Since we are also building out the corridor it was important that these doors match other doors in the apartment and the overall design."

"The average person would be hard pressed to tell a fire door from a non-fire-rated door," says Rick Autovino, President of New Jersey-based Artistic Doors and Windows, Inc. "Fire-rated doors can be very elegant, and give architects an unprecedented choice. There are literally hundreds of styles on the market—flat panel, raised panel, exotic woods, paint grade, even full French doors. Architects are enjoying expanded flexibility in meeting their design objectives."

CONTINUING EDUCATION



Use the learning objectives below to focus your study as you read **Wood Fire-Rated Doors Combine Safety and Aesthetics**. To earn one AIA/CES Learning Unit, including one hour of health safety welfare credit, answer the questions on page 181 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:

- Discuss the recent trends in fire-rated doors
- Recognize the types of fire-testing that meet codes
- Analyze the requirements for fire-rated door glass and hardware
- Identify national codes and standards pertaining to fire rated doors



Photo courtesy of Artistic Doors & Windows

From Code to Luxury Applications

The necessity of specifying a fire door is largely driven by code, which can vary widely by jurisdiction. Fire doors are critical because when there is an access portal, like a doorway, to an enclosed compartment, the fire barrier is temporarily broken. To maximize resistance to the spread of fire, smoke, and toxic gasses, fire doors must be self-closing and have proper latching devices.

Generally speaking, the following doors must be fire doors, and are typically used in commercial applications: doors that are marked with an exit sign; doors that lead to marked exits, such as stairwells; doors that lead to hazardous areas; and doors that lead to hallways or from one fully enclosed room to another.

In the late 1960s, some residential building codes began to require fire-rated doors leading from the garage, and often from the basement, into the house. Since the garage houses gas-filled vehicles and the garage and basement may contain storage of flammable materials, fire doors are a way to isolate the fire and keep it from spreading into the house.

Although it's a cost-plus situation, more architects are going beyond code and specifying fire-rated doors in several situations, particularly in high-end residential and commercial projects. Within the industry, as technology has enabled the door's fire retardant component to become "miniaturized"—some are as thin as 1/16 of an inch—doors themselves have taken on a sleeker look. Stile and rail doors are typically available in 1 3/4 inch thickness—down from more than 2 1/4 inches before. Doors are available in 1/2 inch flat panel—single doors, double doors, full panel and full glass.

"Architects are increasingly specifying fire doors in non-code situations," says Autovino, noting that fire-rated doors for bedrooms are becoming increasingly common. In a departure from the open look that has been popular in recent years, homeowners are increasingly opting to enclose the kitchen—an aesthetic as well as a safety preference. "Homeowners are very concerned about the possibility of a fire spreading," adds Autovino.

Doors and Door Assemblies

In addition to the door itself, the doorframe, the door hardware, and the structure that holds the assembly in place must all conform to product certification and standards that are prescribed by the local building code. In addition to codes, the standard known as NFPA 80 Standard for Fire Doors and Fire Windows, is a user-friendly reference for fire doors and their associated components. "The codes tell you where a fire-rated door is necessary, and NFPA 80 tells you how to do it, piece by piece," says Robert Solomon, Assistant Vice President for Building and Life Safety Codes at the National Fire Protection Association.

Fire Rated Doors: Basic Functions

To understand how critical fire rated doors are in containing a fire, it is important to understand the basic characteristics of fire. Fire spreads quickly—in just two minutes a fire can become life-threatening. In five minutes, a house can be swallowed up by flames—a scenario that demands a dependable protective system already be in place.

As opposed to active fire protection, such as sprinklers or smoke detectors, fire doors are classified as passive fire protection measures. The objective of passive measures is to contain a fire and curtail its spread, as well as limit excessive heat and re-ignitable gas for a certain period of time—capabilities that are determined by testing, and which must be contained in a configuration that is consistent with the local building code or fire code.

Rating Fire Doors

Not all fire doors are created equal. Fire doors are rated by time that a door can withstand exposure to fire conditions. Ratings are given for a door's ability to withstand fire for 1-1/2-hours, 1-hour, 3/4-hour, and 1/3-hour, with the maximum rating required of any swing-type fire door being three hours. Generally speaking, 1/3-hour or 20-minute doors are used for corridors and where smoke and draft control is the main objective. One-hour rated doors are found in between rooms, and 45-minute doors in corridor walls and room partitions. Doors with 1 1/2 hour, or 90-minute ratings, are typically used in stairwells; 3-hour rated doors are typically found in walls that separate buildings or that divide a large building into smaller fire areas.

Up until recently, fire doors have been tested under neutral-or-negative-pressure conditions. But by the year 2000, virtually all of the jurisdictions enforcing the Uniform Building Code (UBC) opted to update to the first model code in the U.S. to require positive-pressure testing of fire doors. Used widely in Europe and Asia, positive pressure testing is intended to more accurately address real-world fire conditions. As air heats up through fire, it expands, causing pressure to build up within an enclosure and increasing the potential impact of fire on a door, and possibly causing flames to enter through cracks or other openings.

The door assembly is placed in a furnace with temperatures up to 1800 ° F for the specified length of time. The door must remain latched and in position, with no cracks or openings developing or flame penetrating to the other, non-fire side of the door. After the door has been exposed to the fire for half its intended rating, the door is subjected to a hose stream test, in which it is doused with water from a fire hose. The thermal changes resulting from cold water thrown on a hot surface, combined with the force of the hose stream itself, may cause a door to come unmoored from its frame, not meeting the requirements of the test.

The duration of the hose stream test is dependent on the desired rating of the door. With the positive-pressure testing followed by hose-stream tests, the U.S. has the most stringent standards in the world. In the U.S., fire doors that are rated for 20 minutes are exempt from hose-stream tests.

More architects are going beyond code and specifying fire-rated doors.

Fire spreads quickly—in just two minutes a fire can become life-threatening.

In certain situations, such as staircase enclosures in a high rise apartment or commercial building, fire doors are called on to resist the transmission of heat so as to give building occupants a safe path of egress to the floors below where the fire is raging. This type of door is known as a temperature rise door, and has a specially designed core to meet these requirements. The fire door label of a temperature rise door will state, not only the door's fire protection rating, but its temperature rise rating above ambient. Typically, these ratings are stated as 250°F 450°F, and 650°F, corresponding to the greatest rise in temperature over and above the temperature measured on the non-fire side of the door during the first half hour of the standard fire test. The highest rating here is the 250°F as that is the least rise above the ambient temperature.

Relevant Codes and Standards

To be fire rated, all products must have undergone testing at one of the following main certifying laboratories:

Underwriters Laboratory (UL) Certification

UL is the largest and oldest nationally recognized testing laboratory in the United States. Manufacturers submit products to UL for testing and safety certification on a voluntary basis. While there are no laws specifying that a UL Mark must be used, in the U.S. many municipalities have laws, codes or regulations which require a product to be tested by a nationally recognized testing laboratory before it can be sold in their area.

Warnock Hersey Certification

Warnock Hersey is an independent testing laboratory. Building and construction materials bearing the WH Mark indicate product compliance to relevant building codes, association criteria, and product safety and performance standards.

In addition, to be fire rated, products may be subject to other codes and requirements. Some of these include:

American Society for Testing and Materials (ASTM) E2074—Standard test method for fire test of door assemblies

Organized in 1898, ASTM International is one of the world's largest voluntary standards developing organizations. ASTM members, representing producers, users, consumers, government, and academics from over 100 countries, develop technical documents that are a basis for manufacturing, management, procurement, codes, and regulations. There are more than 12,000 ASTM standards that can be found in the 77-volume Annual Book of ASTM Standards.



Photo courtesy of Artistic Doors & Windows

Uniform Building Code (UBC) 7-2—Fire test of door assemblies

The Uniform Building Code is a set of regulations covering all major aspects of building design and construction relating to fire, life safety, and structural safety and reflects the latest technological advances available in the building and fire-and life-safety industries. Revised editions are published approximately every three years.

National Fire Protection Association (NFPA)

80—Standard for fire doors and fire windows

The NFPA's mission is to reduce the burden of fire and other hazards on the quality of life by providing and advocating consensus codes and standards, research, training, and education. Established in 1896, NFPA is a leading advocate of fire prevention and an authoritative source on public safety, with some 300 codes and standards that influence every building, process, service, design, and installation in the United States, and many in other countries.

NFPA 252—Standard methods of fire test of door assemblies

International Building Code (IBC)

7-13—Fire resistive assemblies for protection of openings

The IBC is a model building code of the International Code Council (ICC). One or more parts of the code have been adopted in many jurisdictions throughout the U.S. In large measure, the IBC deals with fire prevention in relation to design and construction. The ICC was established in 1994 and founded by the nation's three model code groups, Building Officials and Code Administrators International, Inc. (BOCA), International Conference of Building Officials (ICBO), and Southern Building Code Congress International, Inc. (SBCCI), each of which had developed separate sets of model codes used in different sections of the country. Through the International Building Code, the ICC has produced a single set of codes enabling code enforcement officials, architects, engineers, designers, and contractors to work with a consistent set of requirements nationwide.

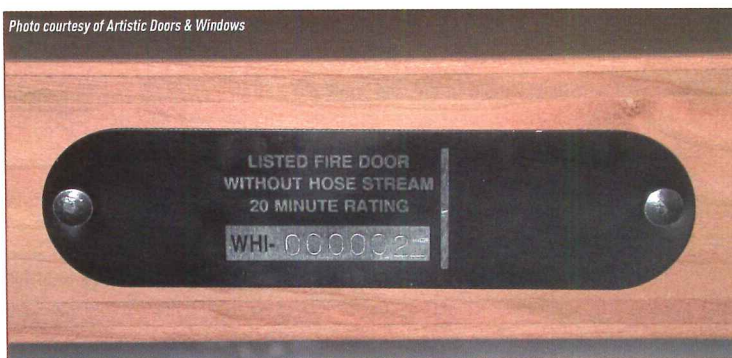
IBC 715—Opening protectives

A Local Standard

In addition, other standards may apply to fire-rated doors being specified in large cities in the U.S. In New York City, for instance, the Department of Buildings requires approval of certain materials and equipment that affect public safety, health, and welfare and are usually a permanent part of a building—fire-rated assemblies are among them. Established in 1969, the Materials and Equipment Acceptance (MEA) Division was created to implement this requirement and ensure that prescribed permanent building materials and equipment meet the minimum national standards required by the Building Code. The product must be tested by a Department-accepted testing lab or service. All manufacturers that receive product acceptance from MEA are given an MEA number for the product and provided a copy of a report that lists the model numbers and describes the material, assembly or equipment and any conditions of the acceptance. Architects should note that it is the responsibility of the manufacturer to obtain MEA acceptance for the product, and that it is the building owner's responsibility to ensure that all materials and equipment used in the building construction have MEA numbers where applicable. Failure to do so places the building owner in violation. Many other major cities have similar programs.

Where necessary or required by local code, an additional smoke seal must be added to an assembly to comply with a smoke and draft control rating. Doors that open onto corridors that are used for a means of egress may be required to have such a rating. To be qualified for smoke and draft control, an assembly is tested for two parameters—a fire test and a test to indicate how much air leaks around the door, both air at room temperature and air that has been heated to 400 degrees. The amount of air leakage must be below NFPA 105 standards, and the assembly must be equal to a minimum of 20-minute fire test.

Photo courtesy of Artistic Doors & Windows



Whatever the application, architects should note that a fire rating can be easily lost with the touch of a drill bit. With the drilling of a small hole, a perfectly installed, certified fire door can lose its rating, taking what may have been a 90-minute door down to a door that will be useless in the event of fire because smoke and heat can easily penetrate even a tiny opening in a door. Even tacking a nameplate on a fire-rated bedroom door can be a breach of the door face, which may render the door ineffective in the event of fire. This is particularly true if the nail or screw has penetrated deep into the fire core.

Frames

There is a saying in the industry that a door is only as good as its frame—and the good news is that fire-rated doors no longer have to be installed in steel frames. Many manufacturers offer complete fire door and frame packages, representing several advantages to architects. Such all-in-one door and frame systems dispense with the need for applying unattractive surface intumescent around the door, additional framing preparation, and/or extra packing between the frame and the stud—which in turn reduce cost for supplies and labor. “Architects may not realize the importance of a complete listed assembly,” adds Solomon, “and the best way to go is usually to purchase the entire fire-rated assembly from a reputable manufacturer who delivers certified products.”

Glass

Until recently, fire doors that contained glass were virtually slabs of steel with small sections of polished wired glass. Still the most frequently used type of glazing material, wired glass has been around for more than 100 years and is known to be effective in a fire. Intense heat causes ordinary glass to splinter or blow apart, whereas the wire mesh keeps the glass intact. As a result, wire glass has been the performance benchmark in the industry for nearly a century and was, in fact, one of the only materials that could stand up to fire testing. The downside is that wire glass has hazardous breakage patterns, and can leave dangerous jagged edges. While recognizing the potential danger of broken wire glass, building codes acknowledged its superior performance in the event of a fire, hence its specification in many fire rated doors.

In response to a safer, more attractive, glazing material, manufacturers developed a new round of products to challenge the supremacy of wired glass. The new glass is largely a function of advances in glass ceramic, a material well known to withstand heat. Displaying a low coefficient of expansion when heated, ceramic is used in diverse “hot” applications including car engines. In fact, some new product options are actually transparent ceramic that looks like window glass but has the superior heat-resistant qualities of ceramic.

Regular flat glass will not perform under extreme temperatures; it breaks at around 250°F, allowing the spread of fire and smoke. To be fire-rated, glass is placed in a test furnace in temperatures of more than 1,600 °F. The better the glass is able to withstand the heat, the higher its rating. To achieve levels above a 20-minute rating, glass is also subject to the hose test. Only the glass that is able to withstand the drastic changes in temperature from

an intense blaze to a deluge of cool water can be fire rated. The purpose is to simulate a real situation during a fire where water from a sprinkler system douses and determine whether the glass will function as a barrier or fail, enabling smoke and fire to spread. Fire-rated glass that has passed these rigorous tests should remain intact and restrict the expansion of flames and smoke.

Typically, wired glass carries a fire rating of 45 minutes. So well do transparent glass ceramic products withstand heat, they can achieve a three-hour fire rating. Glass ceramics also have safer breakage patterns and can withstand four times the impact of traditional wire glass, satisfying Consumer Product Safety Commission (CPSC) 16CFR1201 (Category II), the highest impact safety standard for window glass. CPSC is charged with protecting the public from unreasonable risks of serious injury or death from more than 15,000 types of consumer products under the agency’s jurisdiction. ■

Installation—What to Know

While not strictly the purview of architects, installation considerations can prove helpful in creating the best possible environment and assuring the effectiveness of fire rated doors. Particularly for architects who make site visits, several of the following considerations may be of particular value.

When it comes to actually putting the fire rated assembly in place, the NFPA 80, “Standard for Fire Doors and Fire Windows” also provides valuable guidance for installing fire doors and frames and hardware.

If a fire-rated assembly is intended for interior use, i.e., areas unexposed to the weather, it is generally appropriate for apartment entrances, elevator shafts, hallways, stairwells, electric service closets, and any area deemed a fire protection zone. With doors rated Category A, no additional edge sealing is necessary—they have been evaluated without intumescent. Category B doors, on the other hand, do require an additional edge-sealing system that must be installed by a licensed installer.

Category A doors may be installed in a metal or wood frame. If the fire-rated doors and frames have been tested in a steel stud/gypsum wallboard, they are set to be installed in any type of wall assembly, provided the installation is completed by qualified personnel according to the manufacturer’s instructions.

Following are additional installation concerns:

- Before installation, all substrates should be thoroughly cleaned and properly prepared and using the methods recommended by the manufacturer.
- Rough opening sizes should conform to specified shop drawings.
- Walls should be the correct type and rating to receive door assemblies.
- The door unit should be acclimated to the environment at the actual installation site 24 hours prior to installation.
- Generally speaking, all fire-rated doors should be installed in accordance with manufacturer’s instructions.
- Particular care should be taken to use the proper type and length of screws that the manufacturer requires.
- After doors have been installed into frames, they should be shimmed as necessary to adjust spacing for proper fit and operation of entire unit.
- In installing hardware, manufacturer’s instructions should be followed exactly to comply with tested assembly requirements.
- Hardware should be fitted for unrestricted function.

CLICK FOR ADDITIONAL REQUIRED READING

The article continues online at <http://www.archrecord.com/resources/conteduc/archives/0610artistic-1.asp>

LEARNING OBJECTIVES

After reading this article, you should be able to:

- Discuss the recent trends in fire-rated doors
- Recognize the types of fire-testing that meet codes
- Analyze the requirements for fire-rated door glass and hardware
- Identify national codes and standards pertaining to fire rated doors

INSTRUCTIONS

Refer to the learning objectives above. Complete the questions below. Go to the self report form on page 244. 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. Fire-rated wood doors work effectively as barriers against fire, especially when passing recognized tests such as
 - a. The National Fire Protection Association (NFPA) 252, "Standard Methods"
 - b. Fire Tests of Door Assemblies
 - c. NFPA 80 Fire Rated Doors standard
 - d. CPSC 16CFR1201 (Category II)
 - e. Federal Emergency Management Agency stipulations
2. The primary objective of a fire door is to:
 - a. conform to specifications of the Materials and Equipment Acceptance (MEA) Division.
 - b. contain a fire and curtail its spread, as well as limit excessive heat and reignitable gas for a certain period of time.
 - c. conform to product certification and standards that are prescribed by the local building code.
 - d. to halt the spread of flammable materials.
3. Fire doors are rated by:
 - a. their ability to withstand smoke.
 - b. the thickness of the fire-retardant component of the door.
 - c. the time that a door can withstand exposure to fire conditions.
 - d. whether they can stand up to the hose stream test.
4. The first model code in the U.S. requiring positive-pressure testing of fire doors is intended to:
 - a. qualify fire doors for smoke and draft control.
 - b. raise the amount of allowable glass in a fire door from 9 square feet to more than 22 square feet.
 - c. enable the door's fire retardant component to become miniaturized.
 - d. more accurately address real-world fire conditions.
5. To be fire rated, all products must have:
 - a. passed the hose test.
 - b. been approved by ASTM.
 - c. undergone testing at a recognized certifying laboratory.
 - d. been submitted to the NFPA for review.
6. To be qualified for smoke and draft control, an assembly is subject to:
 - a. a test to indicate how much air at room temperature leaks around the door.
 - b. a test to indicate how much air leaks around the door, both air at room temperature and air that has been heated to 400 degrees.
 - c. a test to indicate whether the door has been properly stained or painted.
 - d. a test to indicate whether there are cracks in the door.
7. Complete fire door and frame packages represent several advantages, except which of the following:
 - a. All in one packages can have lower fire ratings.
 - b. They dispense with the need for applying unattractive surface intumescent around the door.
 - c. Additional framing preparation, and/or extra packing between the frame and the stud are not necessary.
 - d. There is a reduced cost for supplies and labor.
8. New fire rated glass products provide several advantages, including:
 - a. exemption from standard fire rated tests
 - b. dramatic increases in the amount of glass allowed in fire-rated doors
 - c. doors that don't have to be equipped with "listed" hardware
 - d. in a non-temperature rise 90-minute door, the increase is from 100 square inches to a generous 400 square inches.
9. Because a fire door must be in a closed and latched position to fulfill its objective as a protective barrier in the event of a fire:
 - a. Glass ceramics, which have safer breakage patterns and can withstand four times the impact of traditional wire glass, should be used.
 - b. Category A doors should be installed.
 - c. The doors must be in a normally closed position, must automatically close using components such as hydraulic closers or spring hinges, or a listed door is required.
 - d. Non-metallic labels should be attached with an adhesive back
10. Fire door labels must not be made out of:
 - a. wood
 - b. steel
 - c. brass
 - d. aluminum



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Collaborating with Contractors for Innovative Architecture

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 CONTINUING EDUCATION

Use the learning objectives below to focus your study as you read **Collaborating with Contractors for Innovative Architecture**. To earn one AIA/CES Learning Unit, including one hour of health, safety, welfare credit, answer the questions on page 191, then follow the reporting instructions on page 191 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:

- Explain the primary benefits of architecture firms collaborating with construction firms throughout the project life cycle.
- Evaluate the pros and cons of collaborating with contractors, including insurance and legal issues.
- Identify and describe at least four types of collaborative project delivery.
- Describe anecdotal examples of how collaborative project delivery led to design innovations and/or client satisfaction.



Collaborating with Contractors for Innovative Architecture

With construction more complex than ever, architecture firms are joining forces with construction experts to solve tough problems and innovate. The key is to understand the benefits—and challenges—of architect-contractor partnerships

By: C.C. Sullivan
Communications Consultant and Author

Buildings are more complex than ever, and the knowledge needed to build them well is increasingly in the hands of specialized builders, fabricators, and manufacturers

Since the dawn of the profession, the best architecture has been created in close association with construction professionals. That's no surprise. Today, however, alliances between designers and builders are getting tighter and more pervasive. Buildings are more complex than ever, and the knowledge needed to build them well is increasingly in the hands of specialized builders, fabricators and manufacturers. Closest to the source are construction managers and general and specialty contractors. By building on the constructor's experience—literally—savvy architects are producing innovative, best-in-breed architecture.

Trends and statistics bear out this tendency. A new generation of younger architects is embracing design-build, the formal and contractual union of the two fields. At the avant-garde end of the spectrum, architects like Frank Gehry and Thom Mayne have fashioned unique work models built on early and deep alliances with contractors. And "serial builders" like banks and franchise retailers have shown their preference for marriages of constructors and conceptualists to ensure both visual impact and bottom-line performance.

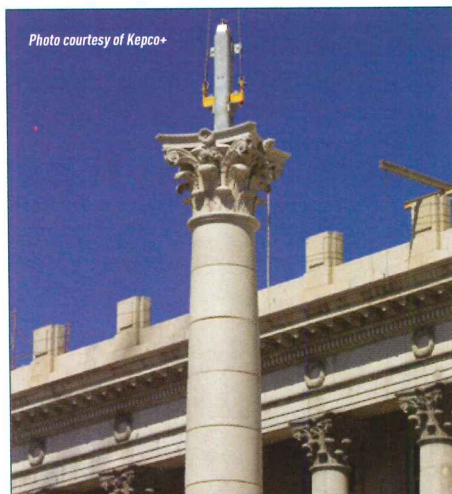


Photo courtesy of Kepco+
Terra cotta column capitals constructed with original terra cotta and placed on a trailer to be shipped to the jobsite for installation on the Utah State Capitol.

For technically demanding projects, designers and builders are practically joined at the hip. Under the direction of Robert Fraga, for example, the U.S. Postal Service dealt with such high-risk projects as the clean-up of its anthrax-tainted Brentwood facility in Washington, D.C., by employing novel partnerships of design firms and builders. Complex restoration

projects bring specialty contractors into the mix during schematics, as at the Utah State Capitol's terra-cotta dome restoration; there, a stone-panel specialist was retained even before the architect was. Across the board, when building projects are large or complex, the most successful project teams boast of formal and informal collaboration structures.

No surprise, then, that such teamwork is becoming standard in some circles. Building-information modeling (BIM) is increasingly used by project teams to maximize knowledge sharing; the recently opened Denver Art Museum by Daniel Libeskind stands as a prime example. Many state and federal agencies—including the General Services Administration (GSA)—have favored proposals that stipulate early contractor involvement. And it's not just in the public sector. In fact, the negotiated projects of the private sector are a hotbed of collaborative strategies, including projects delivered by traditional, hard-dollar bidding.

Industry groups recognize the trend, too: The AIA recently joined the Associated General Contractors of America (AGC) and the Construction Users Roundtable (CURT), an owner's group, to announce a new collaborative working group to spearhead industry transformation. "This undertaking represents an unprecedented level of collaboration between building owners, designers, and contractors," says Norman Strong, FAIA, an AIA Vice President and managing partner at The Miller Hull Partnership, Seattle.

The transformation has already begun. A desire to tame cost and schedule is driving the trend, but so is the possibility of breakthrough solutions. Architects realize that by working more closely with contractors earlier and throughout the project cycle, they stand to gain more—and lose less.

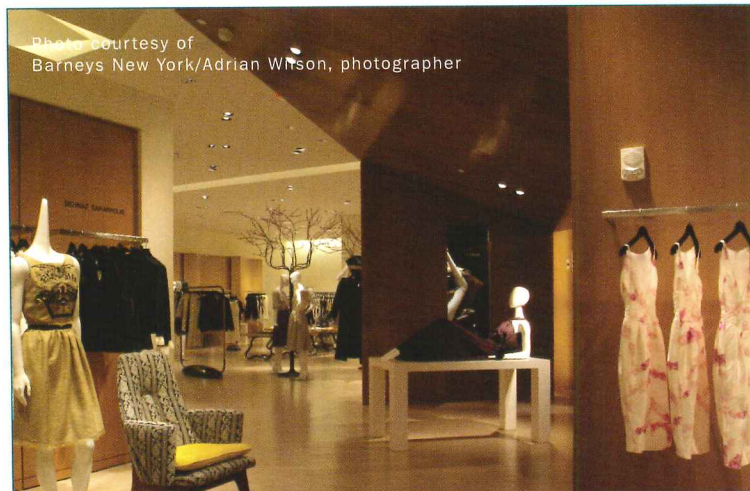


Photo courtesy of Barneys New York/Adrian Wilson, photographer

In a retail rollout the branches may all be unique, but the themes and materials and construction techniques remain somewhat consistent for the client's look and brand

Endorsing Collaboration

Though it's more common and customary, architect-contractor collaboration is by no means limited to a single model. There are many paths to success, with partnerships ranging from legal joint ventures and design-assist contracts to informal marketing and advisory affiliations. Yet many architects—armed with advice from lawyers, insurers, and senior partners—still shun close associations with contractors. Many will gladly seek advice from favored contractors—in return, perhaps, for a good word to the owner during bid reviews. But why, they ask, should architects compromise their independence and expose themselves to added risk?

"The reason why is that most knowledge of construction technology and cost is in the hands of specialty subcontractors and manufacturers, not architects and engineers," says Charles B. Thomsen, former chairman and CEO of 3D/I, a construction-management (CM) and A/E firm recently acquired by Parsons. "So we need to figure out contractual ways to engage subcontractors in the design process—and get that brain power."

Timing maximizes those benefits, adds Robert Fraga, president of the Construction Managers Association of America and former facilities portfolio manager for the U.S. Postal Service who just joined the GSA as assistant commissioner for capital construction program management. "Try to bring in the contractor as early as possible, because they have a great deal of knowledge that designers don't have and they're typically in tune with market conditions and cost," he explains.

And innovation comes in surprising places, such as site logistics and alternative methods, adds Boyd Black, director of project management services for the University of Illinois at Chicago and a board member of the Construction Owners Association of America. "These are things that architects don't have first-hand knowledge of, and they can lead to some very creative solutions," says Black. "The contractor has a very down-to-earth, practical role."

Whether for multiple midsized projects or a national franchise rollout, when the projects are numerous and repetitive such architect-contractor collaborations uncover useful efficiencies, says Robert W. Mullen, CEO of New York City-based Structure Tone. "In a retail rollout the branches may all be unique, but the themes and materials and construction techniques remain somewhat consistent for the client's look and brand," says Mullen. A retail owner might hire a CM who then selects local contractors as partners and hones the delivery process through each iteration. "It's a prime opportunity to create an assembly-line approach, so that the project team just keeps getting better and better," he adds.

Reducing Risk

Beyond a better grasp of materials and techniques, Thomsen adds a second reason to collaborate closely: "Things always go wrong, so you want to have that trusting relationship."

The bottom-line savings of earning a contractor's confidence can be significant. "Risk is a big concern for contractors," says Fraga. "Think of risk as dollars: Shifting all the risk to somebody else just costs the owner a lot more money."

"Insurers would like as many subs as available and the owner involved in project planning, so they can talk about long-lead items and ways to make things easier to construct."

Insurers concur that collaborative structures and activities reduce risk, and many offer reduced bonding costs and lower deductibles for professional liability insurance if the project requires such teamwork. Examples include "risk-mitigation" credits granted to project teams that perform a joint constructability review before work begins, as well as credits available for when a submittal management process is in place or when scheduling milestones are met. "Insurers would like as many subs as available and the owner involved in project planning, so they can talk about long lead items and ways to make things easier to

Partnering with contractors also helps minimize uncertainty on the job site, adds Mullen, such as by fine-tuning the subcontractor and materials selection processes or by creating more comprehensive insurance programs. "It can extend to labor solutions as well, by minimizing field labor and maximizing off-site work when you can," he explains. "That's certainly an important topic in the very active, busy construction markets across the country that aren't matched by gains in the workforce."

construct," says Lorna Parsons, a managing director for Victor O. Schinnerer Co., Chevy Chase, Maryland. "And we'd like to see them talking about these things while it's still on paper, long before anyone starts digging holes."

To get the savings, however, the project team has to work together, says Parsons. "All of the credits require a high level of collaboration between architect and contractor, which we think is beneficial for everybody," she explains. "When we looked at our largest claims, two-thirds of them are for 'delays and extras,' where the project goes over schedule and budget. When the architect and contractor aren't in synch, big claims are made and only the lawyers win."

Since many of those costs are ultimately borne by project owners, there's another market impetus for architects to join forces with contractors: the clientele. Experienced owners may prefer it—or insist on it.

"A lot of an architect's work is for serial builders who are wondering, 'What do you do when you have a continuous building program?'" asks Thomsen. "Routine owners need to be savvy," adds Fraga, citing statistics that 90 percent of projects are undertaken by repeat builders. "All of us in the design-and-construction business want to optimize the facilities supply chain. And it's getting more complex every day with new technology, safety, and environmental requirements. No single individual can totally control the supply chain, so it is essential—not a luxury—to collaborate."

Some owners see architects who don't play well with contractors as a vanishing breed. "Collaborate or die," Fraga sums up.

Methods for Collaboration

Joining forces with a contractor may seem like an obvious or easy thing to do. But savvy building veterans say it's filled with nuance.

"They have done Myers-Briggs personality profiles on architects and contractors showing that they have two very different personalities that drive them into their respective professions," observes G. William Quatman, FAIA, a Kansas City-based lawyer and author specializing in teaming and design-build. "So we're putting opposites into a room and telling them to cooperate. It's a challenge that's bigger than the obvious differences between the two."

You have to have negotiations, because conflict is inevitable.

To bring together these disparate world views, Fraga recommends four critical components for successful collaboration:

- "Most important: all stakeholders must *align their expectations* and objectives. It has to be a win-win for all stakeholders."
- "*Communications* must be superior for all stakeholders—for expectations as well as systems—so that people can react quickly."
- "You have to have *negotiations*, because conflict is inevitable."
- "And the last element is *compromise*."

Risk-averse by nature, many contractors would add a fifth component: *timing*. "The biggest thing is just getting everyone together and getting ideas and opinions out on the table early, before you get too far down the road and changes can't be made," says Bob Durrant, plant and preconstruction services manager with Kepco+, an architectural cladding contractor known for panelized stone. "On a stone job, the earlier you get your blocks and fabricator secured, the better your product's going to be. It's a long-lead item and a lot of people don't take that into consideration."

As an example, Durrant cites the Utah State Capitol restoration—a “design-assist” scenario involving a “project definition” phase consisting of workshops and the preparation of a final scope document. According to David H. Hart, AIA, executive director of the state’s Capitol Preservation Board, the process started with an RFP and qualifications-based selection (QBS) for design and construction providers for each contracted portion of work. Those firms that made the first cut received a 300-page “guidelines-and-imperatives” document from the owner, with technical guidelines such as matching existing colors and detail dimensions on the landmark building. Then several firms were short-listed and given a not-to-exceed budget. Each team was paid a fee to detail and design a solution to meet the predetermined budget. All accounting was open-book, with a negotiated process for the bidding phase.

The team with the best solution would be converted to a design-build contract if they could agree on a budget with the board. If not, the state could put out their solution for open bidding. “So there was an incentive for the contractor to get the job,” says Hart.

After architect and contractor were both on board, a three-day-long workshop was held to review the capitol design guidelines and imperatives. Specialty contractors for each trade were brought in to define the full extent of the work. The result was a scope document with about 20 percent construction documents. “The process helped keep scope creep out of the equation and kept us on schedule, with a wonderful synergy from that technical assistance,” says Hart, who calculates that there were only about 1.5 percent change orders for the \$170 million project, versus 8 percent to 10 percent for typical state buildings.

Although the construction teams were paid for their design assistance, the Utah State Capitol process represented a tradeoff: Precise collaborative planning required a serious time commitment even before work was awarded. “At times it was frustrating because there was so much involvement, but the outcome was great because we had so much input from the design engineer and the terra cotta manufacturer,” says Durrant. “It was really a good experience.”

Other states and public agencies may find such collaborative options constrained by procurement regulations. According to the AIA Design-Build Knowledge Community, QBS is not allowed in Georgia, Iowa, South Dakota or Wisconsin, for example.

“We would actually like to use the collaborative roles more than we do,” says the University of Illinois’ Black. On large projects, the state permits construction management (CM), allowing Black to bring in the construction firm at same time as the architects and engineers.

The Right Partners, the Right Process

Experts in construction offer two rules for architects interested in collaboration: choose your partners carefully, and tailor your service approach. One well-known international firm, for example, has sought deeper control of its pioneering designs by working closely with specialty contractors in structural steel and titanium cladding. The partnerships inform the firm’s studio structure, information-technology choices, and to some extent, its client list.

“To successfully innovate, it’s important to develop longer-term, better relationships with suppliers and subcontractors,” Fraga observes. “Prequalification is essential to that.” A prequalification effort should encompass a review of three measures, he explains:

- Capabilities
- Past performance
- Past experience

Performance can include quantitative measures such as successful completions as well as more qualitative traits, such as the company’s track record of “customer orientation,” Fraga explains. And past experience means types and size of projects as well as specific construction techniques.

Considering possible project outcomes is useful in these situations. “Choose your contractor partner thoughtfully,” adds Parsons. “If they bring in a value engineer and the collaboration between the contractor and the architect is not good, that can damage project or at a minimum increase liability for the architect. And fast-track has a whole set of problems of its own.”

“It’s really a three-way equation: Who fits best with the client, the project type and location, and with the architect culturally, in terms of how the firm services clients and its people’s skills, services and attitudes,” says Mullen.

For a growing number of firms, working together can mean involvement by the architect in shop drawings and fabrication—a nontraditional role that many specialty contractors would rather not consider. To extend the architect’s domain to the shop floor, some firms have adapted CAD/CAM technologies for architectural use. The software allows the firms to coordinate designs directly with key fabricators by interfacing with robotic cutting and milling tools.

This direct transfer of architectural CAD data not only increased the architect’s control of the construction process, but it also reduced the chronic overlap in creating working drawings, says 3D/I’s Thomsen. “I’ve heard estimates from A/E firms that between 30 percent and 60 percent of construction documents are discarded and replaced with shop drawings. That’s as much as 2 percent of the construction cost of the project that we’re throwing away,” he explains. And it’s more than a simple loss of money, he adds: “It’s also a quality loss.”

The idea of having more control and being more productive has propelled architects’ use of building-information modeling, or BIM. And conversely, as Black points out, the availability of BIM software has actually boosted interest in collaborative project delivery. “When you have the contractor involved at the early phases, tools like BIM save time and create a more coordinated product,” says Black.

Yet there are impediments to the widespread use of BIM even though “the benefits are huge,” says Parsons. “The risk is, who controls the software and who is putting pieces of design into it. Will it allow a vendor, for example, to put the specifications in—and is the architect liable for that? Those questions are not answered yet.” Other insurance and legal specialists agree with Parsons that BIM has the potential to go either way. “If it’s not used appropriately,” she cautions, “architects can come up with short end of the stick.”

“The days of design-bid-build as dominant method are going by the wayside,” says Fraga. “Owners need to be sophisticated and have an arsenal of delivery systems.”

A recent article in the newsletter *Construction Litigation*

Reporter contends that BIM is more than a technology—it’s an entirely new delivery system. The author, attorney Howard W. Ashcraft Jr., notes that several emerging technologies including BIM are now accelerating the need for collaboration.

Comparing Collaborative Delivery Systems

Which raises the question of project delivery: If a project demands a high level of collaboration, the architect can advise the owner on the optimal method. “The days of design-bid-build as dominant method are going by the wayside,” says Fraga. “Owners need to be sophisticated and have an arsenal of delivery systems.”

Indeed, collaboration with contractors tends to lead to nontraditional approaches, as the traditional hard-bid approach is based on a (hopefully) healthy tension and competition between architect and contractor. In collaborative structures, instead of checks-and-balances

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there may be mutual incentives. "You share the risks and you share the benefits of the project," says Fraga. "Instead of firm fixed-price, there can be a guaranteed maximum price, or GMP, where you are audited, so you know what the contractors' exact costs are."

Quatman notes that AIA's most recent position on alternative project delivery has been that architects should lead, regardless of delivery model. "If architects are going to heed the call, they need to take on guaranteed completion, guaranteed cost, indemnity for all kinds of hazards, liquidated damages, OSHA responsibilities and more," he explains. That's not common in the marketplace, adds Quatman, "But those who have done it say they'll never turn back." To pick the right alternative method, Fraga advises, "Let the project needs dictate the delivery system."

• Design-Build

Design-build has emerged as the classic collaboration model, and an increasing number of architects swear by it. The contractor remains close at hand from beginning to end, and design and construction professionals speak to the owner as one. "There are lots of versions of design-build that are cost-reimbursable and work real well," says Thomsen. Benefits include a single point of responsibility for the client and a reduction of change orders and delays.

Architects should take care, however, especially in the more common contractor-led set-up. "That way is most problematic for the architect and can increase your risk," says Parsons. "If you are hired by a contractor who just needs a seal, they may cut off your construction phase services, and construction administration is your last best chance to catch errors. So the scope of services needs to be appropriate." In addition, because the contract price is fixed in very early stages of design development, the contractor may try to hold the architect responsible for increased costs from any downstream design changes.

The AIA and many architects recommend the architect-led version of design-build, but that also has inherent challenges. "The architect has to be bonded and is responsible for means, methods, and jobsite safety," says Parsons. "If you are the prime, it all floats up to you." A third option is to form a limited-liability corporation (LLC) or joint venture with the construction company. "You still have to be careful because construction risk still flows up to you. The LLC is popular because that deals with some of that risk issue," says Parsons.

Of course, design-build is not always an option. A few states don't allow the contracting method at all—Alabama, Iowa, Michigan, Rhode Island and Wyoming—though the other 45 allow some applications. "And in New York, there's a turf battle between administrative agencies and the courts," says Quatman. "The licensing board takes the position that it's illegal, though the state courts have said it's legal."

• Construction Management

Construction managers oversee typically more complex projects, either as an advisor to the owner—while the architect and contractor retain conventional roles—or as an agent, which means the CM has the authority of the owner. In a third approach, known as CM-at-risk, the CM acts as constructor, coordinating the project and occasionally taking on the role of the general contractor. The CM assumes all liability and makes an early cost commitment, according to the AIA California Council's *Handbook on Project Delivery*.

The continuous oversight of the CM approach appeals to owners that may lack the in-house resources to supervise their own projects. Many architects chafe at the CM's powerful role, and rightly point out that any beneficial dialogue between designer and owner is mediated or

even cut off. Other architects say they enjoy the CM's tight control of cost, schedule, and constructability. A positive relationship between architect and CM can make up for the fact that the architect can't communicate directly with the owner.

• Bridging

Bridging is best described as a combination of traditional bid delivery and design-build. In this approach, the owner hires the architect for preliminary design, and the same architect becomes the owner's representative during the construction phase. The design documents prepared by the architect are used to choose a design-build firm, which completes the construction documents (CDs) and builds the project.

According to critics, crucial collaboration in the design phase is generally not a formal part of this delivery scheme, and conflicts may arise between the original architect and the design-builder. But as noted in *Handbook on Project Delivery*, there is ample attention paid to design issues—and a single point of responsibility during the CD and construction phases. Many highly innovative designs have been developed for the GSA and other clients using bridging contracts, such as Perkins & Will's Los Angeles Federal Courthouse.

• Design assist

Another decidedly collaborative model, design-assist, involves early participation in programming and design by the contractor. The contractor might review site selection, program intent, project feasibility and cost and schedule targets. Other tasks typically include detailed budget studies, ongoing cost estimates and determinations of "value"—that is, whether the right dollars are being spent in the right places, given the project's goals.

Design-assist is seen as a formal process for architect-contractor collaboration that can be highly detailed and controlled. For the renovation of the Utah State Capitol, for example, the state's Capitol Preservation Board issued a set of "guidelines and imperatives" for contractors and then led a series of workshops to solicit highly detailed cost and constructability documents from participating teams. Generally, however, design-assist is more popular in the private sector, where there are no competitive bidding rules. For public projects, owners are often prohibited from hiring a GC until they are ready to bid; in some cases, however, public-sector owners may work with a CM for design-assist to get around the exclusion.

Design-assist has enjoyed positive reviews recently, especially on the heels of such successes as the San Francisco Federal Office Building, a highly innovative building delivered by design-assist. "There's better cooperation between designer and contractor because they're sitting side by side, and issues are resolved along the way," says Quatman. "Design analysis, value engineering and constructability reviews are done as the design progresses."

• Other methods.

Some veteran owners have developed their own home-grown collaborative processes, many created in conjunction with architects or builders.

"When I became the client, we came up with 'project definition' to clearly characterize the project and know much more so we would be capable of delivering it on time and on budget," says Utah's Hart. "In design-bid-build and even design-build there is still this adversarial relationship; I kept asking myself is there not a better way to have a structure that's more collaborative?"

Hart tried out project definition on two capitol projects, including a new 89,000-square-foot, \$45 million building. "There were no change orders and no scope creep," he says. But a few areas seemed ripe for improvement, so when Hart prepared for the larger capitol renovation project, he turned the selection process on its head. "You can get a lot from an architect, but we really wanted to have the contractor's attention," he recalls. "So we said, 'What if we hire the contractor first, and they hire the architect?'"

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Legal Considerations

Hart had a good idea—but one that won't work for everyone. In many states, the architect has to be hired first. Other legal restrictions dictate how architects and contractors may work together—some offering useful protections to the architect. "In Illinois, for example, if the contractor hires the architect, that fact has to be disclosed to the owner in contract, and the contractor cannot replace the architect without the owner's consent," says Quatman. This helps avoid the situation in which an owner hires a team based on the choice of architect, only to see the contractor subsequently dump the original firm.

In fact, awareness of construction law is vital for architects interested in project collaboration. Inextricably linked with risk, legal considerations may largely decide how and when architects choose to collaborate with contractors.

For example, the growing area of law known as "economic loss" doctrine has prevented contractors from suing architects in design-bid-build delivery. "If the contractor's loss is only economic, the contractor has to go through the owner to get to architect," Quatman explains. Another issue is state licensing, which in some states is a requisite for holding the prime contract on a project. "Architects are licensed in every state, and contractors are licensed in about half of the states," Quatman points out. So when the two affiliate formally, as in design-build, the architect may have to take the lead.

In fact, project delivery methods shape many legal concerns. For example, "In design-build, there are fewer lawsuits than in traditional procurement," explains Quatman, who is also 2007 chairman of AIA's Design-Build Committee. "If there's a design problem, the A/E and GC do work it out. Designer and contractors see an indirect benefit because there are fewer claims."

To complicate matters, two sets of strictures apply to cases where the architect and engineer form a legal partnership or LLC—licensing law and corporate law—and they don't always dovetail nicely. Some states may restrict majority ownership of the entity to licensed professionals, or the LLC that seems advantageous for tax reasons may be restricted or forbidden under the licensing statutes.

The Right Outcomes

Beyond avoiding legal problems, how do architects measure whether their collaboration strategy has paid off? Innovation is one gauge, though it's important to focus on a range of measures, say experts.

"Ultimately, we are interested in outcomes, which are traditionally quality, cost, and schedule," says Fraga. "But that actually is not enough. I have delivered buildings on time and on budget and failed because I've delivered the wrong building! You need to have more." For that reason, on any project Fraga adds three more for a complete yardstick of success:

- Customer satisfaction
- Supplier, contractor, and consultant satisfaction
- Employee satisfaction

Eventually an architect may want to work with the same team players again, says Fraga, so it matters to have satisfied builders and vendors. Employees should benefit from the process, and, of course, the client must feel good about the final product.

Thoughtfully outlining goals at the outset makes the final evaluation all the more meaningful. That's another reason that Hart stands by "project definition" as applied at the Utah State Capitol. The results of the \$8.5 million drum-and-dome portion, for example, included an innovative panelized terra-cotta cladding and an on-budget, on-schedule finish. "The contractors really complemented the architects, who were freed up to focus on design," says Hart. "A wonderful synergy came out of that technical assistance." For contractors, the benefit of such tight alliances can accrue from the architect's enhanced focus. "Rather than architects designing in a vacuum, and perhaps not considering the ramifications of means and methods—which can mean additional cost—this pulls them out in

front so we can contain cost," says Kevin L. Brown, project director with Jacobsen Hunt Joint Venture, Salt Lake City, which served as the general contractor for The Utah State Capitol project.

Another way to consider success is by what's missing—things such as excessive change orders and lawsuits. "The teaming concept works," Quatman summarizes. "The trust relationship is built, and for economic survival reasons architects and contractors choose to resolve issues rather than litigate disputes." ■

Collaboration and Innovation Case Study: The Utah State Capitol

To restore the historic Utah State Capitol to its former glory, owner's representative David H. Hart, AIA, executive director for the state's Capitol Preservation Board, orchestrated a unique and highly collaborative process he calls "project definition." The approach called for selecting contractors, developing technical solutions and cost estimates, and then hiring a design-build team to complete the work.

The benefits of the design-assist delivery included tight cost control, minimal change orders, and novel solutions to longstanding problems.

One of Hart's main concerns was how to restore the dome and rotunda to its original 1916 Richard Kletting design, which called for neoclassical details rendered in terra cotta. Working with manufacturer Boston Valley Terra Cotta and installation subcontractor Kepco+DBI, the team elected to install panelized terra cotta, a novel method that "marries the Old-World technique of terra cotta with modern curtain wall," says Hart. The most technically demanding elements were column enclosures of up to 38 inches in diameter—larger pieces of terra cotta than are typically fabricated.

The benefits of the design-assist delivery included tight cost control, minimal change orders, and novel solutions to longstanding problems

The planning during the project-definition phase was critical to the project, says Hart. Mock-ups of different panelized terra-cotta elements were created to assure the feasibility of the panelized approach, saving time and money while increasing jobsite safety. To ensure that the historic landmark's modern updating would not alter its original dimensions, a digital laser scan was performed to ensure the integrity of the restored capitol dome.

Collaboration and Innovation Case Study: Barneys New York, Boston

To create a new Barneys department store—the retailer's first flagship in 12 years—architects from Gensler and Jeffrey Hutchinson Associates teamed up with construction manager (CM) Structure Tone during the schematic phase to address issues of constructability and cost. The main concern, however, was keeping the final design "customer-friendly."

The collaboration relied on the CM for a range of preconstruction services including surveying, field-verifying dimensions, alternate specifications, and cost control.

"We had a very intense estimating process, to let the client know how each department broke down in cost," explains Dan Finnegan, vice president and national retail leader for Structure Tone. "We focused on millwork because it was central to the project and about 40 percent of the total construction cost." In an unusual approach, five separate millwork subcontractors were hired and coordinated for the work.

A number of innovations and benefits came from the front-end partnering, says Ryan Caffyn-Parsons, Structure Tone's project manager. A costly and elaborate flooring design featuring mosaic tile, marble and wood was accomplished within budget by "outsourcing" the work—offshore—to China. Working with specialty contractors in steel, ornamental metals and glazing, the team conceived of a method for manufacturing an innovative Y-shaped staircase in components to allow installation.

CLICK FOR ADDITIONAL REQUIRED READING

The article continues online at <http://www.archrecord.com/resources/conteduc/archives/0608building-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.

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LEARNING OBJECTIVES

After reading this article, you should be able to:

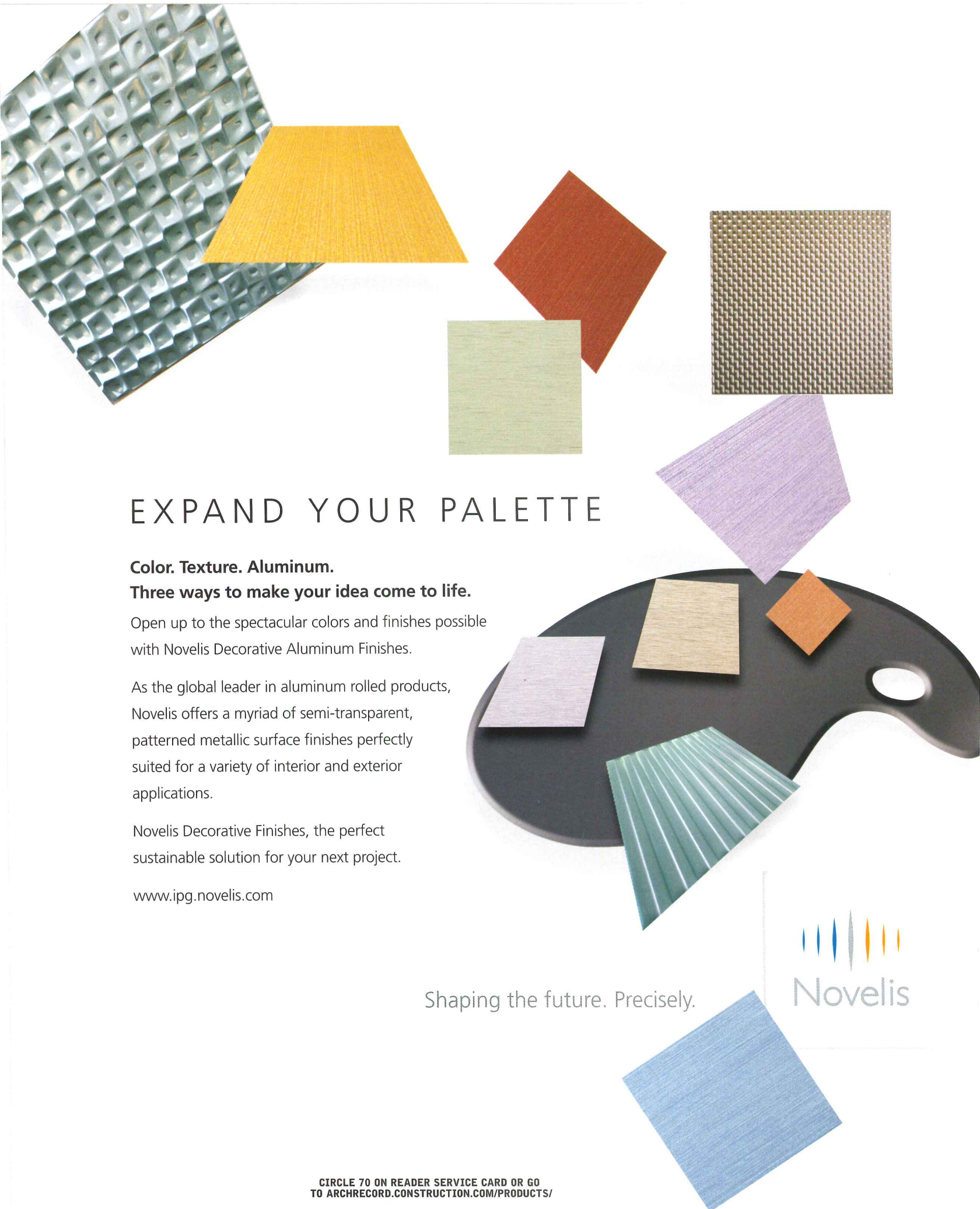
- Explain the primary benefits of architecture firms collaborating with construction firms throughout the project life cycle.
- Evaluate the pros and cons of collaborating with contractors, including insurance and legal issues.
- Identify and describe at least four types of collaborative project delivery.
- Describe anecdotal examples of how collaborative project delivery led to design innovations and/or client satisfaction.

INSTRUCTIONS

Refer to the learning objectives above. Complete the questions below. Go to the self report form on page 256. 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 project participants with the most technical knowledge about building construction are:
 - a. Engineers and architects
 - b. Owners and facility managers
 - c. Manufacturers and subcontractors
 - d. General contractors and program managers
2. What types of construction insurance claims are the most common?
 - a. Acceleration
 - b. Changed work
 - c. Labor productivity loss
 - d. Delays and extras
3. Which statement best describes the project delivery system known as "bridging"?
 - a. Construction management at-risk
 - b. A combination of traditional bid delivery and design-build
 - c. Consultant mediation between architect and contractor
 - d. Design-assist preconstruction services
4. Which of the following is NOT a typical benefit of architect-contractor collaborations?
 - a. Increased awareness of market conditions and materials costs
 - b. Considerations for shifting labor off-site
 - c. Increased fees for the architect
 - d. Reduced project risk
5. What are the three general measures used for contractor prequalification?
 - a. Past performance, leadership, and profitability
 - b. Capabilities, past performance, and past experience
 - c. Site logistics, cost overruns, and change orders
 - d. Location of business, size of business, and credit rating
6. The "economic loss" doctrine legally holds that:
 - a. Contractors must reimburse architects for inaccurate change orders
 - b. Architects can be held liable for project cost overruns
 - c. Only licensed professionals can hold prime contracts
 - d. Contractors cannot always sue architects directly
7. Design-build project delivery is risky for architects when:
 - a. The project is a historic restoration
 - b. The contractor is the project lead
 - c. It is part of a "bridging" delivery system
 - d. Architect and contractor form a limited liability corporation
8. True or false? The availability of building-information modeling (BIM) has increased interest in architect-contractor collaboration, although some experts say that BIM may increase architect liability.
 - a. True
 - b. False
9. What barriers tend to reduce collaboration between architects and contractors?
 - a. Their different personality profiles
 - b. Owner contractual requirements
 - c. State licensing and procurement laws
 - d. All of the above
10. Which statement best describes "design-assist"?
 - a. Early participation in programming and design by the contractor
 - b. Software used for project design and management
 - c. Use of consultants to monitor the schematic design phase
 - d. Risk-reduction techniques used by insurers



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BRIEFS

The housing market has seen better days. Luxury home builder Toll Brothers announced that its third quarter profits were down 19 percent in August, and existing home sales fell 4.1 percent in July, their lowest numbers since 2004. Industry analysts debate whether this marks a serious market drought that could have implications for the overall economy, or if it is just a sign of a temperamental market. For more, go to www.msnbc.msn.com.

"Zero-energy capable" homes are energy efficient enough to be self-sustaining as built, with the addition of on-site energy generation. The city of Austin, Texas, is studying the feasibility of implementing code changes that would enable all new single-family houses built in its jurisdiction by 2015 to hold this title. This level of energy efficiency is approximately 60 percent higher than homes built to code today. Find a full press release at igreenbuild.com.

The AIA Home Design Trends survey, published last month, noted an increased popularity in energy-efficient products and systems, the strong appeal of home offices

and home theaters as specialty rooms, and a continued strong market for remodeling and renovation in housing, despite the softening housing market. See www.aia.org.

A model prefab house, designed by SCI-Arc founder Ray Kappe, FAIA, is the first residence to achieve a platinum rating in the LEED for Homes pilot program. It is 80 percent more energy efficient than a conventional residence of similar size, and it is constructed with 75 percent less waste. Visit www.livinghomes.us to find out more.

"The homeownership rate for blacks has remained nearly 20 percent below the national average for the past 50 years," says a collaborative report published in August by the NAACP and NAHB. Entitled *Building on a Dream*, the publication discusses the benefits of homeownership, as well as policy recommendations to increase minorities' access to adequate housing. Visit naacp.org or nahb.org for more information.

A film on ScrapHouse, a green demonstration home built entirely of salvaged material, aired on the National Geographic Channel in September. Designed and built as the centerpiece of World Environment Day 2005 at the San Francisco Civic Center Plaza, its walls are sheathed in everything from street signs and shower doors to fire hoses and phone books. Emmy Award-winning documentary filmmaker Anna Fitch captured every step of the process for the film. Visit www.scraphouse.org for showings near you. *Sophia Asare*

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Saia Barbarese Topouzanov Architects
- 221 Residential Products**

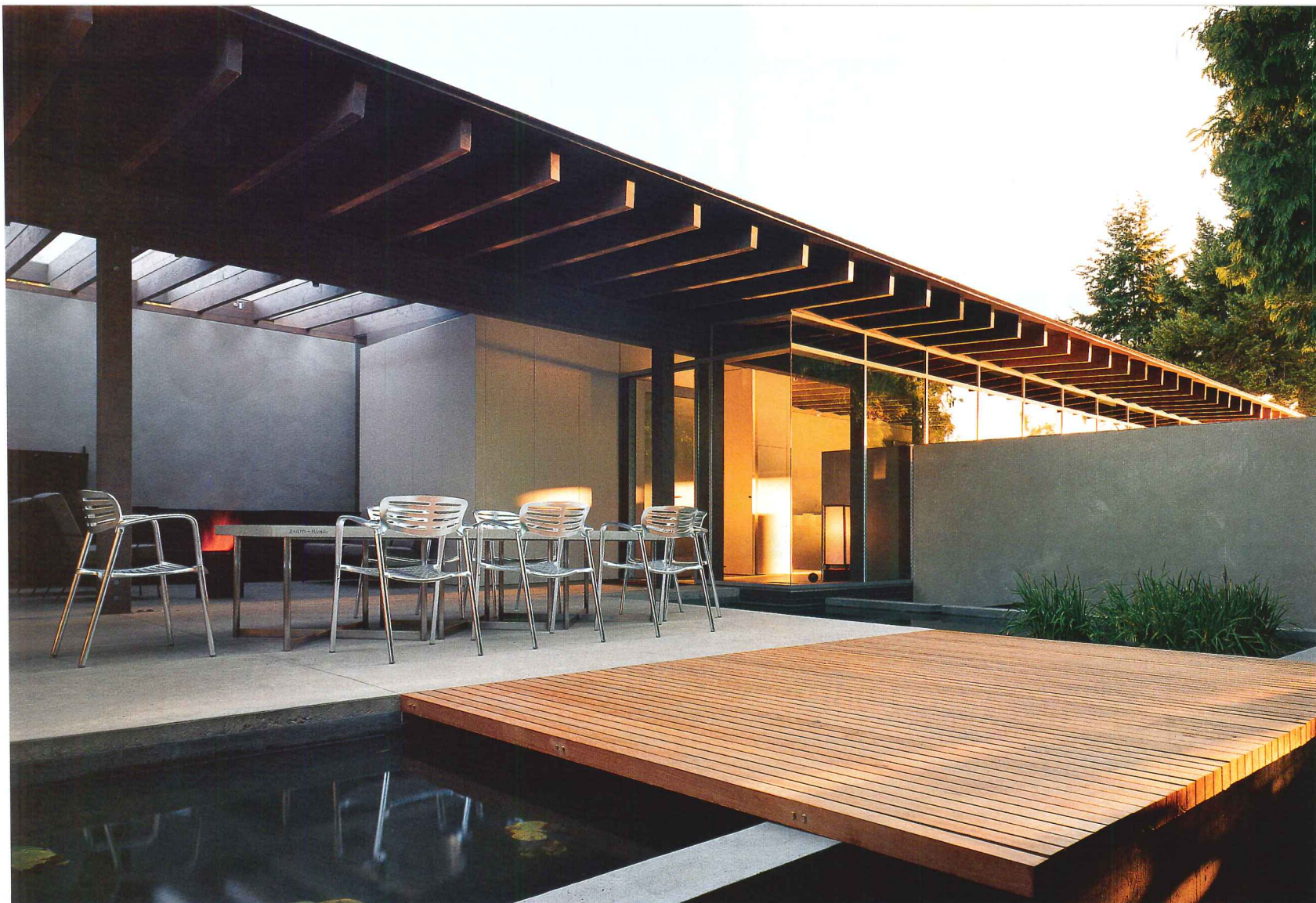
There are many reasons to design houses to be long and narrow. They ventilate well, maximize views of scenery, and provide easy circulation. These features are evident in all of the houses presented here. As well, the narrow shapes of Kansas Longhouse and Maison Goulet reflect the forms of buildings indigenous to their locales: The Midwest rural shed or chicken coop inspired the former, the Quebec farmhouse, the latter.

Building an elongated house maximizes opportunities to blend the landscape with architecture; in hugging the land, the form is defined by it. Fronting the beach and water of Puget Sound, the sequencing of indoor and outdoor spaces at Fautleroy House fits with the rectangular sloping contour of its site. Rankin Creek House derives its shape from the creek that runs alongside it.

So, too, these houses play on the relationship between indoors and outdoors. Porches bookend the ground floor of Maison Goulet, and Rankin Creek house's observation deck opens to and cantilevers over a steep drop to the water below.

The practical advantages of this archetypal form are obvious. Perhaps this, combined with the form's clarity and simplicity, explains its abundant appeal. *Jane F. Kolleeny*





Suyama Peterson Deguchi's Fautleroy House reveals a thoughtful coupling of structure with nature

By Jane F. Kolleeny

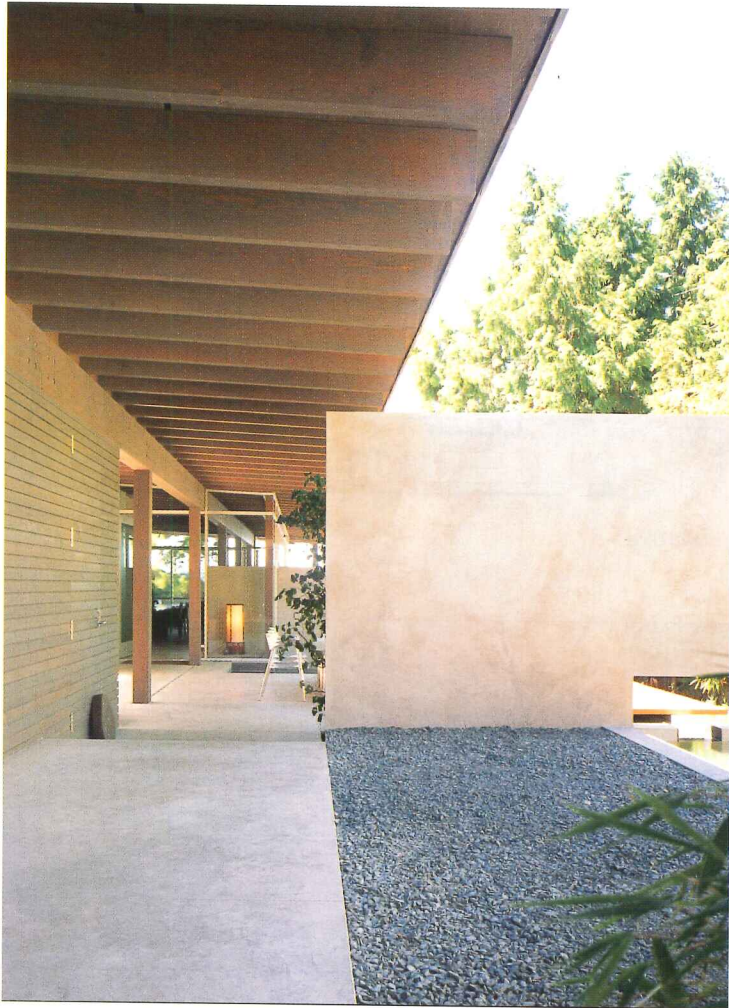
Isolated by water on three sides, West Seattle exists as both a peninsula and a state of mind. While animated by the bridges, roads, and ferries that bring it closer to downtown, it remains determinedly aloof and uncitlike. It is here that the beachfront community of Fautleroy emerged, developed at the turn of the last century as a summer getaway. Fautleroy rests on the eastern edge of Puget Sound, offering panoramic views of Vashon Island, Blake Island, and the Kitsap Peninsula to the west. The white-capped Olympic Mountains in the distance can be glimpsed from behind these bodies of land.

Here, architect George Suyama, FAIA, of the Seattle-based firm Suyama Peterson Deguchi Architects, created a home for himself and his wife, one that rests comfortably within an eclectic mix of suburban houses and beach bungalows arranged into rows of narrow rectilinear lots aligned to the beach along the sound. “We don’t produce very aggressive

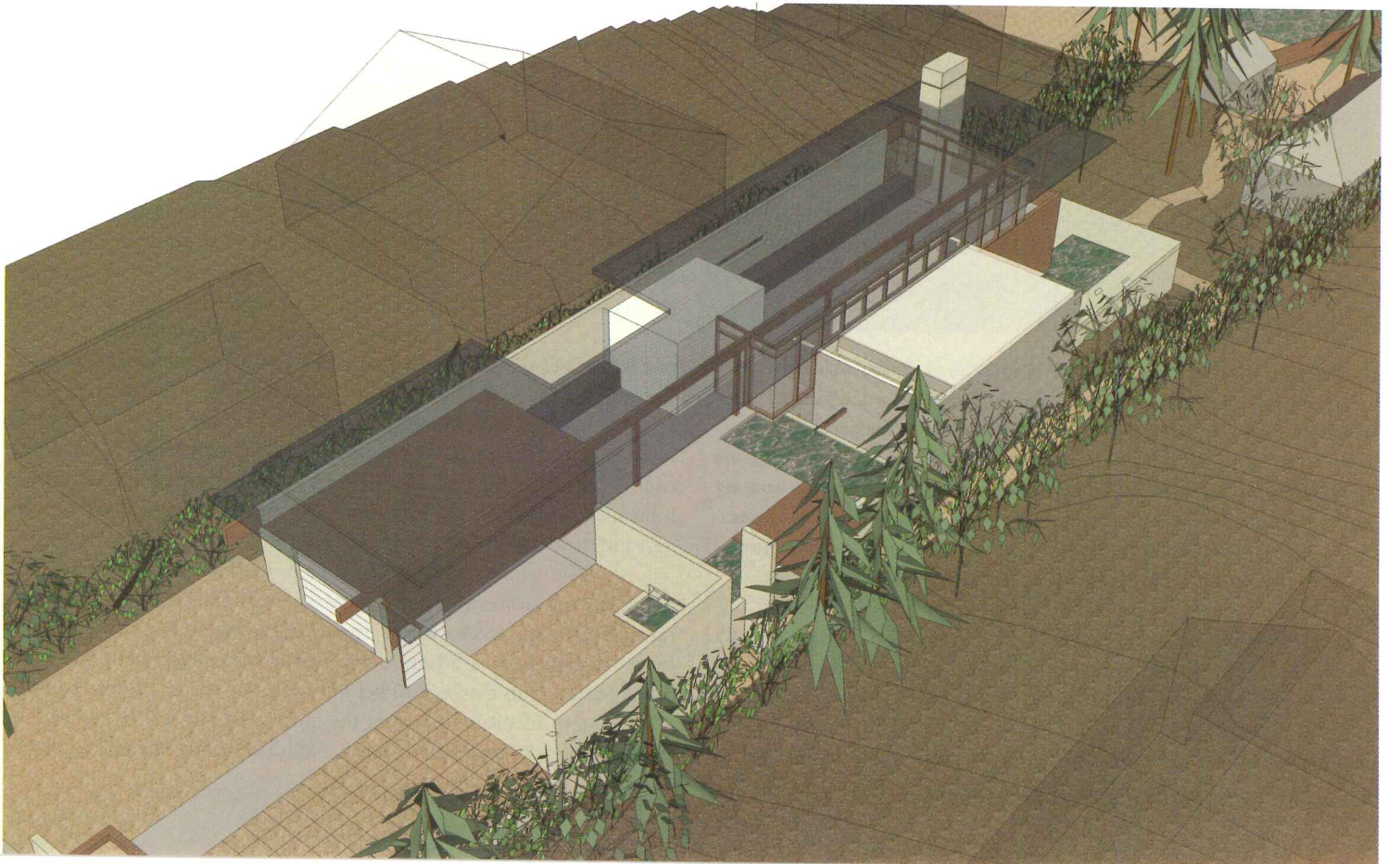
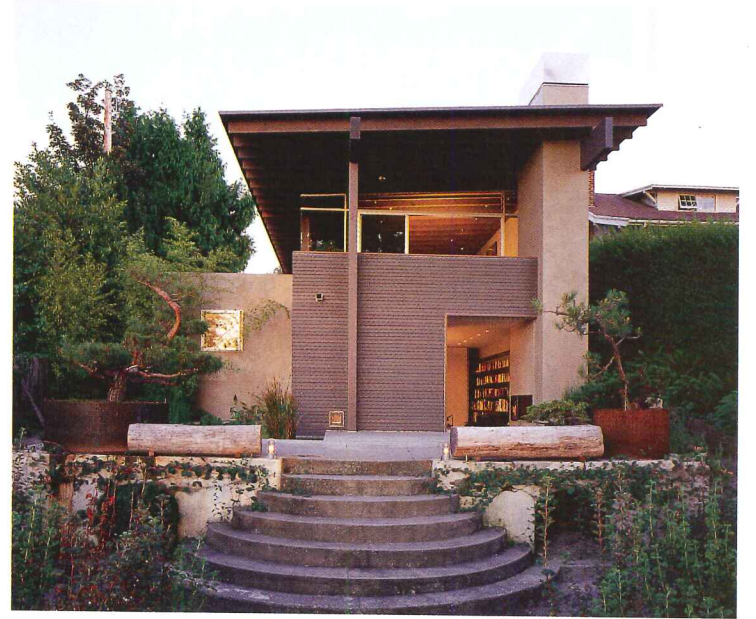
Project: Fautleroy Residence, Seattle
Architect: Suyama Peterson
Deguchi—George Suyama FAIA,
partner in charge; David Derrer,
Chris Haddad, Carl Mahaney, Kevin
Miyamura, Matt Scholl, Jeff King,
project team

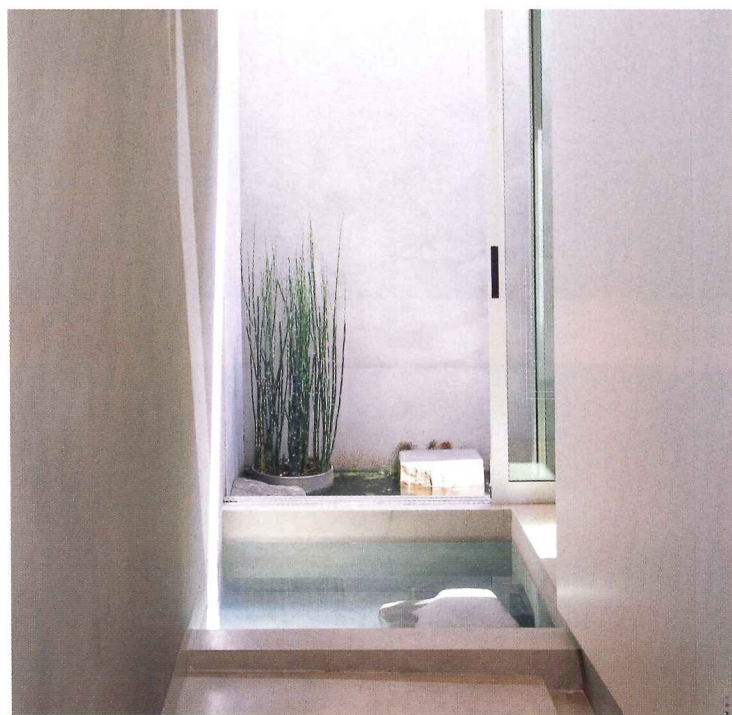
Engineer: Swenson Say Faget
(structural);
Landscape: Alchemie
Lighting: Brian Hood Lighting
General contractor: Crocker
Construction

PHOTOGRAPHY: © PAUL WARCHOL (THIS PAGE AND OPPOSITE, TOP LEFT);
LARA SWIMMER (OPPOSITE, TOP RIGHT)



In the entry courtyard, a dining area and deck sits next to and over the reflecting pond (opposite). Suyama reinforces the elongated house with a concrete bearing wall that begins at the front (left) and culminates at the back (below and rendering, bottom).

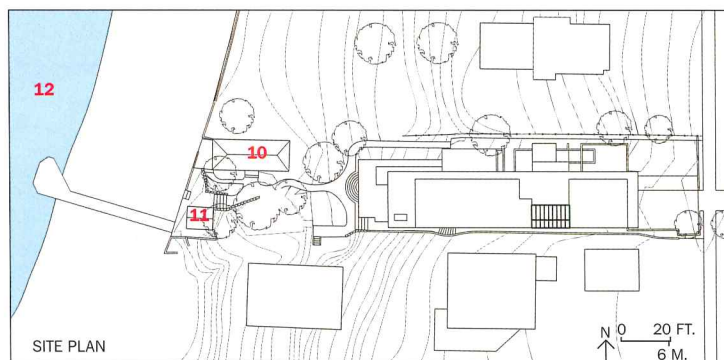
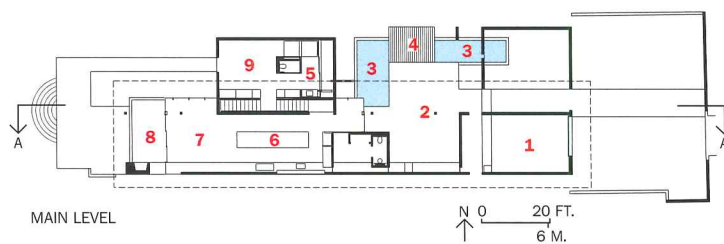
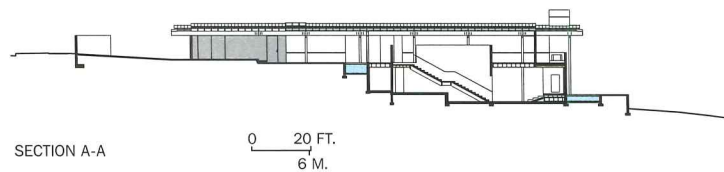




architecture in Seattle because the landscape is too beautiful, and the weather too benign," says Suyama. This couldn't be a more accurate description of the Fauntleroy house's inconspicuous street presence, which belies its interior—a serene, Minimalist sequence of spaces that references and opens gradually to the water at its back.

The 2,600-square-foot house features a main floor containing the key public areas: an entry courtyard, outdoor sitting room, kitchen/dining area, bath, living room, and porch. A downstairs landing houses a master bedroom and bath, while a library/office/den, bath, and storage reside on the level below. Outside, the backyard steps down to the beach where a dock juts out into water. A fisherman's shack built in the 1920s and a 1940s rustic cabin (now used for

Visible from the entryway, a reflecting pond creates a place of repose (top). The master bath features a soaking tub, where a pond sits next to and outside a glass wall (above).



1. Garage
2. Entry terrace
3. Reflecting pond
4. Deck
5. Bath
6. Dining/kitchen
7. Living room
8. Terrace
9. Bedroom
10. Guest cabin
11. Fisherman's shack
12. Puget Sound

guests), both framed by a tall cluster of 100-year-old Douglas fir trees, share the property.

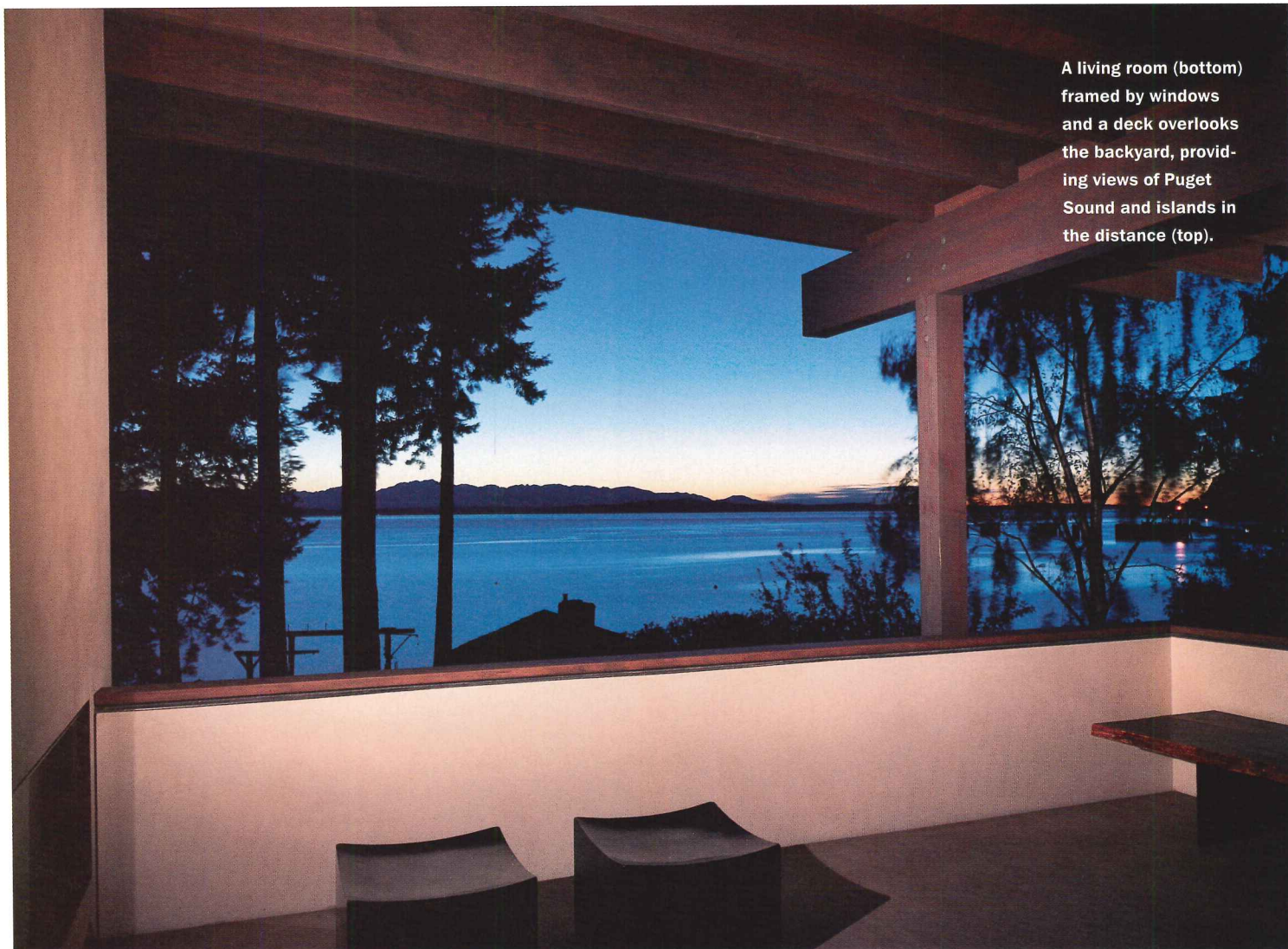
The house emerges in stages, from the street to the carport and through a wide, pivoting front door. An entry courtyard leads to an outdoor sitting area where a water element begins. A home to koi, reeds, and other water-growing plants, it continues throughout the house, meandering indoors and out—here a reflecting pond, later narrowing into a stream, then widening again into a pond. A continuous trickling sound contributes to the contemplative mood of the residence. The water terminates at the lower terrace in the back of the house, but seems to restart farther on as Puget Sound. "One begins with water and comes back to water," says Suyama.

The house's long, narrow footprint parallels hedges of trees on the south and north length of the site, providing abundant privacy. A black steel countertop that originates in the front outdoor room continues inside, transformed into a kitchen countertop (composed of African black granite), and then extends into the living room as low-slung steel cabinets.

The architect contrasted such rectilinear elements, which direct one's movement from front to back, with interior places for relaxing and settling into everyday activities. Drawing on distinctly Japanese forms, a multipurpose library/den/office and the master bath hide functional elements in closets and behind walls. Japanese antiques contrast with Modern furniture to accent the quiet simplicity of the house. The architect uses the principles of *wabi* (subdued austere beauty) and *sabi*

Sheltered by wide overhanging eaves, an entry court frames the front door to the house. Inside, a long kitchen table, canopied by a "chandelier" composed of a contorted espalier apple tree branch, is visible, as are distant views of the sound.





A living room (bottom) framed by windows and a deck overlooks the backyard, providing views of Puget Sound and islands in the distance (top).



(rustic patina) to guide the design. “The idea of beauty in things that are imperfect, impermanent, and incomplete, while modest and humble, contrasts with the architectural precision of the construction,” explains the architect.

Suyama worked in tandem with landscape architect Bruce Hinckley, of the Seattle-based firm Alchemie. Hinckley describes their sequencing of outdoor and indoor places “like two improvisational jazz musicians riffing back and forth to create something richer than its individual parts.” Bamboo groves cluster harmoniously near the entry, in the backyard, and in gardens inset around the pond. On the periphery of the carport, rusted-out steel piping is used as planters for equisedum, and moss grows through concrete pavers known as “grasscrete.” Meanwhile, climbing hydrangeas drape the front wall, and a contorted filbert tree covers a wall near the entry. Maximizing the benefits of indigenous growth and using the limits of the site as an inspiration, Suyama’s design fulfills his statement that “in the Northwest, design is more about place and less about object.” ■

Sources

Exterior stucco and wall coverings: Dan Daniliucci

Glazing: Cardinal Glass Industries

Wood doors: Northstar Woodworks

Custom cabinets: Bellan Shopworks

and Von Mertens Metalwork

Lighting: Translite; Artemide; Lutron

For more information on this project, go to Residential at

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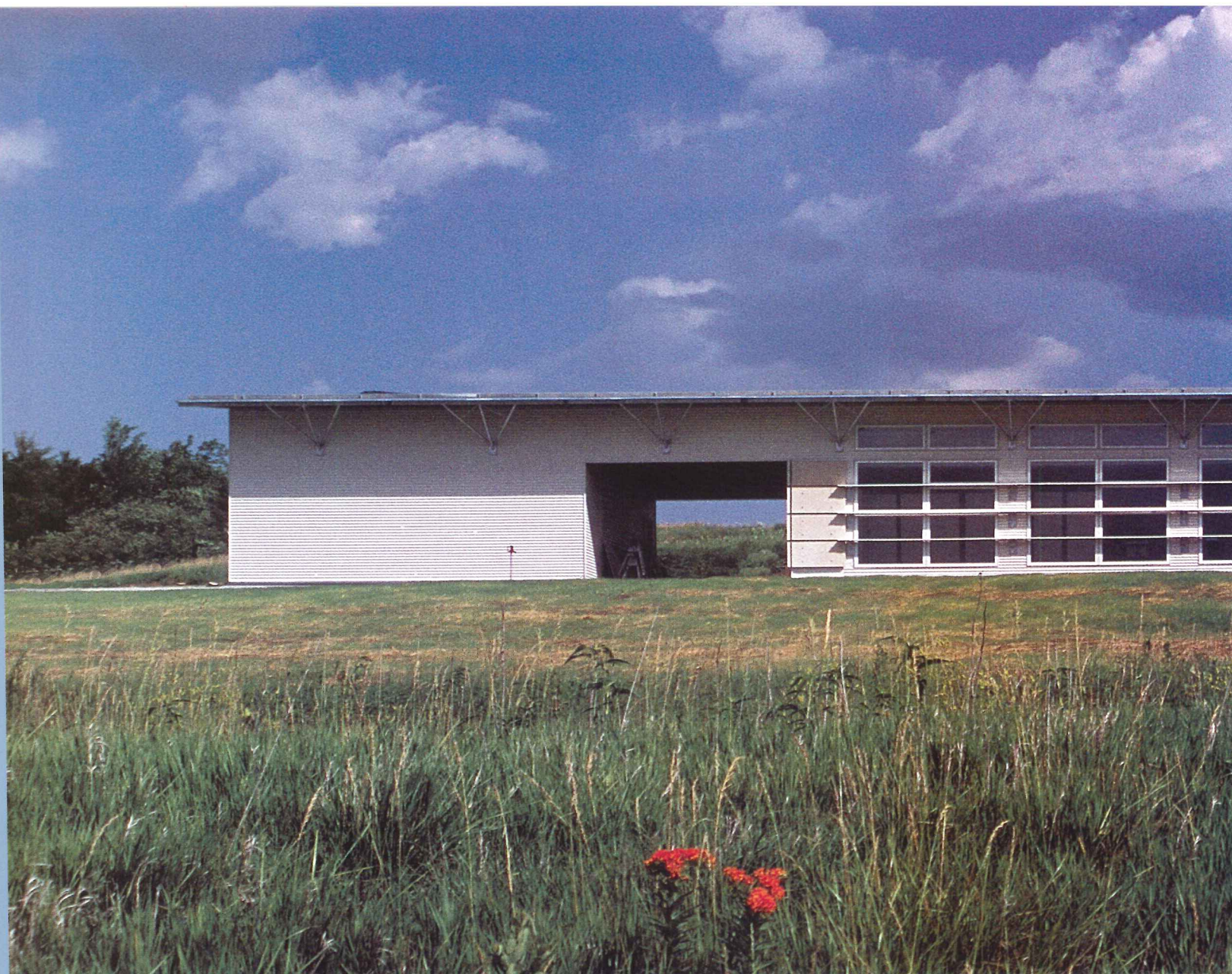
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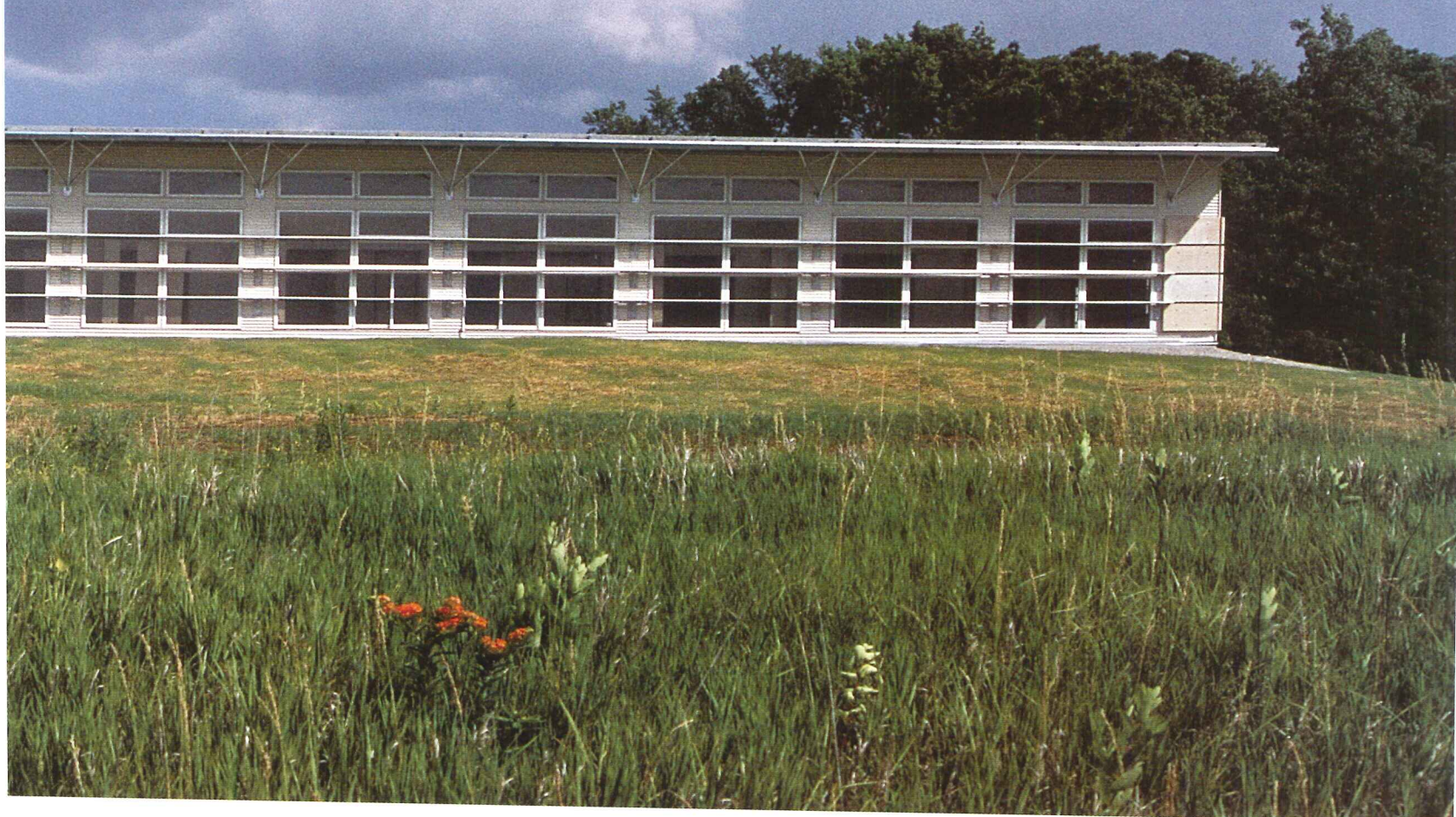
By Charles Linn, FAIA

A few years ago, one of Dan Rockhill's clients gave him an 8-acre lot with frontage on a busy county road west of Lawrence, Kansas, in lieu of payment for some design and construction work. Rockhill explains, "We were cash poor, so we decided to build a spec house on it and sell it. When we started, we were enamored with the notion of literally coming down and cutting the prairie, moving it aside, putting a house on the exposed ground, and replanting the prairie back on top." The idea developed by Rockhill and his colleague David Sain works: The Kansas Longhouse's low-slope green roof has been so successfully colonized by the native prairie grasses that on approach it is nearly invisible. Visitors walking up the long driveway toward it ought to be warned before they embark, "Just keep going, it's back there."

The structure's major axis runs roughly east-west. It is placed parallel to and at the base of a short, sharp slope. Its south-facing wall of windows—which extends the entire length of the house itself—overlooks wide fields of brome grass, soybeans, and a distant tree-covered ridge. Orienting the building toward this view also allows the cooling south breezes to flow across the short axis of the house in summer, when the windows are shielded by shallow light shelves. In winter, sun-

PHOTOGRAPHY: © DAN ROCKHILL

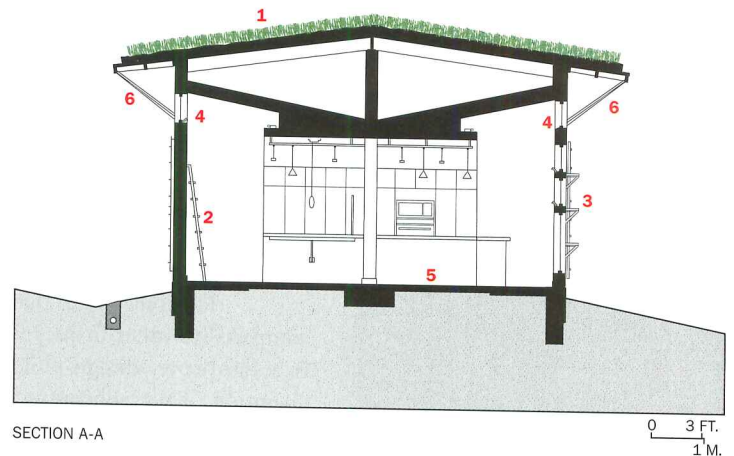
Like the little house on the prairie, Rockhill + Associates' **Kansas Longhouse** sits comfortably in a field of grass



shine warms the house's concrete floor, and the slope behind the building shields it from the brutal north winds of Kansas. The plan, organized on a pure, 12-by-12-foot structural grid, could not be much more straightforward. The garage is separated from the house by a breezeway. One enters through the open living, dining, and kitchen area; beyond this, spaces become increasingly more private as the master bedroom at the far end of the house is approached.

The residence's primary circulation path runs along the south window-wall, leading past two bathrooms, two bedroom/study spaces, and on to the master bedroom. Vanities for each bathroom are stationed in the corridor so users can enjoy the view, although they can be made private by pulling closed pocket doors on each side. A second corridor runs along the inside of the north wall of the house, allowing access to utility rooms, a tornado shelter, and the other end of the bedroom/study spaces. The outside wall of the corridor is lined with storage cabinets. The two bedroom/study spaces are separated from the corridors by pivoting doors rather than walls. When windows are open on both sides of the house here

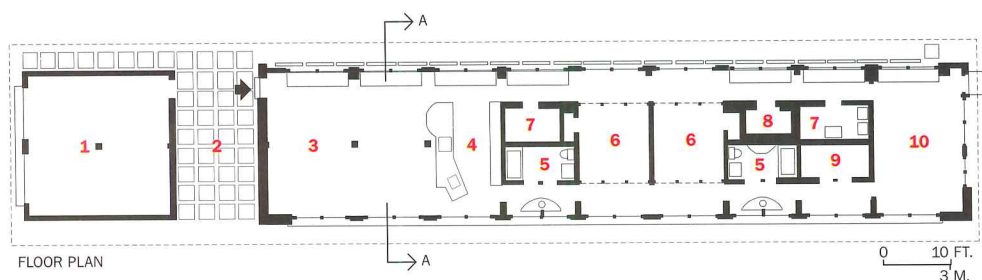
Glazing on the south is shaded by light shelves (above), which also reflect light onto the sloped ceiling; operable windows allow cross ventilation. Heat is provided by a radiant floor.



- 1. Sod roof
- 2. Ladder to clerestory windows
- 3. Light shelves
- 4. Operable windows
- 5. Radiant heating
- 6. Overhangs supported by custom brackets



Turfgrass sod from a local farm was rolled over the EPDM green-roof system, where native grasses now thrive (top). Outside, the house features a wood frame sheathed in metal with a yellow finish. Over the garage, the metal is corrugated and left exposed; elsewhere, the metal is flat, and limestone slabs are bolted to metal bars anchored to the wood frame (near left, on the left). Rockhill's studio can afford to splurge on details, because they do nearly all the construction themselves, including custom fabrication of cabinets and vanities (far left) and light shelves.



- 1. Garage
- 2. Breezeway
- 3. Living/dining
- 4. Kitchen
- 5. Bath
- 6. Bedroom/study
- 7. Utility rooms
- 8. Tornado shelter
- 9. Closet
- 10. Master bedroom



(and elsewhere), and the doors at each end of these rooms are pivoted open, cool, refreshing breezes can freely circulate throughout the entire house.

Rockhill notes that compared to other firms, his is a hard-core, design-build operation. They subcontract out very little work, and take on very technically challenging tasks, such as the installation of the green roof and radiant-

floor heating system used in this project. The firm's builders are particularly gifted at fabrication, says Rockhill, "otherwise you really couldn't afford to do a spec house like this." Although the house makes

rather pointed references to the region's brooder-house forms, people still see it as Modernistic. "You can't help but be a bit nervous in this neck of the woods, if you build something that's spec that's the slightest bit different. We advertised it for three full months and no one called." In the end, the first person who viewed the house bought it. But now he's considering selling. "He's a highly social being," Rockhill says. "Some people can't help but be a little surprised that out here it's quiet all the time." ■

Project: *Kansas Longhouse, Lawrence, Kansas*

Architect: *Rockhill + Associates—Dan Rockhill and David Sain*

Sources

Windows and doors: *Jeld-Wen*

Roofing: *Genflex*

Cabinets and hardware: *IKEA*

Solid surfacing: *Formica*

Radiant Floors: *Midwest Radiant Heat*

Sinks: *Blanco*

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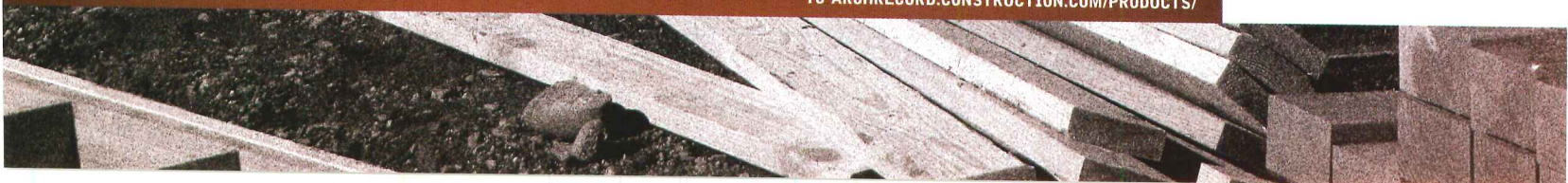
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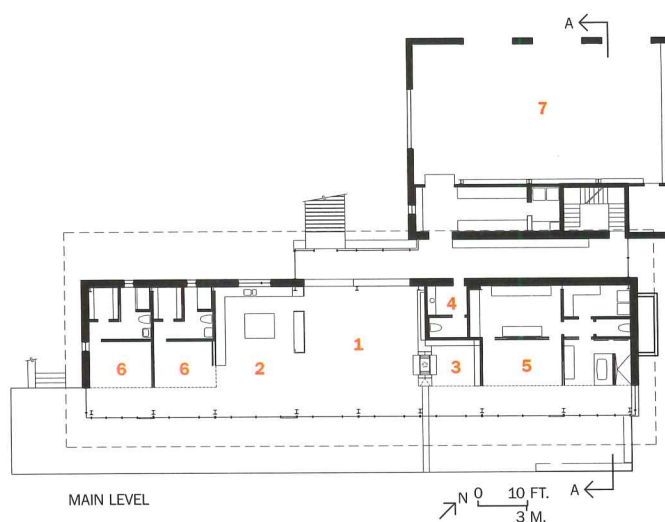
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Along a high bank of the Rattlesnake Creek, Public's Rankin Creek House takes its cue from the water's flowing form



By Beth Broome

On an old glacial lake bed, Missoula, home to the University of Montana, feels like a dusty outpost with a college town vibe. Surrounded by national forests and wilderness areas, with Glacier National Park a few hours to the north and Yellowstone to the southeast, the city attracts people who like to spend their time outdoors.

The area's natural beauty was certainly a main draw for Matt and Marian Maxwell, California and Idaho natives, respectively, who built Rankin Creek House atop the steep-wooded bank of Rattlesnake Creek. However, as a working couple with two young children and the demands of a heart surgeon's schedule, the owners do not get out as much as they would like to. When the Maxwells hired San Diego architect James Brown of the firm Public to create their full-time residence, they told him they wanted a Minimalist home with a relatively small footprint that would fit into its urban forest setting and bring the outdoors in. The house they envisioned would serve as an observation deck for taking in the scenery, while at the same time function as a "living" home that responded to their needs as a growing family.

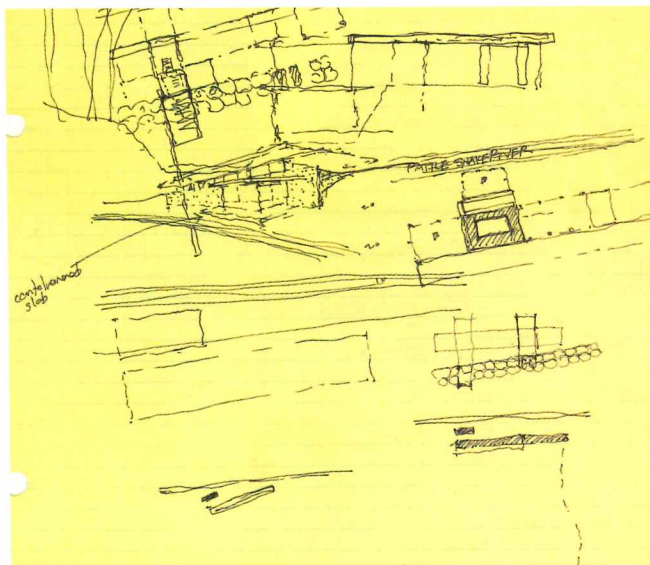
When Brown first visited the site, he was captivated, too. A vision immediately came to him: a line of straight-backed chairs arranged in a row along the edge of the high creek bank. "It felt like you could sit in one of these chairs and be in a separate universe, though others might be with you contemplating the setting," says the architect. He took this simple idea and rigorously implemented it, allowing the vision to guide his design, which over the course of two years and with close client involvement, went through 13 iterations.

Ponderosa pines, black cottonwood, and Rocky Mountain maple dot the 7-acre lot, which sits on the edge of town, past a grouping of ranch and split-level homes. A winding drive brings visitors through

blue bunch wheat grass, Idaho fescue, and other native species the Maxwells have planted to restore the natural grasslands that had been damaged by grazing horses.

Shaped by that image of a line of chairs, the footprint evolved as a long, narrow rectangle, following the creek's path. A large garage connected

1. Living room
2. Kitchen
3. Den
4. Bath
5. Master suite
6. Child's room/bath
7. Garage



to the house by a wide, gallerylike hall breaks from the linearity of the residence, but plays a secondary role in the plan. A durable shell of board-formed concrete shields the house from the elements, including potential wildfires, while giving the hard exterior a soft, textural quality. The austere envelope also protects the jewel-like core—an "insert" of soffits and brightly colored walls that define the living quarters. Like the communal yet private environment Brown envisioned, the interior spaces relate individually to the outdoors. The house can either be compartmentalized by closing large steel sliding walls, or, with the partitions pushed into their pockets, work as a single volume.

Aluminum-framed glazing, with some operable windows and four doors, forms the rear elevation, which leads onto a concrete deck partially cantilevered over the steep drop to the water below. Though

Project: Rankin Creek House, Missoula, Montana
Architect: Public—James Brown and James Gates, design partners; Ruediger Thierhoff, project manager; Steve Rosenstein, digital modeling

Landscape: Garden City Florascaping
Engineer: Valley Electric
General contractor: Gordon Construction



All of the house's living areas look out over a concrete deck, which is cantilevered at its far end and runs parallel to the creek below (top). Use of turf around the house and garage is limited to two small patches in favor of native grasses (bottom).



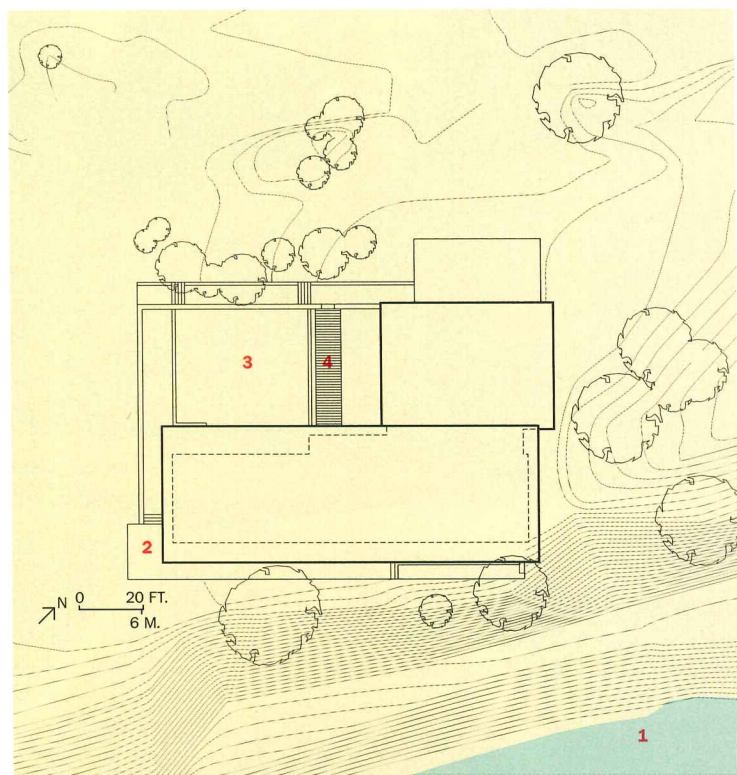


The soft, colorful inner core of the house is inserted into the more rugged protective envelope.

Missoula's climate is temperate by Montana standards, it is by no means mild. Brown specified triple-glazed, argon-filled glass throughout and built interior/exterior walls with two 8-inch-wide concrete slabs sandwiching a layer of insulation. Clerestory windows wrap the entire house, making the metal-pan roof, supported by exposed steel beams and columns, appear to float, and reducing the need for artificial lighting. The Maxwells eschewed air-conditioning, opting instead for cross ventilation. On a late summer afternoon, as the two children wandered in and out at will, a breeze kept the house comfortable and carried in the sounds of the babbling creek and rustling pine branches outside.

The material palette lends an honest quality to the 3,600-square-foot house (which includes a finished basement level), and establishes an intimate relationship between resident and residence. Lines between the inside and outdoors are blurred by the continuation of elements such as the steel beams and board-formed concrete from interior to exterior. Brown heightened the connection of the built and natural environments by orchestrating a series of tactile and auditory experiences—starting with the sound of footsteps on gravel, then on concrete slab, Nyotah decking, and finally Pennsylvania bluestone (well adapted to

1. Rattlesnake Creek
2. Deck
3. Yard
4. Walkway



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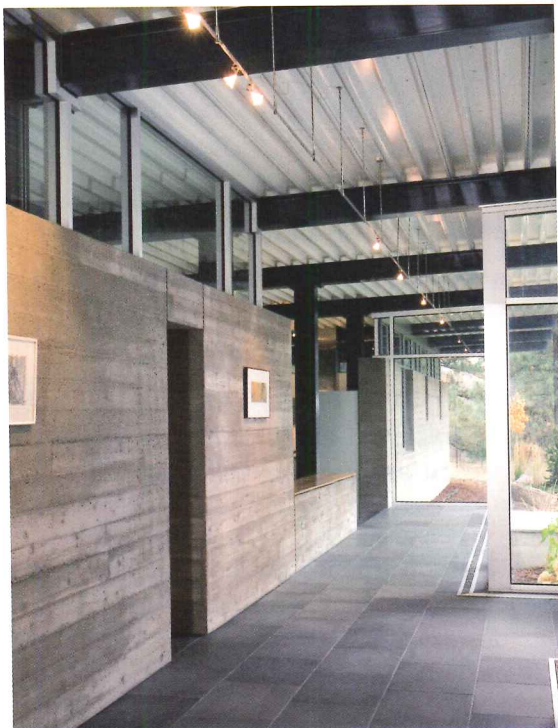
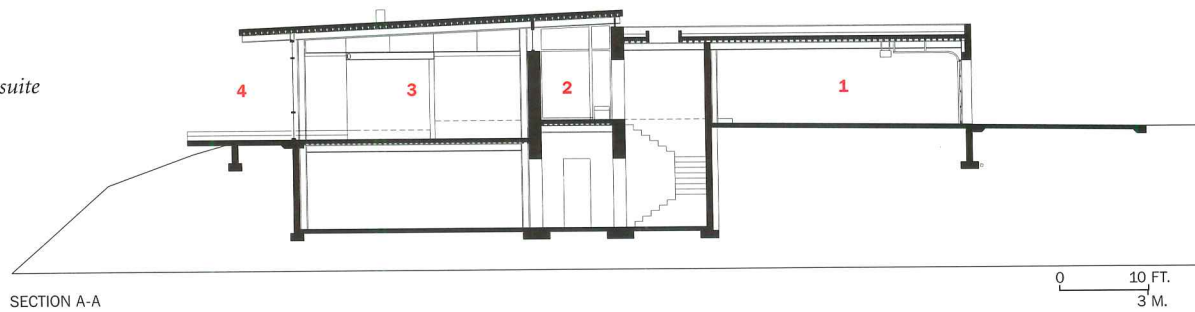
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1. Garage
2. Gallery/entry
3. Master bedroom suite
4. Deck



Exterior materials are carried into the interior, in the gallery (right and far right), and in the living area (below).



the freeze-thaw cycle), which extends into the front gallery and down a step, where it meets swaths of quarter-sawn white oak. It was a challenge finding local builders who could handle traditionally commercial materials in a residential project, but Brown eventually brought in a commercial contractor, Gordon Construction. Working from California, Brown, who made just two site visits during construction, relied heavily on the contractor's craftsmanship and input.

While achieving a delicate balancing act of simultaneously providing shelter from the environment while admitting it in, the house does not get caught up with itself as an object on the landscape. Rankin Creek House, which is named for Matt Maxwell's paternal grandmother, is very much for and about the family that lives in it. When the concrete was setting on the front walk, and again on the back deck, the couple's young daughter cast imprints of her tiny hands and feet, making her indelible mark, along with the rest of her family, on the house's legacy. ■

Sources

Kitchen: *Polyform*

Locksets: *Schlage*

Iron fabricators: *Iron Horse*

Flooring: *Superior Hardwoods*

Plumbing fixtures: *Hansgrohe*

For more information on this project, go to Residential at

www.archrecord.com.





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Saia Barbarese Topouzanov Architectes' **Maison Goulet** recalls the primal shape of the farmhouse

By Rhys Phillips

In their infancy, the Laurentian Mountains north of Montreal would have dwarfed even Mount Everest. But several billion years of persistent erosion has reduced most of them to modest if rugged hills, cloaked in a thick forest mantel and curling around countless small lakes. Here, 60 miles north of Montreal, near the village of Sainte-Marquerte-du-Lac-Masson, urban dwellers have found a four-seasons playground. As a result, overdevelopment is intruding on the once raw landscape.

In spite of this, Montreal art historian Marlène Goulet found and purchased an unspoiled 80-acre ridge that curves around the bay of one of the lakes—Lac Grenier—and rises sharply 200 feet to its crown. A

Rhys Phillips, a writer based in Ottawa Canada, specializes on architecture and urban design.

rudimentary cottage was the only existing structure on the property, built on marshy flatland next to the motorboat-free lake. Initially, Goulet, her architect-husband, Mario Saia, and their three children made do with this rustic facility, albeit with a number of rambling but modestly scaled additions. But when the couple decided they wanted a comfortable year-round retreat complete with a studio/office, Saia got involved. He embarked on the task of creating a home that would combine his design

Project: *Maison Goulet, Sainte-Marquerte-du-Lac-Masson, Canada*

Architect: *Saia Barbarese Topouzanov Architectes—Mario Saia, principal; Marc Pape, team*

Engineer: *Saia Deslauriers Kadanoff*

Leconte Brisebois Blais

Landscape: *Claude Cormier Architectes Paysagistes*

General contractor: *Michel Riopelle Construction et Rénovation*

PHOTOGRAPHY: © FREDERIC SAIA (THIS PAGE); ALAIN LAFOREST (OPPOSITE)

ideas with the family's lifestyle.

They retained the existing compound for summer use by their children and grandchildren, but wished to refrain from intruding further on the lake's delicate shoreline. As a result, a long, narrow shelf almost a quarter of a mile up the slope from the lake became home to the new 2,800-square-foot building, with a footprint measuring 18-by-85 feet, tucked below two side-by-side rock faces. "We built on a plateau, in the verdant forest between the erratic stones," describes Saia. The two-story residence provides a first floor with screened porches at either end between a long, double-height living/dining area and a well-equipped kitchen. Two bedrooms above the kitchen and a generous studio on the west end are separated by the house's double-height space.

The narrowness of the plateau suggested a very long, thin plan. Also, the site's southern exposure, shaded by deciduous trees in summer but open most of the day to winter sun, played a role. "The idea was to stretch out the summer view of the forest and the winter panorama of the lake to be available to every space in the house," said Saia, "while establishing strong continuity inside and outside."

The residence's simple rectangular volume with a gabled roof

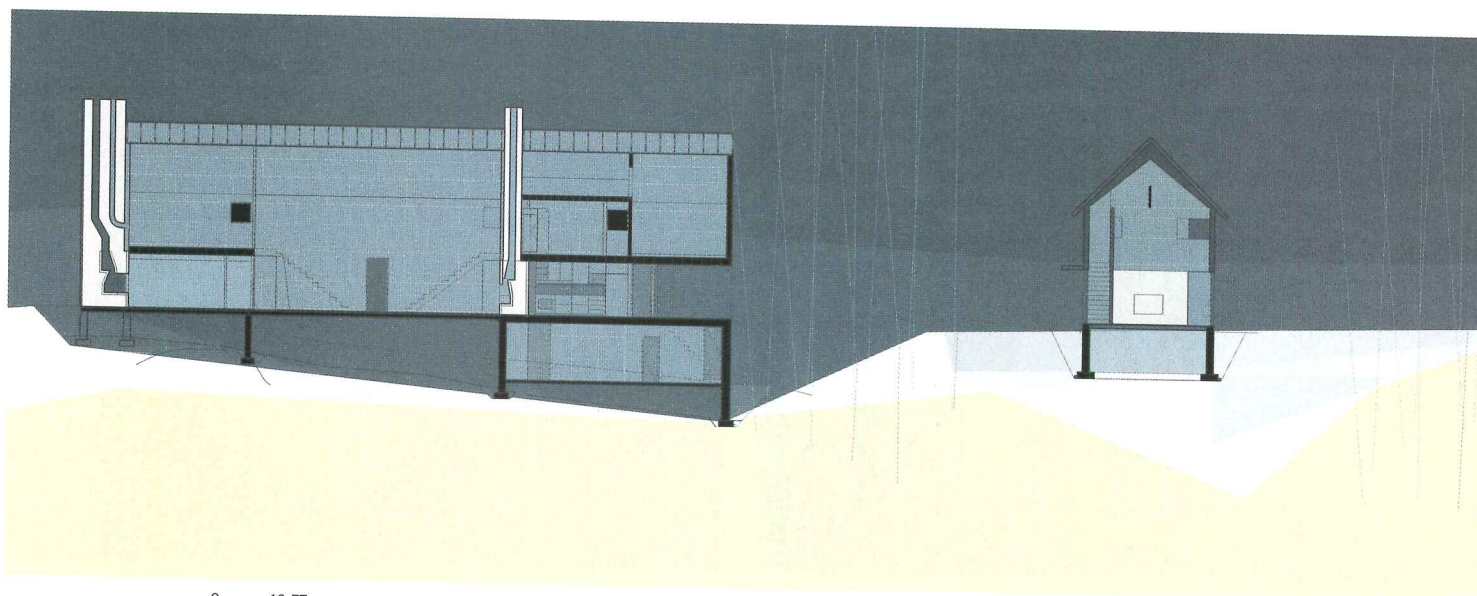
is intended to invoke the "familiarity of shelter through an archetypal form," while at the same time "reflecting simple geometry and volume, purified of superfluous details," says the architect. Added to this are the house's zinc cladding and corrugated-metal roof, unsentimental vernacular references to traditional Quebec tin sheds.

The steel-reinforced, wood-frame house sits on a fieldstone foundation wrapped mostly around a 4-foot-deep gravel base. At the house's west end, this solid base is replaced by a basement mudroom.

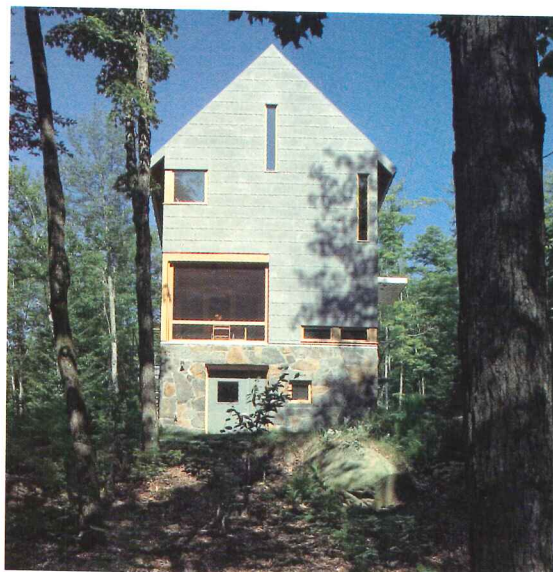
THE LAKESIDE FACADE FEATURES A SYMMETRICAL ROW OF WINDOWS THAT REACH FROM THE FLOOR TO THE CEILING.

With this mudroom extruded from the slope and also clad in stone, the foundation suggests a huge, partly submerged rock. Saia's intent was to present the house rooted to the landscape as if built on a found-in-place but sliced-off stone plinth.

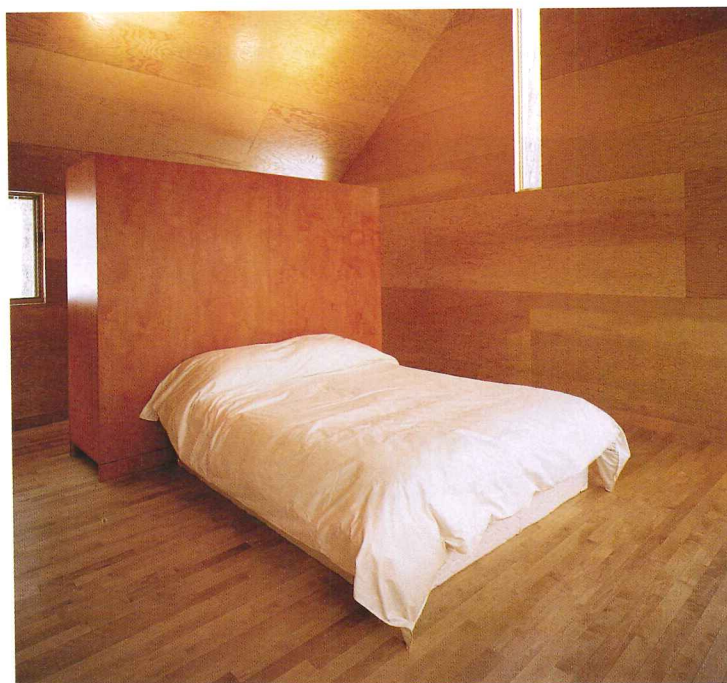
On the ground floor, two exterior rooms, enclosed with full-height sliding screens against the area's ravenous mosquitoes, illustrate



The simple, barnlike form of the house, with its two large chimneys and sloped metal roof, presents a harmonious blend of vernacular and Modern design. The ground floor of the south-facing side is fully glazed. A fieldstone foundation and mudroom roots the building to the land.



On the lake-facing elevation, the ground floor opens to the outside with floor-to-ceiling glazing and screened porches on either end (right). Inside, walls and ceilings, clad in perfectly matched sheets of plywood, flow into one another (below two).

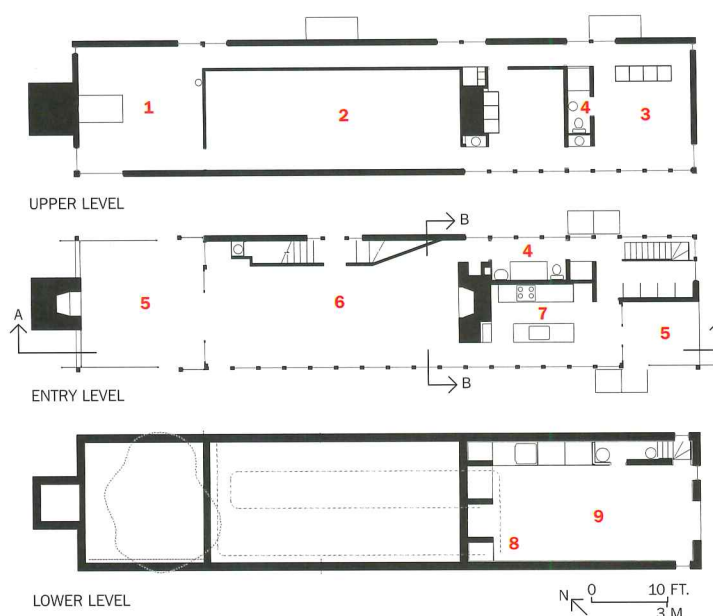


how the design blurs inside and out. A large porch stretches across the full width of the west end, and a smaller half-width porch cut out of the area under the second-story master bedroom provides an outdoor room on the southeast corner. A massive stone fireplace and chimney on the west end both anchors the double-height space and serves as a structural support for the second floor.

In plan, the first level revolves around a central great room, an elongated, sculptural space rising up to the roof peak and broken only by the slimmest of metal tie-rods. Folding glass doors open to allow the complete dissolution of the west wall during warm weather. A second, totemic stone hearth centers the great room's east end with passage along the south facade into the kitchen. In turn, folding glass doors again integrate the kitchen with the smaller, southeast-facing "breakfast" porch.

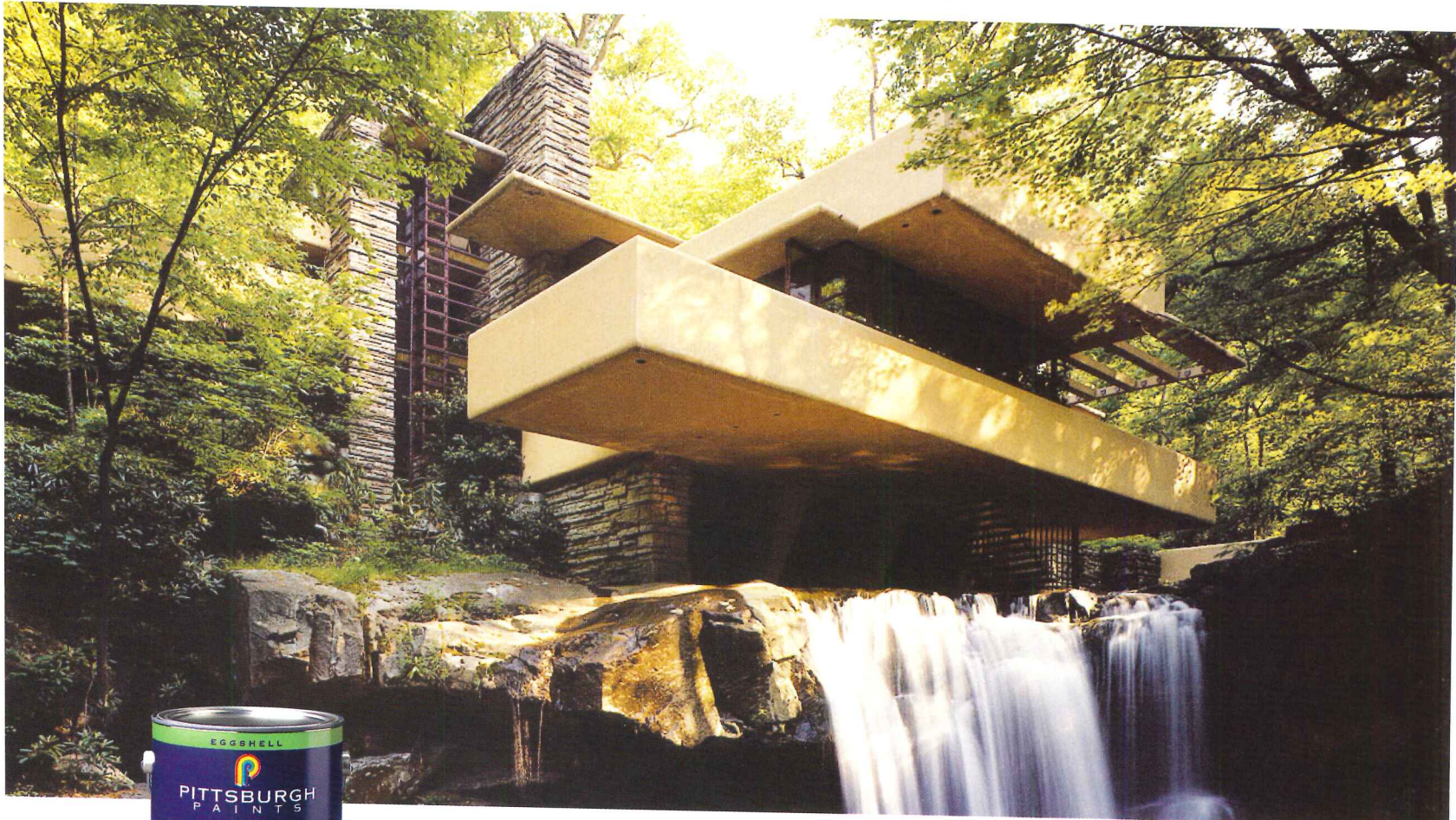
Along the entire first level, the lakeside facade consists of a sym-

1. Studio/office
2. Bedroom
3. Master bedroom
4. Bath
5. Porch
6. Living room
7. Kitchen
8. Studio
9. Storage



PHOTOGRAPHY: © ALAIN LAFOREST (TOP); MARC CRAMER (BOTTOM TWO)

Achieving the Perfect Harmony Between Beauty and Performance



Photograph courtesy of the Western Pennsylvania Conservancy. Fallingwater is located in Mill Run, PA; 724-329-8501.



When Western Pennsylvania Conservancy embarked on a comprehensive restoration of Frank Lloyd Wright's Fallingwater, they were looking for a coating solution that would provide harmony between beauty and performance. The paint system developed by Pittsburgh® Paints balances the strict aesthetic, functional and environmental requirements of the preservation project. No compromise. The interior involved a three-part system: vapor barrier, primer and Pittsburgh Paints Pure Performance®, a low odor, zero VOC premium latex paint. With antimicrobials that resist mold and mildew growth, it is the first premium paint to earn Green Seal Class A certification. For the exterior, the Fallingwater engineering team tested more than 118 samples before selecting Pittsburgh Paints Timeless®.

Interested in seeing the colors inspired by Fallingwater, including Frank Lloyd Wright's signature Cherokee Red? Email kclifford@ppg.com to receive the Pittsburgh Paints pouch of 4"x6" color chips.



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The plywood inner lining of the house imparts a warm, log-cabinlike quality (left). The hard outer shell addresses the semi-wild landscape (below), creating a compelling contrast with the interior.

metrical row of windows that reach from the floor to the height of the first level and visually open the narrow great room and kitchen to the forest slope. As it is the house's relatively opaque rear elevation that is first

THE FIRST LEVEL REVOLVES AROUND A CENTRAL GREAT ROOM, A LONG, SCULPTURAL SPACE RISING UP TO THE ROOF.

approached, this transparency is not immediately evident. But upon entering, the house's openness is instantly apparent, framed between two face-to-face enclosed stairs that ascend on either side of the entry. The right stair leads up to the studio over the west porch, while the left climbs to the bedrooms.

The interiors are clad with a continuous membrane of richly grained British Columbian fir plywood, selected to be knot-free and sealed with a water-based varnish. "These inexpensive panels," says Saia, "are positioned horizontally, juxtaposed one beside the other in continuity, without moldings, without framing, and simply defined by openings." The couple selected the journeyman fir because they wanted a rustic, unsophisticated environment. Yet when sculpted with such unadorned finesse and countered with the rough-textured stone fireplaces and gray limestone floors, the effect is more sumptuous than humble. ■



Sources

Roofing: *Ideal Revêtement*

Interior wood paneling: *Good Fellow*

Zinc cladding: *VM Zinc*

Bath: *Kohler/Porcher*

Hardware: *Sargent*

Lighting: *Novus*

Cabinet hardware: *Häfele*

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

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► The original counter

Adding to its selection of more than 20 wood species and construction styles, Craft-Art Wood Countertops has introduced three new exotic domestic woods—elm, quarter sawn sycamore, and spalted maple and sycamore—to its extensive custom-order wood countertop selection. The countertops can be customized to fit any sink or basin on the market, and are heat-resistant, waterproof, and food-safe. Craft-Art Wood Countertops, Atlanta. www.craft-art.com **CIRCLE 233**



▲ Floating bookcase

The Shift bookshelf was designed by Patricia Urquiola for B&B Italia. Hanging and overlapping, bracket-shaped elements of different lengths can be creatively staggered to form wall-hung storage/bookcases. A sliding track is available either in varnished or unvarnished aluminum to create a contrasting or monochromatic effect. The doors, panels, and back of the unit are available in either a glossy or matte finish. B&B Italia, New York City. www.bebitalia.it **CIRCLE 234**



◀ Bubbly block

The new SeaScapes glass block pattern from Pittsburgh Corning features a grouping of three-dimensional circles of various sizes that appear to float inside the block. Similar to other Pittsburgh Corning glass block designs, SeaScapes is available in a 8" x 8" x 3" size and provides noise control, durability, and low maintenance for windows, step-down walls, and room dividers. Pittsburgh Corning, Pittsburgh. www.pittsburghcorning.com **CIRCLE 235**



◀ Entrance to a secret lair

Responding to an increased demand for secret doors that hide secret rooms, Wine Cellar Innovations created the Hidden Vertical Display Door. From the front, the hinged, swinging door looks like another vertical rack that identically matches the style, depth, wood species, and stain of surrounding racks. However, hinges are not visible, there is no handle, and it is flush with single deep racking. When light pressure is applied, the door opens, revealing a private tasting room, storage for valuables, or whatever else can be imagined. Wine Cellar Innovations, Cincinnati. www.winecellarinnovations.com **CIRCLE 236**



▲ Wood shutter options

Copper Moon Woodworks offers a range of shutter models in two wood species—solid African mahogany (above) and western red cedar, both of which can be painted. The mahogany can be stained, while the cedar is weather-resistant and will patina to a more rustic silver color over time. Several models feature wrought-iron, pewter, or solid copper hardware. Custom designs are possible at no extra cost. Copper Moon Woodworks, Allentown, Pa. www.coppermoonwoodworks.com **CIRCLE 237**

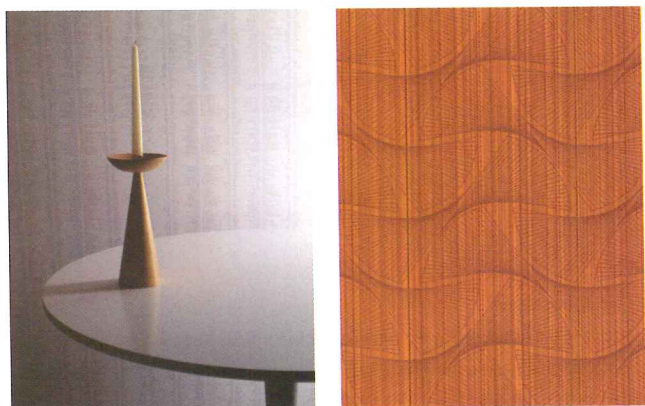
► Tasteful kitchen design

Artematica Vitrum is the latest kitchen system from Valcucine. Designed by Gabriele Centazzo, the system features durable, tempered, heat- and moisture-resistant glass available in a range of patterns, including etched or with "graffiti" drawings in a variety of colors. Doors are made from a durable, lightweight aluminum frame, and the glass front and work top come in matte or gloss finishes. Valcucine voluntarily subjects its product to rigorous testing and certification by German Industrial Standards, one of the most stringent in the world. Valcucine N.Y., New York City. www.valcucinena.com **CIRCLE 238**



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

Residential Products



▲ No wallflowers allowed

Following the trend of manufacturer/design school collaborations this year, Graham & Brown has launched a wall covering collection by five students from London's Royal College of Art. The disparate designs include Info (left) designed by Christopher Pearson, which functions as a pattern from a distance, but when seen close up is revealed to be an English-French translation phrase book, and the organically inspired Woodgrain (right) by Zeynep Karaca. Graham & Brown, Cranbury, N.J. www.grahambrown.com **CIRCLE 240**



◀ Taller sheathing option

Temple-Inland has extended its line of FiberBrace structural wall sheathing to include 10' lengths. This allows FiberBrace to be applied from the bottom plate to the top of the upper floor joists without cutting or piecing on floors with 9' ceilings. Eliminating the extra piecing reduces installation time while structurally reinforcing the upper floor joists' connection to the lower floor's bottom plate. Temple-Inland, Diboll, Tex. www.templeinland.com **CIRCLE 242**

► Hot water in an instant

The InSinkErator Hot Water Dispenser delivers filtered, near-boiling (200 degrees Fahrenheit) water at the touch of a fingertip. The newest line of dispensers, Series 1100, is now available in 12 designer finishes, including brushed chrome, oil-rubbed bronze, and matte black. All Series 1100 units are equipped with the only filtration system specially designed for instant hot water dispensers. Some models also dispense cool, filtered drinking water. InSinkErator, Racine, Wis. www.insinkerator.com **CIRCLE 243**



► Alternative wrap

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◀ Concrete surfacing

Every product from Vivendi concrete surfaces requires a custom mold and is poured to spec. Seventeen standard colors are divided into three categories: earth, sand, and stone. The surfacing is applicable for kitchen or bath countertops, bar tops, desktops, fireplace surrounds, or outdoor kitchens. Two styles of vessel bowls are also

available in standard and custom Vivendi colors. Vivendi is backed by a one-year-installed warranty against cracking and fading. Hallmark Building Supplies, Waukesha, Wis. www.hllmark.com **CIRCLE 241**



▲ Clingy benefits

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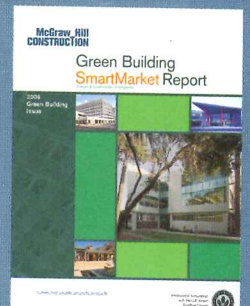
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Products **Tile & Stone**

A review of not one, but two trade shows focusing on the tile and stone industry follows on the next page: **Coverings**, held last April in Orlando, and **Cevisama**, held last February in Valencia, Spain. Included are a range of products for horizontal, vertical, outdoor, and even underwater applications. *Rita Catinella Orrell*



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top, tabletop, vanity, and other surfaces in high-end health-care, hospitality, and retail environments, Fusionstone is highly resistant to bases, acids, and organic substances and is more resistant to temperature variation and scratching than normal float glass. The 10 standard options come in 47", 59", 78", and 94" standard sizes with custom shapes and edges available. The stone is avail-

able in .9" or 1.3" thicknesses, while the glass comes in a .16" standard thickness. LED lighting can be incorporated behind the material or along the edge. Four edge details are available: straight edge with upper bevel and lower bevel; straight edge with radius; coving with lower bevel; and bead-molding. Architectural Systems, New York City.
www.archsystems.com **CIRCLE 200**

Clockwise from left: An edge detail of Fusionstone in Royal Garden (top), Crema Marfil (center), and Blue Valley (bottom). Fusionstone (shown here in Carrara Gioia) is highly resistant to acids, such as lemon juice. Stone color options include Rosso Verona (right) and Verde Guatemala (left).

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

Products Tile & Stone Coverings Review

A rich display of tile and stone from around the world captured the attention of more than **33,000 visitors to Coverings, at the Orange County Convention Center** in Orlando last April. Presented here is a distillation of products on view **from over 1,200 exhibitors.** *Jane F. Kolleeny*

▼ In the style of majolica

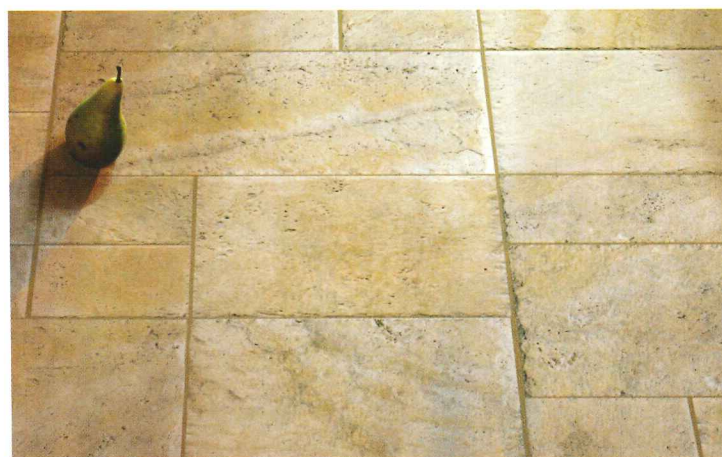
A thick mosaic designed on a glazed porcelain substrate, Ker-Av's Mosaicanda was inspired by a Mediterranean aesthetic; its brilliant, saturated colors are etched in cheerful geometric patterns. As part of its ecofriendly philosophy, the company utilizes exclusively lead-free raw materials. Individual pieces are 1" x 1", and mesh-mounted mosaics measure 12" x 12" rectified. The mosaics are available in a range of seven colors. Italian Trade Commission, New York City. www.italytile.com

CIRCLE 202



▲ Concrete with personality

These handcrafted concrete tiles are inspired by the colors and textures of Nicaragua. Utilizing sustainable materials and energy, Granada launched three lines this year—Echo, Rustico, and Monostratto. Available in a 12"-square size, Rustico comes in five colors and two finishes. The 13"-square Monostratto is available in 12 colors and aggregate combinations. The Echo Collection includes geometric and floral decorative tiles, such as the one pictured above. Granada Tiles, Los Angeles, www.granadatiles.com **CIRCLE 203**



▲ A weathered look

PietraArt Chiseled Edge Travertine is a natural stone product suitable for all residential and commercial wall applications and light countertop and floor uses. A variation in color gives this stone its distinctive appearance; no two installations look alike. The stone is textured with natural pits and holes and comes in three soft beige tones: Ivory, Noce, and Picasso. It is available in 16" x 24", 8" x 16", 16"-square, and 8"-square sizes, as well as in a "modular" package. Florida Tile, Lakeland, Fla. www.floridatile.com **CIRCLE 205**

► Ornate accent tiles

Clay Decor's Aurelia collection delivers big design impact in both scale and shape in these giant elliptical ceramic stoneware tiles. Aurelia Centerpiece measures a massive 18" x 13" and Aurelia Companion, a smaller 9½" x 7", complements the centerpiece tile. Aurelia—a name derived from the Latin meaning "golden or splendid"—has an elaborate leaflike center design surrounded by graceful curved elements that echo the elliptical curve of the tile itself. Clay-Décor, Lederach, Pa. www.clay-decor.com **CIRCLE 204**



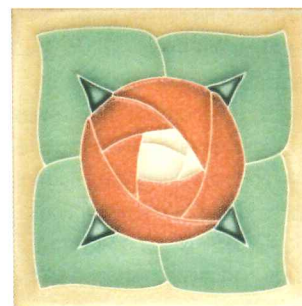
◀ Subtle materiality

Moiré by Edilcuoghi Ceramiche has a ceramic pattern suggesting woven material. Moiré's striated texture resembles a swatch of stripped cotton poplin. The collection is available in gray, black, rose, beige, almond, green, and white. The large-format porcelain tiles, enhanced by high-resistant-



surface ceramic glazes, can be seamlessly installed in both large and small interior spaces. The tiles come in approximately 20"-square, 12" x 24", and 4¾" x 24" sizes. All have ground edges, allowing for extremely narrow grout joints. Italian Trade Commission, New York City, www.italytile.com **CIRCLE 206**

▼ A rustic yet elegant Art Deco style



Developed in the "cuenca" style, referring to the small raised lines of clay that make up the basins into which glazes are poured, Motawi Tilework's new polychrome designs include 6"-square Button Basket and Mourning Dove tiles; 4"-square Ohio and Pasadena tiles (Pasadena, at left, in Pale Salmon); and Songbirds, Sunflower, and Long Stem tiles, all in a 4" x 8" size. Motawi Tileworks, Ann Arbor, Mich. www.motawi.com **CIRCLE 207**



Clive Bridgwater, Architect
Promontory, Park City, Utah

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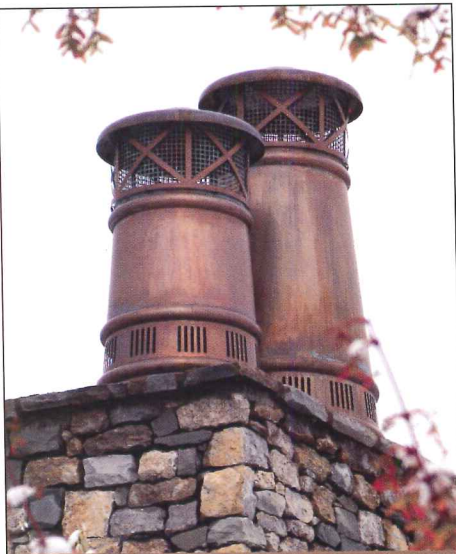
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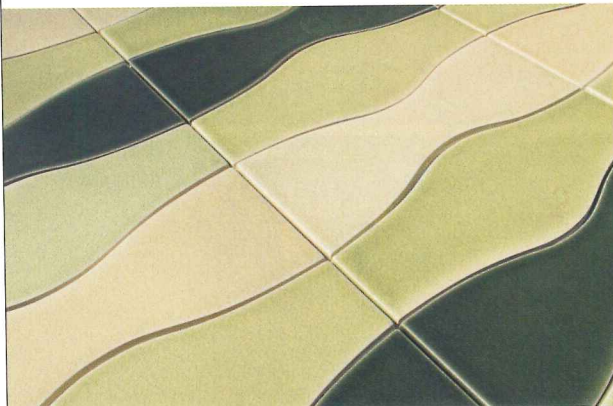
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Products Tile & Stone Coverings Review

► An earthy brick look-alike

Imported from Nepal to the Porcelanosa factory in Spain, these exquisitely crafted handmade stone tiles include Brick Nepal (right) and Brick Lhasa (a lighter shade). The 4" x 16" pieces are installed in multiple thin layers, giving them a choppy, rustic appearance that resembles the natural patterns of stone. Set around a fireplace, as shown, the temperature-absorbent tile holds the heat from the fire long after the cinders have cooled. Porcelanosa U.S., Saddle Brook, N.J. www.porcelanosa-usa.com **CIRCLE 208**



◀ Luscious curves

Modulus is a new line from Trikeenan with its own unique palette of 25 glaze colors. The line both differs from and coordinates with the manufacturer's 52 other styles. Modulus offers six trim styles and 14 shapes, including several large-format tile sizes. Well suited for residential and commercial spaces, Modulus tiles are durable and withstand high traffic. Modulus Ebb & Flow (left) comes in a 4" x 12" size only. Trikeenan, Keene, N.H. www.trikeenan.com **CIRCLE 209**

► Modern artistry

A new product from Imola Ceramica, Nuvole contrasts delicate base colors with strong vibrant ones to accent and enhance interior spaces. Good for residential applications and hospitality environments, these tiles can stand alone or be combined with edges and bands in multicolor geometric patterns. Colors include green, red, indigo, orange, gray, black, and beige. The double-fired trims come in a 5" x 13" size, and glazed porcelain field tiles measure approximately 13" square. Italian Trade Commission, New York City. www.italytiles.com **CIRCLE 210**



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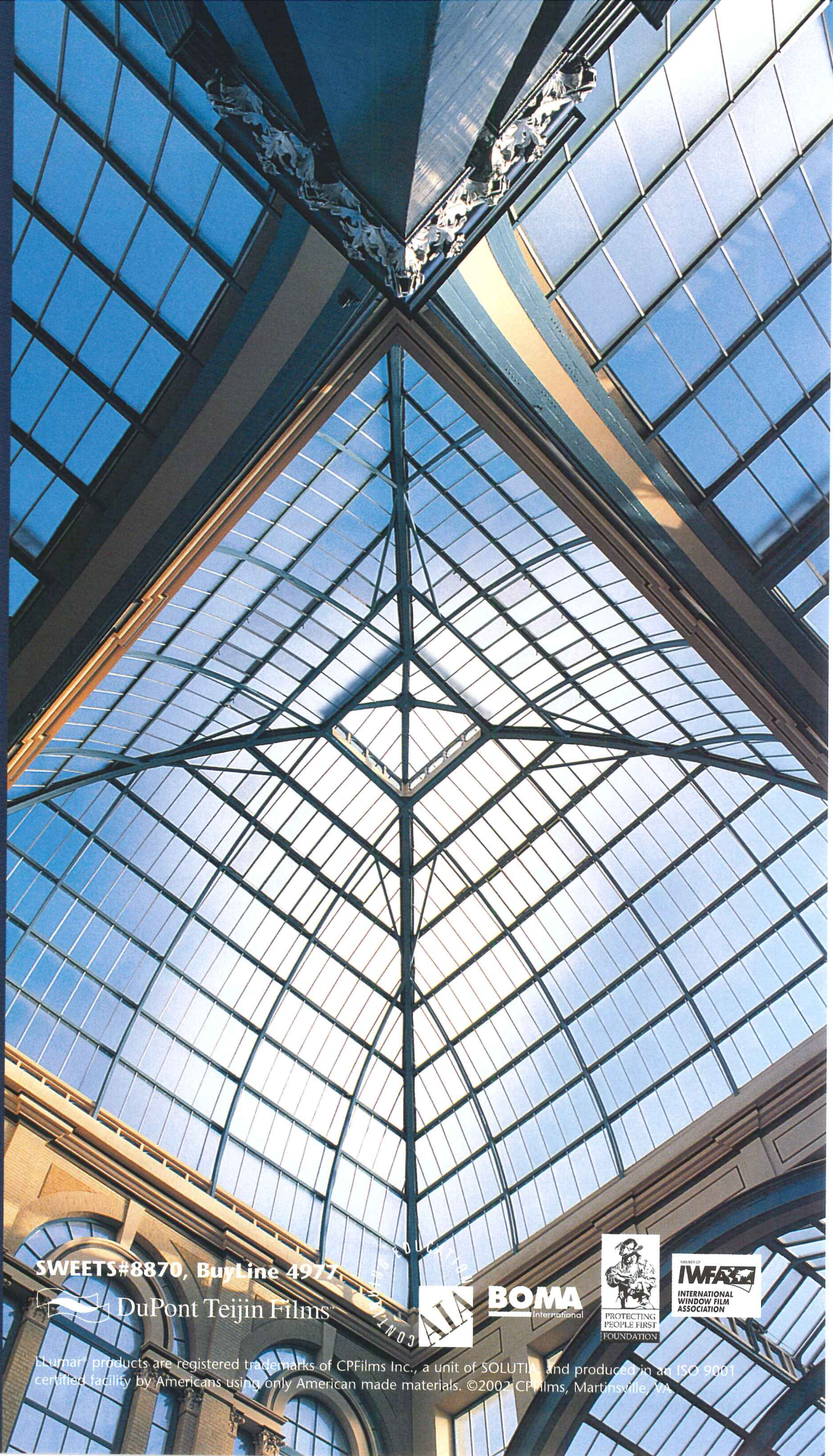


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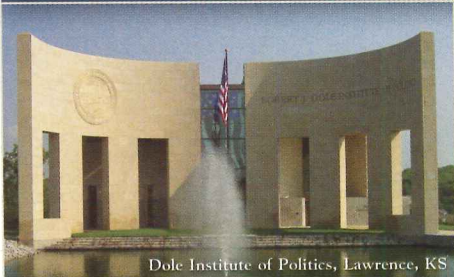


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Products Tile & Stone Cevisama Review



◀ Living history

Crafted by centuries-old techniques but updated for today's stringent environmental requirements, the Andalucia collection of wall tiles display the embossed, geometric, and hand-painted patterns inherited from Moorish culture. Ideal for residential or hospitality installations, options include terracotta decorated with a hand-poured white glaze or intricate designs embellished with richly colored or metallic glazes. Mensaque Rodriguez, Seville, Spain. www.mensaque.com **CIRCLE 211**

▶ Heavy metals

In 2004, Tau introduced the rugged Cor-Ten series, turning heads with its aura of "living" industrial steel. This year, the company's second-generation Metallica series of glazed through-body porcelain tile offers a sleeker Minimalist aesthetic in four luminous finishes: Copper, Rhodium, Silver (flooring, right), and Steel. Suitable for light commercial and residential floor and wall installations, Metallica is available in four large-scale formats, which include 12" x 24", 18" square, 24" square, and 24" x 48". In addition, a number of coordinating decorative shapes and formats featuring cutouts and insets were developed for more creative installations. Tau Ceramica, Castellón, Spain. www.tauceramic.com **CIRCLE 212**



◀ A touch of glass

The 14 groups of Onix recycled-glass mosaic collections have been designed to meet optimum performance standards. Offered in a variety of size formats, including ½"-square, 1"-square, 1" x 2", and 2"-square pieces, the collections vary in strength, translucency, colors, and texture. Special finishes and custom designs are also available. Onix Mosaico, Castellón, Spain. www.onixmosaico.com **CIRCLE 213**



Technology merged with art and tradition at Spain's 24th annual CEVISAMA ceramic tile exhibition, held last February in Valencia, featuring the country's most innovative manufacturers. *Linda Lentz*



▲▶ Cutting-edge developments

Combining the aesthetic appeal of slate with the technical performance of porcelain, Tectonic through-body tiles are ideal for high-traffic indoor and outdoor horizontal and vertical surfaces, including ventilated facades (above left). Available in anthracite, gray, beige, and multicolor, tile formats include 12"-square, 18" x 36", and 12" x 24" sizes; mesh-mounted brick; a shinglelike, 12" x 24" relief tile; stair treads; and stainless-steel trim. The interior Comba porcelain series (above right) features coordinated dropped ceiling tiles and clever integrated accessory pieces, such as vent sleeves, light housing, toiletry baskets, and shelves. Saloni, Plantation, Fla. www.saloni.com **CIRCLE 214**



◀ Color forms

From Sunset pastels (pink, left) to basic brights, Roca's Rainbow collection boasts modular formats for wall and floor, including 12" x 18", 6" x 18", 12"-square, 4"-square sizes, and 12"-square with a 4" hole for an insert, multitone mosaics, or glass decors. Roca Ceramica, Barcelona, Spain. www.rocatile.com **CIRCLE 215**

▶ Drawn from nature

Evocative in line and texture of the finest Art Deco cloisonné, Diago's Magica Series is notable for its delicately contrasting polished tone-on-tone floral pattern and matte through-body porcelain ground. Suitable for interior walls and floors, this durable, 13"-square tile collection is available in four sophisticated shades—arena (sand), black, brown, and green—and features three variations with graduated patterning: fully decorated, semi-decorated, and with the decoration in one corner. A coordinating undecorated field tile completes the offering. Diago, Castellón, Spain. www.diago.com

CIRCLE 216



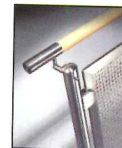
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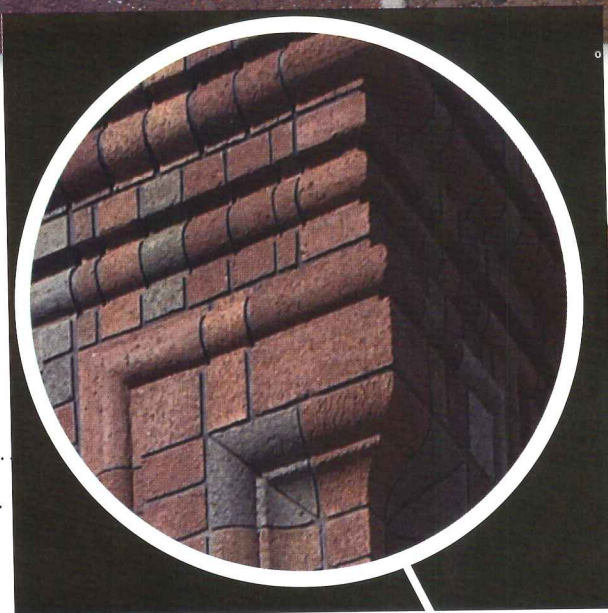
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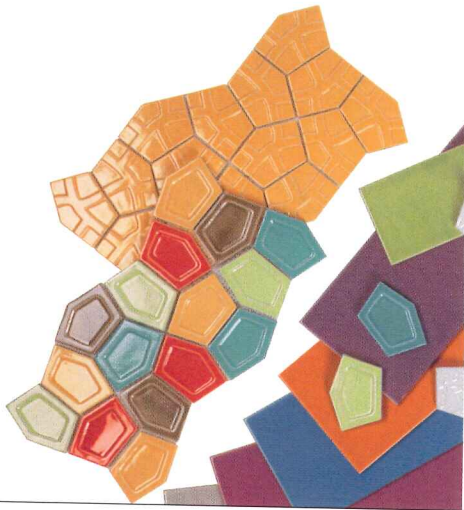
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Products Tile & Stone Cevisama Review



◀ Art and architecture

A welcome departure from the ubiquitous rectangle, the Decorativa Aichi wall collection is a remarkable mini-adaptation of the striking glazed earthenware forms developed by this creative company for the Spanish Pavilion at the 2005 World Exposition in Aichi, Japan, designed by Alejandro Zaera Polo and Aarshid Moussavi of the London-based Foreign Office Architects. Available in brilliant hues, the collection's four playful designs, simply named 01, 02, 03, and 04, are made of glazed white-body ceramic. Decorativa, Valencia, Spain. www.ceramica-decorativa.es **CIRCLE 217**

▶ Rock solid

Extruded porcelain tile with optimal technical properties, Keramia's Tibet series reflects the subtle shading and tactile qualities of Tibetan slate in four colors and anti-slip, rectified sizes including 12" x 24", 18" square, and 6" square, as well as mosaic and trim pieces. Keramia, Castellón, Spain. www.keramia.es **CIRCLE 218**



◀ Cement mix

Improving on a trend, the Ikoni Series of through-body porcelain tile by Pamesa embodies the essence of concrete in a generous range of formats from 12" square to 16" square to 20" square. A variety of trim pieces are also available. More durable and reliably consistent than the material that inspired it, Ikoni is suitable for the rigors of kitchen and bathroom walls and floors as well as exterior facades and flooring. The color offering includes Gris (gray), Negro (black), Blanco (white), Arena (sand), Noce (walnut), and Bambu (bamboo). Pamesa Ceramica, Castellón, Spain. www.pamesa.com **CIRCLE 219**

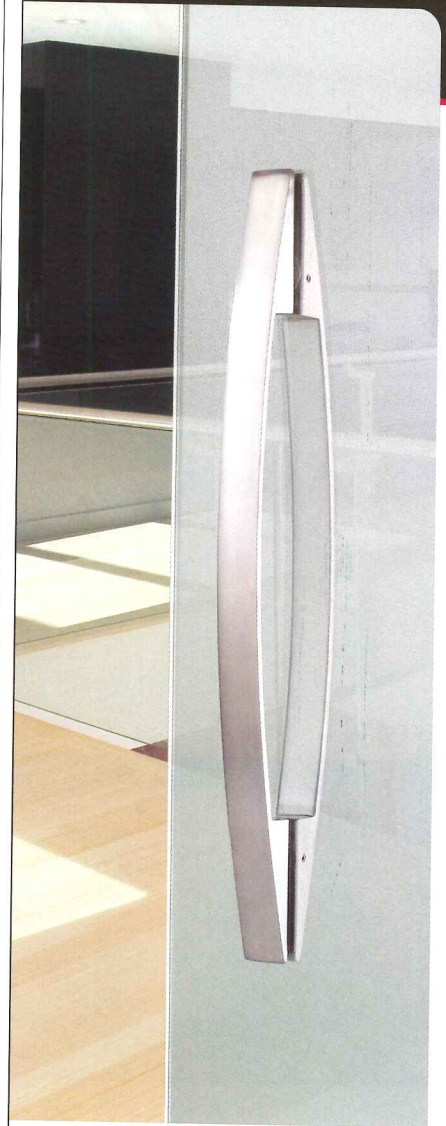
▶ Extreme tolerance

Designed to withstand the rigors of outdoor flooring and swimming pools, Rosa Gres Concept porcelain stoneware floor tiles are claimed by the manufacturer to be easy to maintain, colorfast, nonslip, and resistant to chemicals, microbial formations, frost, wear, and abrasion. In addition to mosaics, an extensive selection of sizes and special pieces accommodate myriad installations. Rosa Gres, Barcelona. www.rosagres.com **CIRCLE 220**

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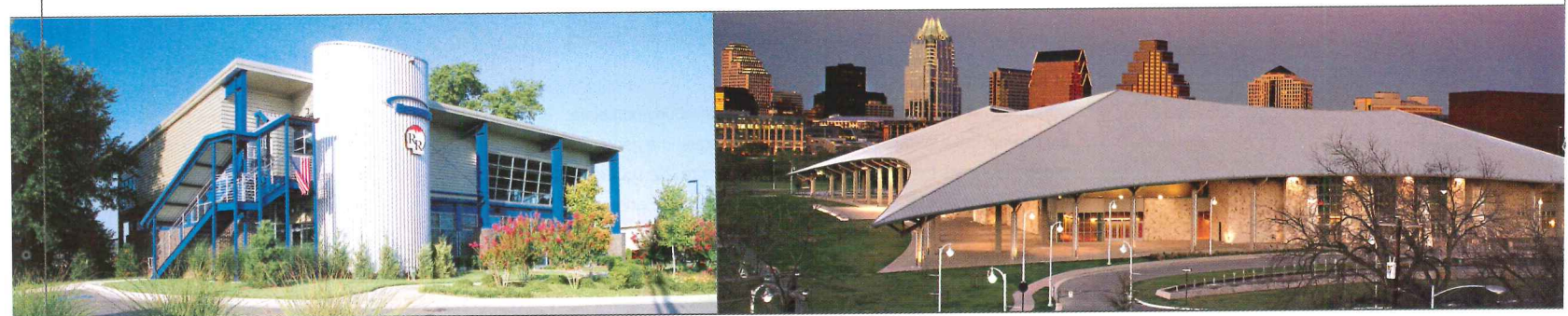
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Product Briefs



◀ Trip to recovery

As part of last November's renovation of the emergency department registration area at St. Louis Children's Hospital in St. Louis, designers replaced the existing chipping laminate sheets on the surface of a specially designed "train car" intake area with Sanparrel rigid vinyl sheets. Unlike the previous laminate sheets, Sanparrel material is flexible, will not chip or break, can be wrapped around columns, and

carries a lifetime warranty. InPro Corp., Muskego, Wis. www.inprocorp.com **CIRCLE 221**

▶ Revamped brands

At this year's NeoCon, The Mohawk Group revamped its showroom as well as the product introductions from its five brands—Karastan Contract, Durkan Commercial, Mohawk Commercial, Bigelow Commercial, and Durkan Hospitality. Poetry in Motion (right), new from Karastan Contract, includes two tailored patterns that create an animated, graduated tonal carpet offering. The Mohawk Group, Kennesaw, Ga. www.mohawkgroup.com **CIRCLE 223**



▼ Commercial wood flooring

Columbia Commercial, the new commercial division of Columbia Flooring, has launched its first line of commercially rated solid and engineered hardwood flooring. The two new lines include a range of solids in 3/4" oak, hickory, maple, and 5/8" bamboo, and a selection of engineered hardwood flooring in oak, maple, pecan, and exotic African species, along with



a range of hand-sculpted planks. The products meet or exceed industry standards for slip-, indentation-, and scratch-resistance. Columbia Flooring, Danville, Va. www.columbia-flooring.com **CIRCLE 225**



▲ Well-proportioned collection

The wa desk and storage collection by Piero Lissoni and Marc Krusin for Knoll are freestanding primary forms, suitable for open-plan, private-office, and collaborative settings. The collection features a continuous perimeter edge detail that connects components, open legs, and thin screens. Joining clips allow for the personalization of individual workspaces. Knoll, New York City. www.knoll.com **CIRCLE 222**

▶ Outdoor furniture for special needs

Wellspring, by Landscape Forms, is the first commercial outdoor furniture line designed specifically for the retirement and healthcare environments. Designed by landscape architect Robert Chipman, Wellspring includes a teak chair, bench, rocker, and table, and a sunshade (shown) in Jarrah with a marine-grade Sunbrella shade. The seating has higher arms, contoured seats, curved backs, and extra slats that make it easier to sit, reach, and rise. Landscape Forms, Kalamazoo, Mich.

www.landscapeforms.com **CIRCLE 224**



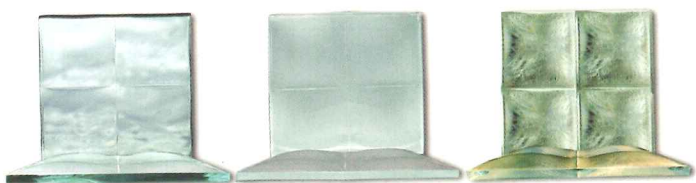
◀ Royal garden tree box

Modeled on the citrus tree boxes displayed in the Versailles Gardens since the 17th century, these tree tubs are manufactured by the French company Les Jardins du Roi Soleil. Made of cast iron and solid oak, the pots are appropriate for outdoor terraces, gardens, parks, and urban sites as well as indoor galleries, halls, or building entrances. Resistant to low temperatures, they can be planted with palms, laurels, citrus, magnolias, or coniferous trees. The entire line is based on one model and is available in 10 sizes in a range of colors. Les Jardins du Roi Soleil, New York City. www.jardinsroisoleil.fr **CIRCLE 226**



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Product Briefs



▲ 3D glasses

Produced and developed with the New York City architectural firm Janson/Goldstein and the facade consultants at Front Inc., Convex Glass from Nathan Allan is shaped so that dimensional viewing can take place from either side of the glass. The 3D glass can be safety tempered and produced in ¼", ⅜", ½", ⅝", and ¾" single layered panels, and is available in clear low-iron glass, as well as with cast textures and privacy coatings. The Fire Frost coating has a sealed permanent finish that repels grease, dirt, and fingerprints for both indoor and outdoor applications. The product will be available in May 2007. Nathan Allan Glass Studios, Richmond, British Columbia. www.nathanallan.com **CIRCLE 227**

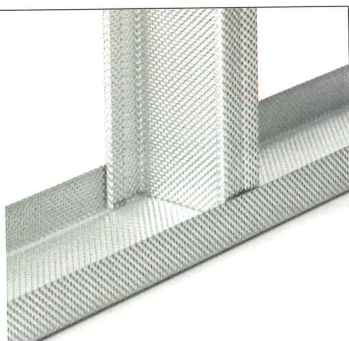
► Fresher concrete floor

The Flowfresh hygienic polyurethane concrete flooring system from Valspar Flooring is intended for applications such as heavy industrial warehouses and processing plants. The flooring can withstand the thermal shock produced from steam or the high-temperature cleaning that floors are routinely subjected to in dairy, beverage, and pharmaceutical applications. Flowfresh floors also contain a continually regenerating performance antimicrobial that inhibits growth of mold, mildew, bacteria, and fungi; as the floor is worn, antimicrobial dispersed through the thickness of the surface is released over time. Valspar Flooring, Wheeling, Ill. www.valsparflooring.com **CIRCLE 228**



► Enhanced framing

The technology behind Dietrich Metal Framing's UltraSteel framing product alters the characteristics of flat base strip steel, providing increased strength capacity from lighter gauge material. The result is a product that allows for better acoustical performance, improved fire resistance, faster and easier installation, improved safety, and better finish quality, according to the manufacturer. UltraSteel is currently available on the East Coast, with nationwide distribution planned for late 2007. Dietrich Metal Framing, Columbus, Ohio. www.dietrichindustries.com **CIRCLE 229**



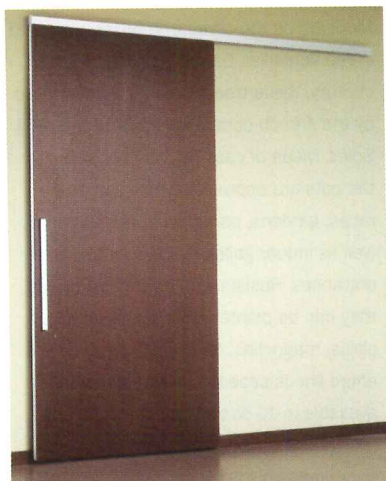
► Ride the wave

Designed by Komplot Design for Stylex, the Avo stacking chair features a subtle wave form on the maple back and seat. As the wood traces these curves, it changes thickness, gradually transitioning from thick to thin and back to thick again. Without any visible fasteners, both seat and back appear to rest gently on the steel frame. Intended for cafeterias, libraries, training rooms, waiting rooms, and public areas, the chair stacks up to six high on the floor. The 14-gauge frame is either chrome plated or finished in one of 10 standard powdercoat finishes. Stylex, Delanco, N.J. www.stylexseating.com **CIRCLE 230**



▼ Smooth operator

The Milan-based manufacturer Res Doors and Systems produces a range of Modern, streamlined interior doors and door hardware. The Fan design (left) features anodized aluminum details and a New Wood Wengé-finished panel, and includes a sliding door mechanism that allows a thin rail to be fixed to the wall. Fan is also available with the rail fitted inside the plaster ceiling, as a pocket door, and as a wing door with bidirectional hinges. Three lock options are available. Also new from Res is Luna Light, a glass door illuminated by hidden LED lights in a range of colors that is operated by a sensor switch or button. Res Doors and Systems, Milan. www.resitalia.it **CIRCLE 231**



► Echos of the past

Authentic Provence offers Ancient Flooring, an exclusive line of antique wood flooring salvaged from some of Europe's grandest chateaux, castles, and farmhouses. The initial shipment, which included 2,000 square feet of flooring, has already been purchased and installed in a Palm Beach estate. A select variety of woods and patterns is in stock and available for immediate delivery. Ancient Flooring comes in easy-to-install tongue-and-groove panels that are 6' 11" in width and average 89" in length. No sanding is required and basic waxing and oiling create a wide palette of deep, rich colors and hues. Authentic Provence, Palm Beach, Fla. www.authenticprovence.com **CIRCLE 232**



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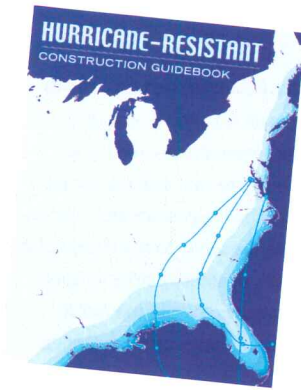
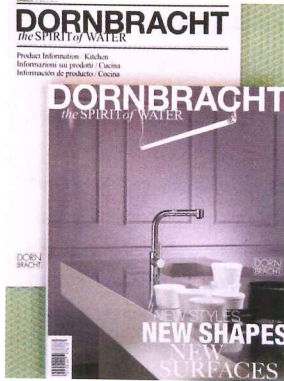


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Product Resource: Literature

Magazine meets catalog

Dornbracht has published *The Spirit of Water* magalog to showcase its range of luxury faucets and fittings for bath and kitchen. Separate editions for kitchen and bath each feature informative stories, commentaries, and original artwork and photography, interspersed with product. Dornbracht, Duluth, Ga. www.dornbracht.com **CIRCLE 245**

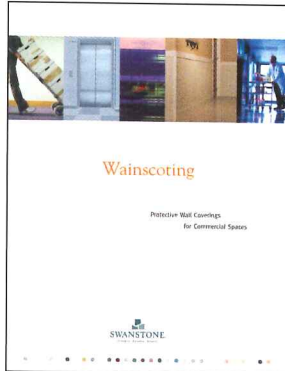


Guide to weathering the storm

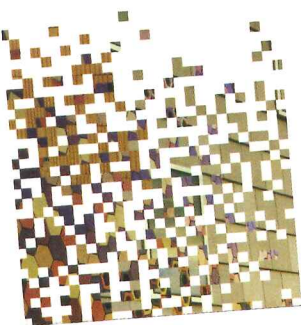
A construction industry initiative led by Building Media Inc. (BMI) has launched a multimedia educational program to promote better building practices in geographic regions prone to hurricane force winds and flooding. Included in the project is the *Hurricane-Resistant Construction Guidebook*, a building-code reference for builders in hurricane-affected areas. Building Media Inc., Santa Barbara, Calif. www.buildingmedia.com **CIRCLE 246**

Wainscoting guide

Swanstone's new full-color solid-surface wainscoting guide features full descriptions and dimensions of Swanstone finishing trim available in wainscot matching colors. Examples of six new styles of decorative wainscoting and three different size configurations are shown to help specifiers determine the best use of the material for both horizontal and vertical installations. The Swan Corp., St. Louis. www.swanstone.com **CIRCLE 247**



moulding assembling designing
Ceramics in Architecture



The role of tile in architecture

ASCER, the Spanish Ceramic Tile Manufacturers' Association, has introduced a new book titled *Moulding Assembling Designing: Ceramics in Architecture*. Intended to be an authoritative reference guide to ceramic tile, the book includes technical information, industry terminology, and a concise overview of tile, including manufacturing processes, installation methods, and the latest technologies. Tile of Spain Center, Coral Gables, Fla. www.spaintiles.com **CIRCLE 248**

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

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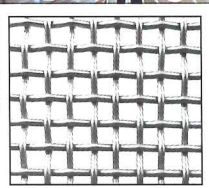
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Product Resource: On the Web

www.designer.com

This site covers the gamut of design types—from graphics, fashion, digital, and art, to comprehensive sections dedicated to product design and architecture. The product design section includes info on competitions and events as well as new introductions to the market. The site has a clean design, but narrow columns make reading the articles a bit difficult.

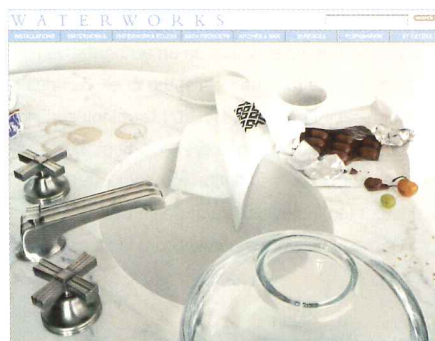


www.eldoradostone.com

This manufacturer of architectural stone veneer offers an easy-to-navigate site with inspiring project application images. Special touches include the ability to download hatch patterns of stone profiles so specifiers can incorporate the profile directly into plans and renderings.

www.zerofootprint.net

This site provides information, products, and services to the global network of consumers and businesses that wish to reduce their environmental impact. A section on Architecture & Construction includes info on green design firms, properties, literature, and products.



www.waterworks.com

A single site that effectively caters to both consumers and professionals is tricky to design, but Waterworks has found the right balance. The new site provides an easy-to-use interface and colorful photos, as well as downloadable CAD drawings, specifications, and installation guides.



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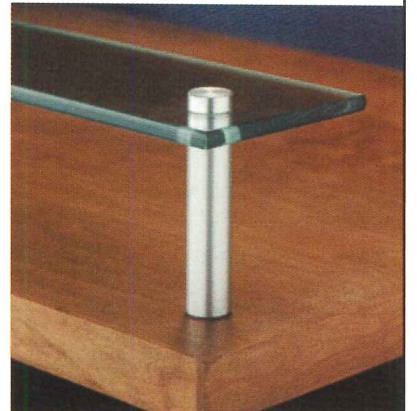
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**AIA/ARCHITECTURAL RECORD
CONTINUING EDUCATION**

Program title: "Wood Fire-Rated Doors Combine Safety and Aesthetics," (10/06, page 177)

106SPONA

AIA/CES Credit: This article will earn you one AIA/CES LU hour of health, safety, and welfare credit. (Valid for credit through October 2008.)

Directions: Select one answer for each question in the exam and completely circle appropriate letter. A minimum score of 80% is required to earn credit.

Take this test online at <http://archrecord.construction.com/continuing/default.asp>

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Material resources used: Article: This article addresses issues concerning health and safety.

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**AIA/ARCHITECTURAL RECORD
CONTINUING EDUCATION**

Program title: "Designing for Fire Resistance with Gypsum Panel Systems," (10/06, page 171)

106SPONB

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Directions: Select one answer for each question in the exam and completely circle appropriate letter. A minimum score of 80% is required to earn credit.

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Dates & Events

New and Upcoming Exhibitions

Emerging Chicago Bus Tour Chicago

October 7, 2006

The tour will reveal new architecture south and west of the Loop and include several stops with commentary by architects and developers involved with these recent projects. For more information and to purchase tickets, visit www.architecture.org.

The Bronzeville Experience Chicago

October 14, 2006

This comprehensive one-day class/bus tour of Chicago's famed Bronzeville neighborhood explores the contributions the Bronzeville neighborhood has made to art, music, film, politics, and economics, with on-site visits and guest lectures. Call 800/997-9689 or visit www.grahamschool.uchicago.edu.

Alexander Girard: Vibrant Modern San Francisco

October 14, 2006–February 25, 2007

Along with Charles Eames, Herman Miller, and George Nelson, Girard helped form a team that transformed the legacy of American Modernism. This exhibition will include more than 60 pieces by Girard, highlighting his textile works for Herman Miller as well as a selection of his designs for La Fonda del Sol Restaurant in New York. At the San Francisco Museum of Modern Art. Call 415/357-4000 or visit www.sfmoma.org.

Home Tours II West Los Angeles

October 15, 2006

The Home Tour series features beautiful houses by Los Angeles's leading architects and includes viewing the homes and talking to the architects. Call 213-639-0777 or visit www.aialosangeles.org.

CA Boom Fall Design & Architecture Tour Series

Los Angeles

October 21 and November 11, 2006

A new generation of independent Los Angeles architects showcase and lead tours of recent projects. Hollywood Hills and Los Feliz, October 21; Echo Park and Mt. Washington, November 11. Visit www.caboomshow.com.

P.A.N. (Progressive Architecture Network)

New York City

October 27–December 2, 2006

Curated by Winka Dubbeldam with Helene Furjan, this exhibition features the work of five "young" international architecture offices, whose attitudes toward the discipline are similar. The exhibition will contain models, as well as drawings and photographs, exemplifying the work of each office. At the Frederieke Taylor Gallery. Call 646/230-0992 or visit www.frederiketaylorgallery.com.

Structure: The Los Angeles Series Los Angeles

November 5, 2006–January 5, 2007

An exhibition of national-award-winning artist Ted VanCleave. A selection of sixteen of his new photographic images captures Los Angeles in a bold and colorful way that extends beyond representation to become brilliant, almost surreal abstraction. These highly stylized photographs juxtapose vibrant color and the geometry of L.A.'s architectural landscape. At ChopChop Salon/Gallery. Visit www.tedvanclleave.com.

Ongoing Exhibitions

Paul Rudolph: The Florida Houses Auburn, Ala.

Through October 15, 2006

This exhibition features one of Auburn University's most esteemed architecture alumni, Paul Rudolph, who produced a body of post-World War II domestic architecture that played a significant role in articulating an American style in architecture. At the Jule Collins Smith Museum of Art Auburn University. For additional information, Call 334/844-1484 or visit www.auburn.edu.

Best of Friends: Buckminster Fuller and Isamu Noguchi Long Island City, N.Y.

Through October 15, 2006

The relationship between the artist Isamu Noguchi and visionary designer and inventor Buckminster Fuller is illuminated in this special exhibition, which includes models, sculptures, drawings, photographs, film footage, and letters. At the Noguchi Museum. Call 718/204-7088 or visit www.noguchi.org.



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Get into green this fall at the National Building Museum

The Green House: New Directions in Sustainable Architecture and Design is a groundbreaking exhibition revealing exciting trends in green technology, materials, and design. This season, a series of exciting programs and lectures compliment the exhibit:

october



11 wednesday, 6:30 – 8:00 pm
Ritual House: Drawing on Nature's Rhythms for Architecture and Urban Design with Ralph Knowles

16 monday, 6:30 – 8:00 pm
Off the Grid: Modern Homes + Alternative Energy with Lori Ryker

23 monday, 6:30 – 8:00 pm
Spotlight on Design Lecture series with Paolo Soleri

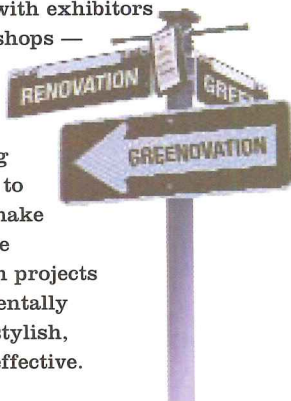
november



15 wednesday, 12:30 pm
Special Presentation of the National Awards for Smart Growth Achievements

18 saturday, 10:00 am – 5:00 pm
Day-long Home Renovation Event Greenovation, An Expo for the Home:

This green renovation expo for the home — complete with exhibitors and workshops — will equip visitors with everything they need to make their home renovation projects environmentally friendly, stylish, and cost effective.



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Dates & Events

Team 10: A Utopia of the Present New Haven

Through October 20, 2006

In 1956, several young architects from England, France, the Netherlands, and Italy were charged with organizing the 10th meeting of the International Congress of Modern Architecture (CIAM), a formal gathering of proponents of Modernism. This multimedia show pays homage to the coterie of pan-European architects who, challenging the orthodoxies of Modernism in post-World War II Europe, raised issues of urban design that continue to reverberate in architectural discourse today. This exhibition draws on a range of resources and media that includes correspondence, transcripts, tape recordings, photographs, drawings, and film. At Yale's landmark Art and Architecture Building. For more information about the exhibition, call 203/432-2288 or visit www.architecture.yale.edu.

Zaha Hadid New York City

Through October 25, 2006

The first woman to be awarded the distinguished Pritzker Architecture Prize, which she won in 2004, Hadid is internationally known for both her theoretical and academic work, as well as a portfolio of built projects that have literally "shifted the geometry of buildings." This exhibition provides a comprehensive look at her projects worldwide. True to Hadid's interdisciplinary approach to architecture, there is a wide range of mediums on display, including painting, drawing, large-scale urban plans, proposals for international design competitions, building designs for contemporary cultural and sports facilities, and documentation of current projects under construction. At the Solomon R. Guggenheim Museum. Call 212/423-3500 or visit www.guggenheim.org.

Seattle Architecture Foundation Tours Seattle

Through October 28, 2006

Seattle Architecture Foundation connects people to architecture through popular guided walking tours, exhibitions, youth programs, and public forums—programs that inspire participants to engage in shaping their community. Visit www.seattlearchitecture.org.

Rural Studio: Education of the Citizen Architect Auburn, Ala.

Through November 5, 2006

An exhibition of the Rural Studio, an internationally acclaimed program of architectural education within Auburn University's School of Architecture, which has educated over 450 citizen architects in the classroom of Hale County, Alabama. At the Jule Collins Smith Museum of Art, Auburn University. Call 334/844-1484 or visit www.auburn.edu.

10th International Architecture Exhibition of the Venice Biennale Venice

Through November 19, 2006

In its 10th year, this international exhibition is directed by Richard Burdett and dedicated to cities, architecture, and society. Two collateral sections will complement the theme of the international exhibition: *Cities of Stone*, curated by Claudio D'Amato Guerrieri, and *City-Port*, curated by Rinio Bruttomesso. Fifty countries will be represented. Call 39 041 5218711 or visit www.labiennale.org.

Lectures, Conferences, and Symposia

Eric R. Multhauf Lunchtime Lectures Chicago

Wednesdays, October 4-November 29, 2006

These free lectures include: David Mann on "The Restoration of Louis Sullivan's Ganz Hall at the Auditorium Building"; Tim Wittman on "Sullivan and the Synthesis of Nature and the Machine"; Suzanne Morgan on "The Transformation of Synagogues to Baptist Churches in Chicago"; Lee Bey on "The Politics of Architecture/The Architecture of Politics"; Ben Helphand on "Building the Bloomingdale Trail"; Meredith Mack on "Renzo Piano's Modern Wing at the Art Institute of Chicago"; Neal Samors on "Chicago in the Sixties: Remembering a Time of Change"; and Mary Brush on "Klein and Hoffman: Recent Work." At CAF's ArchiCenter. Call 312/922-3432 or visit www.architecture.org.

Ritual Architecture: Philosophy, Practice, Perception, Perspective New York City

October 5, 2006

A panel of design notables will discuss the bath's evolution from a utilitarian to spiritual retreat as well as cultural and historical relevance. AIA/NYS

Credits will be available. At the Hotel Gansevoort.
Call 212/966-3759.

**The American Society of Landscape
Architects (ASLA) 2006 Annual Meeting
and EXPO and the 43rd IFLA World
Congress
Minneapolis**

October 6-10, 2006

Featured speakers include Jean-Michel Cousteau, educator, environmentalist, and film producer; Catherine Mosbach, International ASLA, prominent French landscape architect; The Honorable Richard Daley, Honorary ASLA, Mayor of Chicago; Steve Martino, FASLA, winner, 2006 ASLA Design Medal and 2006 Award of Excellence for Residential Design. At the Minneapolis Convention Center. Call 202/898-2444 or visit www.asla.org.

**Sustainable Architecture Lunchtime
Lecture Series
Chicago**

October 10 and November 14, 2006

The free lecture series includes Zoka Zola on 21st Century Chicago and Bill Becker on Aerotecture: Designing Buildings with Integrated Windpower. At CAF's ArchiCenter. Call 312/922-3432 or visit www.architecture.org.

**National Design Week
New York City**

October 15-21

A new initiative that aims to draw national attention to the ways in which design enriches everyday life, through outreach to school teachers and their students and partnerships with design organizations across the country. The centerpiece of National Design Week will be the National Design Awards gala on October 18. At Cooper-Hewitt, National Design Museum. Call 212/849.8400 or visit www.cooperhewitt.org.

**Off the Grid: Modern Homes +
Alternative Energy
Washington, D.C.**

October 16, 2006

Architect Lori Ryker will discuss concepts for off-the-grid strategies and present two in-depth profiles of projects demonstrating how ideas are developed, refined, and applied to residential architecture. Her recent publication *Off the Grid* profiles 10 contemporary residences from across the world which incorporate alternative and off-the-grid technologies. These urban, suburban, and

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Dates & Events

rural homes all demonstrate how more-sustainable lifestyles can be achieved through low-tech and high-tech solutions for energy and resource conservation. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

The New York Institute of Technology (NYIT) Fall Architecture Lecture Series New York City

October 17 and November 7, 2006
On October 17, Gisue Hariri and Mojgan Hariri of Hariri & Hariri Architecture will discuss their recent interior design projects and their monograph, *Hariri and Hariri Houses*, recently published by Rizzoli, at NYIT's Manhattan campus, 16 W. 61 Street. The final lecture, "Interior Dialogues," with designers Kitty Hawks, Wendy Evans Joseph, Calvin Tsao, Nancy Boszhardt, and Margaret Newman, will take place on November 7 at

Steelcase Inc., in New York City. Judith DiMaio, dean of NYIT's School of Architecture and Design, will moderate a panel discussion about architectural interiors. Call 516/686-1280 or visit www.nyit.edu.

2006 Design-Build Conference and Expo: Harmony & Rhythm in Project Delivery Nashville

October 18–20, 2006
Featuring an inspiring keynote, an evening of entertainment, and five tracks of education including "Building Information Modeling (BIM): Integrating Through Technology"; "Going Global—Design-Build in the International Marketplace"; "Design-Build—Market Uniqueness"; "People: Becoming and/or Developing a Rock Solid Leader"; "Design-Build

How-To—Effective Implementation Strategies." Call 202/682-0110 or visit www.designbuildexpo.com.

20th Annual National Conference on Liberal Arts and the Education of Artists: Reassessing the Modern, Modernity, and Modernism New York City

October 18–20, 2006
A forum that brings together instructors of studio and academic disciplines to explore issues of mutual interest. This year's theme, "Reassessing the Modern, Modernity, and Modernism," addresses such topics as originality, consumer culture, connections between art and science, and the struggle for authenticity. The keynote speaker is curator, artist, and author Robert Storr. At the Algonquin Hotel. Call 212/592-2625 or visit www.sva.edu.

AIA-AAH Fall Conference: The Technologically Sophisticated Healthcare

Environment Miami

October 18–21, 2006

This four-day conference will feature a focused curriculum of innovations in health-care technologies specifically for health-care planners and designers, as well as case studies delivered by health-care institutions deeply embedded with emerging health-care technologies. The conference will also feature special events including a charrette, awards banquet, and facility tours. At the InterContinental Hotel Miami. Visit www.aia.org/aah.

Paolo Soleri Washington D.C.

October 23, 2006

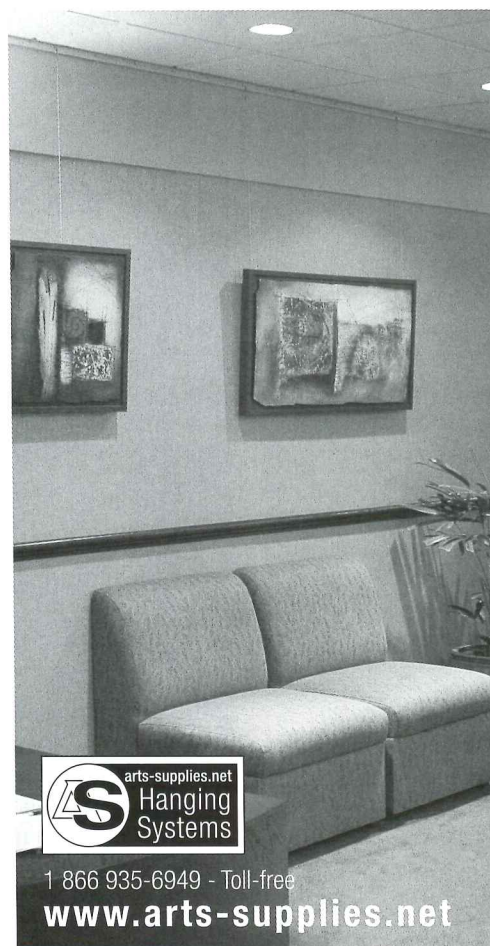
Architect Paolo Soleri's concept of "Arcology," architecture coherent with ecology, is the basis for his ongoing building project Arcosanti in central Arizona. Since 1970, this prototype town has demonstrated Soleri's interests in minimizing the use of energy, raw materials, and land while allowing for an interaction



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Las Vegas, Nevada

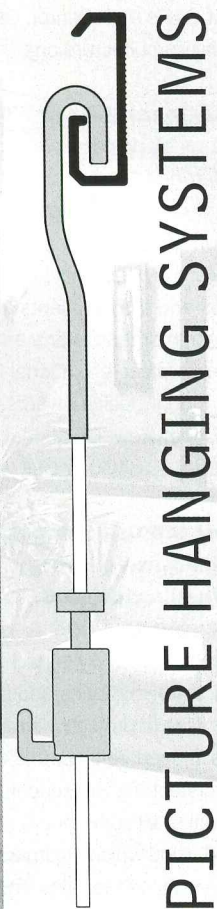
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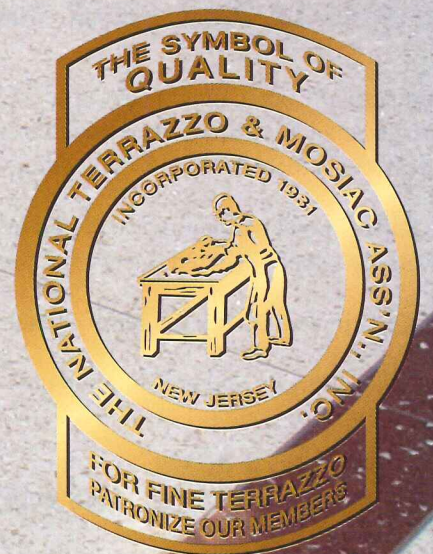
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Dates & Events

with the natural environment. This year, Soleri was honored at the White House for his ongoing work at Arcosanti and received a life-time achievement award from the Smithsonian's Cooper Hewitt, National Design Museum. In this exclusive public appearance, he will discuss his continuing experimentation in sustainable urban planning, architecture, and design. For information, call 202/272-2448 or visit www.nbm.org.

2nd Annual Restaurant Design Awards Ceremony Los Angeles

October 26, 2006

Winners of the Restaurant Design Awards will be announced. This year's jury panel includes: architect Hagy Belzberg of Belzberg Architects; *Bon Appetit's* senior editor Heather John; *Interior Design* deputy editor Edie Cohen; and

graphic designer Sean Adams of Adams Morioka. Venue is to be determined. For further information, visit www.aialosangeles.org

Masters of Architecture Lecture: Kengo Kuma Los Angeles

October 26, 2006

Kengo Kuma established Kengo Kuma & Associates in 1990. His numerous residential works, museums, and other public facilities have received ongoing critical acclaim as well as national and international awards, including the prestigious Architectural Institute of Japan Award in 1997. Recent projects include the Nagasaki Prefectural Art Museum and the Lotus House, 2005. Kengo Kuma will be introduced by Christopher Hawthorne, architecture critic, *Los Angeles Times*. At LACMA's Bing Theatre. To learn more, call 213/639-0777

or visit www.aialosangeles.org, or www.lacma.org.

A+DEN Conference 2006: Identify.Connect.Elevate Chicago

October 27-28, 2006

Founded by the American Architectural Foundation and the Chicago Architecture Foundation, A+DEN is the foremost design education network in the United States—bringing together leaders and practitioners in the fields of architecture, design, and education. The inaugural A+DEN Conference addresses the range of issues and concerns that K-12 design educators share. A+DEN connects the diverse disciplines that contribute to and comprise design education. The conference will identify and explore ideas that elevate the practice and shape the future of design education nationwide. For further information, visit www.adenweb.org.

Building (in) the Future: Recasting Labor in

Architecture New Haven

October 27-29, 2006

A three-day symposium related to the exhibition *Some Assembly Required: Contemporary Prefabricated Houses*. Scholars, architects, planners, and designers will examine how contemporary practices of production are reshaping the design/construction process, especially as it relates to fabrication, detailing, and ultimately the organization of labor. The keynote address will be delivered by Kenneth Frampton. At the Yale School of Architecture. Call 203/432-2288 or visit www.architecture.yale.edu.

Competitions

"Have You Taken the Wright Photo?" Photography Contest

Deadline: October 16, 2006

Wright enthusiasts and amateur photographers are invited to submit their images of famous Frank Lloyd Wright sites and products to exhibit

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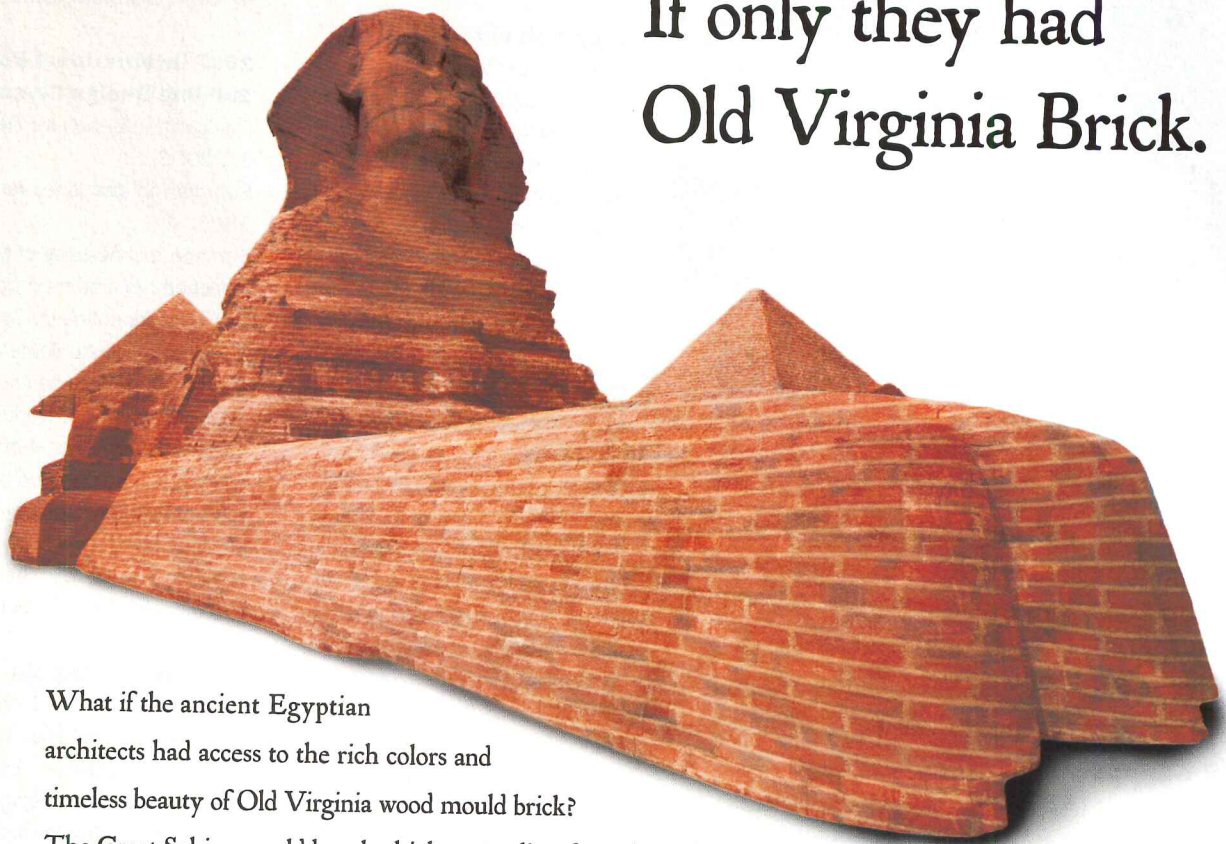
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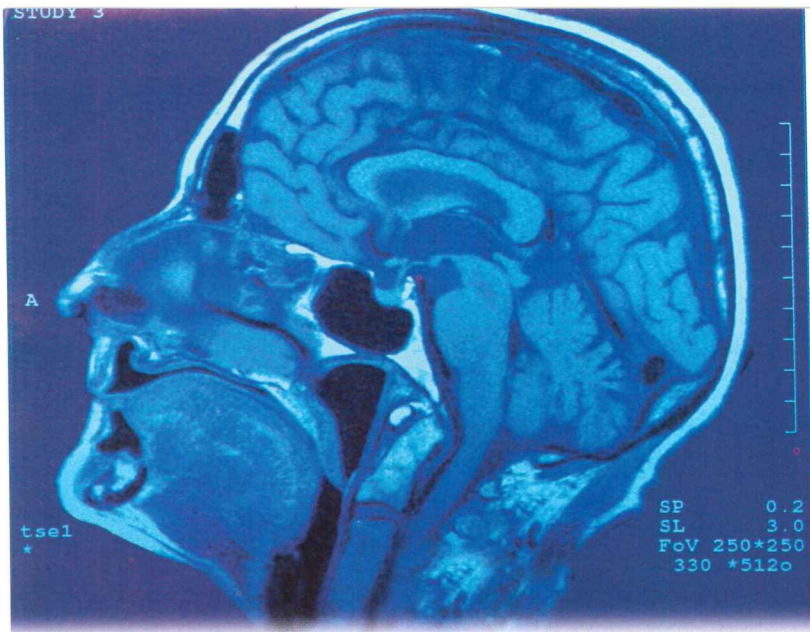
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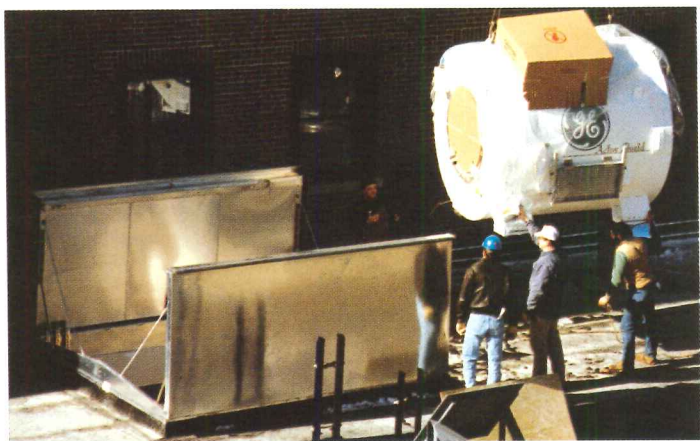
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Dates & Events

at the annual fund-raiser, "A Night of Wright Design." Call 480/627-5327 or visit www.franklloydwright.org

Record Houses 2007

Deadline: October 31, 2006

The 52nd annual Record Houses awards program is open to any architect registered in the U.S. or abroad. Of particular interest are projects that incorporate innovation in program, building technology, form, and materials. Visit www.architecturalrecord.com.

The 5th Tile of Spain Awards of Architecture and Interior Design

Deadline: October 31, 2006

Sponsored by the Spanish Ceramic Tile Manufacturers' Association (ASCER), these awards recognize outstanding architectural and interior design projects using ceramic tiles from Spain. Prizes totaling 45,000 euros are being offered. The competition is open to professional architects, interior designers, architectural engineers, landscapers, and decorators of all nationalities. Entries may represent new construction, renovation and restoration projects, urban development projects, or exterior landscaping. Visit www.spaintiles.info/awards.

The 2nd Annual JELD-WEN Student Door Design Contest

Deadline: November 1, 2006

Individuals are invited to create and submit original designs for residential front doors, focusing on the theme of "honoring architecture." To learn more, visit www.jeld-wen.com/studentdesign.

2007 Palladio Awards

Deadline: November 15, 2006

Submissions are now being accepted for the 2007 Palladio Awards. The sixth annual competition will recognize outstanding work in traditional design for commercial, institutional, and residential projects. The Palladio Awards program is

coproduced by *Traditional Building* and *Period Homes* magazines. For additional information, visit www.palladioawards.com.

2007 International Bamboo Building Design Competition

Registration deadline: December 31, 2006

Submission deadline: January 15, 2007

Bamboo Technologies of Maui has launched the first International Design Competition for Structural Bamboo Buildings. Some of the winning entries will be chosen for manufacture by the world's premier builder of international-building-code-approved bamboo homes. The competition is open to architects, builders, designers, and students anywhere in the world. Visit www.bamboocompetition.com.

2007 Aurora Awards

Deadline: March 9, 2007

Builders and architects who have demonstrated excellence and creativity when designing hurricane-resistant structures are invited to submit projects to this design competition recognizing projects in the southeastern United States. Solutia, a manufacturer of polyvinyl butyral (PVB) interlayers for impact-resistant glass, is sponsoring a new category in the competition. The Safe & Secure Award will recognize builders, designers, architects, and other home building professionals who incorporate—and meet or exceed code requirements for—impact-resistant windows and doors for safety, and use other design elements that minimize the effects of hurricanes and other disasters on residential structures. Visit www.theauroras.com.

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Program title: "Collaborating with Contractors for Innovative Architecture," (10/06, page 183)

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“Living the Mundane and the Catastrophic,” Architectural Record (10/06, page 155).

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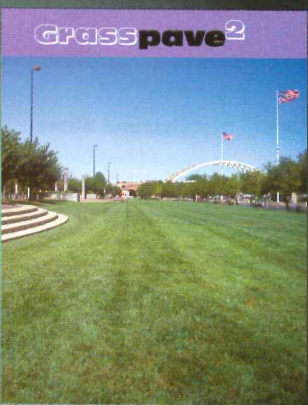
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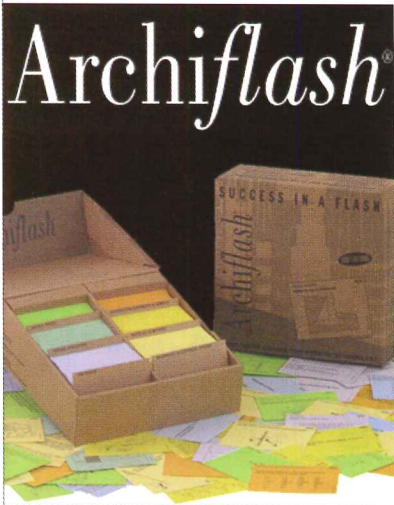
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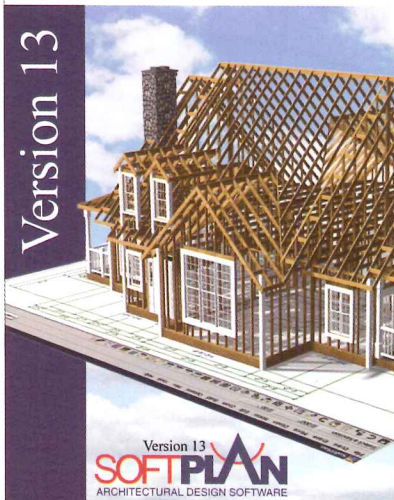
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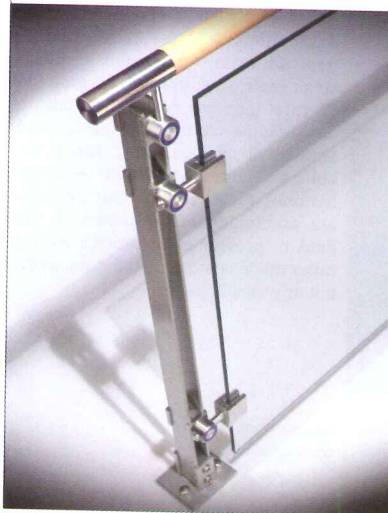
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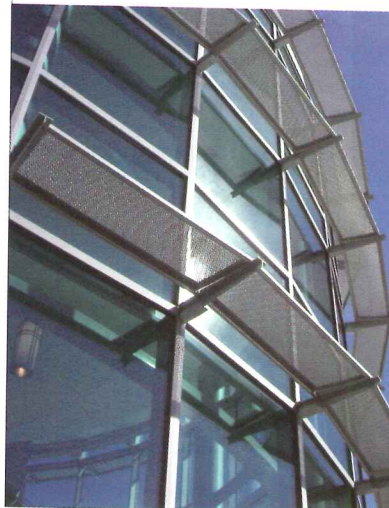


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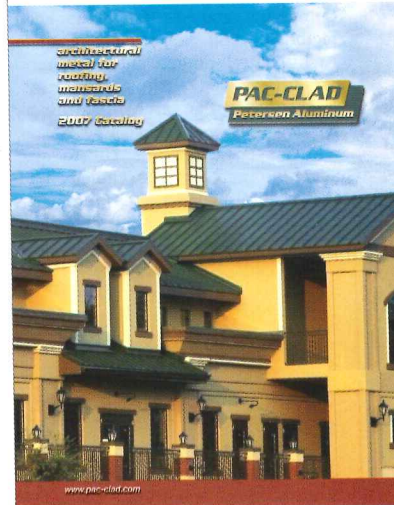


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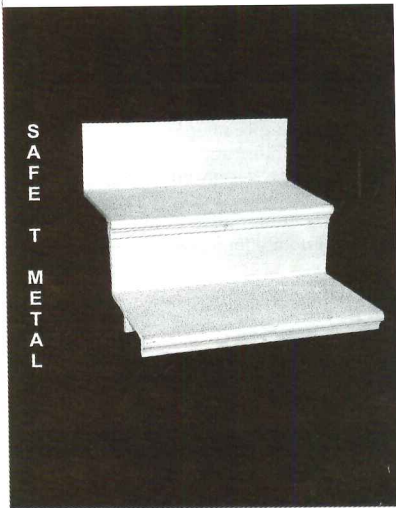
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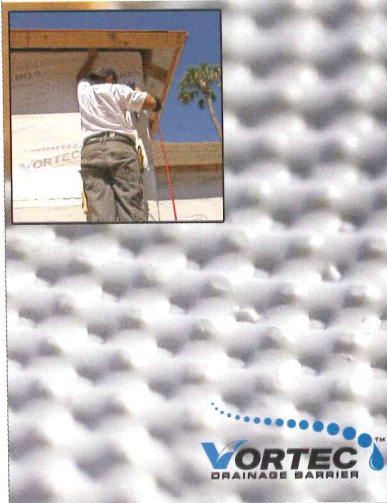
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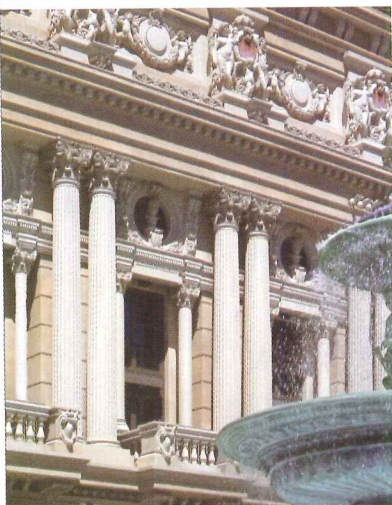
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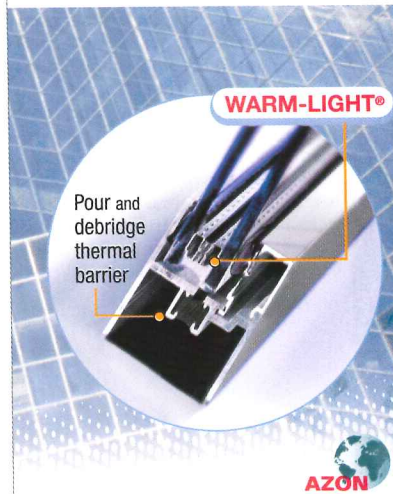
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Fenevations manufactures MegaWood, Infinity Bronze, and SteelView windows. Megawood offers fine hardwoods with furniture-grade finishes, combined with heavy gauge bronze or hand welded, aluminum extruded exteriors. Infinity Bronze is a unique thermally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



908-688-5710
www.fenevations.com

| Circle Reader Service #168

Translucent Daylighting Panels

Major Industries



Guardian 275® Translucent Daylighting Panels long recognized for their energy efficiency, light management qualities, and cost-effectiveness are now better than ever. New technology Guardian 275® Translucent Daylighting Panels feature Ultimate Series™ exterior face sheet for great color stability, longer life, and their best-ever performance for your translucent daylighting needs.

715-842-4616
www.majorskylights.com

| Circle Reader Service #171

Anti-Reflective Glass

IGT Glass



Luxar anti-reflective glass is perfect for any glass application where glare and reflection are not wanted. Luxar reduces glare and reflection to less than 0.5%. It is perfect for museums, store fronts, stadiums, restaurants, projection rooms and display cases. It is available on low iron float glass for maximum clarity in 2mm to 12mm thicknesses to meet any project requirement.

480-767-8220
www.luxar.ch

| Circle Reader Service #169

Fire-Resistant Glass

Pilkington North America - Fire Protection Glass



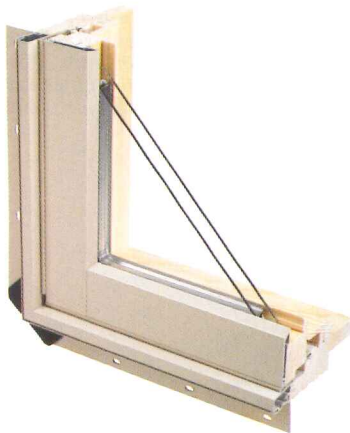
Pilkington Pyrostop™ is available with many options including opaque films, colored interlayers, surface designs and lightly sandblasted. Pilkington Pyrostop™ can also be combined with any of the Pilkington products to meet your design needs. For more information contact Technical Glass Products or visit their web site.

800-426-0279
www.fireglass.com

| Circle Reader Service #172

Optimal Performing Casement

Kolbe



Kolbe provides the ultimate in style and performance with the Ultra casement. Redesigned to include an extruded aluminum sash to match the frame, corrosion resistant stainless steel hardware and more. Quality materials and innovative engineering allow for an optimal performing window with some units achieving ratings up to DP85.

800-955-8177
www.kolbe-kolbe.com

| Circle Reader Service #170

Fire Rated Aluminum Framing

SAFTIFIRST



With SAFTIFIRST's SAFTIfire Frames, rated 45-min. to 2-hr., you can create the maximum barrier against fire and radiant heat while providing attractive framing that meets all the temperature requirements of the national building codes. Design flexibility of multiple forms makes for easy installation, creating a sleek, attractive profile.

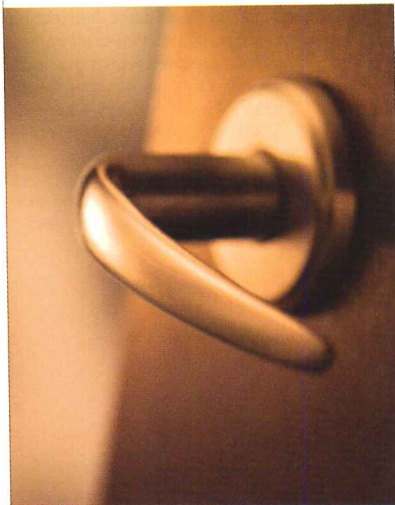
888-653-333
www.safti.com

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Contemporary Designer Levers

Sargent Manufacturing Company



High performance hardware meets beautiful design. SARGENT® introduces Metro Elements: 22 levers in a choice of 12 finishes. Part of the Studio Collection, the levers are contemporary in design and may be used with coordinating access control devices, mortise locks, tubular locks and exit devices. SARGENT—now a single-source for superior levers and door hardware.

800-727-5477
www.studiocollection.com

| Circle Reader Service #174

Squash & Racquetball Systems

Anderson Courts & Sports



Anderson Courts & Sports Surfaces, Inc. is a specialty company that designs and installs complete Squash and Racquetball Systems. They have three excellent playing wall surfaces. Anderson's Interflex cushioned maple floor system has been specially designed for court flexibility and bounce consistency. The company also installs World Squash accredited glass wall systems and all court accessories.

800-543-5155
www.andersoncourt.com

| Circle Reader Service #177

Insulating Glass with Integral Blinds

Unicel Architectural Corp.



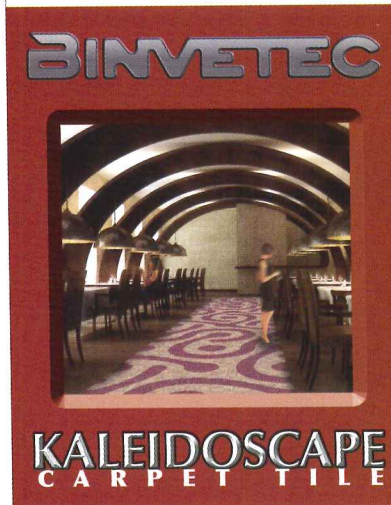
Unicel Architectural is the proud manufacturer of this unique patented glazing product: Vision Control®. With this custom unit, enjoy total control of light, privacy and sound without worrying about cleaning. Unlike ordinary blinds, Unicel's pivoting blinds made of extruded aluminum are mounted inside a hermetically sealed glass unit offering you 100% dust-free and germ-free louvered glazing, without cords or strings! Blinds are operated using a hand crank, thumbwheel, motorized switch or computer. Ideally suited in interior partitions, doors, windows, curtain walls and skylights.

800-668-1580
www.visioncontrol.qc.ca

| Circle Reader Service #175

Carpet Tile

Binvetec, LLC



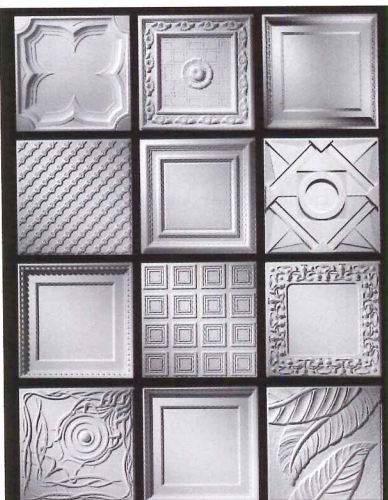
Kaleidoscope Carpet Tile with TractionBac non-adhesive installation system is the only modular floor covering solution that can create a wholly non-repetitive and free-flowing pattern from a single tile design. They can also be arranged in groups to create myriad patterns. Available in nine color combinations, they can be used to create entire wall-to-wall floor coverings, runners, or assembled together to make six-tile area rugs (6-ft. by 9-ft.).

714-731-2369
www.binvetec.com

| Circle Reader Service #178

Ornamental Plaster Ceiling Tiles

Above View Mfg., By Tiles, Inc.



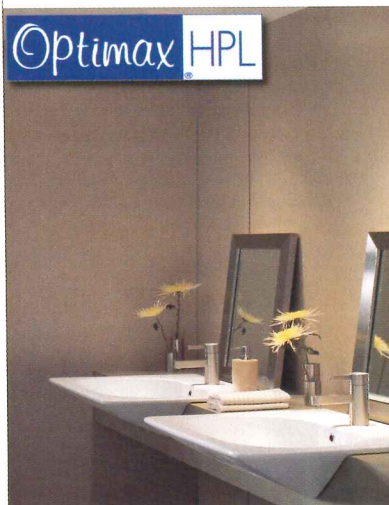
Above View ornamental plaster ceiling tiles are fabricated from a non-toxic, non-combustible, proprietary composition. They drop into any standard 15/16-in. T-Bar grid system. There are more than 50 standard designs, custom design work, and 1,300 custom colors and faux finishes available upon request.

414-744-7118
www.aboveview.com

| Circle Reader Service #176

Sanitary Wall & Ceiling Panels

Crane Composites, Inc. (formerly Kemlite Company, Inc.)



With over 500 patterns available, Optimax HPL is the premier frpDesign Solutions panel. It is a decorative wall panel made of a high pressure laminate (hpl) surface bonded to a fiberglass reinforced plastic (frp) substrate. For more information, visit Kemlite on the web.

888-332-6377
www.frpdesignsolutions.com

| Circle Reader Service #179

Slate Flooring

Evergreen Slate Co., Inc.



Natural Vermont Slate, the beautiful and durable choice for interior and exterior flooring, is available in 5 standard sizes and 5 patterns in groupings from 10 sq. ft. to 36 sq. ft. and is ideal for entryways, kitchens and stairways. A full range of 8 colors is available in both cleft face tiles and irregular slate flagstone for patios, walkways or stepping stones.

866-USA-SLATE
www.evergreenslate.com

| Circle Reader Service #180

Authentic Tin Products

The American Tin Ceiling Co.



One of the largest manufacturers of authentic tin ceilings panels, offering over 30 of the finest embossment patterns and over 50 high quality powder coat finishes. Exclusive distributors of the innovative SnapLock™ and 3D Dropin tin ceiling panels. Eight designers provide free phone consultation six days a week. Orders shipped direct worldwide. Fax number 941-359-8776

888-231-7500
www.americantinceilings.com

| Circle Reader Service #183

Stainless Steel Floor System

Gage Corp.



The Gage Stainless Steel Floor System is a durable, high-tech flooring solution designed in Italy for purity of form and ease of installation. The embossed stainless steel finish has been specifically designed to prevent traffic wear and is virtually indestructible. "The system is the solution."

866-855-4243

| Circle Reader Service #181

Unique Surface with Metallic Glaze

Viva Ceramica



Viva has added to their philosophy the idea of not weighing down this world with useless products, copies of things that have already been seen, interchangeable repetitions of objects that are born today and die out with fashion. IRIDIUM is created to be exclusive, for those who understand and know how to appreciate the value of things that last and the work and passion that is part and parcel of their ceramic workshop. A metallic glaze with iridescent tones creates an absolutely new type of surface. Ideal for homes, offices, shops and public venues.

www.cerviva.it

| Circle Reader Service #184

Crystallized Glass Ceramic Architectural Panels

Technical Glass Products



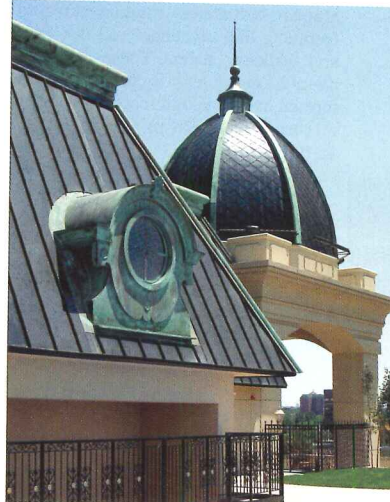
Neopariés® and Neopariés® LT are lighter yet stronger than granite. Commonly used for cladding interior and exterior walls, flooring, and counter or tabletops, they are virtually impermeable and not subject to freeze-thaw damage, penetration by rust, mortar or other staining substances. Contact Technical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

888-397-3473
www.tgpamerica.com

| Circle Reader Service #182

Architectural Sheetmetal Products

CopperCraft



CopperCraft manufactures a complete line of high-quality architectural sheetmetal products including ornamental dormers, roof vents, roof drainage products, conductor heads, steeples, cupolas, and spires, as well as items which are custom built to your specifications. Design, engineering, testing, and fabrication methods that meet stringent structural and performance standards make the difference. You get unsurpassed quality, delivery, and custom service including a nationwide network of representatives.

800-486-2723
www.coppercraft.com

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Canopies & Walkway Covers

CPI Daylighting Inc.



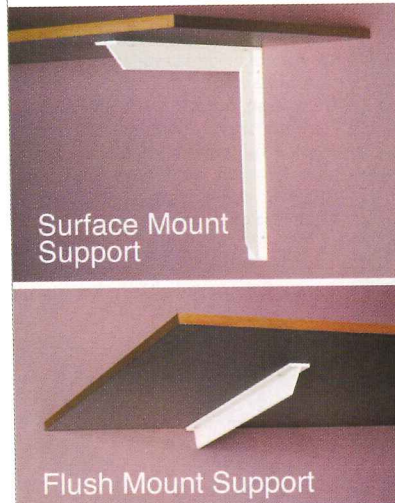
CPI provides single source responsibility for the entire Clearspan Canopy structure from the ground up. CPI's new Clearspan design for translucent canopies and walkway covers offers an economical, functional design with unequaled aesthetic appeal. Clearspan provides an excellent shelter and gives an open-air feeling by allowing natural daylight through to light up the area below.

800-759-6985
www.cpidaylighting.com

| Circle Reader Service #186

Counter Support Brackets

Rangine Corporation / Rakks



Rangine Corporation's counter support brackets provide an easy-to-install alternative to full-height laminated panels. Available in a range of sizes to support counters up to 30-in.-deep, brackets install easily into studs or blocking and can support loads up to 450-lb. Less expensive than laminated supports, they increase open space while improving handicapped access and ergonomics. Brackets can be ordered in either surface or flush mounted configurations to provide heavy-duty unobtrusive support. Manufactured of extruded structural aluminum.

508-376-4545
www.rakks.com

| Circle Reader Service #189

DOT Approved Street Signs

Custom Home Accessories



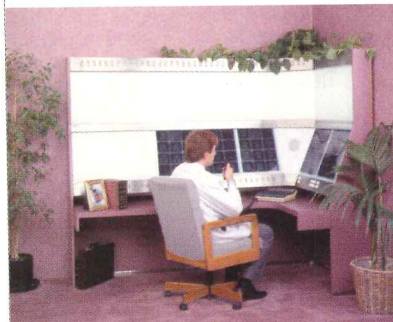
Enhance your community's curb appeal by installing street signs that match your mailboxes. Their street signs can be customized with a wide variety of blades, bases, and finials to match your development's mailboxes. Their cast aluminum street signs are designed for direct ground burial and meet all DOT standards and requirements.

800-265-0041
www.mailboxes.info

| Circle Reader Service #187

Medical & Hospital Equipment

Carr Corporation



Carr was established in 1946. Over the years, their product line grew and a continuous stream of innovations were introduced. "Excellence in X-Ray" became Carr's company culture. Today, their product line includes not only X-ray, but also surgical, specialty lighting, stainless steel casework and many other accessories. Carr products are sold internationally and are used by many of the most prominent institutions around the globe. Email carrcorp@aol.com

800-952-2398

| Circle Reader Service #190

Canopies & Walkway Covers

Mapes Industries, Inc.



Mapes Industries manufactures a complete line of hanger rod canopies and walkway covers. These pre-engineered canopies incorporate roll formed and extruded roof decking, flat or corrugated, with projections up to 12-ft. With multiple fascia profiles, the canopies are a cost effective alternative to job site built designs. Custom colors are also available. Specially designed brackets allow these canopies to be attached to any wall surface including EIFS, metal buildings and CMU. For more information, please call or visit their web site.

800-228-2391
www.mapes.com

| Circle Reader Service #188

Soft-Close, Pull-Out Waste Containers

Rev-A-Shelf LLC



This assortment of single and double stainless steel or polymer waste containers are easy to install and feature heavy-duty brushed aluminum self-closing slides that provide exceptional support and stability eliminating that side-to-side movement and a fully adjustable (10-in.-high) door mount frame with built-in storage area for bags. Available in single and double 32 QT, 35 QT, and 50 QT capacities and a variety of sizes.

800-626-1126
www.rev-a-shelf.com

| Circle Reader Service #191

Unique Storage & Filing
Aurora by Richards-Wilcox

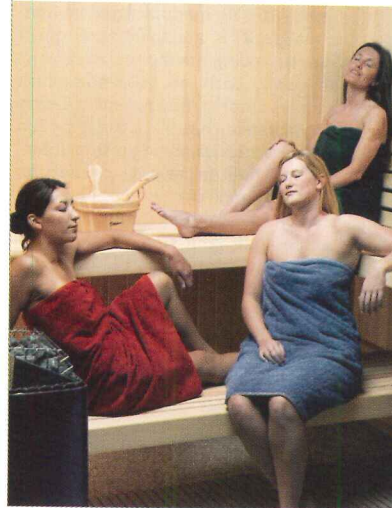


Aurora® Times-2 Step-Up, Step-Down™: It's a simple concept, two tall "steps" on the upside, two small steps on the "downside" to give you plenty of compact multimedia storage and filing. The task area is great for printers, fax machines, copiers, phones, mail meters and more. Units come as a bank of four in letter or legal sizes in an eco-friendly finish in 26 beautiful colors. Order a variety of different heights and accessories.

800-877-8456
www.aurorastorage.com

| Circle Reader Service #192

Saunas
Finlandia Sauna Products, Inc.



Finlandia Sauna has manufactured exclusive and authentic saunas since 1964. Finlandia offers precut sauna packages and modular sauna rooms as an affordable luxury that can be included in any remodel or new construction. The company markets four all-clear western softwoods and is the only manufacturer to use 1-in. by 4-in. paneling, instead of the cheaper 1/2-in. by 4-in. material used by others. Finlandia's packages include all room parts, a choice of a Finnish made electric heater, a prehung door with choice of glass, and all necessary accessories.

800-354-3342
www.finlandiasauna.com

| Circle Reader Service #195

Redesigned Shelves
Gyford Productions



The newly redesigned Archer Shelves retain all of their original appeal and style with a simplified, more elegant design. The system is made from Gyford's stock, satin finished aluminum components. It can be customized endlessly to suit your design needs. Combine the redesigned Archer Shelves with Gyford's new Eclipse shelves in your next design project to create a truly remarkable combination of function and beauty. Made in the USA.

775-829-7272
www.standoffsystems.com

| Circle Reader Service #193

Steam Shower
Sculptured Homes



Sculptured Homes manufactures the WetSpa, a contemporary alternative to a custom-built steam shower, in one complete package. The package includes a 3-1/4-in. Corian floor system that can be recessed for barrier free entry, 3/8-in. tempered glass walls that can be custom color-coated for installation in a corner or alcove, pre-plumbed wet-wall, choice of shower fittings and optional steam, fiber-optic lighting, marine-grade stereo speaker and seating. Standard sizes facilitate easy specification for remodels and new constructions.

248-723-5230
www.wetspas.com

| Circle Reader Service #196

Deep Seating Club Chair
Modern Outdoor Inc.

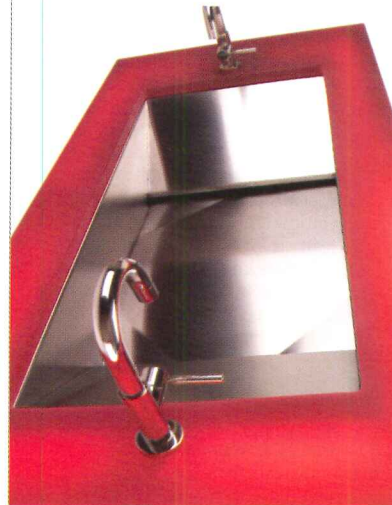


New to their Etra line is this deep seating club chair. Designed for comfort and style, the deep seating line also includes a sofa and ottoman. They offer four complete lines of high-style, clean-lined environmentally conscious outdoor furniture. The Modern Outdoor Collections are commercial grade products 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. View the entirety of their collection online.

818-785-0171
www.modernoutdoor.com

| Circle Reader Service #194

Modern Form & Function
Neo-Metro®



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. An illuminating console resin (featured photograph: Cranjuice) completes a stunning picture of modern form and function. Email info@neo-metro.com

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

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Zurn Plumbing Products Group



Temp-Gard III, manufactured by Zurn AquaSpec®, is a single-handle pressure balancing mixing tub and shower valve, with an ADA-compliant handle, chrome finish, and a heavy duty ceramic control cartridge with a stainless steel balancing piston. It features a built-in reverse connection capacity and two integral service stop/check stops and an adjustable temperature limit stop. The four-port valve body has a tub port plug included for shower-only applications. The valve inlet, shower outlet, and tub outlet are standard with half inch N.P.T. female thread connections.

877-987-6669
www.zurn.com

| Circle Reader Service #198

Architectural Ceiling Fans & Lighting

G Squared Art



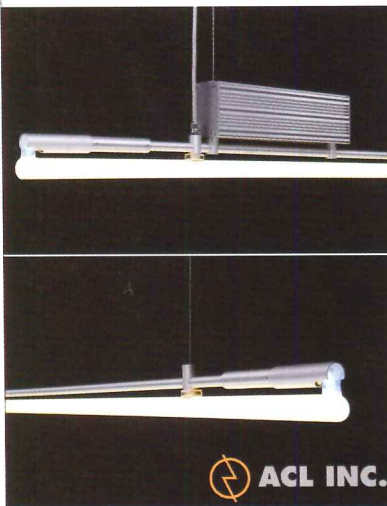
Balanced design that is light and airy. Moving sculpture... The San Francisco ceiling fan is a GOOD DESIGN Award winner by Mark Gajewski. Whisper quiet, powerful, reliable and beautifully made. Also available without a light kit. Lifetime warranty. Buy great fan and lighting designs on G-Squared Art's website or call Monday through Friday from 7am to 5pm PST.

877-858-5333
www.g2art.com

| Circle Reader Service #136

A Fusion of the Art & Science of Cold Cathode

Architectural Cathode Lighting



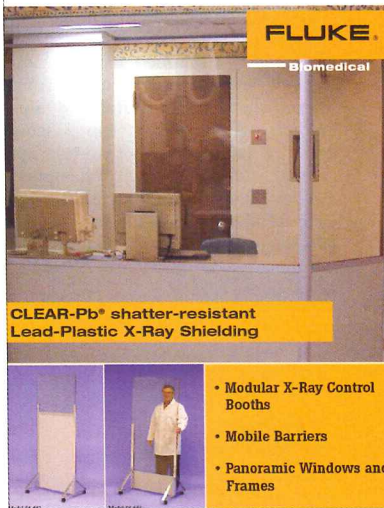
Streamlites expresses a new and exciting language of hardware that transforms into elegant structures supporting the cold cathode lamp with minimalist sensibility. Streamlites have socket-free end-to-end illumination, available in several standard lengths and an array of colors. Streamlites offer unlimited possibilities that are both classic and timeless.

www.cathodelighting.com

| Circle Reader Service #199

X-Ray Radiation Shielding

Fluke Biomedical



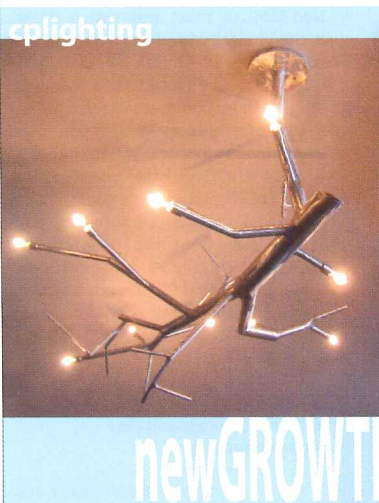
CLEAR-Pb® shatter-resistant Lead-Plastic X-Ray Shielding is a lead-impregnated, transparent plastic that contains 30 percent lead by weight. The full line of CLEAR-Pb shielding products consisting of Modular Operator Control Booths, Mobile and Overhead Barriers, along with Windows and Frames, provide just the right solutions for planning all radiation shielding projects. Fluke's new 2006 CLEAR-Pb brochure contains a comprehensive product listing and description of their latest product offerings. Visit their web site www.clearpb.com.

631-266-2229 or 440-248-9300 x3710
www.flukebiomedical.com/rms

| Circle Reader Service #137

Custom Light Fixtures

CP Lighting



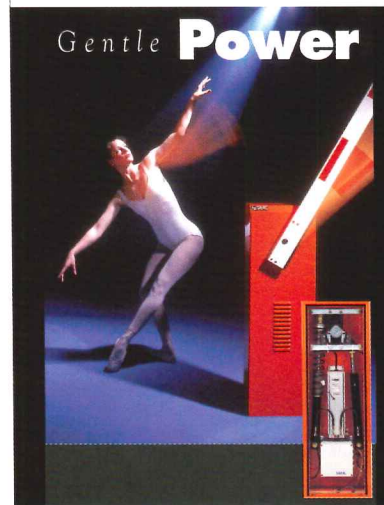
CPLIGHTING introduces the newGROWTH chandelier. Custom fabricated from brushed aluminum, these UL listed fixtures are a modern sculptural interpretation of fallen branches. Like real trees, no two newGROWTH fixtures are ever alike. Each fixture is built to suit your specific project needs utilizing line-voltage type JCD halogen bulbs. Please visit their web site to see their complete line of modern light fixtures designed by Christopher Poehlmann including their recycled acrylic Popsicle Pendant series.

866-597-4800
www.cplighting.com

| Circle Reader Service #135

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FAAC is the world's largest specialized manufacturer of hydraulic operators for barrier, slide and swing gate systems. Barrier features include 100% continuous duty operation, the ability to raise beams up to 23-ft., and control panels with full system compatibility. High-speed and economy models available. Visit their web site for brochures and specs.

800-221-8278
www.faacusa.com

| Circle Reader Service #138



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Submit by 27 November 2006 for full consideration: curriculum vita; letter of interest with teaching, research/scholarship, and service objectives; position sought; three references; and examples of professional or scholarly work (five page maximum) to:

Faculty Search Committee, miller@clemson.edu.
More info: www.clemson.edu/caah/architecture.

FULL-TIME, TENURE-TRACK POSITION
UNIVERSITY OF WASHINGTON

The Department of Construction Management at the University of Washington is seeking applications for a full-time, tenure-track position beginning in September 2007. Appointment will be made at the assistant professor level. The department offers an ACCE-accredited Bachelor of Science degree and a Master of Science degree and participates in a college-wide Ph.D. program. The department enjoys an outstanding reputation within the industry and receives strong industry support. The department is developing a research and education center that will house virtual construction and construction methods and materials laboratories. Successful candidates are expected to teach undergraduate and graduate courses, supervise graduate students, develop strong externally-funded research programs, publish in professional journals, and provide service to the university, the community, and the construction industry. Applicants must possess a doctoral degree in a construction-related field. Applicant should send a letter of interest, a current curriculum vitae, a 2 to 3 page statement of teaching and research interests that explains how the applicant will contribute to the program, and the names, addresses, telephone numbers of three references to Faculty Search Committee, Department of Construction Management, Box 351610, University of Washington, Seattle, WA 98195-1610. Review of applications will begin November 16, 2006 and will continue until the position is filled. More information about the department can be found at: <http://depts.washington.edu/cmweb>. The University of Washington is an affirmative action, equal opportunity employer. Qualified women and minority candidates are especially encouraged to apply.

MICHIGAN

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Within the discipline of architecture, the college offers four degrees (B.Sc. in Arch, M.Arch, M.Sc., and Ph.D.). There are related programs in the college such as Urban and Regional Planning, Urban Design, and Real Estate Development. And in the context of an international research university, there are a number of joint degrees with other programs across campus, such as art, business, engineering, law, environment, and public policy.

The presumed rank is **Professor with tenure** or **Professor of Practice**, although other candidates who show extraordinary promise may be appointed at an appropriate rank.

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The University of Michigan is an equal opportunity/affirmative action employer.



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KANSAS STATE UNIVERSITY

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Head, Department of Interior Arch. & Product Design

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<http://capd.ksu.edu/about/employment>

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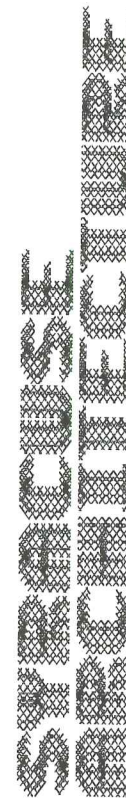
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suabroad@syredu 1-800-235-3472
OR

Speranza Migliore, Admissions Coordinator
Syracuse Architecture Graduate Programs
The Warehouse, 350 West Fayette, Room 501
Syracuse, NY 13244-1250
archgrad@syredu 315-443-1041

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- **Southeastern Regional Sales Manager**
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... light for a brighter future™

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Wanted to manage design, construction and renovation of restaurants & retail stores. Will work at, and resumes to be mailed to: H.R., Le Pain Quotidien, 434 Broadway, 3rd Fl., NY, NY 10013.

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Assist architects to research, plan, design, & administer building projects, applying knowledge of design, construction procedures, zoning & building codes & building material. Job site: Corona. Send resume to: MCA Architects, Inc. 1247 Pomona Rd., #105, Corona, CA 92882

ARCHITECTURAL INTERN

40hrs/wk M-F, 9a-5p. Bach in Civil Engr reqd; Research, dsgn, plan bldg projects under supervision of licensed architect. Apply knowledge of Design, Autocad and Code, Excel and Word. Consult w/ clients. Prepare drawings, calculate bldg measurements. Resume to Jody Luna, Permit Guys LLC, 156 N. Jefferson St., Ste 201, Chicago, IL 60661.

ARCHITECTURAL DESIGNER

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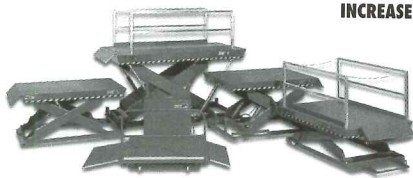
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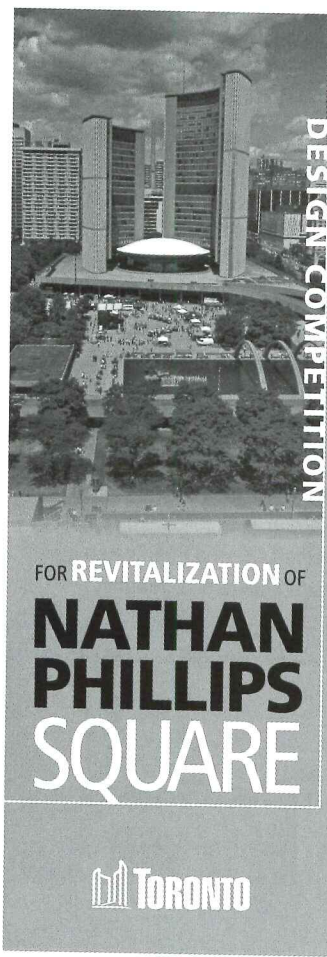
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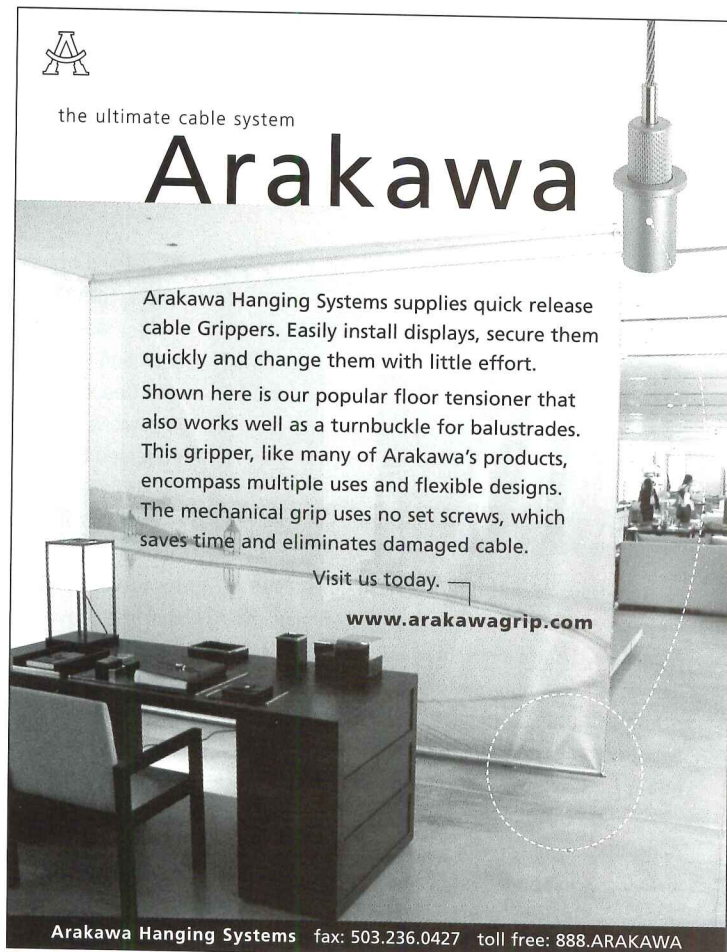
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Architecture's Claim to Fame



From the pages of ARCHITECTURAL RECORD 2005

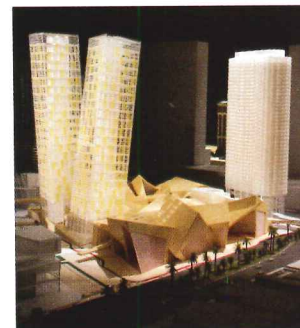
A 66-acre, 18-million-square-foot mixed-use complex, MGM Grand's \$7 billion CityCenter is both the largest privately financed development in the United States, and a testament to the American urge for super-sized consumption.

The transition from present to past is fast in Las Vegas, where the half-life of architecture can match the short half-lives of savings accounts and shotgun marriages. Just last year, RECORD asked "What's left to learn from Las Vegas?"—as though the city had finally reached a limit condition [RECORD, May 2005, page 194]. The article cited MGM Grand's CityCenter, a \$6 billion project, with Cesar Pelli as architect. But to that project has now been added another \$1 billion, along with an impressive roster of celebrity architects, including Rafael Viñoly, Norman Foster, Daniel Libeskind, Kohn Pedersen Fox Associates, and Murphy/Jahn, who are all working with Gensler, the executive architect.

CityCenter may represent a shift in Las Vegas development from gaming to mixed-use, but it also signals a shift in architectural style by sounding—yet again—the final death knell for Postmodernism on its home turf. In the lot where a casino inspired by Coney Island once stood, and in between buildings that represent Monaco and the Italian Renaissance, will rise an assemblage of Modernist buildings devoid of historicist references.

But CityCenter does not sacrifice exoticism altogether. Vegas has always provided access to faraway times and places, and proximity to stars (either real or impersonated). In this collection of Modernist buildings, the stylistic imprimatur of each architect is not immediately discernible, so MGM Grand is gambling that the architect's name will signify the exotic. Now the architect's celebrity is a surrogate for themed architectural appliqué.

While architectural styles quickly change, and the buildings come and go, rest assured that there will always be something to learn from Las Vegas. *John Gendall*



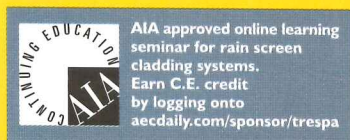
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