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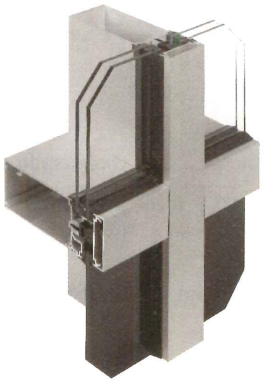

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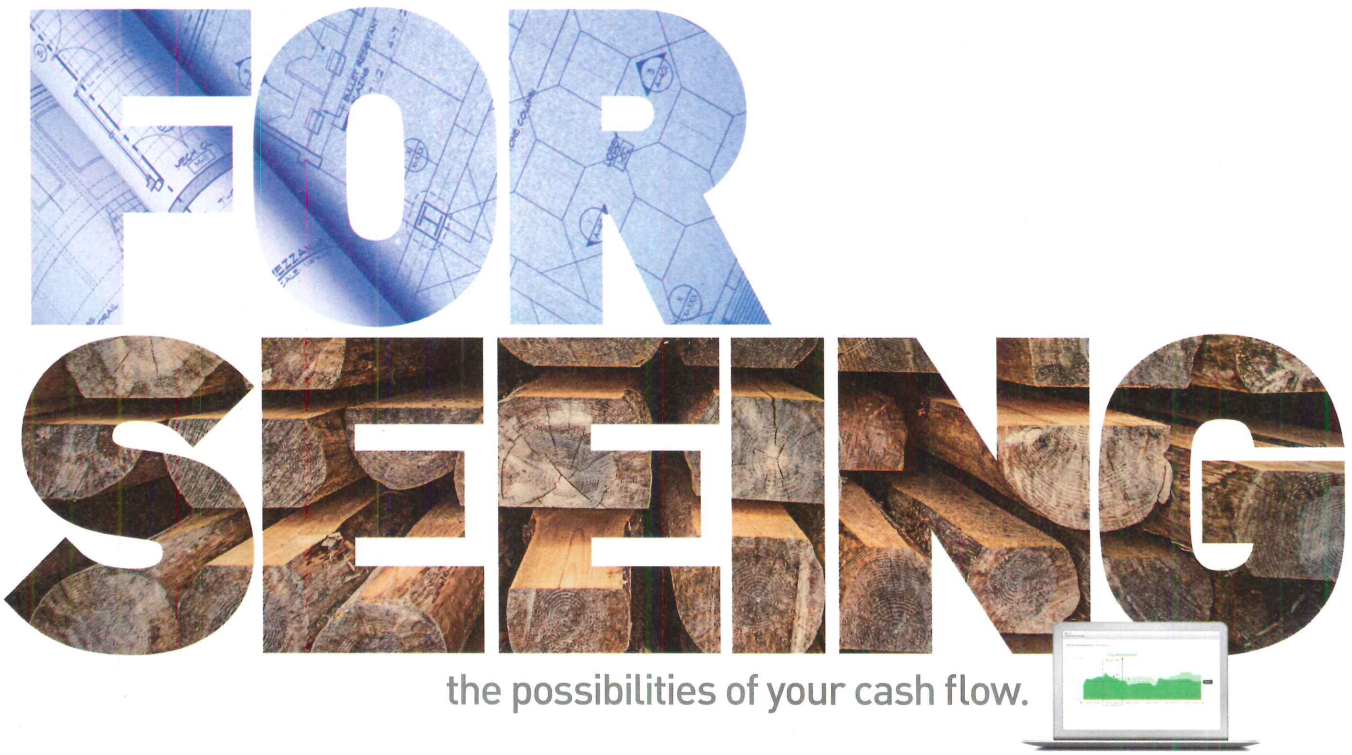

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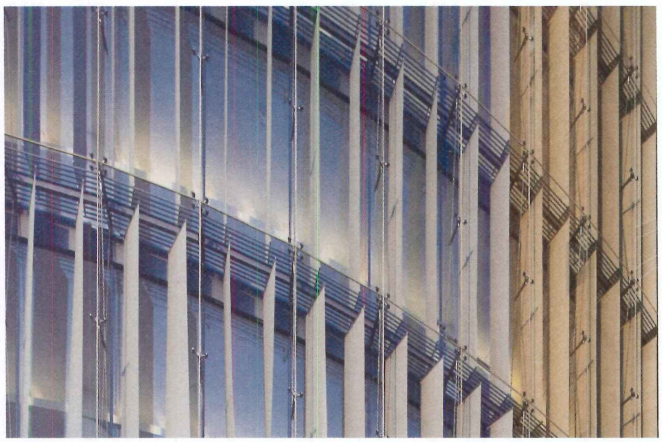

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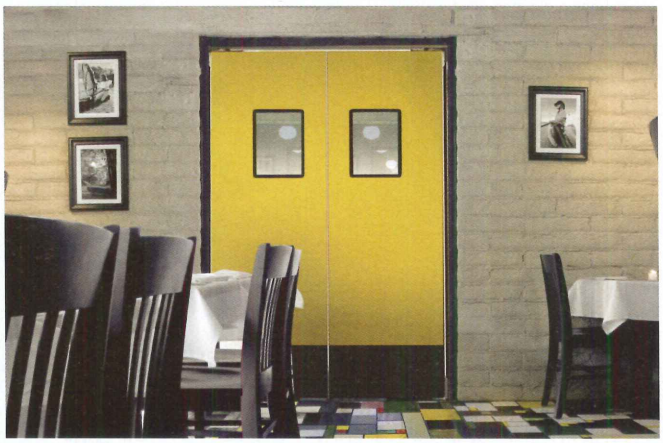

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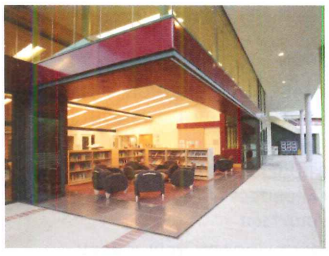

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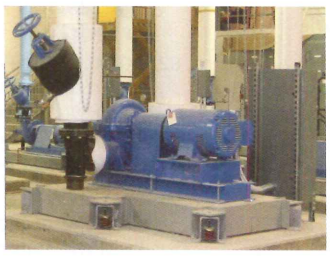

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Isn't It Ironic?

The Museum of Modern Art plans to destroy Williams and Tsien's gem.

IN THIS ISSUE of RECORD, we explore works of architecture as urban catalysts—buildings that raise the stakes for design in their neighborhoods while successfully engaging the surrounding context.

So it was a brutal irony to learn, as we were closing the following pages, that the Museum of Modern Art in New York plans to demolish its next-door neighbor, the stunning former home of the American Folk Art Museum, designed by Tod Williams Billie Tsien Architects, the 2013 AIA Architecture Firm Award recipient.

Williams and Tsien's museum, which opened in 2001 (RECORD, May 2002), is the epitome of an urban catalyst: a beautiful and inventive jewel of a building that enriched its streetscape and the city when it opened in the dark days not long after the 9/11 attacks. Its modest scale (the 30,000-square-foot structure sits on a site just 40 feet wide) was humane, a reminder of the townhouses that once lined that Midtown Manhattan block. Its dazzling facade of pockmarked bronze-alloy panels was a tour de force of contemporary craftsmanship—an artwork that begged to be touched.

The story of the Folk Art Museum's fate is full of sad ironies, as I recently wrote on archrecord.com. The most obvious is that MoMA was the first museum to establish a department of architecture and design, and is now both judge and executioner of an acclaimed modern building by one of America's most distinguished practices.

When the small museum opened, MoMA, on its eastern edge, was in the throes of constructing a mammoth expansion, completed in 2004. Williams and Tsien had been invited to submit a design for the new MoMA (irony no. 2), but were beaten by the minimalist scheme of Yoshio Taniguchi. Another contender in that competition, Rem Koolhaas and his firm OMA, tweaked MoMA's expansionist ambitions by putting the words "MoMA, Inc." on their proposed plans (irony no. 3)—and, of course, OMA lost MoMA.

Unfortunately, the Folk Art Museum had overreached in creating a new facility, and in 2011 its board was forced to sell the building to meet debt obligations of nearly $32 million. MoMA was an eager buyer. (It got it for less than the price of a good Picasso!) Its director, Glenn Lowry, had once tried to swap the Folk Art Museum's site for property that MoMA owned just west of it, to create a contiguous plot for the museum in the future, but the Folk Art folks turned the deal down (irony no. 4).

So when MoMA bought the Williams and Tsien museum last year, it was not adding a building to its collection so much as acquiring a coveted piece of real estate. MoMA has failed in its stewardship of a work of modern architecture at least once before: after the widow of Gordon Bunshaft bequeathed his East Hampton beach house to MoMA, the museum sold it to Martha Stewart, who gutted it and later sold the unfinished shell. It has since been demolished (irony no. 5).

At first, there was hopeful speculation that MoMA might keep the Williams and Tsien museum as a home for its department of architecture and design. But much bigger plans got in the way. MoMA had sold its last piece of land in 2007 to the Hines company (including that lot on the west side of the Folk Art site), where the developer will construct a skyscraper designed by Jean Nouvel. It will include galleries for MoMA. The museum maintains that the William and Tsien building can't be adapted as a link between the current MoMA building and the Nouvel structure because of varying floor heights. In addition, according to the *New York Times*, MoMA officials said the opaque bronze facade is "not in keeping with the glass aesthetic of the rest of the museum." (We can't help but wonder how that argument will sound when Nouvel's macho-man behemoth is breathing down on MoMA's smooth ladylike skin.)

MoMA's board chairman, Jerry I. Speyer, may not miss the Williams and Tsien museum as much as the rest of us because he gets to go home every night to one of their buildings, a Manhattan townhouse that he and his wife commissioned from the architects (irony no. 6).

If only the process that led to this decision had been as transparent as that glass aesthetic that MoMA loves. But it all took place behind closed boardroom doors, not unlike the controversial plans unveiled by the New York Public Library to radically alter part of its interior with a design from Foster + Partners.

Like the library, MoMA is in both the real-estate and the culture business. Yes, these are nonprofit institutions with heavy financial burdens in an era of ever-diminishing government support. But they—and their buildings—are part of the public realm. Whether we borrow books or look at art, we are citizens who support them, through our taxes and through tax relief. Not every significant building can remain standing in perpetuity—but decisions to destroy or alter key works of architecture should be made transparently and openly. And the voices of the public should be heard. ■

Cathleen McGuigan

Cathleen McGuigan, Editor in Chief

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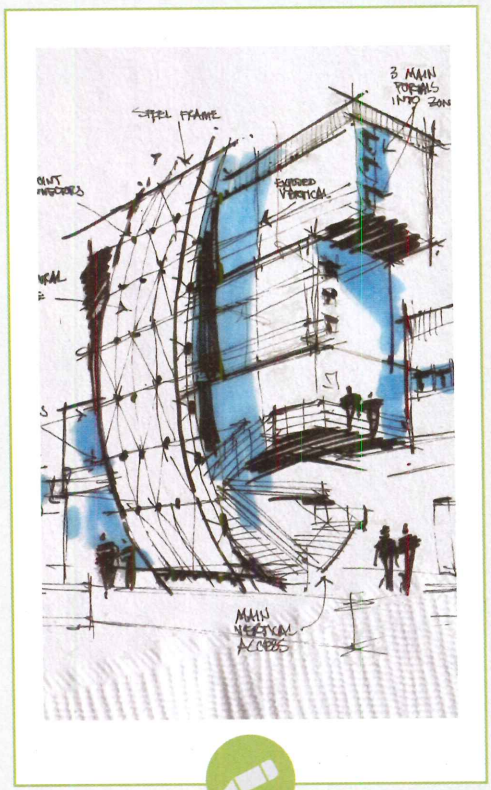

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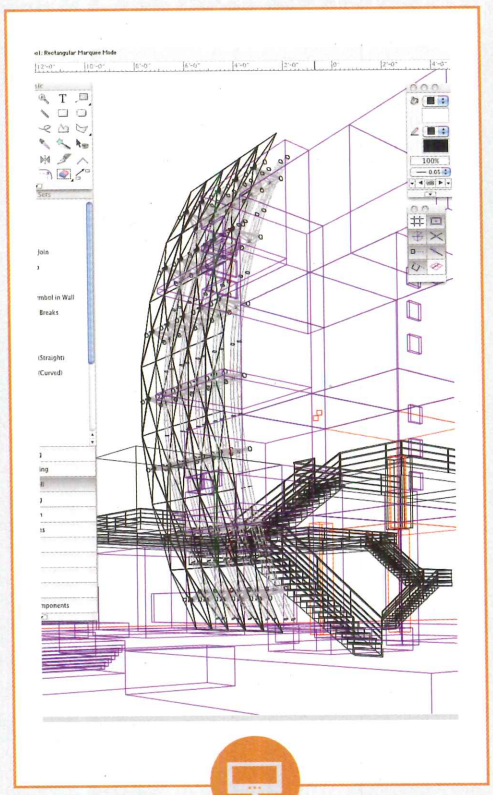

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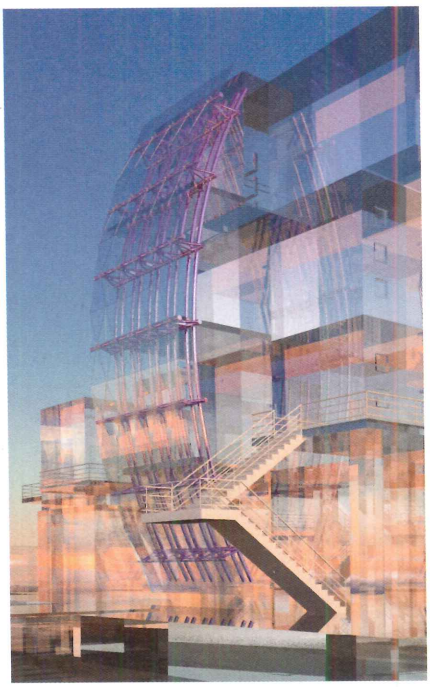

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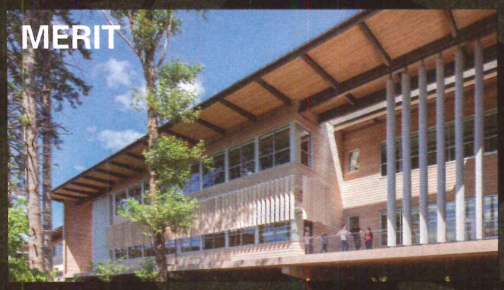

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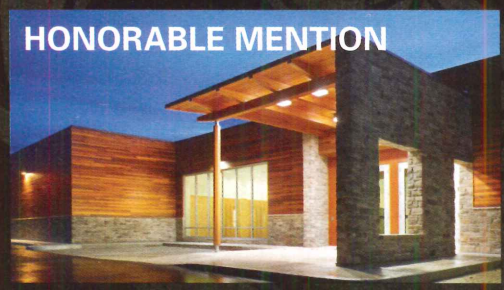

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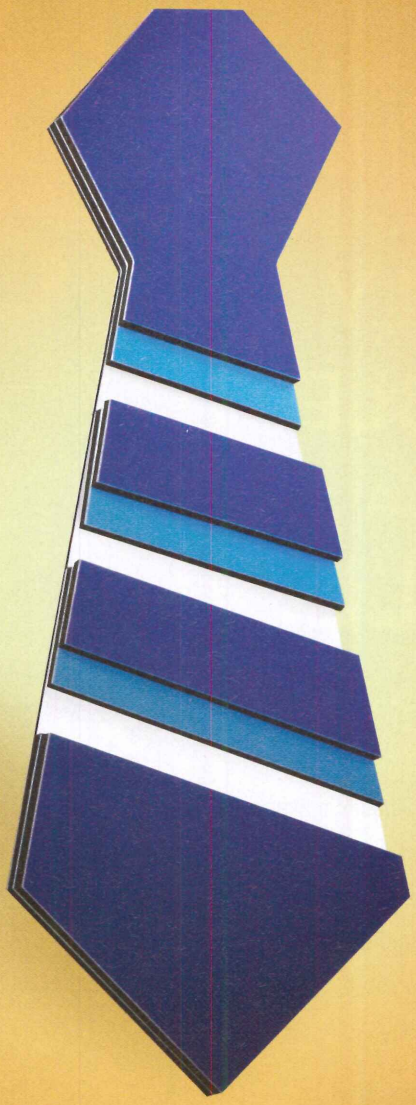

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I consider I was born when I built this building.

– Phyllis Lambert in an April 3 interview in the New York Times about her book Building Seagram *(Yale University Press), which was released last month*

Second Time Around: Will Scott Brown Get Her Pritzker?

BY WENDY MOONAN

Denise Scott Brown in front of the Provincial Capitol Building in Toulouse, France. Designed by Venturi, Scott Brown and Associates, it was completed in 1999.

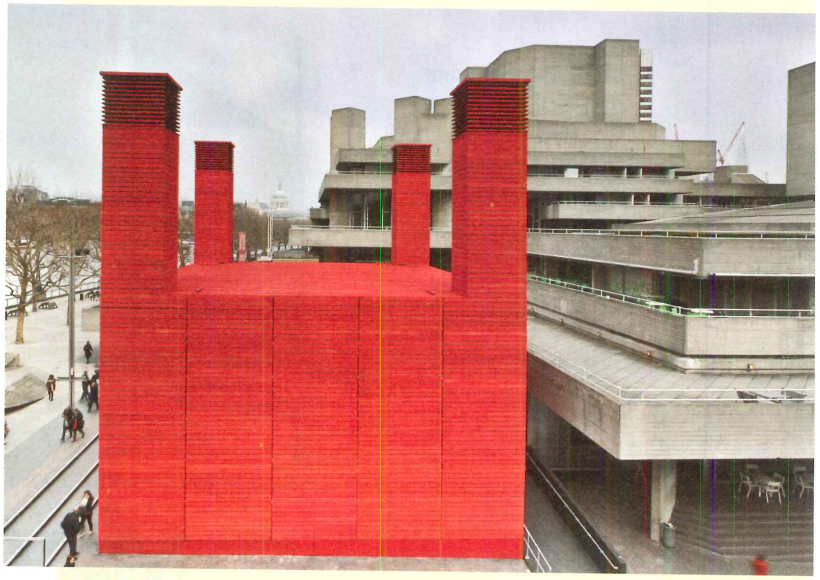
AS OF April 15, 8,500 people had signed an online petition demanding that Denise Scott Brown be given a retroactive Pritzker Architecture Prize as the equal partner and collaborator of her husband, Robert Venturi, who won the prize in 1991. Scott Brown says she is "thrilled" about the petition, which was launched in March by two students at Harvard Graduate School of Design (GSD), Caroline James and Arielle Assouline-Lichten, a few weeks after they read that Scott Brown had told the *Architects' Journal* in London that she deserved her own Pritzker. The petition was delivered to Martha Thorne, the executive director of the Pritzker Prize. In an interview, Scott Brown asked philosophically: "I am a prize loser, but which of the prize winners could have been the cause of a petition signed by more than 8,500 people?"

Should Scott Brown be given the prize retroactively? Those who signed the petition say an emphatic yes. So did several architects interviewed for this article. Traditionally, the Pritzker Prize has been awarded to only one person, almost always a man. Very few women have served as jurors. The Pritzker's mission is "to honor a living architect whose built work demonstrates a combination of those *(continued)*

For the complete story, visit architecturalrecord.com/news.

London's New National Theatre Pop-Up Puts On a Show of Its Own

DESIGNED BY Denys Lasdun and Peter Softley in a Brutalist-Corbusian mash-up, London's National Theatre opened in 1976 on the South Bank. Since April, a campus addition has turned commuters' heads as they cross the Waterloo Bridge: British architecture firm Haworth Tompkins designed an enigmatic temporary venue clad in rough-sawn, red-painted wood, a nod to the theater's board-formed concrete. Four chimneys protrude from the roof of the square, windowless volume and are key to its low-energy profile: they exploit the stack effect in order to naturally ventilate the 225-seat auditorium inside. The architects have been at work for five years on the National Theatre's master plan. The steel-frame Shed, as the new venue is called, allows it to maintain three theaters while one, the Cottesloe, is closed for redevelopment for a year. "The theater is a really important building, and we can do things on a temporary basis that we could never do permanently," says architect Paddy Dillon. "We can experiment, have fun, and explore. It's been a real luxury." *Laura Raskin*



Though the Shed will be razed in a year and most of the materials recycled, architect Paddy Dillon says it has become a prototype for future energy-efficient, "light-touch" buildings.

(Scott Brown continued)

qualities of talent, vision and commitment which has produced consistent and significant contributions to humanity and the built environment through the art of architecture." Of the 38 prizes awarded since 1979, only two women have won: Zaha Hadid in 2004 and Kazuyo Sejima in 2010, the latter with her partner, Ryue Nishizawa, of SANAA. The only other architects who have won as a partnership are Jacques Herzog and Pierre de Meuron. Last year the jury awarded the prize solely to Wang Shu, even though he works with his architect wife and partner, Lu Wenyu. (Wang has signed the petition.)

Clearly, the prize criteria are inconsistent, particularly at a time when more and more young architects are engaged in collaborative practices that no longer even go by the names of the principals. When Venturi accepted the prize, Scott Brown refused to attend the ceremony. Few members of the 1991 jury are still alive, and one of them, Lord Jacob Rothschild, refuses to be interviewed. Another, Kevin Roche, of Kevin Roche John Dinkeloo and Associates, is not at all contrite about his vote. "I was the one who proposed Bob and pushed him," Roche recalls. "It was more about his writing [referring to *Complexity and Contradiction in Architecture*, Venturi's book from 1966] and thinking than about his actual work. Denise's name really never came up. At the time the ground rules were that the prize would be given to one person."

But times have changed. "The starchitect model is outmoded; there is not one lone genius handing down all the ideas in any practice," says Peggy Deamer, a New York architect who also teaches at the Yale School of Architecture. "There are many, many examples of partnerships where it's impossible to disengage one partner's work from the other."

The online petition could also be seen as a feminist fist pump, attempting to right a perceived wrong and show that women architects need to step out of the shadows of their male counterparts, whether married to them or not. In 2002, architect Beverly Willis established the Beverly Willis Architecture Foundation in New York to "expand knowledge about women's contribution to the built environment." "I worked my ass off for 35 years and finally realized that just because I was a woman, there was no way my legacy would ever be known," she says. "I want to get women architects into the history books and change the culture of architecture."

One former Pritzker juror said, "Don't discount the negative role that prickly personalities play." Most could not be reached. Thorne responded via e-mail: "The Laureate is chosen annually by a panel of independent jurors. Those jurors change over the years so this presents us with an unusual situation. The most that we can say at this point is that I will refer this important matter to the current jury at their next meeting." To which Scott Brown says, "I suggested the inclusion ceremony to Martha Thorne three years ago."

Former Pritzker Prize winners who have already signed the GSD petition include Venturi, Hadid, Herzog & de Meuron, and Rem Koolhaas. Other prominent architects who have added their names to the list include Toshiko Mori, Frances Halsband, Deamer, Deborah Berke, Hani Rashid, Farshid Moussavi, and Jeanne Gang. Will Scott Brown finally get the award? "Are the Pritzkers just going to remain silent?" asks Laurie Hawkinson, a New York architect and partner with Henry Smith-Miller. "What's wrong with recognizing partners in architecture? Someone has to stand up and say, 'The buck stops here.' The Pritzker is considered top of the pile. The jury should be setting an example and reflecting the world as it is today." ■

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CIRCLE 65

RECORD Honors Patrons and Designers at AAF Gala

"STEVE SAID that he was at the nexus of art and science," said Peter Bohlin, referring to the late Steve Jobs, the Apple founder and his most famous client. "We are at the nexus of people and places." Bohlin used the analogy to explain the success of the Apple stores designed by his firm, Bohlin Cywinski Jackson, after receiving ARCHITECTURAL RECORD's Good Design Is Good Business Lifetime Achievement Award at the American Architectural Foundation's (AAF) Accent on Architecture gala on March 22.

He was one of three honorees at the event, which packed the Andrew W. Mellon Auditorium in Washington, D.C. While Bohlin won for his firm's designs, real-estate developer Gerald Hines accepted RECORD's lifetime-achievement award on behalf of his eponymous company's patronage of architecture. The AAF conferred its own Joseph P. Riley Jr. Award for Leadership in Urban Design on Oklahoma City Mayor Mick Cornett.

Left to right: AAF president Ron Bogle, Oklahoma City Mayor Mick Cornett, developer Gerald Hines, architect Peter Bohlin, and RECORD editor in chief Cathleen McGuigan.

After presenting Bohlin with his award, RECORD editor in chief Cathleen McGuigan asked him in an onstage interview about working with Jobs. He related his work on the Pixar building in Emeryville, California, completed a little more than a decade ago, to the nearly 20 (and counting) Apple stores his firm went on to design. "Jobs was certainly fully involved in the early years, and we found the right solutions together," said Bohlin. "As time went on, he trusted us more and more."

RECORD's other honoree is familiar with reshaping skylines. "Long before anyone coined the word 'starchitect,' Gerald Hines understood that good design added value to commercial real estate," said McGuigan. From Philip Johnson and John Burgee's 1976 Pennzoil Place in Houston to the Norman Foster–planned CityCenterDC taking shape a few blocks from the event, Hines's company has long hired prominent designers for ambitious projects. "Great design is helpful, but what it really meant to us was that we could be a very major symbol in a city," he said. "If we can achieve that, then we're going to be the last to lose a tenant and the first to gain one." ■


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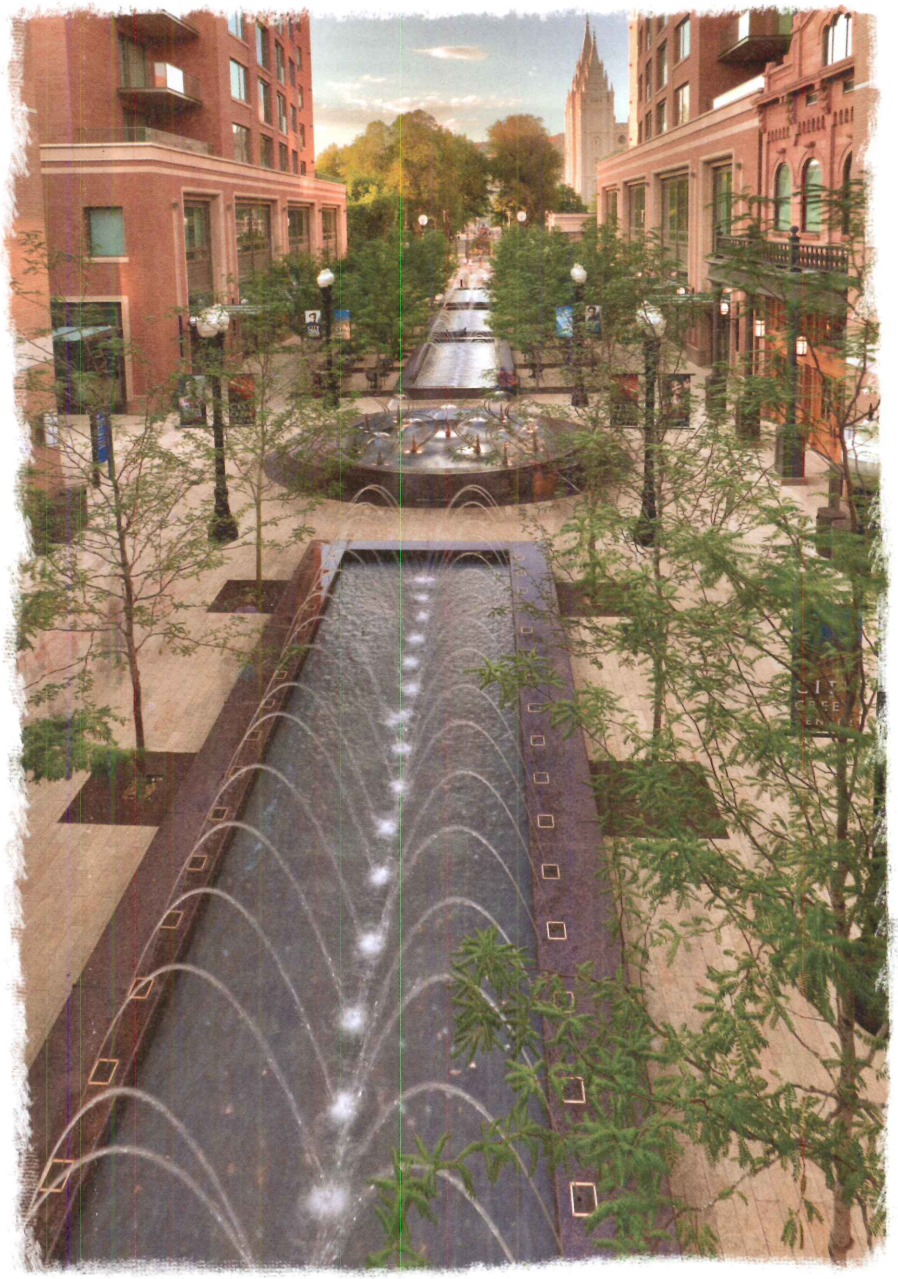

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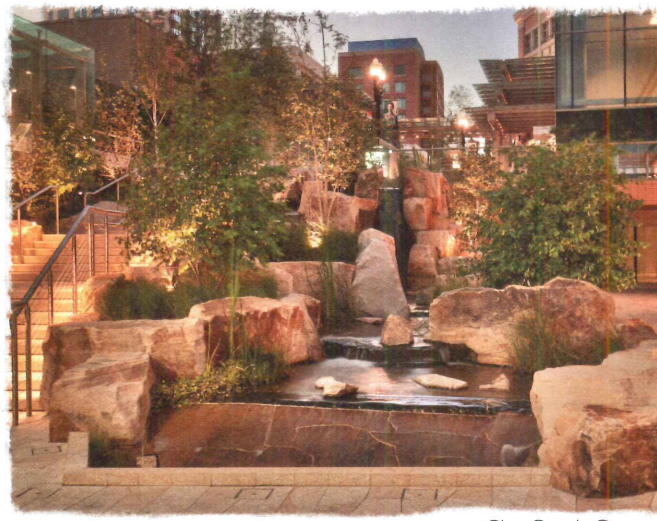
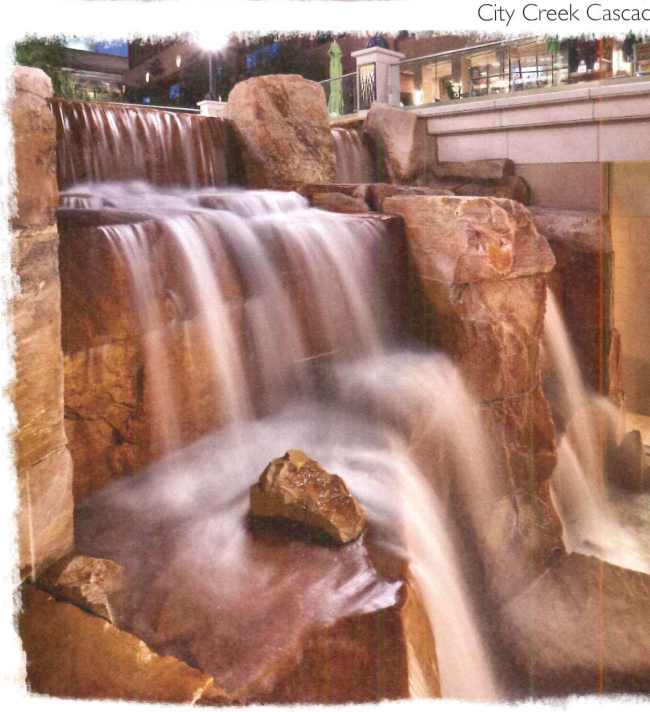


City Creek Cascad



CIRCLE 75

Starchitects Face Off in New Film

BY LAURA MIRVISS

JEAN NOUVEL may have regretted letting the cameras roll as he asked his staff, through gritted teeth, if their painstaking design for a new art museum was meant for pigeons. It was one of his milder moments in a new documentary film about architecture competitions.

The Competition features the offices of five starchitects—Frank Gehry, Dominique Perrault, Zaha Hadid, Norman Foster, and Nouvel—as they fight to win the commission for the first National Museum of Art in Andorra, a tiny country of fewer than 100,000 people sandwiched between Spain and France in the Pyrenees. Shot in 2009 by a team of Spanish architects turned novice moviemakers, the film is in its late editing stages and has been publicly shown three times—once in Spain and twice in the U.S. this spring. It offers a rare and comical look at the inner workings of some of the most prestigious firms in the business and sheds light on the ways starchitects carefully curate their public images.

Frank Gehry looks over models before his presentation.

Madrid-based architect Angel Borrego Cubero, who has spent the last five years working on the film, was slogging through his own competition in 2007 when he decided that his next project would be a commentary on the intense pressure of those events. Late that year he got a small grant from a visual-arts center in Spain to start filming a documentary. After six months of searching, he heard about a restricted competition in Andorra open to Pritzker Prize winners or those with similar honors.

The Andorra government welcomed the publicity, Cubero says. It updated the design brief with the stipulation that the firms offer unrestricted access to a film crew, which would also record the final jury presentations. Cubero hired a crew of five young Spanish architects and gave them a monthlong crash course in filmmaking. The plan was for one crew member to spend three months at each of the five offices.

But that turned out to be wishful thinking. "It ended up being a power struggle," says Cubero. Foster backed out of the competition completely before filming started.

While the cameraman at Nouvel's office had full access, the other architects were more restrictive. One crew member was in Los Angeles for nearly two months before he was granted a one-hour interview with Gehry—the only time he was allowed to set foot in the office. Perrault was more generous, allowing the filmmakers to record the progression of an ever-evolving design by two of the architect's

young Japanese staffers, who proposed a building resembling a person making the "Y" motion in the YMCA dance. Hadid, who is virtually absent from the film, sent an envoy to present to the jury because of a scheduling conflict. She granted access only to group meetings with engineering consultants, who met regularly in a tiny conference room with magenta chairs. "In the end, Nouvel was the most courageous," says Cubero.

Despite the hiccups, the filmmakers were granted access to all jury presentations, where delivery tactics ranged from the professorial to the theatrical. Gehry, wearing all black, had more than a dozen models, largely stacks of wood blocks and stones in different configurations. "We had many more, but we didn't bring them," he says in the film, going on to explain that he hates doing competitions because you can't have a back-and-forth with the client. He passes around a sample of aerated aluminum for the jury members to touch as he explains why it's the inspiration for the whole project. "It's the most original thing I've seen in years," a jury member tells him. As they clear out after the presentation, one Gehry staffer yells, "Get the critical model out before someone from Zaha's sees it!"

Left: Jean Nouvel criticizes a design for a museum in Andorra. Right: Dominique Perrault (with hand up) presents his scheme to the jury.

For his presentation, Nouvel wears a black coat with prominent shoulder padding (he looks like a count or Darth Vader). He makes a sweeping speech about the cultural importance of museums ("They become monuments of the city in place of religious buildings") but blasts the 20th-century paradigm of "art on white walls in white boxes," with its lack of regard for historical context. "Religious art is supposed to be shown in semidarkness," he explains. Of his design, one juror comments enthusiastically: "It looks a bit like *Star Wars*."

To date, none of the architects has seen the movie, and Cubero plans to keep things that way until it's finished and ready for release. If you want to know who won the competition, you'll have to watch the film. ■

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CIRCLE 22

[NEWSMAKER]

Cecilia Alemani

High Line and Frieze Curator

BY WILLIAM HANLEY

CECILIA ALEMANI'S favorite work of public art is Maurizio Cattelan's massive statue of a hand that stands in front of the stock exchange in her native Milan, with every digit

severed but an insouciant middle finger. While Alemani enjoys the provocation, she mostly admires the way it confounds expectations about what public art should be.

As the director and curator of High Line Art, she brings that spirit of disruption to the elevated New York City park designed by James Corner Field Operations (with Diller Scofidio + Renfro). Since taking the job in 2011, Alemani has exhibited a pickup truck with a brick-filled bed and artist-designed billboards that riff on commercial imagery, among many other works along the park's route. This season a new exhibition, titled *Busted*, shows artists tweaking the tropes of monumental portrait sculpture. As the show opens, Alemani is also reprising her role as curator of Frieze Projects, programming presented alongside the Frieze Art Fair. Begun in London 11 years ago, Frieze has its second turn in New York from May 10 to 13. Once again, it will occupy a 1,500-foot-long tent designed by Brooklyn architecture firm SO–IL, pitched on Randall's Island, a grassy stretch in the East River.

The Frieze fair will shift the New York art world's center of gravity to an out-of-the-way island for a few days. How does your programming respond to that?

This year, we're showing work by five artists. They're all pretty young and almost all female. The idea is to highlight the communal spaces that people create out there—we want to emphasize squares, plazas, and benches. Andra Ursuta is even creating a cemetery for art. Andra says when she grew up in Romania the only way she saw art was traveling to visit churches. In a way, that's similar to what you do when you take a ferry to Frieze: you go on a pilgrimage.

The High Line draws a much wider audience than just art pilgrims. How is it different?

Last year we had 4.4 million visitors, so it's definitely about creating a dialogue with an audience that is not an art audience. Visitors don't expect to see art. They encounter it, and the encounter could be disturbing. It could be pleasant. It takes them by surprise. The architectural and horticultural side of the High Line is so perfect, I see the art as an intervention to disrupt the beauty.

How do you determine where to intervene?

I just invite artists to come and take a walk with me. I want to see an artist's take on something that shapes a location, something that breaks it or makes it even better. We use the city as a pedestal, but the tricky thing is, the landscape and the cityscape changes every week—you walk by one day, and wow, that building went up five more stories.

The High Line has been criticized for contributing to skyrocketing development in nearby neighborhoods. How do you respond?

It's easy to blame the High Line, but galleries moved into Chelsea in the 1990s, and that was already part of its gentrification. The

Alemani has organized a series of installations, talks, and other programming for the Frieze Art Fair in New York, held in a snaking tent designed by SO–IL.

High Line could have been torn down and you would just have more buildings, but now it's a free public amenity.

How will the High Line's third phase and Hudson Yards development affect your work?

I'm excited, because half of section three will be renovated like the rest of the park, but half will be left wild. There I could see big monumental sculptures, but I really don't have any idea yet. I usually just go to an artist I like, and I'm usually pleasantly surprised. ■

noted

Arcosanti Architect Paolo Soleri Dies at 93

Paolo Soleri, the iconoclastic architect and urban theorist and one of the last living students of Frank Lloyd Wright, died on April 9 at 93. Born in 1919 in Turin, Italy, Soleri was best known for Arcosanti, his "urban laboratory" on a mesa in central Arizona.

Weiss/Manfredi to Design Kent State Design School

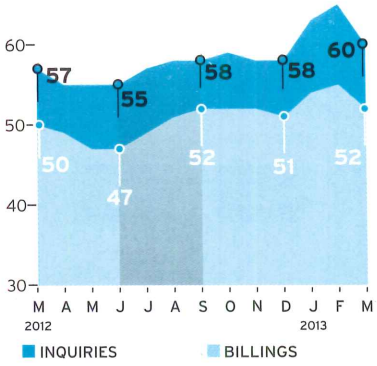
Kent State University in Ohio announced in late March that it has chosen Weiss/Manfredi's concept—three-tiered, rectangular glass volumes—for the College of Architecture and Environmental Design. The New York–based firm was selected from a preliminary list of 30 international firms.

12 Firms Short-Listed for New Nobel Foundation Home

The short list for a new Nobel Center at Blasieholmen, a small peninsula in Stockholm, includes OMA, Herzog & de Meuron, BIG, SANAA, Snøhetta, and David Chipperfield. The building will house a museum, education and research facilities, an event space, a restaurant, café, and shop.

Architects to Reimagine Madison Square Garden

As the New York City Planning Commission debates Madison Square Garden's future above Penn Station, the Municipal Art Society has asked Diller Scofidio + Renfro, Santiago Calatrava, SHoP Architects, and Skidmore, Owings & Merrill to present, on May 29, ideas for reenvisioning both.



Growth Eases, ABI Still Up

Though the March Architecture Billings Index (ABI) score of 51.9 reflects a continued demand for design services, the drop from February's score of 54.9 signals that "the recovery has been uneven across the major construction sectors," said AIA chief economist Kermit Baker, and that therefore the pace of growth has eased.

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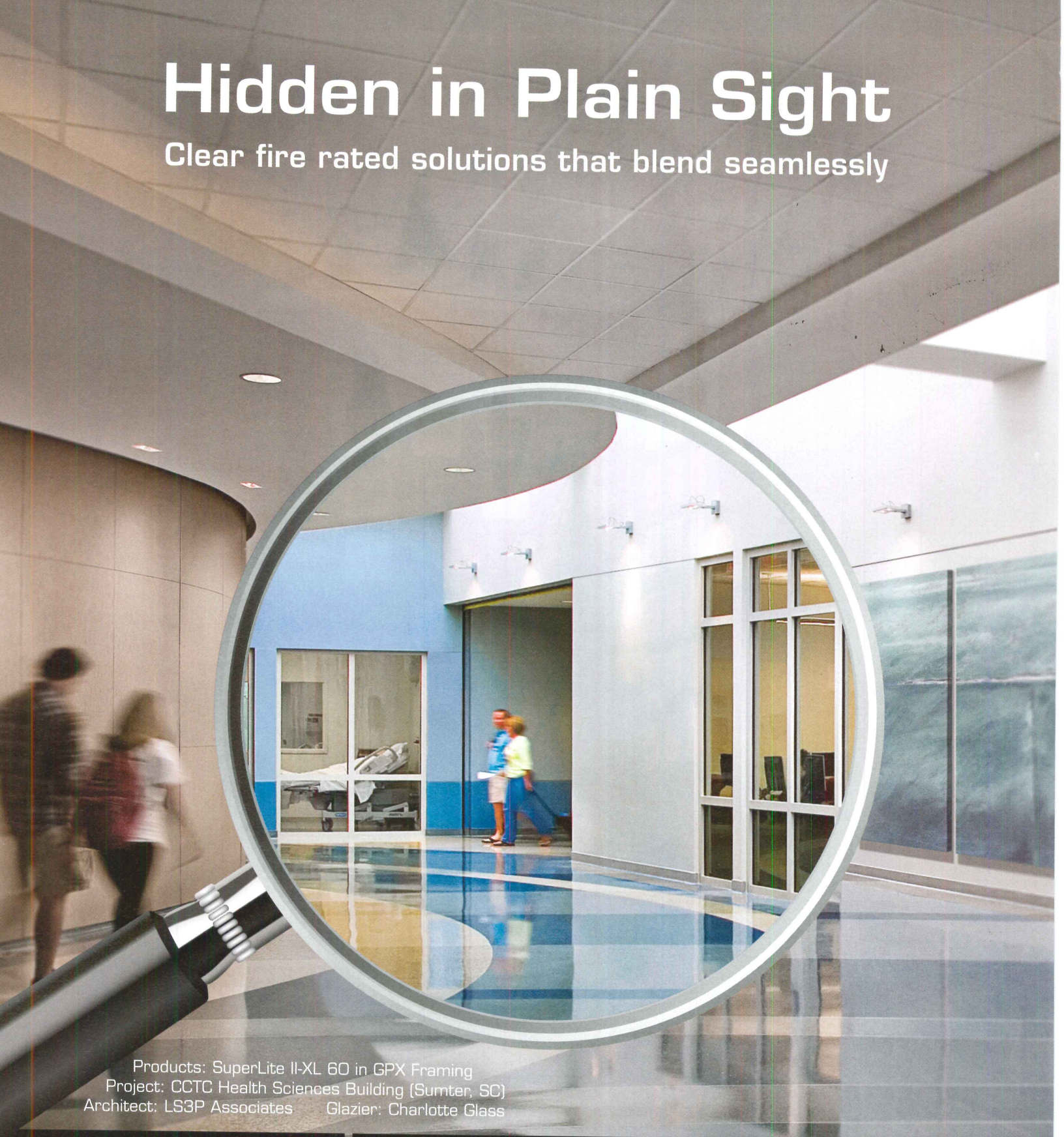

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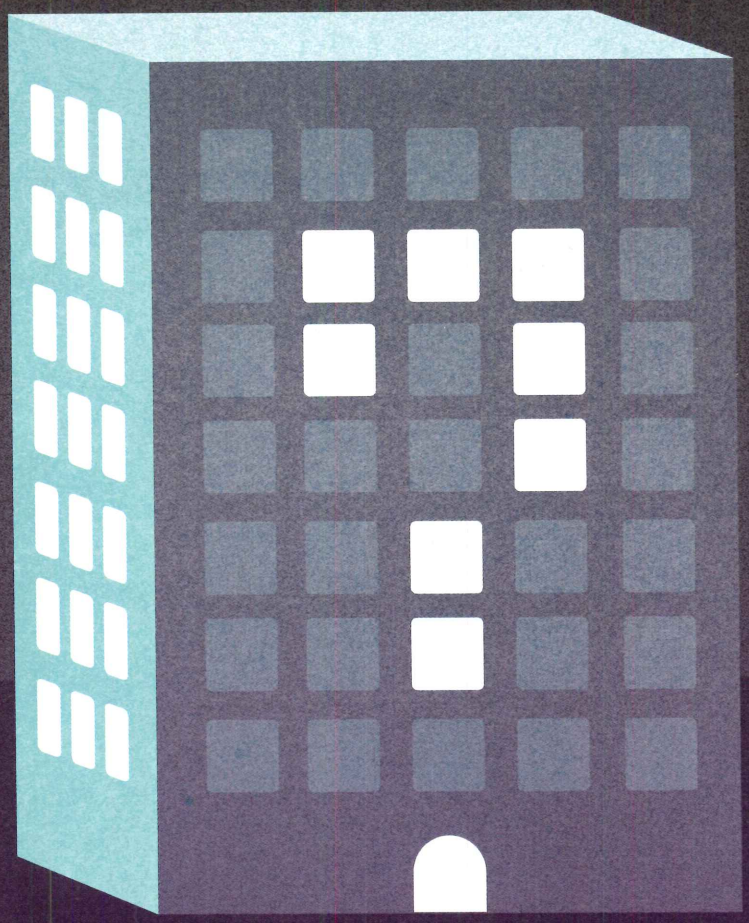

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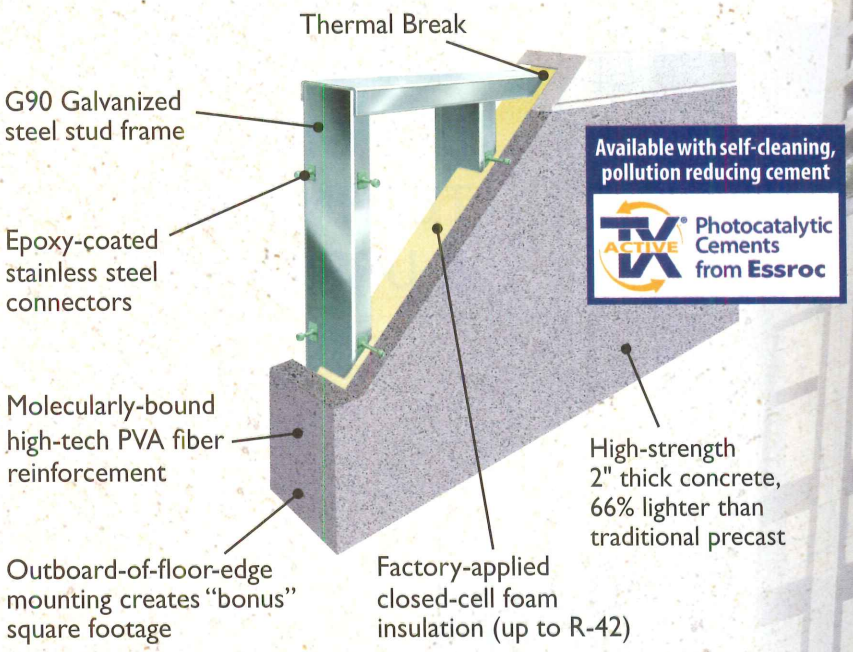

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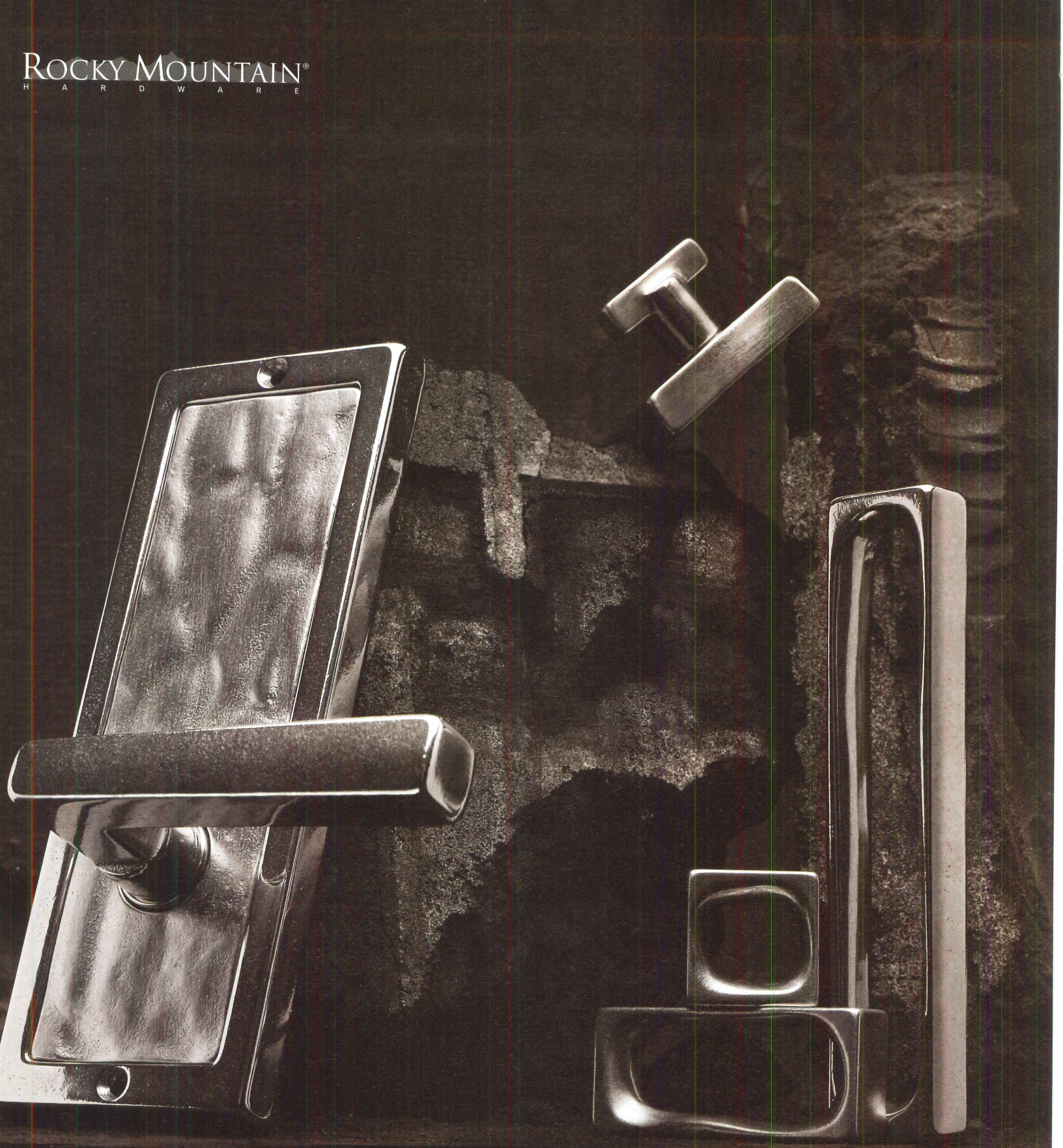

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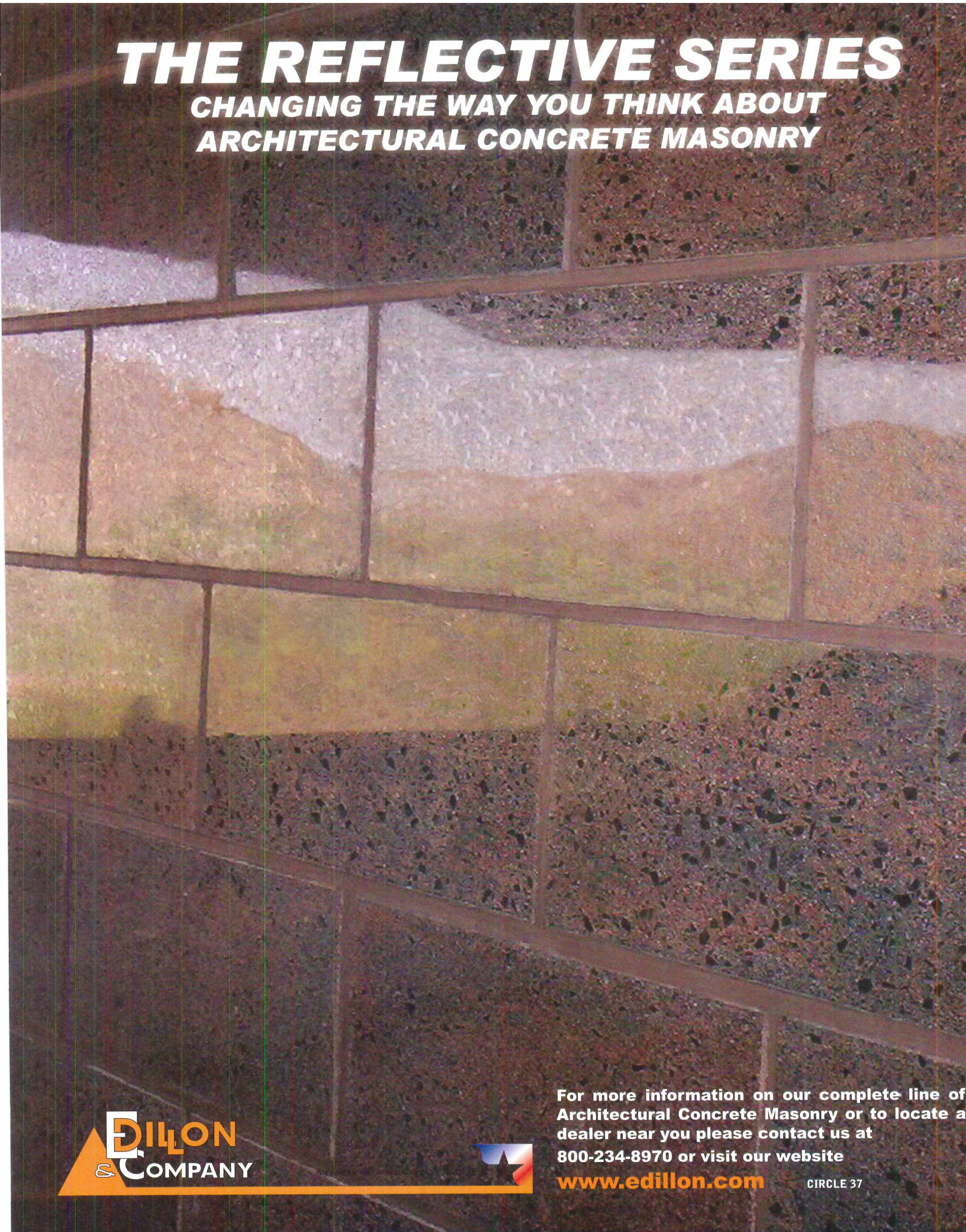
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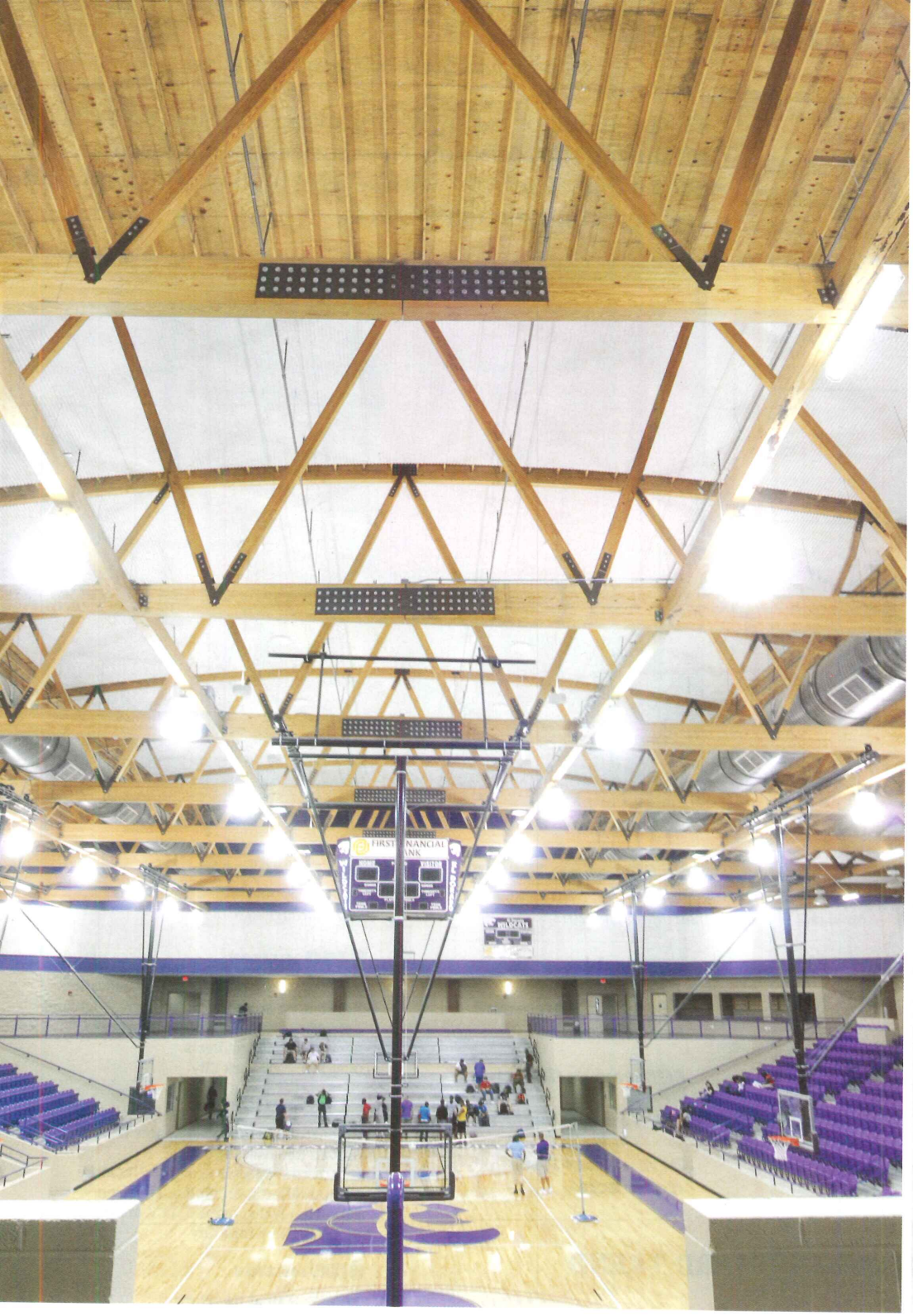

El Dorado High School, El Dorado, AR | Architect: CADM Architecture | Photo: W.I. Bell, courtesy of WoodWorks

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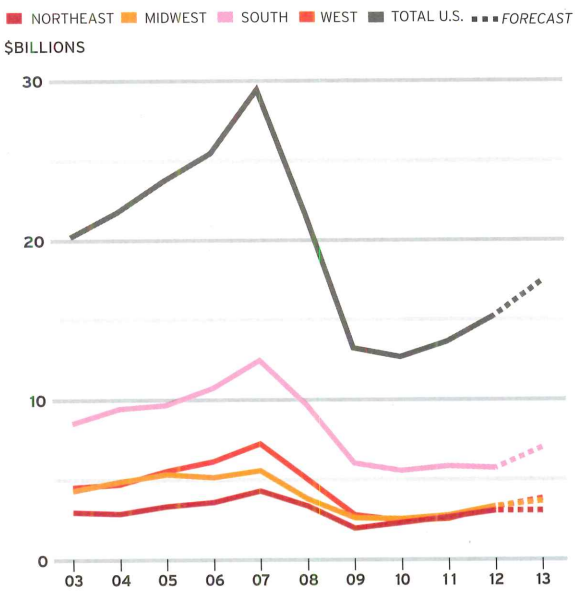
The retail sector is slowly improving after taking a sharp hit during the recession. New York City, in particular, has been a hub of activity, with several high-profile renovation and new-construction projects.

Retail Starts by Region

In addition to U.S. total and 2013 forecast figures



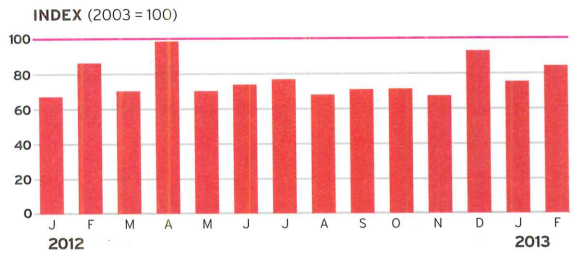
Top Metro-Area Markets

Ranked by total retail construction starts 1/2012 through 2/2013

	REGION	$MILLIONS
1	NEW YORK CITY	1,764
2	CHICAGO	651
3	DALLAS	494
4	WASHINGTON, DC	459
5	LAS VEGAS	429

Alchemist, Miami; Rene Gonzalez Architect (page 132)

The Dodge Index for Retail Construction 1/2012–2/2013



The index is based on seasonally adjusted data for U.S. retail construction. The average dollar value of projects in 2003 serves as the index baseline.

Top 5 Design Firms

Ranked by retail construction starts 1/2011 through 2/2013

1. BRR Architecture
2. Raymond Harris and Associates
3. SGA Design Group
4. MulvannyG2 Architecture
5. Perkowitz+Ruth Architects

Top 5 Projects

Ranked by retail construction starts 3/2012 through 2/2013

$400 MILLION

PROJECT: Macy's Herald Square Renovation
ARCHITECTS: Studio V Architecture, Highland Associates, Charles Sparks+Company, Kevin Kennon Architects
LOCATION: New York City

$250 MILLION

PROJECT: World Financial Center Winter Garden Renovation
ARCHITECTS: Spector Group, Pelli Clarke Pelli Architects, Omniplan, Morrison Dilworth+Walls, AvroKO, BCV Architects
LOCATION: New York City

$105 MILLION

PROJECT: Mall at Bay Plaza
ARCHITECT: Altoon Partners
LOCATION: Bronx, NY

$101 MILLION

PROJECT: City Point, Phase II
ARCHITECTS: CookFox Architects, SLCE Architects
LOCATION: Brooklyn, NY

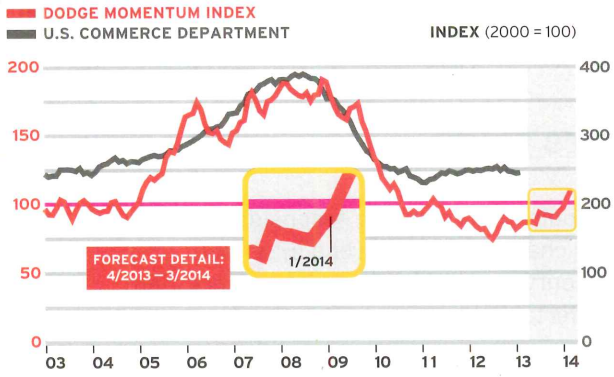
$91 MILLION

PROJECT: Brickell CityCentre
ARCHITECT: Arquitectonica
LOCATION: Miami

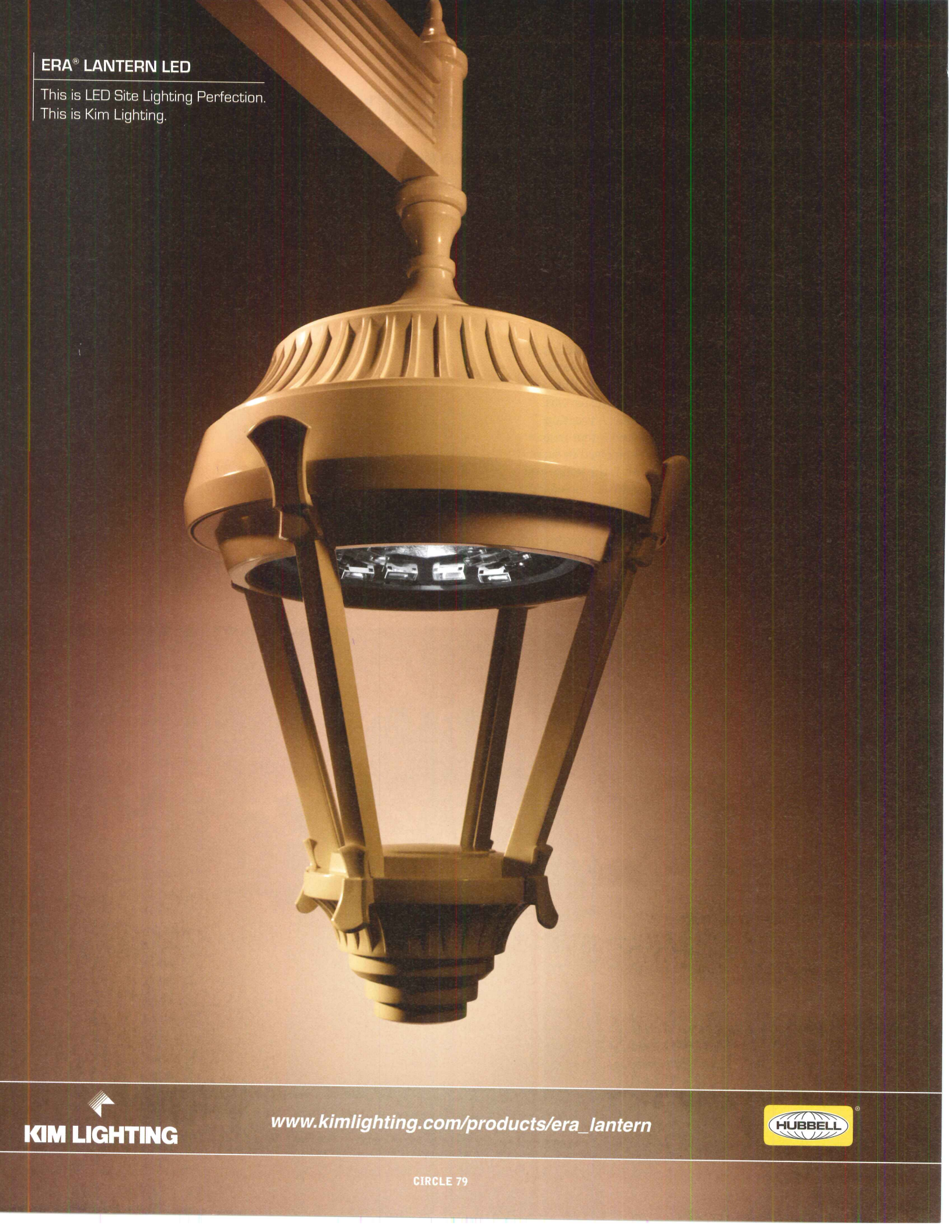
MOMENTUM INDEX SUSTAINS UPWARD TREND

In March, the Dodge Momentum Index rose 5.9%, to 109.4. The increase, the fourth in a row, indicates that owners and developers see an improved climate for construction.

The Dodge Momentum Index is a leading indicator of construction spending. The information is derived from first-issued planning reports in McGraw-Hill Construction's Dodge Reports database. The data leads the U.S. Commerce Department's nonresidential spending by a full year. In the graph to the right, the index has been shifted forward 12 months to reflect its relationship with the commerce data.



McGraw-Hill Dodge Analytics tracks projects from predesign through construction to capture hard construction costs, square footage, and other key statistical information.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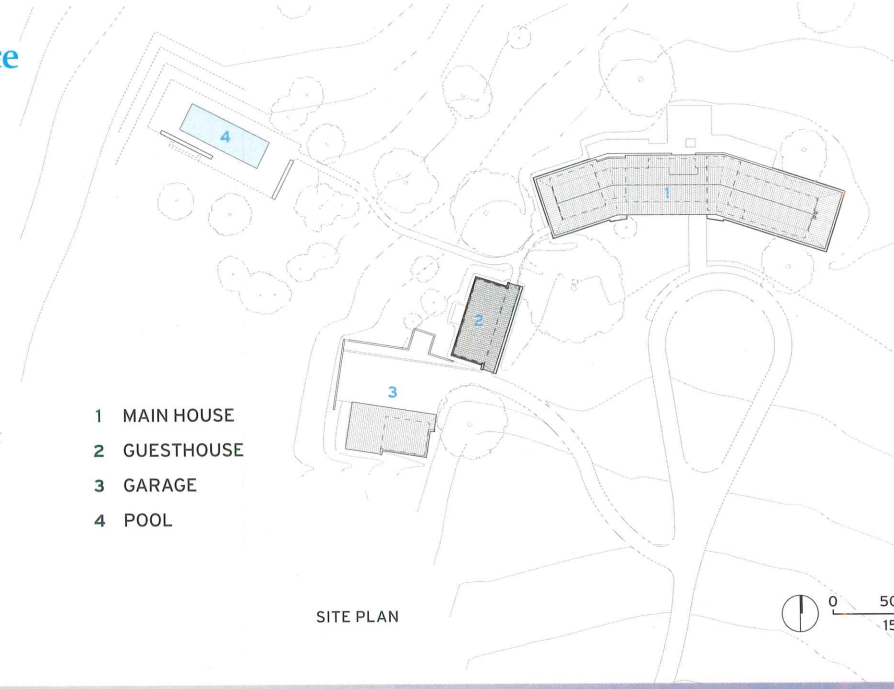
A Client for All Seasons

Laura Bush took a lead role in the design of the new presidential library, as she did once before with the family ranch house.

BY INGRID SPENCER

The George W. and Laura Bush Residence
Crawford, Texas
David Heymann, Architect

WITH THE George W. Bush Presidential Center by Robert A.M. Stern Architects opening in Dallas this month, it is worth taking a look at another architectural commission from "W." The rarely seen ranch house in Crawford, Texas, was designed by David Heymann of Austin in 1999. A vacation house, of course, is very different in scope and intent from a presidential library. But the two architects involved in each project agree that the principal client for both the house and the library was the former first lady, Laura Bush, who encouraged them to design to the highest environmental standards. She assumed her role as an architecture client easily: Laura Welch Bush had grown up in Midland, Texas, the daughter of a home builder. "I was surrounded by construction projects," she says, "and architectural plans were lying around our house all the time." Her father often moved the family into



the latest house he had built, giving the client-in-waiting much exposure to residential architecture.

The house at Prairie Chapel Ranch, the Bushes' 1,580-acre tract of land in Crawford (population 712), was dubbed the "Western White House" during Bush's two terms. About 100 miles northeast of Austin, the modest, well-engineered, modern dwelling sits comfortably in the Texas terrain. Despite the anemic environmental regulations that characterized the Bush presidency, back home the Bushes are patient stewards of their land, living in a house that is environmentally sustainable.

In 1998 a friend of the couple, Deedie Rose, a Dallas arts and architecture patron (her own house was designed by Antoine Predock), heard Heymann give a lecture at the University of Texas at Austin. Heymann, then associate dean of the undergraduate programs at UT's School of Architecture, talked about his environmental strategies. "Deedie later told me, 'I have your architect,'" says Laura Bush.

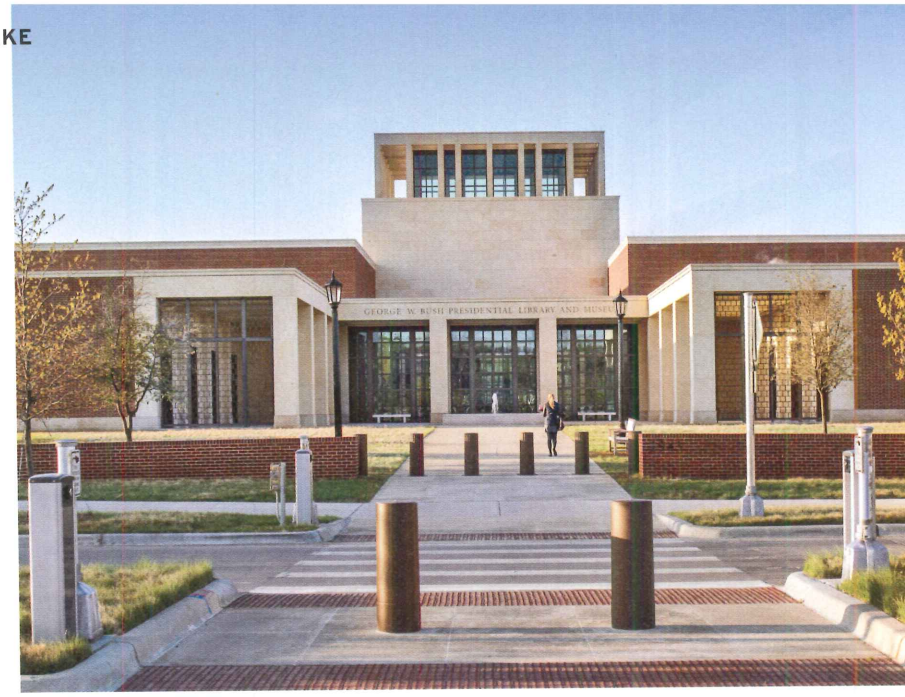
The Crawford residential complex comprises three separate structures totaling less than 4,000 square feet for the interior spaces. Heymann sited the main house, a narrow rectangle broken into an arc, on a slight crest with views to the north and a grove of live oaks to the west. He then placed a two-bedroom guest cottage and a garage southwest of the main house. The wood stud-framed house is clad in Lueders roughback limestone, quarried locally. "People usually wanted smoothly hewn limestone then," says Heymann, "so the roughback was considered waste. But the Bushes liked the idea of using a leftover material for the house." The limestone's insulative characteristics keep the house cool in summer and warm in winter, helped by its thickness: walls may be 16 inches deep to accommodate pocket screens for the steel-framed windows and doors.

Within the main house, 40-foot-wide, gang-nail trusses, spaced 2 feet apart, allow column-free living areas with deep

porch overhangs (typically 10 feet) on all sides. "President Bush asked if there could be accessibility to the outdoors from every room," says Heymann. "We went farther. To get from one room to another you go outside and then back in, sheltered by the deep porch." For strong prairie rains, a gutter wraps around the house at grade, collecting water through rocks and a mesh filter and depositing it in a 42,000-gallon underground cistern. The water is used to irrigate the plants around the house, along with treated gray- and blackwater from the sinks, showers, and toilets. A geothermal system heats and cools the dwelling. "The house is a true mediator between those who live there and the landscape," says Heymann. Although the Bushes now have a home in Dallas too, the Crawford ranch offers them a calm refuge, albeit with an ever-present Secret Service detail.

SOOTHING TURF
Built in 1999, George W. and Laura Bush's ranch in Crawford became famous as the "Western White House." Yet the limestone-clad dwelling was not extensively published for security reasons. Deep overhangs (above) create porches on all sides that are accessible to open living spaces (top).

The George W. Bush Presidential Center
Robert A. M. Stern Architects

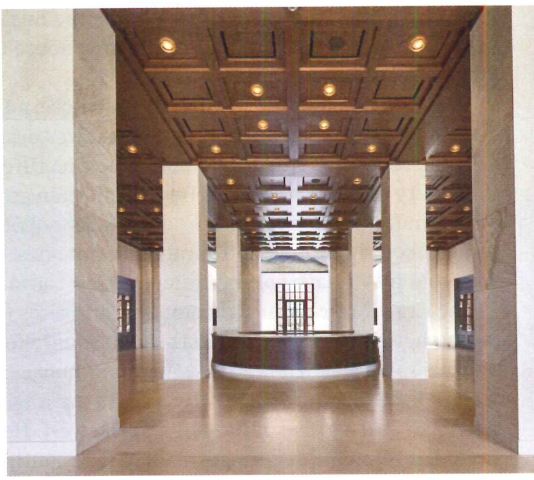


STRIPPED CLASSICISM
The presidential center recalls the architecture of government buildings of the 1930s, including the monumental lobby (below). Visitors to the library and museum enter through the limestone north portico (above), while scholars enter the institute on the west (left).

THE GEORGE W. Bush Presidential Center, designed by Robert A.M. Stern Architects and located on the campus of Southern Methodist University (SMU) in Dallas, does not reflect the colorful nature of the 43rd president's personality. Nor does it symbolically suggest the fact that Bush was the first president of the 21st century. Although the three-story brick-and-limestone building is the first presidential library to contain e-mails—some 200 million—its design is traditional, not contemporary. The 260,560-square-foot structure, which also houses galleries, a museum store, policy institute, restaurant, and 360-seat auditorium, succeeds best as a sedate and sustainable (LEED Platinum–certified) piece of abstracted classical architecture, meant to fit in with SMU's early-20th-century Georgian Revival buildings. Freedom Hall, the museum's central area, is topped by a 67-foot-high limestone-and-glass lantern that dramatically ushers in natural light by day and glows at night. Below the lantern, a 20-foot-high, 360-degree, high-definition LED screen displays changing digital artwork.

The exhibitions promise to keep us pondering, with interactive "What would you have done?" scenarios, historical objects, a re-created Oval Office, and an authentic, reassembled White House Situation Room. Yet the architecture might reveal more about the taste of former librarian and schoolteacher Laura Bush, who was, according to Stern, "the principal client throughout the process." Her touch can be seen everywhere, including in a Texas-style White House Rose Garden, complete with native plants from the Bushes' Crawford ranch, and carpets in the institute by Afghan rug company ARZU. The latter were executed as part of the Bush Institute's Afghan Women's Project, which the first lady began championing during her husband's presidential terms.

Laura Bush's choice of the architect was boosted by recommendations from her design committee, whose members included developer Roland Betts, George W. Bush's fraternity brother at Yale and co-owner of the Texas Rangers baseball team with him from 1989 to 1994; family friend Deedie Rose, whose husband, Edward "Rusty" Rose, was also involved in the ownership of the Rangers; and architect and professor Witold Rybczynski, whom the Bushes appointed to the U.S. Commission of Fine Arts in 2004. Stern is also the dean of the architecture school at Bush's alma mater. "And SMU is my alma mater," says Laura Bush. "It was a perfect fit."



The 15-acre site around the library offered space for the Bushes' real love, the Texas landscape. Landscape architect Michael Van Valkenburgh teamed up with Stern to create a public park surrounding the building that is expected to mature into a re-created Texas prairie. Stormwater runoff and underground cisterns will irrigate the native grasses, meadows, and indigenous trees.

After eight years of controversial decisions and with the president's approval rating at 22 percent when he left office, both Bushes perhaps hope the park and the library/museum will encourage visitors to reflect upon his highest actions. "We did not talk about approval ratings," says Stern of his many discussions with Laura Bush. "This is a building about the dignity of the presidency. It's designed to bring people back again and again." ■

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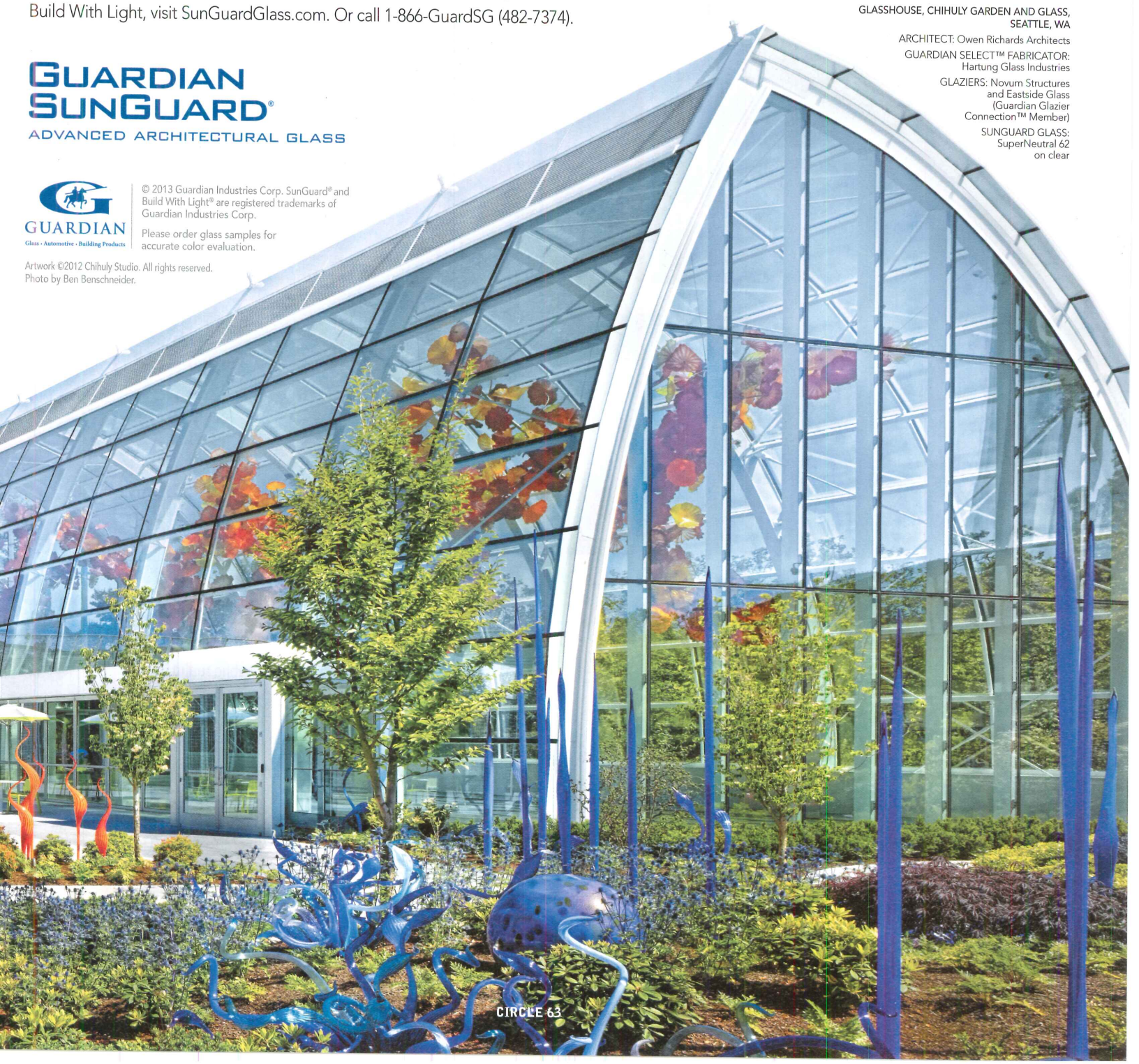

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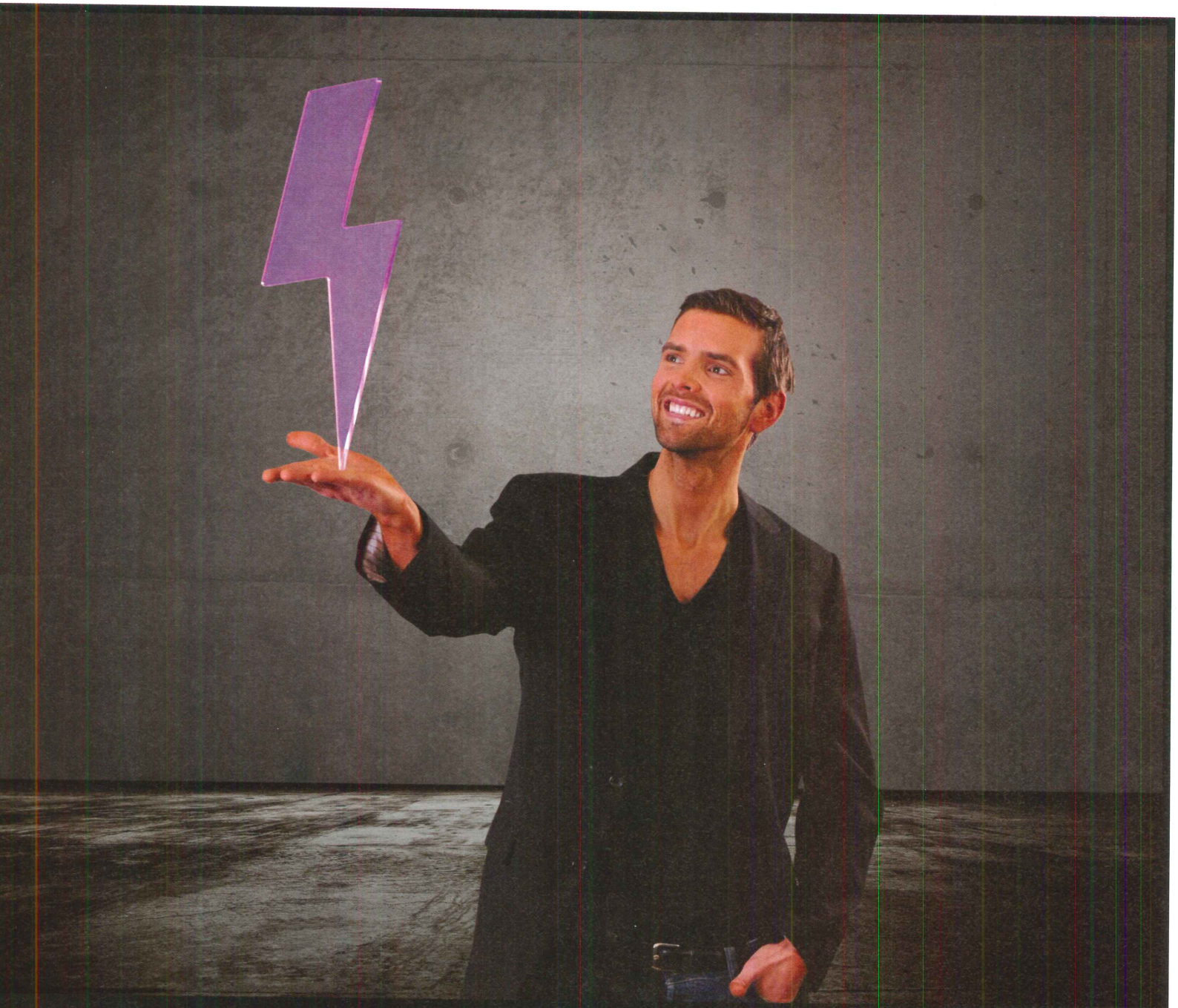

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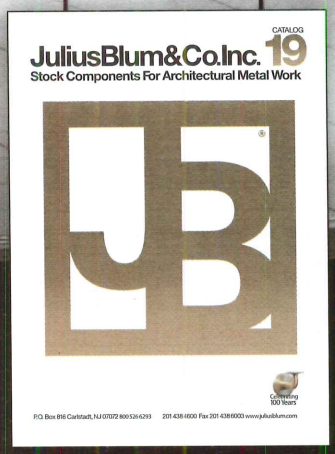

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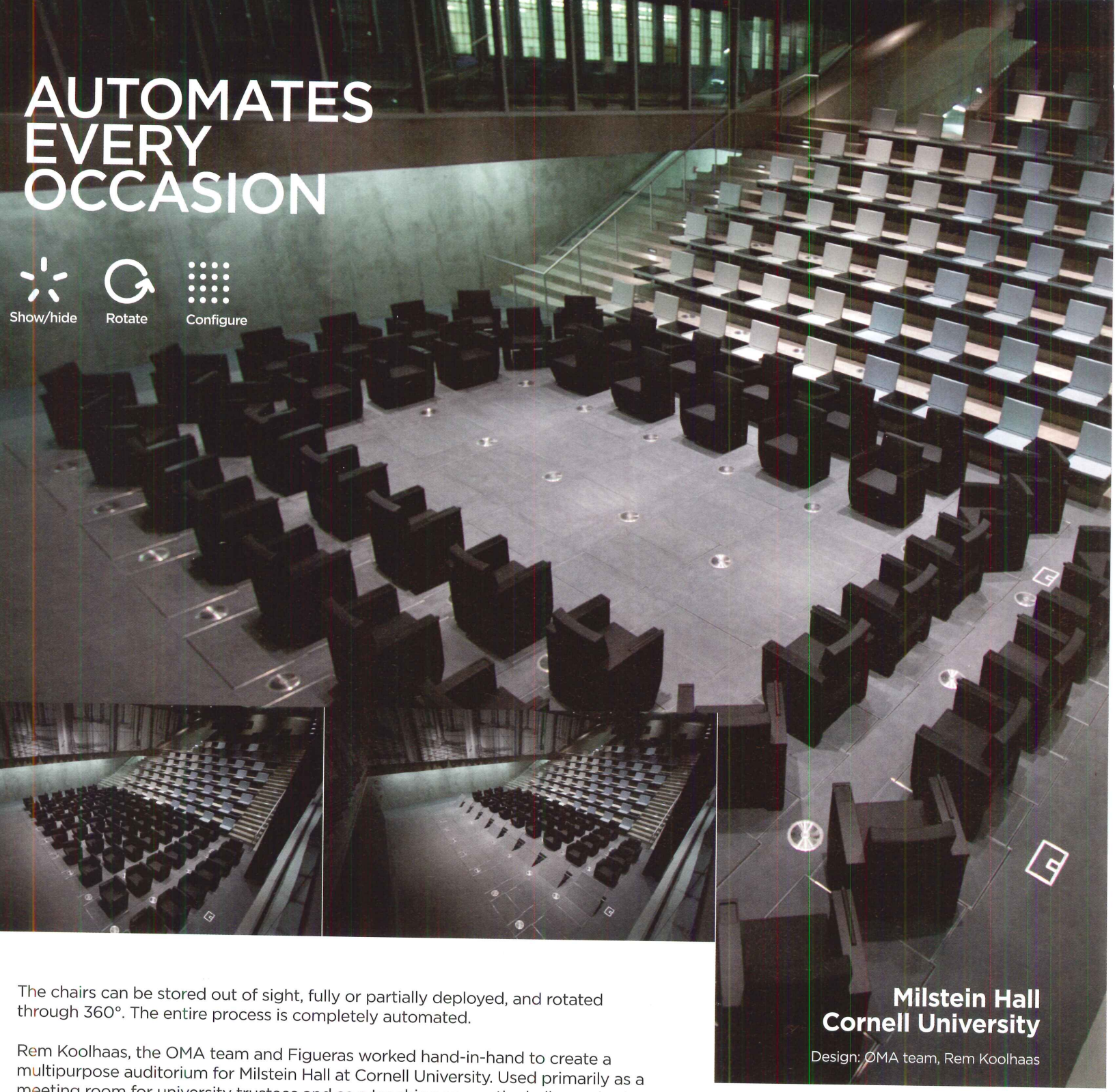

Milstein Hall
Cornell University

Design: OMA team, Rem Koolhaas

The chairs can be stored out of sight, fully or partially deployed, and rotated through 360°. The entire process is completely automated.

Rem Koolhaas, the OMA team and Figueras worked hand-in-hand to create a multipurpose auditorium for Milstein Hall at Cornell University. Used primarily as a meeting room for university trustees and as a teaching space, the hall can also be transformed into an open space where a wide range of events can be held.

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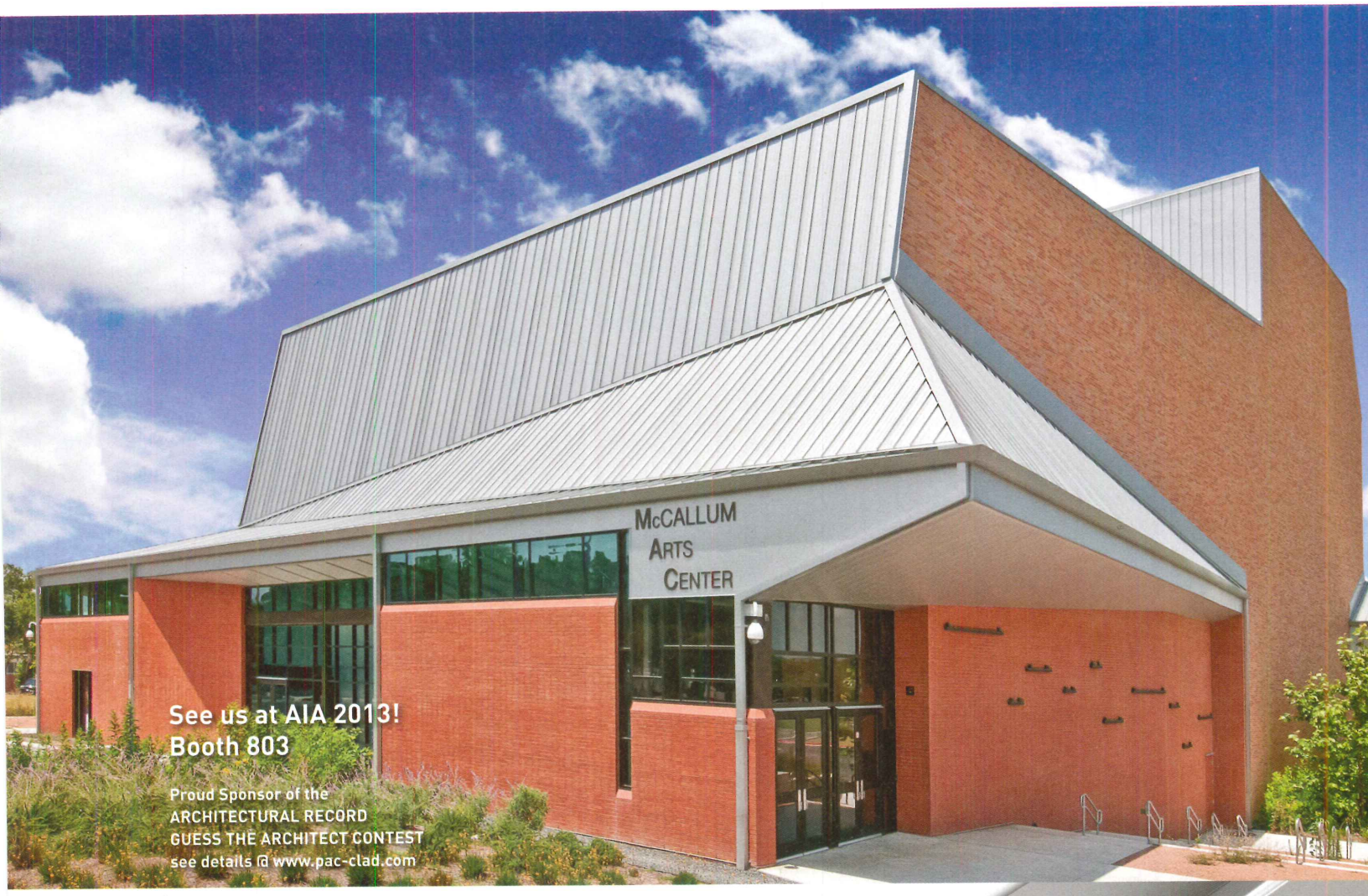

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CIRCLE 67

ARCHITECTURAL
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Guess the Architect Contest

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A new monthly contest from the editors of RECORD asks you to guess the architect for a building of historical importance.

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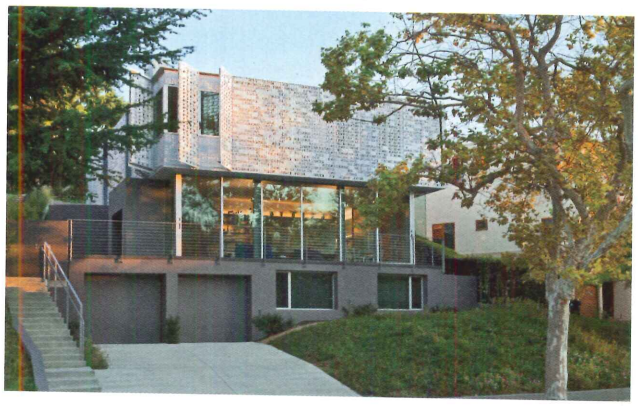
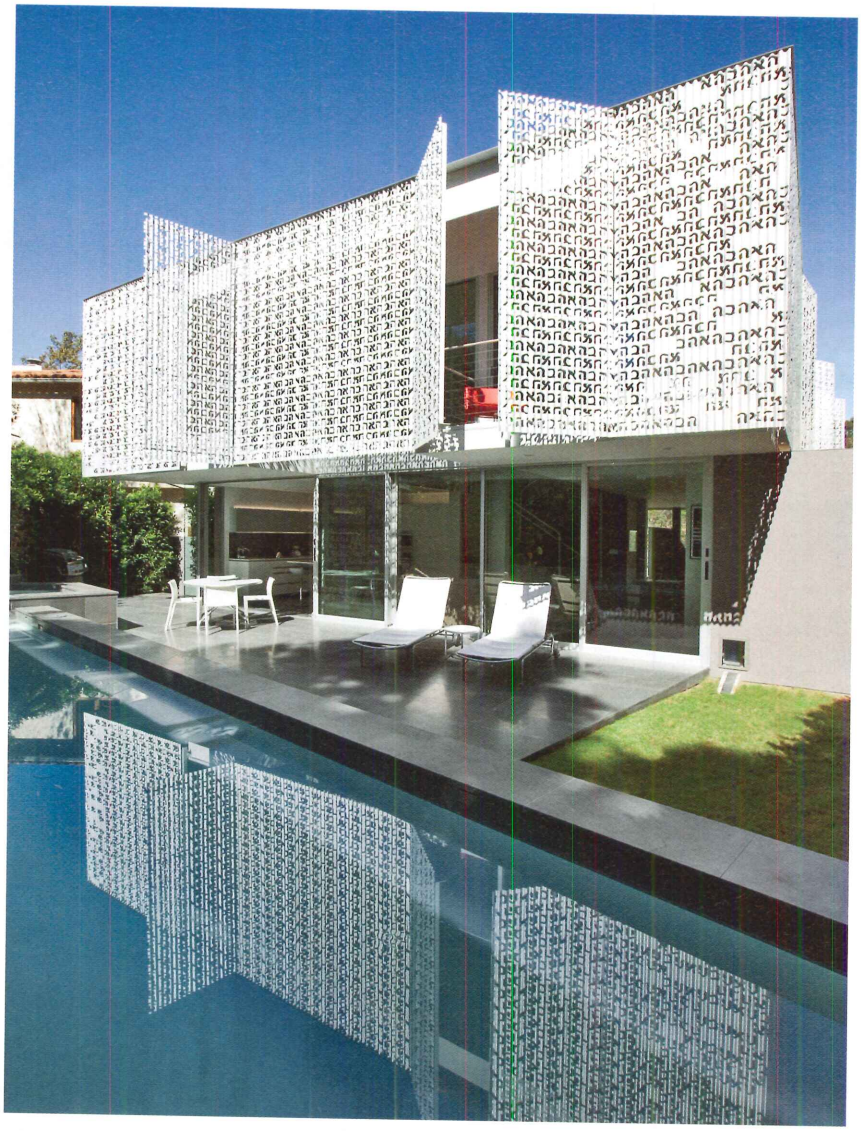
By entering, you have a chance to win a video camera. See the complete rules and entry form online at archrecord.com.

perspective **house of the month**

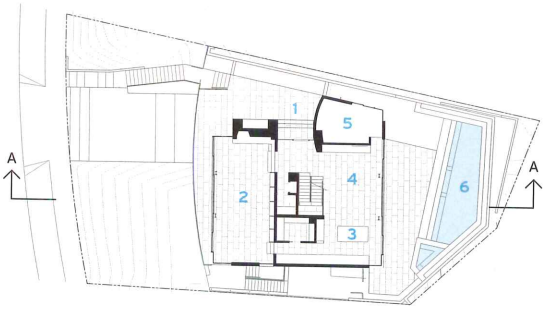
LOS ANGELES ARCHITECT BOB HALE, OF RIOS CLEMENTI HALE STUDIOS, WRAPPED HIS CHEVIOT HILLS HOUSE IN A PERFORATED-METAL SCREEN PUNCHED WITH THE HEBREW WORD FOR LOVE. **BY LAURA RASKIN**



The architect set the stucco ground level into the hillside and pushed the house back from the street (above). The perforated-metal screens on the third floor conceal balconies overlooking a basalt-edged lap pool (right). The basalt floor is carried inside to the kitchen and living spaces on the second floor, where it complements bright furnishings (left).



1 ENTRANCE
2 LIVING/DINING
3 KITCHEN
4 FAMILY ROOM
5 GYM
6 POOL
7 STORAGE
8 BEDROOM



GROUND FLOOR

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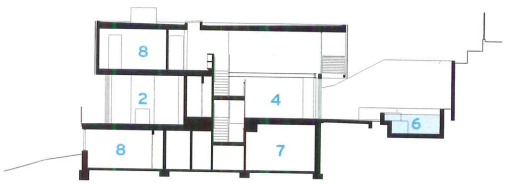

SECTION A - A

0 16 FT. 5 M.

IT'S PROBABLY safe to bet that most architects have designed their dream house—on paper, in their heads—many times over. Bob Hale, of Rios Clementi Hale Studios, was lucky enough to make one of his iterations a reality in Los Angeles's Cheviot Hills neighborhood. The three-story, 5,000-square-foot house replaced a 1940s structure that could not be adapted (Hale donated the scrap material to Habitat for Humanity).

Set partially into a hill, the new house's concrete-masonry lower level contains a separate apartment with its own entrance. "We wanted to think about it as multigenerational," says Hale, who has two grown children. The main living spaces on the second floor are encased in glass and lead to a terrace and pool. But it's the third floor, which appears to float, that provides the poetry. This steel-moment-and-wood-frame level is wrapped in corrugated-aluminum panels with perforations that spell *ahava*—"love" in Hebrew. "We tend to not open the screens because it's almost like they're not there," says the architect. "They read more like a cloud and create great shadows."

They represent something immaterial, too. His first wife of 23 years died in 2006, and, he says, "I was fortunate enough to fall in love again." It is Hale's new wife, Maxine Morris, who had the idea for the *ahava* perforations. "It was like, OK, let's really start over and make a new way," says Hale. "I didn't start out to make a home wrapped in love, but in fact that's what I ended up with." ■

View additional images at architecturalrecord.com.

Publix GreenWise – Tampa, FL
Architect: R.R. Simmons Construction Co.
Photo Credit: Nino Giannotti

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CIRCLE 56

Where All Your Stuff Comes From

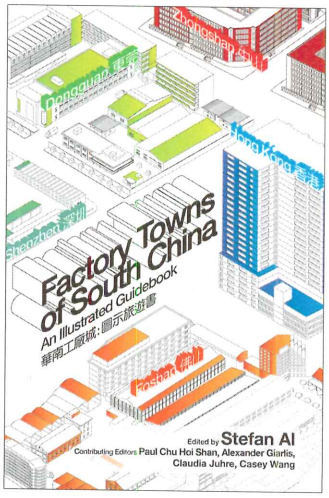
Factory Towns of South China: An Illustrated Guidebook, *edited by Stefan Al. Hong Kong University Press, 2012, 216 pages, $25.*

Reviewed by Clare Jacobson

OPEN THIS book and you cannot help but think of *Great Leap Forward,* the 2001 tome generated by Rem Koolhaas and his colleagues at the Harvard Design School Project on the City. Both books are university-based, research-driven, essay-enhanced, muddy-photography-filled studies of urbanism in the Pearl River Delta (PRD), the manufacturing center of China. The dozen years between *Great Leap*'s "initial overview" and this "critical evaluation" have been filled with enormous progress (or, some say, regress). In *Factory Towns of South China,* editor Stefan Al provides an in-depth guide to the changed and changing landscape of the PRD, adding all-important detail to what many experience only through media sound bites.

The first part of *Factory Towns* includes texts on urbanization, demographics, economics, and infrastructure in south China. By fitting 12 essays and numerous charts into 60 pages, Al chose breadth over depth. This is not a bad thing, as it covers many key topics and contains writing of high quality. Works ranging from Claudia Juhre's data-filled essay on environmental degradation to Minnie Chan's journalistic take on worker strikes to Rex Wong's thoughtful discussion of the effects of governmental policy on design are much more than CliffsNotes to the PRD. I would have liked a detailed text on the factory towns that have been abandoned or converted to other uses, a new phase of development that Al and others only hint at. But this is a minor quibble with an otherwise thorough introduction.

The second part—the bilingual "illustrated guidebook" of the subtitle—looks at factory towns in six metropolitan areas: Hong Kong, Shenzhen, Dongguan, Guangzhou, Foshan, and Zhongshan. The highly visual guidebook form (think *Eyewitness,* not *Lonely Planet*) is a clever device, as it is likely that most readers will never actually visit, say, Donghuanjie Town's Video Game Machine Factory. Detailed research from graduate students in the urban-design program at the University of Hong Kong takes the armchair traveler there. The guide includes brief histories of each city's development, descriptions of the products made in each factory, and steps along the production line—specifics that make a place interesting. Precise maps and clearly rendered isometric drawings of factories and associated housing say "you are here." Some aspects of the guide—repetitive pictures of canteen lunches, interviews with workers who reveal little, and somewhat overwrought graphic design—are less successful. But it is fun to flip through the book, to look through a window into a world that has such import on the rest of the planet. For me, though, the book's essays are the place where readers will want to spend the most time. ■



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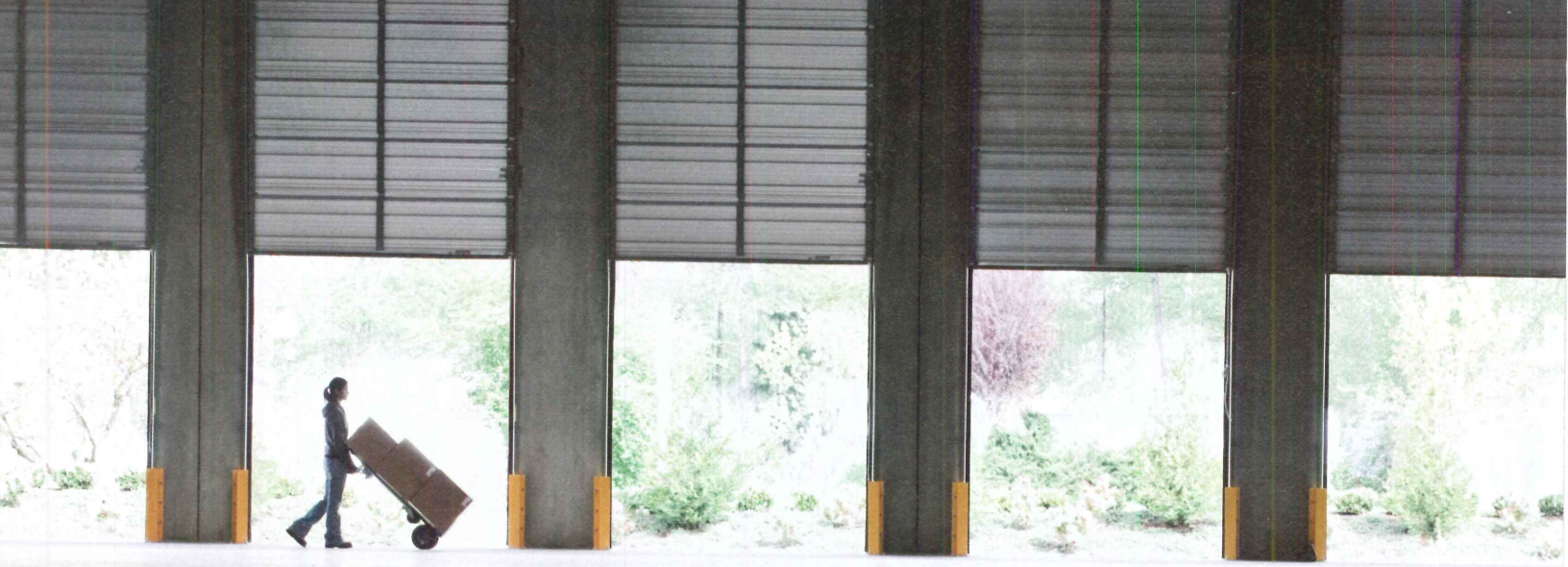

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LP icon mini post top

Design: Mads Odgård. LP ICON MINI POST TOP provides mainly direct downward illumination. In the opal version the shade is lit up from within and creates a soft diffuse upwards light. In the basic version the shade is opaque. Depending on the choice of reflector, the downward lighting characteristics will vary. The reflector types have been designed in three variations to provide either asymmetrical or symmetrical distributions of light.

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Branching Out

New architectural building solutions redefine their product types, including a visually arresting collection of clothing racks for retail, residential, and gallery spaces.

By Rita Catinella Orrell

Les Ailes Noires Rack System

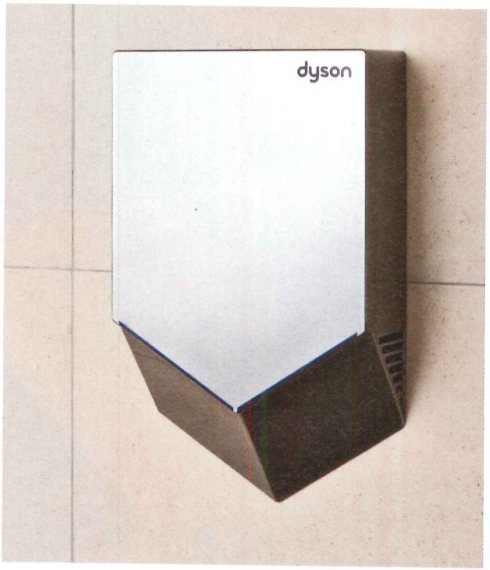
The spatially defying shapes in Les Ailes Noires rack system by Toronto-based multidisciplinary firm +tongtong offer "a series of different perspectives as you walk around it," says designer John Tong. Originally developed for a store in Toronto, the 11-piece collection was inspired by simple black line drawings. The system includes a full-length mirror, a wall-mounted sideboard with a glass shelf, a ceiling-hung rack, and eight freestanding racks with rubber feet and wall bumpers. The ¾"-solid-steel pieces are available by special order in flat black or white powdercoat and polished chrome versions.
tongtong.co CIRCLE 207

Egyptian Folding Chair

Danish architect Ole Wanscher (1903–85) was inspired by a trip to Egypt to create this stable, lightweight folding chair. Originally designed and produced in 1957, the chair was taken out of production for about 30 years; it returned in 2000 with only limited distribution. Carl Hansen & Son recently acquired the manufacturing rights for the design and will be distributing it in the U.S. for the first time. The seat, which folds for easy transport and storage, is made of solid oak or mahogany with a seat in black, cognac, or natural saddle leather. carlhansen.com CIRCLE 209

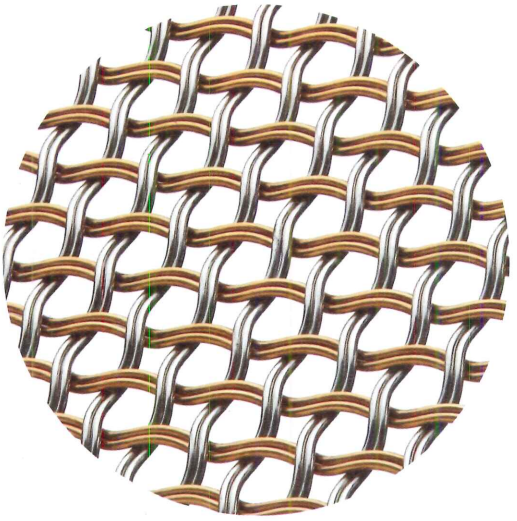
Dyson Airblade

Engineered for various washroom environments, Dyson's next generation of Airblade hand dryers produce sheets of high-velocity unheated air that travel through tiny apertures at 420 mph to scrape water from hands like a windshield wiper. The wall-mounted Airblade V hand dryer (right) is 60% smaller than the original Dyson model and produces two sheets of air angled at 115° to span the width of each hand. The Airblade Tap hand dryer (below) washes and dries hands without your having to leave the sink. Infrared sensors pinpoint hand positions and release water from the tap stem; after the hands are washed, integrated circuitry activates the motor, and sheets of air steam from the tap's branches.
dyson.com/handdryers CIRCLE 208



Circle Mesh

Banker Wire, a leading manufacturer of woven and welded wire mesh for architectural and industrial applications, has introduced the first woven metal fabric with circular patterns. Circle Mesh is woven with the same wire as traditional architectural mesh, but is crimped by a spiral machine that allows for different sizes and percentages of open area. The material can be used on any scale—from intricate design highlights to expansive building facades. As an added benefit, the weaving process of mesh produces very little scrap compared with the process of perforating metal.
bankerwire.com CIRCLE 210



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CIRCLE 38

THE NEWEST SHADES, SCREENS, AND GLASS TECHNOLOGIES HELP CONTROL SOLAR HEAT GAIN AND GLARE THROUGHOUT THE YEAR WITHOUT SACRIFICING ACCESS TO LIGHT OR VIEWS.
BY RITA CATINELLA ORRELL

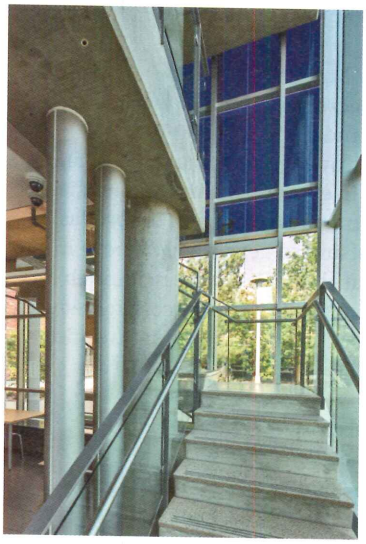
Glazing Helps Keep a Glass Box Cool for Students

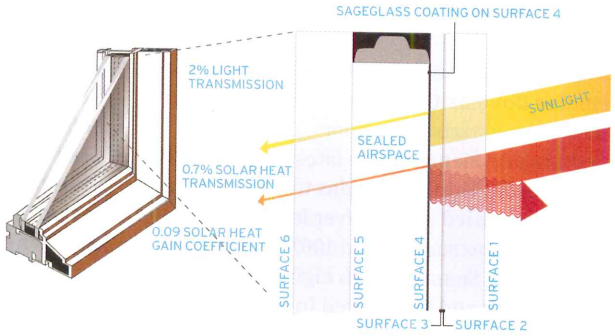
COLORADO STATE UNIVERSITY built the Morgan Library Pavilion, an addition to an existing 270,000-square-foot library on its Fort Collins campus, to create a transparent, inviting space for students. Completed in late 2012, the all-glass building was designed by Denver-based Studiotrope, which collaborated with sustainability consultants YR&G to incorporate various efficiency strategies. Also known as the Study Cube, the project achieved LEED Silver certification in March.

According to Daniel LeBlanc, senior sustainability manager at YR&G, the high-performance Serious Glass on the north, south, and east facades, along with electronically tintable glass from Sage Electrochromics on the west facade, helps lower solar heat gain and reduce peak loads, even on hot days when the building is fully occupied. LeBlanc, whose team used Autodesk Ecotect modeling software to study solar radiation on the facades, says SageGlass was "exactly what we needed for the design goal we were trying to achieve—a transparent cube without a lot of distraction." Keeping the two-story, 5,000-square-foot cube transparent was also important for security, as the space is open around the clock.

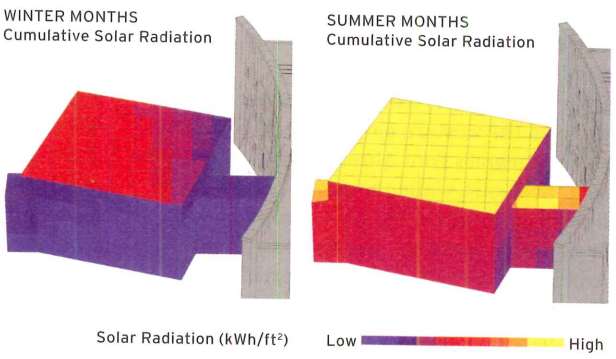
Sage manufactured 74 unique pieces of sensor-controlled SageGlass for the western facade, ranging from 22" x 28" to 39" x 59" in size. The glass wiring was routed through a cast-in-place cantilevered concrete bench and wall, and then down through the concrete floor slab into a crawl space near the control module. "That was a great, clean solution for everyone," says Betsy Podbelski, project manager at Sage Architectural Solutions.

Vertical custom steel fins wrap around the building. While the sunshades were originally conceived as a design element, the client was attracted to them as an extra layer of sun control, says Matthew Edmonds, project manager at Studiotrope. But after daylighting modeling studies confirmed that external fins would not help control glare or heat, the client had already fallen for the aesthetic, says Edmonds, so they remained. Reaction to the Cube has been positive, he says: "It's rewarding to see an all-glass box in Colorado that has stayed comfortable from a thermal standpoint." sageglass.com CIRCLE 200

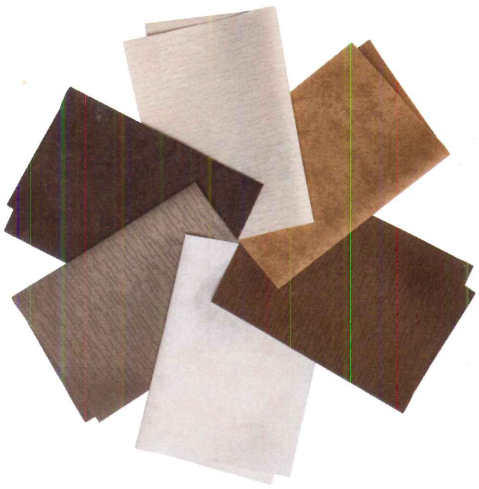


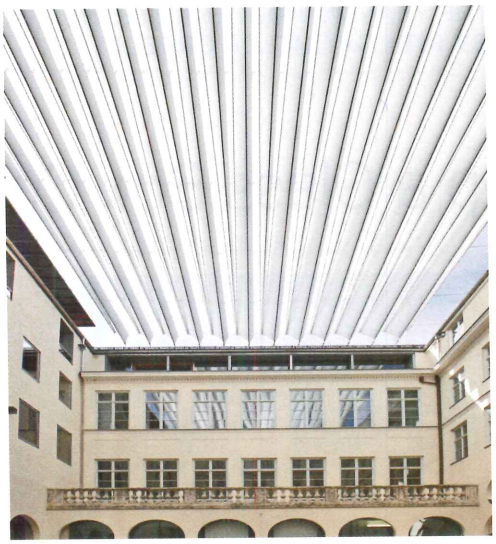


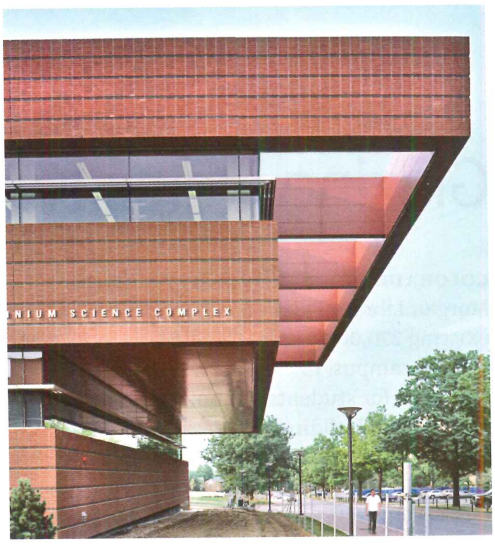
SAGEGLASS LAMINATED INSULATING GLASS UNIT (IGU) - TINTED STATE

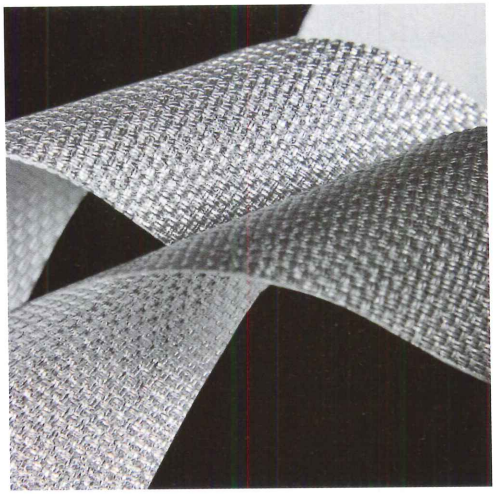


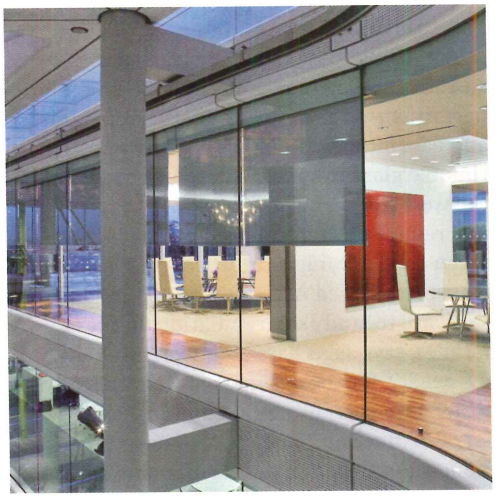
COOL CUBE Exterior and interior views of the western facade of the Morgan Library Study Cube at Colorado State University in Fort Collins (top and above); a diagram of SageGlass (above right); a model of the cumulative solar radiation on the cube in winter (near right) and summer (far right). The yellow and orange colors show higher levels of radiation.











Cortina and Siena Roller-Shade Fabrics
Hunter Douglas Contract
hunterdouglascontract.com
Cortina and Siena are the latest roller-shade fabrics from Hunter Douglas to be Cradle to Cradle–certified at the Silver level for their PVC-free construction and 100% recyclability. Cortina and Siena come in eight colors in a 118" fabric width and are offered in a 5% and 7% openness factor, respectively. CIRCLE 201

Woven-Metal Fabric Fins
Cambridge Architectural
cambridgearchitectural.com
Solar-shading fins from Cambridge reduce glare on the western elevation of the University of Oregon's Ford Alumni Center, limiting solar heat gain while providing natural daylighting and views. The new alumni center, designed by Portland, Oregon–based TVA Architects, earned LEED Gold certification. The shading system is made of cable-supported fins in a Mid-Balance pattern. CIRCLE 202

EL-30-T1-UV Sunscreen Fabric
Sefar Architecture sefar.us/exterior
Sefar has introduced the EL-30-T1-UV, a light-transmitting fluoropolymer PTFE fabric ideal for use in exterior shading applications, including retractable canopies, umbrellas, sun awnings, and screens (shown above in a courtyard at the HVB Forum in Munich). A UV-absorbing additive in the coating reduces the amount of UVA and UVB rays transmitted through the fabric. CIRCLE 203

Interior Sun-Control Fabrics
Phifer phifer.com
Phifer's Style 2500, the latest in its Performance+ collection, is a 1% open basketweave fabric that combines the performance of a traditional SheerWeave material plus the highly reflective properties of a metallized coating. The entire Performance+ series is available in 63" and 96" widths in 10 neutral colors for commercial interiors. The fabrics are also infused with Microban antimicrobial product protection. CIRCLE 204

Sunshades and SuperWall Curtain Wall
Wausau wausauwindow.com
SuperWall curtain wall and ClearStory sunshades helped contribute to the LEED Gold certification of Penn State University's 275,600-square-foot Millennium Science Complex (shown), designed by Rafael Viñoly Architects. Each section of curtain wall on the second and third floors is accented by exterior sunshades that help control solar heat gain and glare. CIRCLE 205

LIFT
Lutron Electronics lutron.com
The latest automated shading innovation from Lutron offers an installed cost savings of 30% per shade panel when compared with existing market solutions. Ideal for large commercial applications, the new Roller 300 drive with Lutron Intelligent Facade Technology (LIFT) is capable of controlling 300 square feet of fabric from one low-voltage shade drive via in-room keypads or Lutron's Hyperion solar-adaptive technology. CIRCLE 206

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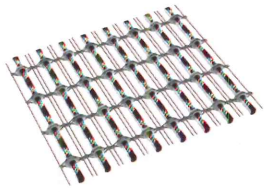

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CIRCLE 58

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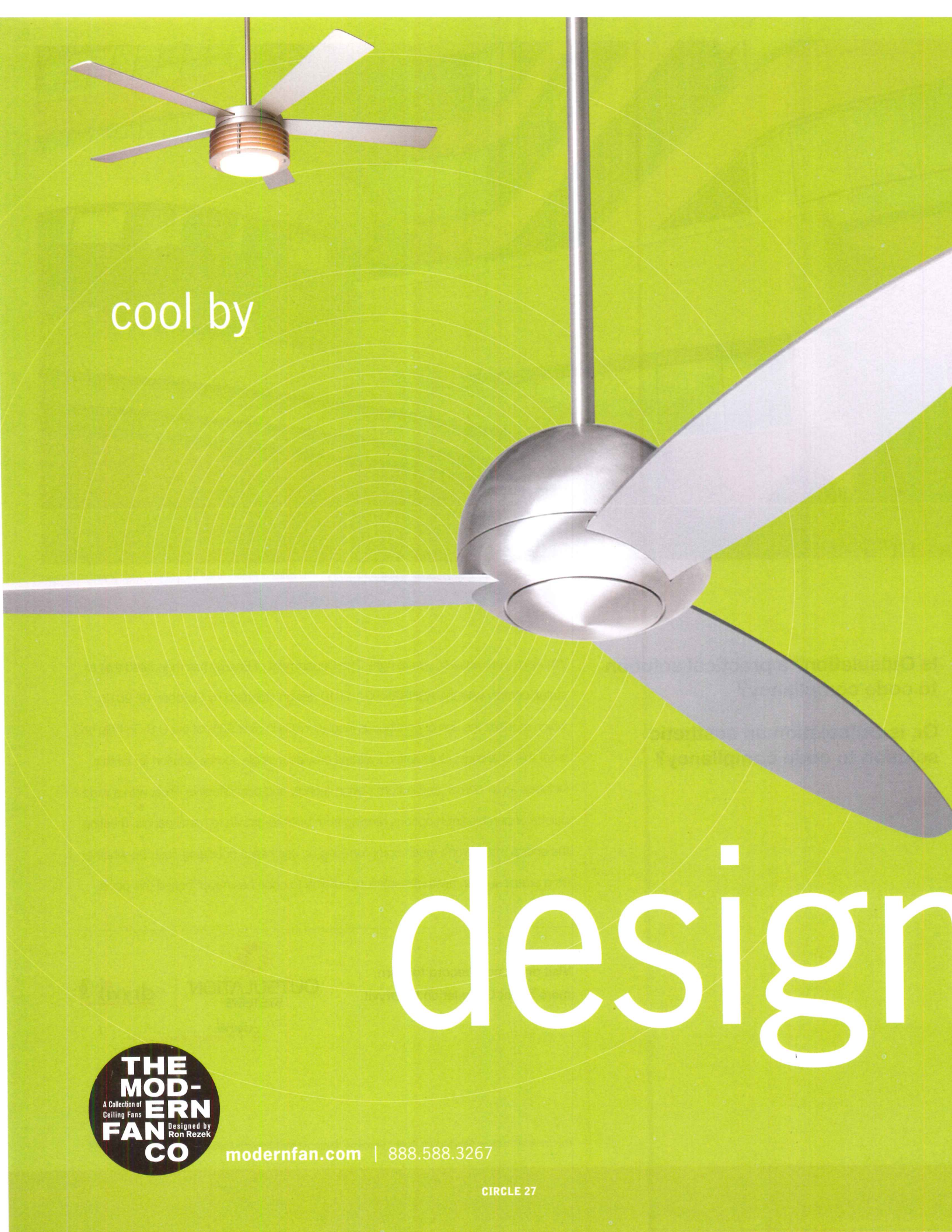
Project Shown: Southeast Georgia Health System; Brunswick, Georgia; Architect: Gresham, Smith & Partners

CIRCLE 60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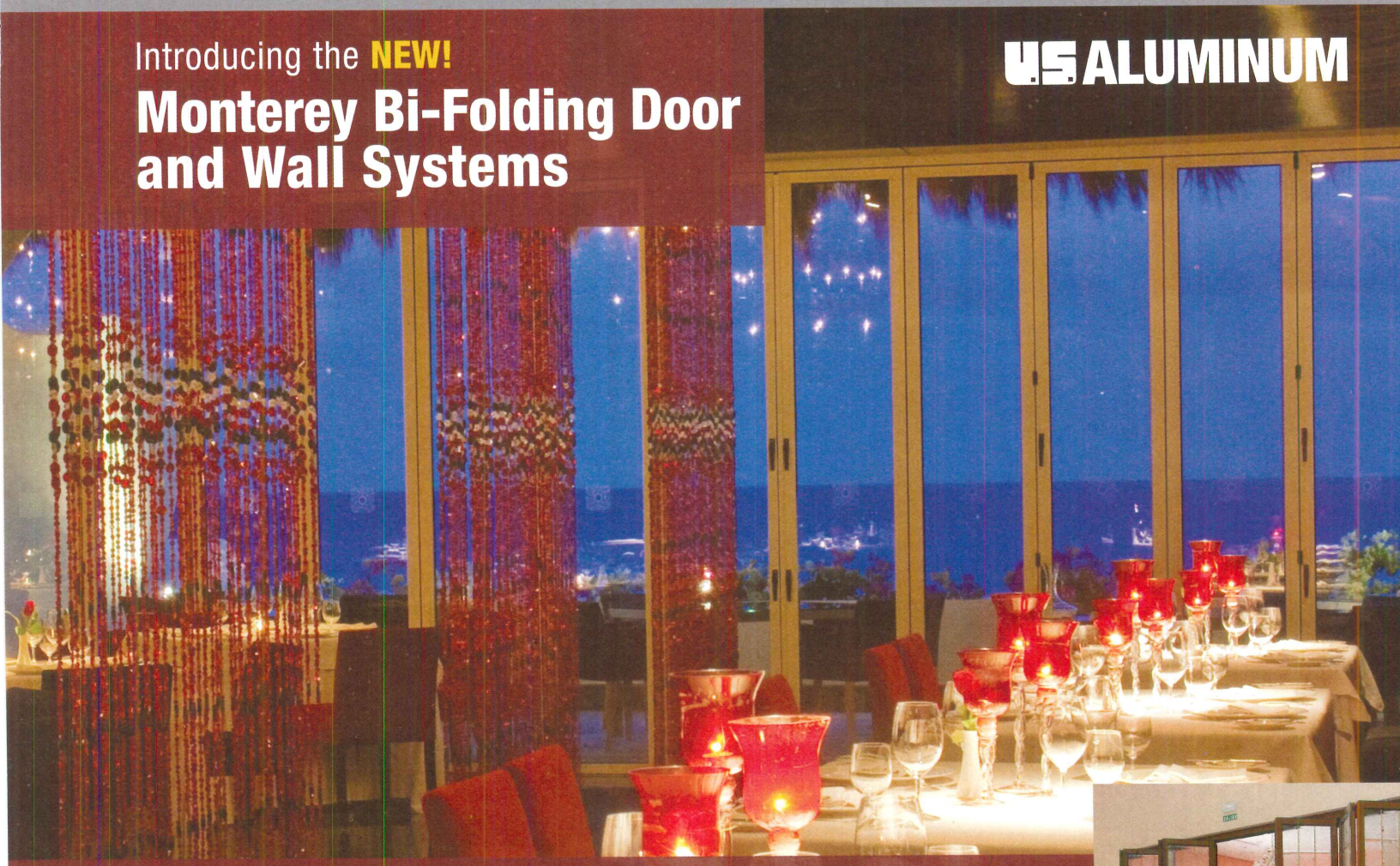

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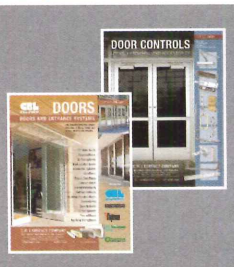

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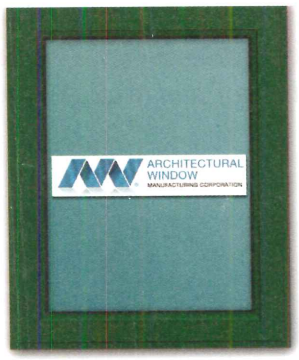

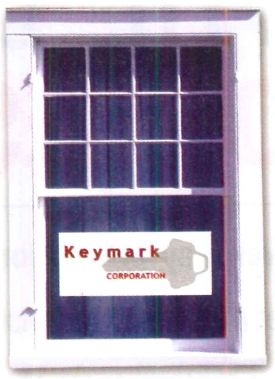

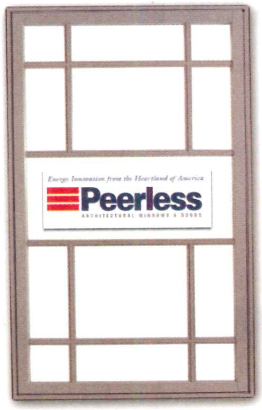

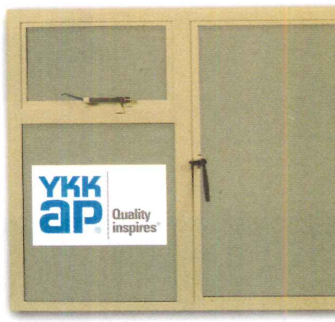

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CIRCLE 48

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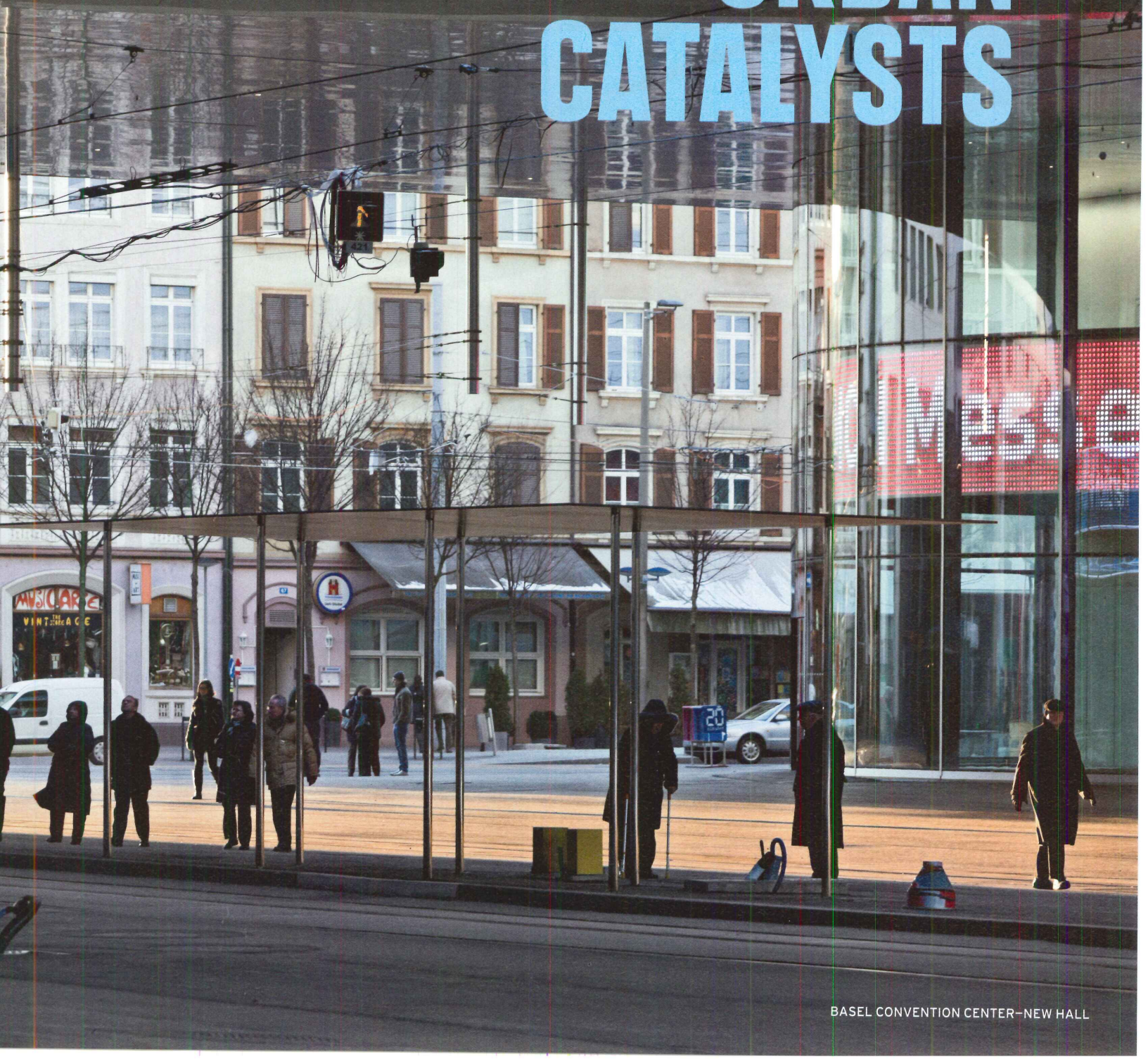
Cities are complex organisms, each with its own cultural and architectural metabolism. Add a new building to a particular place and you alter its physical context, the flow of people around and through it, even its social character. The seven projects featured here contribute to their settings—activating streets, engaging communities, addressing layers of history—all while raising standards of architectural design. Instead of creating individual icons that scream for attention, the architects of these works have inserted dynamic buildings that connect with their neighbors. The strategies they've used vary greatly—from punching an enormous hole in a convention center to restoring the cast-iron facades of a building with a vital link to a neighborhood's past glory. But all of them show that fitting in doesn't mean sacrificing their identity.

URBAN CATALYSTS



BASEL CONVENTION CENTER—NEW HALL

Campbell Sports Center | New York City | Steven Holl Architects

GAME CHANGER

Columbia University's quirky but tough field house bridges the divide between its gritty surroundings and the athletic playing fields beyond.

BY FRED A. BERNSTEIN

PHOTOGRAPHY BY IWAN BAAN

THERE ARE FEW American campuses more urban than Columbia University's; even its athletic fields are in Manhattan, grouped together in the cramped Baker Athletics Complex at the island's northern tip. For years, the rinky-dink facility "was not a welcoming place," says William V. Campbell, a former Columbia football captain and head coach who became an entrepreneur and Columbia trustee. The complex was a morale buster for both its users—the coaches and varsity athletes who had to commute back and forth to the main campus five miles south—and the surrounding community, which, at Broadway and 218th Street, overlooked a cinder-block equipment shed.

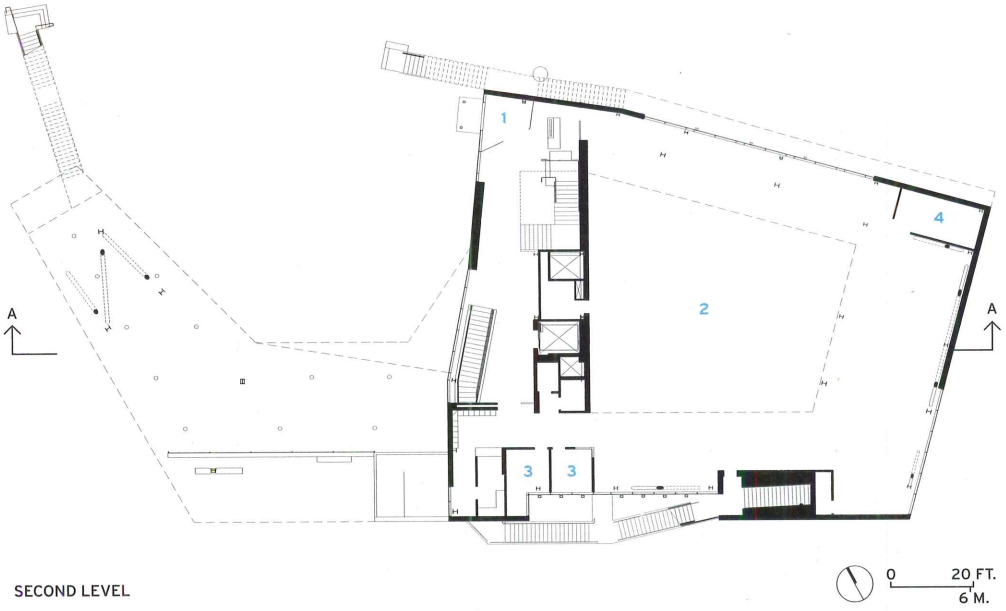
Now that corner is home to something much livelier: a 48,000-square-foot building named for Campbell and designed by Steven Holl Architects for athletes and their coaches. Holl, who has taught architecture at Columbia since 1981 but never previously built for the university, and his partner, Chris McVoy, a Columbia graduate, designed the $30 million building as a series of gangly forms that rise from the sloping site like a scissor lift.

In elevating the east side of the building on spindly legs, the architects have created a gateway to the larger complex, offering views and access. And the building's bulky forms respond to the erector-set-like Broadway Bridge linking Manhattan to the Bronx (across the Spuyten Duyvil Creek);

ANCHOR TENANT
Seen from below the elevated subway tracks (opposite), the building appears as a blocky volume. Its porosity is apparent when it is viewed from the southwest (below). The aluminum used for the cladding appears at the building's base and on its balustrades with an abstracted laser-cut pattern.

View additional images at architecturalrecord.com.

TOP LEVEL



SECOND LEVEL

credits

ARCHITECT: Steven Holl Architects – Steven Holl, Chris McVoy, design architects; Chris McVoy, partner in charge; Olaf Schmidt, associate in charge; Marcus Carter, Christiane Deptolla, Peter Englaender, Runar Halldorsson, Jackie Luk, Filipe Taboada, Dimitra Tsachrelia, Ebbie Wisecarver, project team

ENGINEERS: Robert Silman Associates (structural); ICOR Associates (m/e/p); Hirani Engineering (civil)

CONSTRUCTION MANAGER: Structure Tone/ Pavarini McGovern

SIZE: 48,000 square feet

COST: $30 million

COMPLETION DATE: March 2013

SOURCES

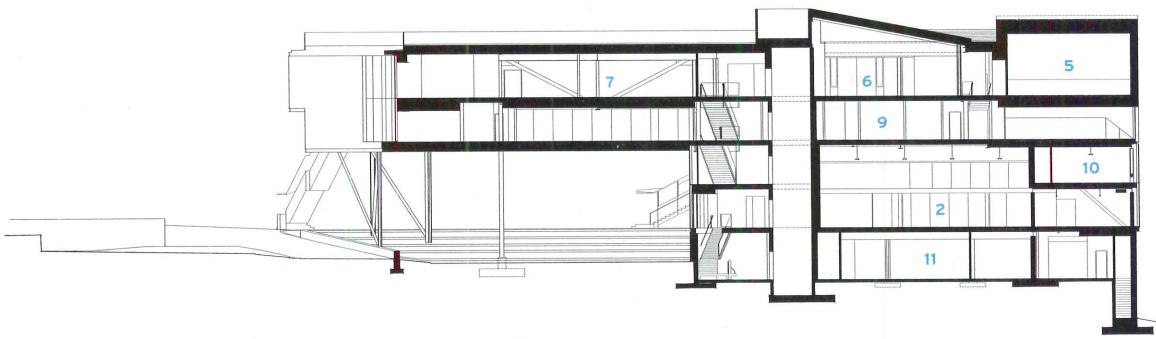
GLASS: Viracon

BUILT-UP ROOFING: Siplast

ENTRANCES: Blumcraft

FIRE-CONTROL DOORS: McKeon Door

1 MAIN ENTRANCE
2 STRENGTH AND CONDITIONING
3 OFFICE
4 STORAGE/MECHANICAL
5 AUDITORIUM
6 HOSPITALITY SUITE
7 STUDENT-ATHLETE STUDY CENTER
8 STUDENT-ATHLETE LOUNGE
9 FOOTBALL SUITE
10 VARSITY COACHES' SUITE
11 FIELD MAINTENANCE



SECTION A - A

to the elevated subway tracks; and to other pieces of the city's rugged infrastructure, which has fascinated Holl since he arrived in New York in the 1970s. It's like "a train that jumped the tracks," McVoy says of the building. Much of that train is clad in sanded aluminum, mimicking the industrial facilities to the east. The rest is glass, which reflects the brick prewar apartments to the south. The Campbell center is also an expression, says McVoy, of the diagrams that football coaches draw, with the zigzag stairs hung off the front facade, and their laser-cut aluminum balustrades, suggesting a particularly tricky play. In addition to these elements, the architects created terraces and nooks to extend the building out to both the fields and the surrounding neighborhood.

Inside, a strength and conditioning area ringed by mezzanine-level offices is a focal point. Above are a hospitality suite for visiting alumni, a student lounge, and a study room, as well as a lecture hall with seats big enough for the burliest football players ("There was only one company that makes them this size," says McVoy). Muscular, exposed structural elements and utilitarian finishes throughout the interiors communicate the building's role as the Baker complex's "back of house," while ample daylighting and framed views animate the rooms, which feel like capsules suspended over the playing fields and the rough edges of the borough's periphery.

PUMPING IRON
The building's robust structure is exposed throughout most of the interiors, such as the strength and conditioning space (above), which is ringed by mezzanine-level coaches' offices and animated by framed views of the city and outdoor sports areas. The center hugs Baker Athletic Complex's playing fields (left). Sanded, anodized aluminum cladding responds to the surrounding infrastructure and contrasts with prewar housing to the south.

And what of views to the building? For the residents of Inwood, a stolid middle-class neighborhood, the industrial aesthetic may take a little getting used to, as will the building's ungainly form. Nonetheless, the facility demonstrates an awareness of context and community. Nearby, the school will soon unveil its James Corner Field Operations–designed Boathouse Marsh, a waterfront park open to the public. Campbell will never offer that kind of community access. But with its jaunty stature and its vague suggestion of open arms, it is about as welcoming as a field house can be. Holl and Columbia, while meeting the needs of varsity athletes, have given an oft-overlooked building type, as well as an oft-overlooked corner of New York City, an architectural high-five. ■

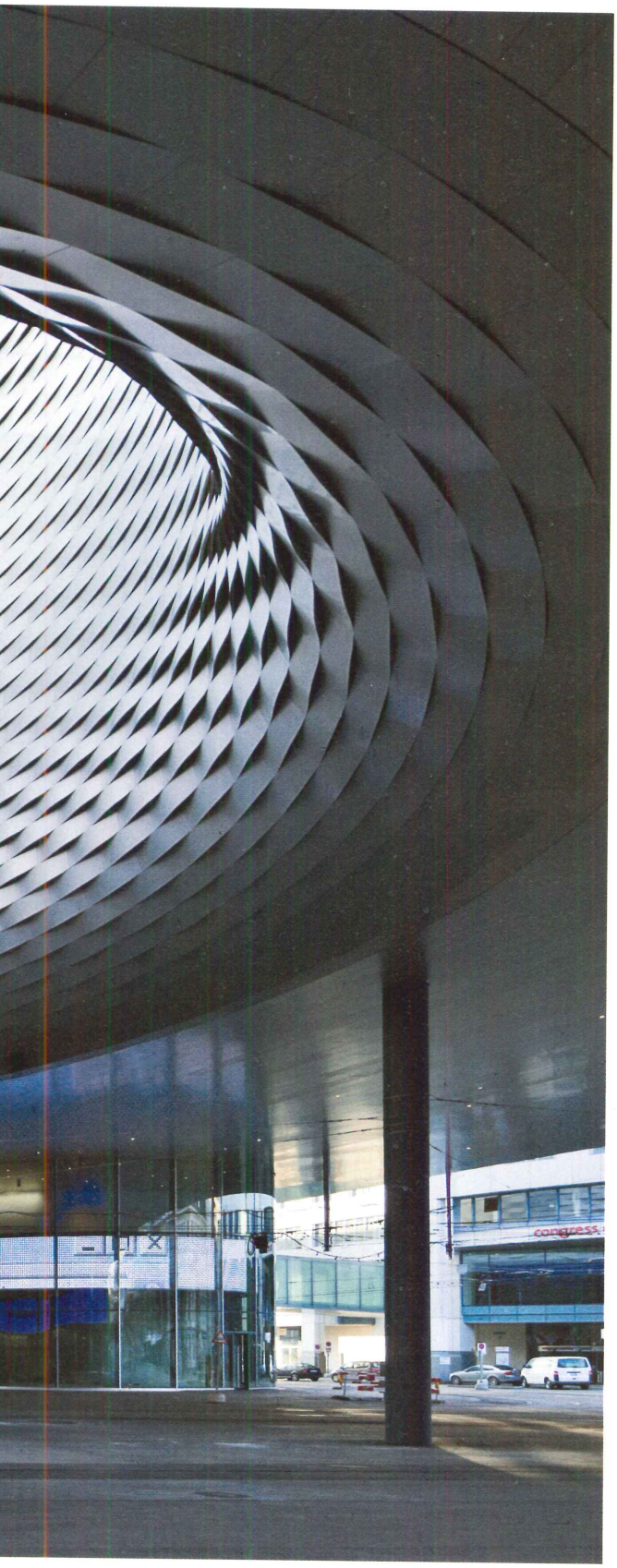
Basel Convention Center–New Hall | Basel | Herzog & de Meuron

THE SKY'S THE LIMIT

The expansion of a vast trade-fair complex satisfies demanding exhibition-hall requirements and figures into a city's plans for urban renewal.

BY CHRIS FOGES

PHOTOGRAPHY BY IWAN BAAN

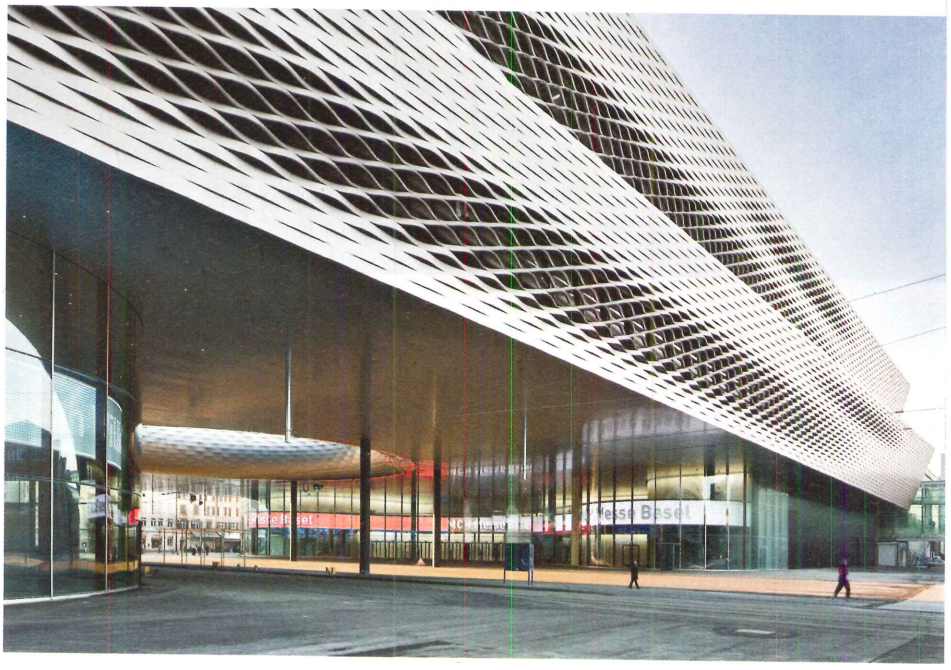


TUCKED TIGHT against Switzerland's border with both France and Germany, Basel is a small city that has made room for big business. Its pharmaceutical giants operate from gated compounds, but another of the city's economic engines, the century-old trade-fair site (Messe or Convention Center), is woven into the fabric of a mixed-use urban neighborhood. After many mutations and extensions throughout the 20th century, the Convention Center now comprises an eclectic group of buildings around Exhibition Square, with a long tail stretching down the city's busy Riehenring. The latest addition, a jagged take on the typical stack of boxes, by Basel-based Herzog & de Meuron, bridges the western end of the square and extends a long row of exhibition halls.

The new building was designed to meet the particular needs of the flagship watch and jewelry show, Baselworld: exhibitors all want to be on the same floor, with room for three-story booths. This required a radical reworking of the existing complex. The architects demolished two outmoded halls dating from the 1930s and 1970s. In their place they constructed a new three-story building that expands a large, glazed 1990s hall, breaking through on its second level to create one continuous floor. It is nearly 1,300 feet long.

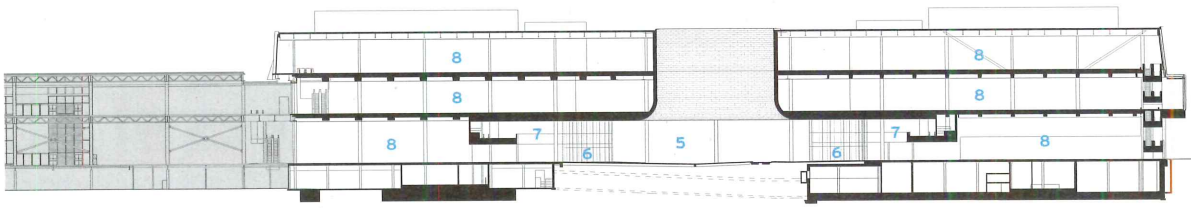
The new wing is topped by a generous 26-foot-high, 720-by-295-foot exhibition space on the third floor. Rather than block the busy thoroughfare it crosses, the design team lifted the structure over the street—to allow for vehicular and pedestrian passage below—resting it on a pair of glazed podiums. They pierced through the center of the suspended exhibition halls to form a giant oculus, which floods the resulting underpass with sunlight by day. This incision hovers above a covered public space, dubbed the City Lounge. Flanked by the addition's transparent entrance foyers, this inviting plaza links the square to Clarastrasse, which runs west to the city center.

Though the large void reduces the real estate and flexibility of the exhibition floors above, it was a crucial concession to the community. According to the firm's partner in charge,



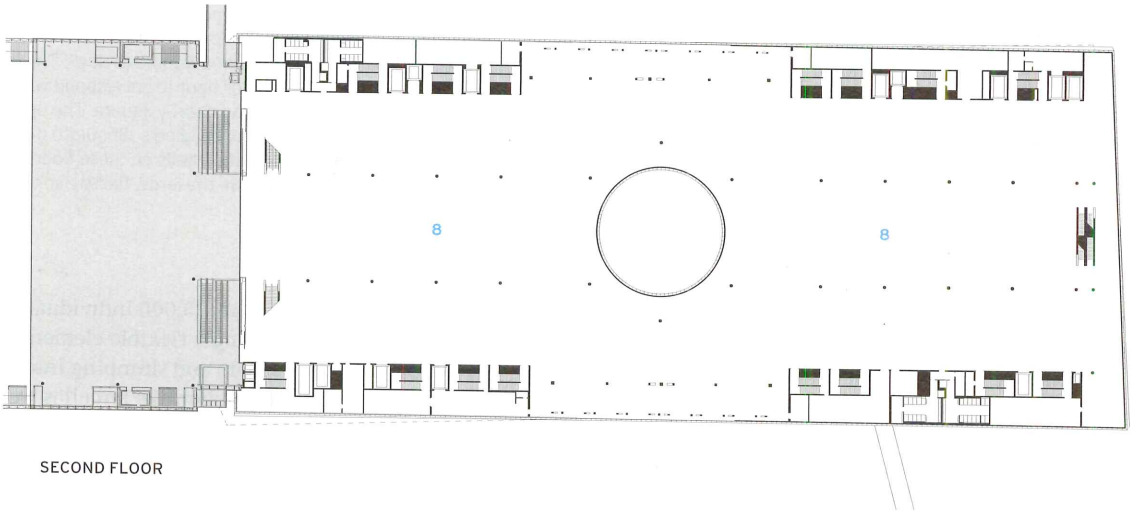
URBAN FABRIC
Wrapped in twisting bands of aluminum, the sweeping new hall breaks the typical convention-center mold with two skewed upper levels that appear to float above transparent podiums. Glazed, curvilinear entrance lobbies flank the street and provide an inviting transition that connects the neighborhood's street life with the business and activity within.

THROUGH STREET
Pierced by a supersized oculus, the building bridges a busy thoroughfare that links historic and new parts of town, allowing for vehicular and pedestrian traffic. The resulting public plaza—dubbed the City Lounge—is open to the sky and maintains the area's vibrant buzz and flow rather than cutting off its circulation.

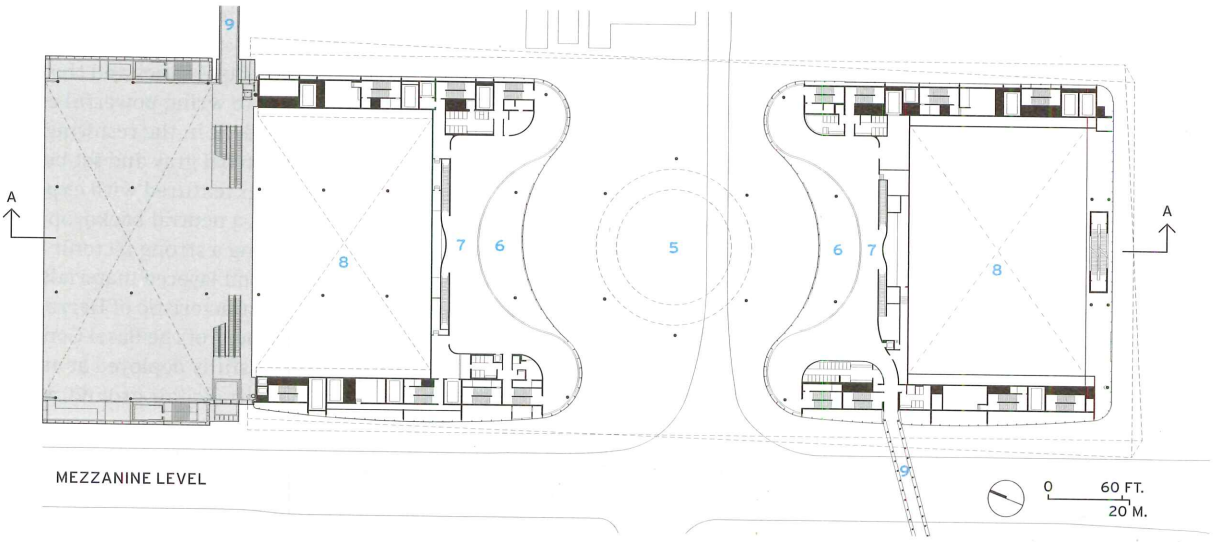


SECTION A - A

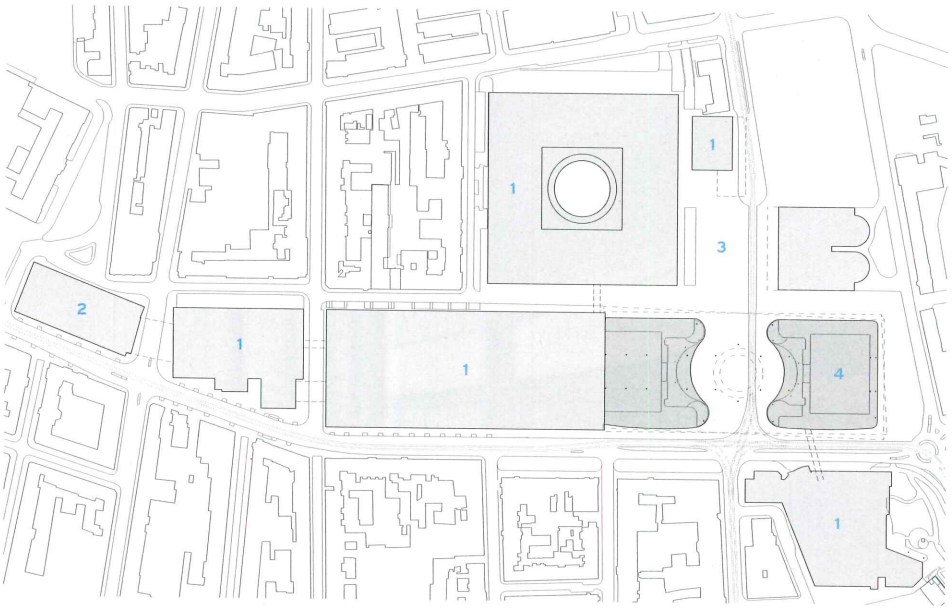
0 60 FT.
20 M.



SECOND FLOOR



MEZZANINE LEVEL



SITE PLAN

1 EXISTING HALL
2 MUSICAL THEATER
3 EXHIBITION SQUARE
4 NEW HALL
5 CITY LOUNGE
6 FOYER (BELOW)
7 GALLERY
8 EXHIBITION HALL
9 INTERCONNECTING BRIDGE

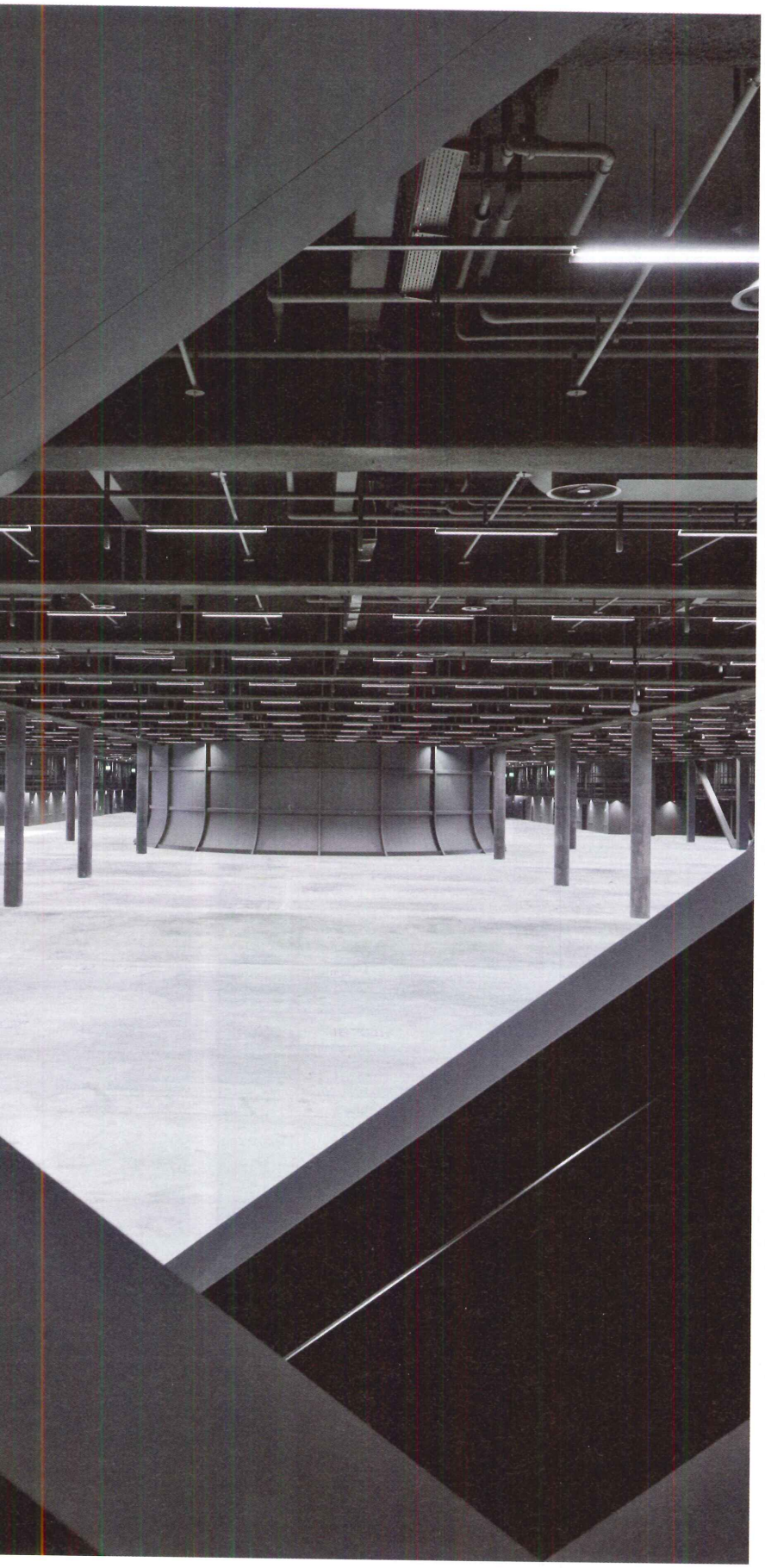
Stefan Marbach, the project had to be approved by local referendum, so the architects needed to "somehow balance the functional concerns of the Convention Center, as a private investor, with the public interest." Conscious that a big box would detract from established public spaces, the architects made sensitive use of both form and program to enhance them. By truncating Exhibition Square, formerly open to the west, they created a defined container that invites occupancy, and by setting the new building apart from an adjacent parking structure, they devised a new path into the square, refining rather than eradicating the city's grain. Additionally, newly installed shops and restaurants rimming the lobbies are turning the lackluster area into a destination.

Remaining elements of the urbanscape that were left untouched reinforce the sense that the City Lounge is a public space. A familiar cobweb of overhead tram wires passes under the building, where there is a convenient tram stop directly beneath the oculus. Here, too, the expansive sweep of glazing adds a layer of permeability between the private interior and the public exterior zones. Concave balconies peel back from the foyers' curvilinear glass walls, drawing the eye into the building and increasing the apparent size of the outdoor room.

Nothing, however, could compromise the ultimate functionality of the orthogonal exhibition halls. So options to ameliorate the building's bulk were restricted to the perimeters of the upper levels. To do this the architects stacked the top two floors, offsetting them in plan and twisting them to vary the building's silhouette, as well as to respect the "right to light" of the neighboring buildings. They wrapped the seven resulting facade planes in a reflective mesh made of aluminum lamellas shaped to form gill-like openings. Though there are 15,000 individual rigid panels, the cladding reads as a single flexible element, a textile stretched taut over corners and slumping into gentle folds on the long elevations. The ribbonlike lamellas were cut and bent according to a parametric script that translated two-dimensional elevation designs into a three-dimensional model replete with all fabrication information, allowing fast revisions during design development. With just 22 months allowed for construction, there was no margin for error, so a section of the facade was mocked up at full scale to test both the subcontractors' capabilities and the designers' data.

The architects' ability to wring powerful effects from ordinary materials is evident in the resulting exhibition halls. Painted a deep charcoal gray and set behind rows of fluorescent tubes, ceilings textured with exposed structural and service grids work as a neutral backdrop for the exhibition stands while retaining a strong tectonic character. The fusion of light, shadow, and layered materials produces a perceptual ambiguity characteristic of Herzog & de Meuron's work. With the development of the Basel Convention Center, this skill has been successfully deployed at an urban scale to stitch the city into the trade-fair ground. ■

TRADING SPACES Encompassing the new plaza, expansive, glazed entrances and foyers facilitate access and egress and encourage fluid interaction with the public realm outdoors (below). The architects used polished asphalt for the interior floor to correspond with the more rugged asphalt pavement in the nearby square. The upper levels are stacked and twisted to vary the building's silhouette (far right). Inside, the oculus cuts through the exhibition halls on these floors, where exposed structural and service grids give the large, flexible volumes a textured industrial atmosphere (right).



credits

ARCHITECT: Herzog & de Meuron – Stefan Marbach, partner in charge; Jacques Herzog, Pierre de Meuron, Wolfgang Hardt, partners; Tobias Winkelmann, associate/project director; Roland Schrieber, project architect

ENGINEERS: Ribi + Blum, Gruner, WITO, ARGE Gruner, Ernst Basler (structural); Lippuner Energie- und Metallbautechnik, CM Engineering, Plodeck Kurt ECS (HVAC); ARGE Scherler, Aicher De Martin Zweng, Herzog Kull Group (HVAC/electrical); Huustechnik Rechberger (m/e/p); Lippuner Energie- und Metallbautechnik (mechanical); Burger + Partner (civil)

CLIENT: MCH Swiss Exhibition (Basel)

DESIGN/BUILD CONTRACTOR: HRS Real Estate

CONSULTANTS: Feroplan Engineering, Neuschwander + Morf (facade); Zimmermann + Leuthe (building physics); Ingenieurbüro Stefan Graf (sustainability); Bartenbach LichtLabor (lighting); Vogt (landscape)

SIZE: 896,600 square feet

COST: withheld

COMPLETION DATE: February 2013

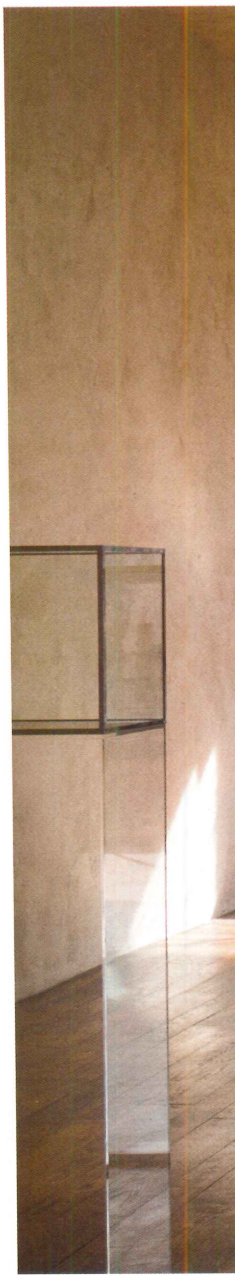
SOURCES

FACADE CLADDING: Novelis; Rytz Industriebau; Marx Flachdach

GLAZING: Aepli Metallbau; Steindl

LIGHTING: Zumtobel (exterior/interior); Leurocom (electronic displays)

LIVE/WORK
The 1870 building by Nicholas Whyte (left) was first used for manufacturing on the upper floors and retail on the ground. Restoring it took eight years and involved repairing 1,300 pieces of cast iron, including 320 that were recast. The third-floor studio (below) looks the same as it did in Judd's day but now has double-glazed windows and new insulation.



Judd Home and Studio | New York City | Architecture Research Office

SOHO TIME CAPSULE

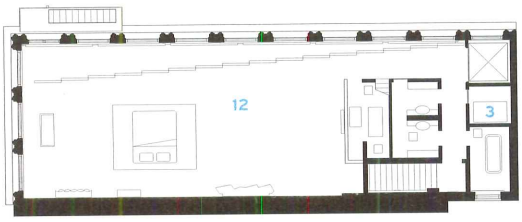
With a light touch, a New York firm restores the base of minimalist master Donald Judd.

BY CLIFFORD A. PEARSON

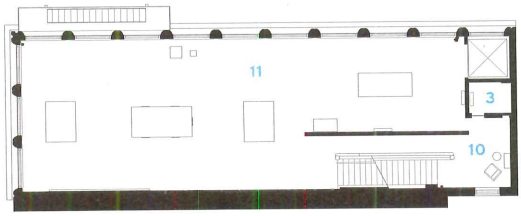
PHOTOGRAPHY BY JAMES EWING

WHILE HE was redefining the boundaries of art in the 1960s, '70s, and '80s, Donald Judd reconfigured 101 Spring Street, his New York City home and studio, into a supersized piece of sculpture. Judd, who bought the 1870 cast-iron building in SoHo in 1968 for $68,000, transformed the industrial relic into an architectural version of his iconic boxes. He treated it as a five-story laboratory for displaying art, both his own and that of friends such as Dan Flavin, Frank Stella, and John Chamberlain. In the process, it became a vibrant hub of the art scene that blossomed in SoHo in that era. But as the area changed in recent years from art center to upscale shopping mall, 101 Spring stood suspended in time, a somewhat forlorn reminder of the days before Prada, Banana Republic, and Uniqlo changed the neighborhood.

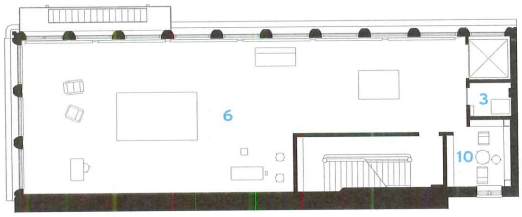
In 2005 the Judd Foundation—including the artist's son, Flavin Judd, and daughter, Rainer Judd—decided to restore 101 Spring, which remained a repository of the artist's work



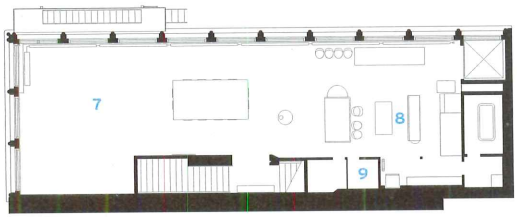
FIFTH FLOOR



FOURTH FLOOR

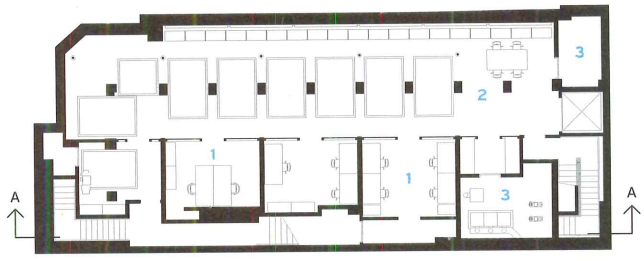


THIRD FLOOR



SECOND FLOOR

GROUND FLOOR



CELLAR

0 10 FT.
3 M.

SECTION A - A

0 10 FT.
3 M.

1 OFFICE
2 MEETING ROOM
3 MECHANICAL
4 EXISTING STAIR
5 NEW STAIR
6 STUDIO
7 LIVING SPACE
8 KITCHEN
9 PUPPET THEATER
10 STUDY
11 DINING
12 SLEEPING

credits

ARCHITECT: Architecture Research Office – Adam Yarinsky, principal in charge; Jeff Hong, project architect; Jeon Yeung, James Henry, Zac Stevens, Katy Barkan, Jeff Jordon, Matt Azen, project team

EXTERIOR RESTORATION ARCHITECT: Walter B. Melvin Architects

ENGINEERS: Robert Silman Associates (structural); Arup (m/e/p, fire and life safety); Langan Engineering (civil)

CLIENT: Judd Foundation

CONSTRUCTION MANAGER: F.J. Sciame Construction

SIZE: 14,500 square feet (including below-grade levels)

COST: withheld

COMPLETION DATE: June 2013

SOURCES

FACADE CAST IRON: Robinson Iron

WOOD WINDOWS: Artistic Windows

GLASS: Competition Metals

SMOKE BAFFLES: Electro-Kinetics

MOTORIZED SHADES: Lutron

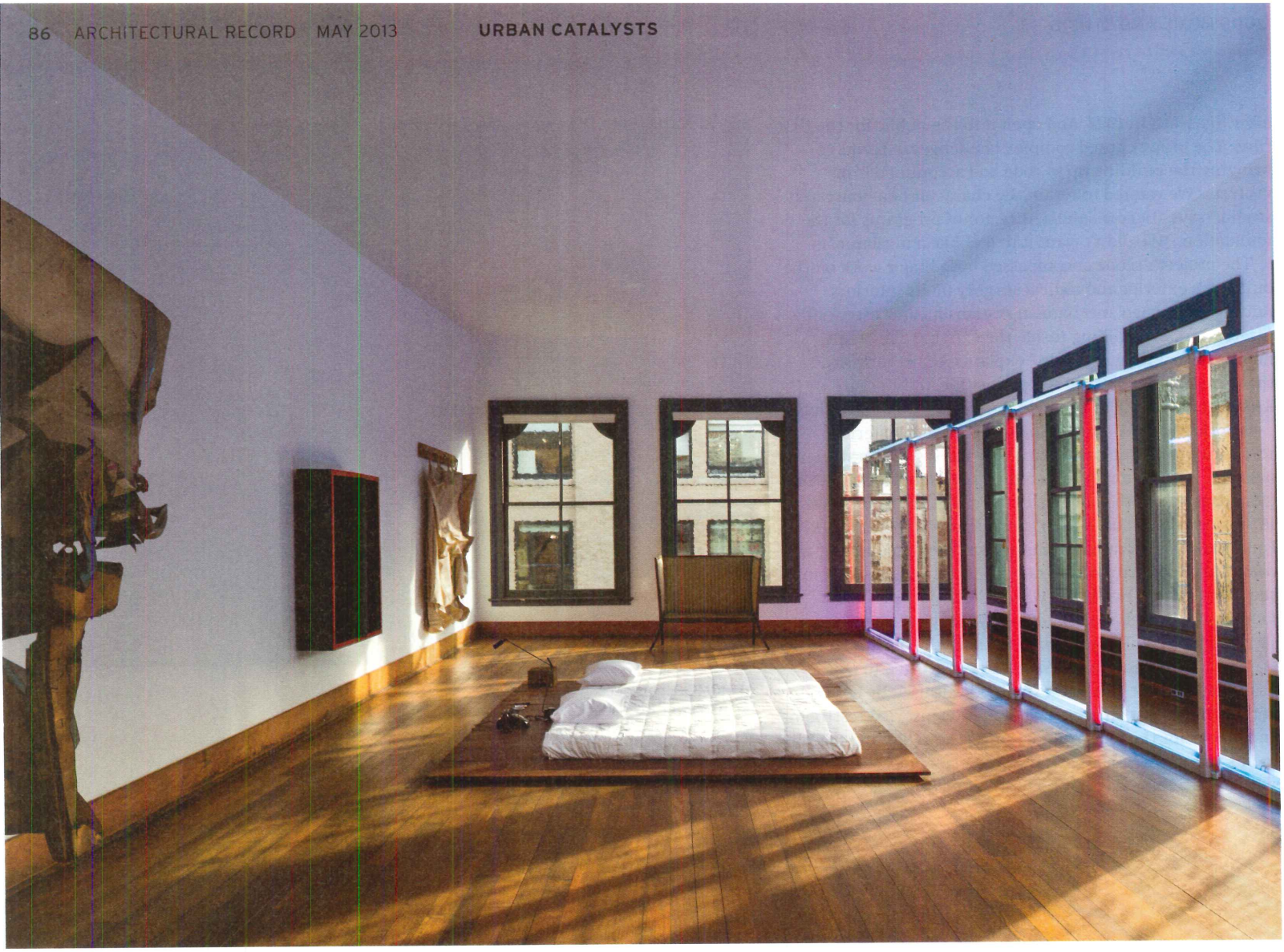
MILLWORK: Humboldt Woodworking

after his death in 1994, and open it to the public for the first time. The project posed complex challenges in terms of bringing the building up to code and accommodating visitors. "We wanted to retain the character of a house and studio," says Michele Saliola, director of programs for the foundation. "We didn't want it to feel like a museum."

The project's scope encompassed both major work on the building's exterior and radical surgery on its interiors. Adding all the new mechanical systems meant "essentially inserting a new building inside the existing one, while making everything invisible," explains Adam Yarinsky, the principal in charge of the project for Architecture Research Office (ARO), the firm overseeing the renovation.

Working with Walter B. Melvin Architects (exterior restoration) and Robert Silman Associates (structural engineering), ARO restored the building to the look of its 1970s glory days as a hotbed of artistic creation, not its original 1870s sweatshop mode—a decision approved by New York's Landmarks Preservation Commission. They repainted it the color Judd used (battleship gray), not the cream tone from the 19th century. Inside, they kept the fluid, open areas Judd created for his work and family. They even restored a secret cupboard-like space tucked under the building's main stair on the second floor, which Rainer revealed to this writer on a recent visit and explained was used by her and her brother to put on puppet shows. ARO inserted restrooms and offices for the Judd Foundation in the cellar and meeting rooms in the subcellar, with restored glass blocks in the sidewalk bringing daylight to both lower levels. A new

AT HOME Donald Judd in the first-floor studio in the 1970s (above). He made the table and chairs on the second floor (below), which was used for cooking, dining, and socializing. An Ad Reinhardt painting hangs near the table, and a mural by David Novros occupies the wall by the south-facing windows.



ART SCENE
After Judd's son was born in 1968, Dan Flavin created a light piece that still runs along much of the fifth floor (above). On the opposite wall, pieces by (front to back) John Chamberlain, Judd, and Claes Oldenburg are back where they had been in the 1970s.

steel-plate stair at the north end of the building provides access to the two floors below the street.

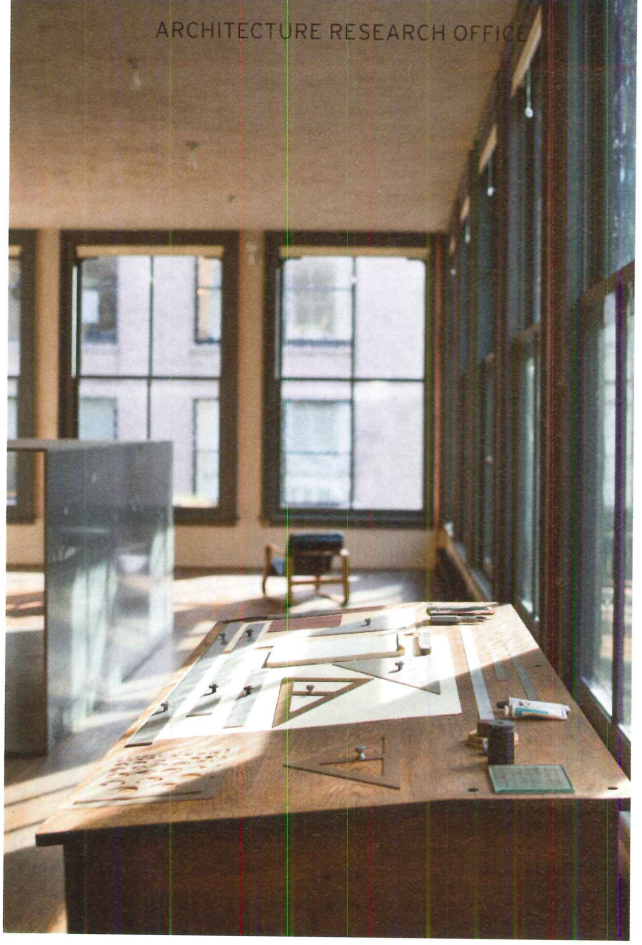
On the exterior, Robert Bates of Walter B. Melvin Architects oversaw the work of stripping and restoring in place the cast-iron columns, removing and restoring all window frames and spandrel panels, and recasting 320 pieces of architectural ironwork such as broken capitals and cornices. He replaced all the glass above the first floor with insulated double glazing, using restoration glass that imitates the original on the inside and low-iron glass on the outside.

To accommodate a new air-handling system, sprinkler pipes, electrical conduit, and security and fire alarms, ARO waged a stealth architectural insurgency on the original building envelope—finding ingenious ways of weaving new mechanical equipment behind walls and in small spaces stolen from old uses. Some of that space was liberated by placing major mechanical equipment on the roof, which had to be rebuilt with new steel structural elements to support the weight.

Walking through the building now, you feel Judd's presence everywhere—from the wood dining table and chairs he made himself to the drawing tools still spread out on his desk. It's a little creepy, but in the same way that any house museum is. Judd believed that each floor should have a singular function, so you find cooking/eating facilities on the second floor, his studio on the third, a big space for socializing on the fourth, and places for sleeping on the fifth. The first floor, which the artist often used for meeting with students, will now host talks, parties, and other events—the only floor that will have a flexible role.

Judd saw history as something to be engaged, not treated as an artifact, says Yarinsky. ARO took a similar approach in renovating 101 Spring, preserving the worn treads of the wood stair running along the east edge of the building, for example, while inserting a new pivoting glass-and-steel door in the below-grade offices. On the fourth floor, the firm faced a tricky problem of maintaining the flowing space around the stair landing where Judd had removed partitions. To keep the area open while meeting fire codes, ARO devised a pair of smoke baffles set into existing walls, elements that swing or spring into action only if there's a fire. As with so much of what the firm did on this project, Yarinsky hopes no one will notice the architects' clever solution.

Surrounded by the frenetic shopping culture of today's SoHo, 101 Spring will not magically return the area to its heyday as an arts mecca. But with the Judd Foundation now in its cellar and the public allowed inside, it will stand as an active lesson about a key moment in modern art. ■



STACKING HISTORY ARO created offices for the Judd Foundation in the cellar and subcellar, using a pivoting glass-and-steel door and glass floor panels to bring daylight inside (above). The firm also installed a new steel-plate stair (right) to access the lower levels. Judd's drawing instruments still grace his desk on the third floor (top right).

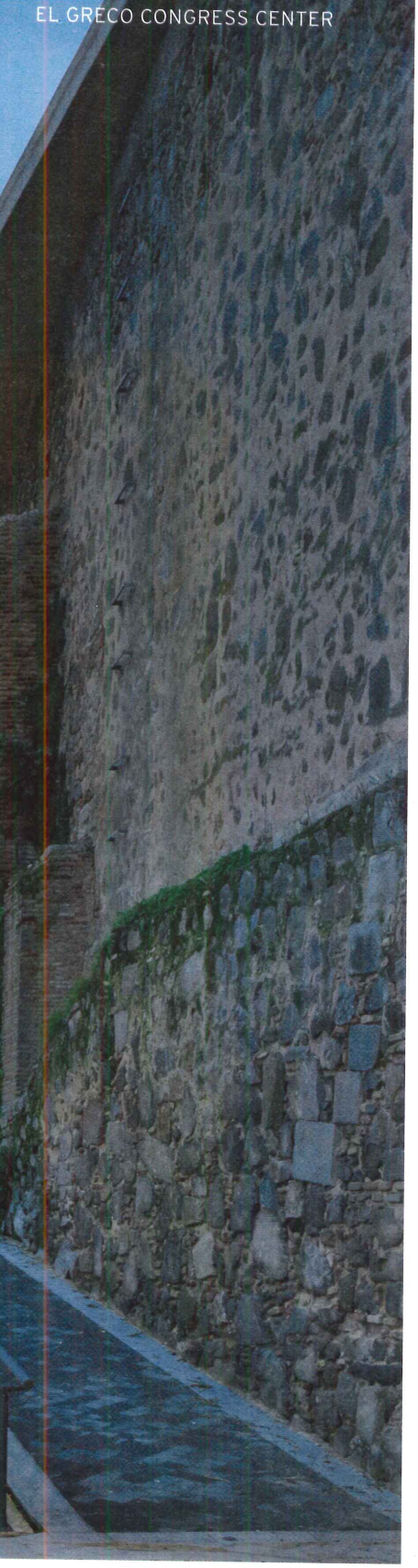
El Greco Congress Center | Toledo, Spain | Rafael Moneo

CLIMBING THE WALL

A design team weaves a new convention center into the fabric of an ancient hilltop city virtually unscathed by the ravages of time.

BY DAVID COHN

PHOTOGRAPHY BY DUCCIO MALAGAMBA



STONE CARVING Cut out of granite bedrock, the building rises amid Toledo's fortified walls (above right) and is topped by a terrace with spectacular views. Moneo's strategy is mimetic, reinterpreting the texture of existing stonework. Only the entry sequence (above), with its porch and a pedestrian bridge supported by a sculptural pylon, adds a note of contemporaneity.

THE DESIGN for a convention center in central Spain's historic city of Toledo presented Rafael Moneo with a fascinating problem: how to insert a modern, 400,000-square-foot building into a city that has scarcely changed since El Greco painted it in the 16th century.

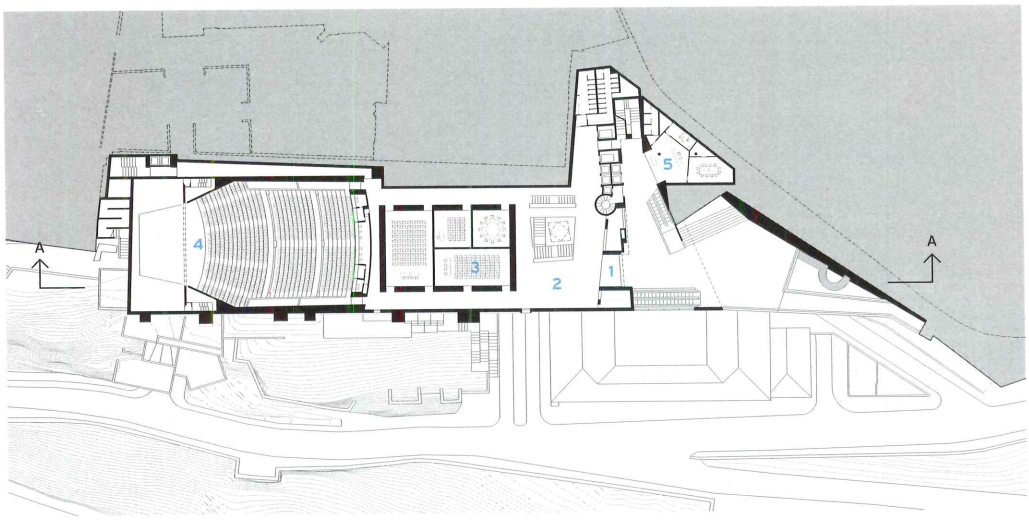
The Spanish architect's approach is essentially mimetic. He has introduced a platform, or terrace, into the existing mix of buildings and vegetation on the steep, fortified flanks of Toledo as it rises on a high bluff overlooking the Tagus River. Despite a few contemporary flourishes, El Greco Congress Center has a discreet presence, whether viewed from a distance or up close, as visitors climb the Paseo del Miradero from the city gates to the central Plaza de Zocodover at the top of the rise.

The building forms part of a master plan developed by the Barcelona urbanist Joan Busquets in 1993, which sought to improve access to the hilltop core of this UNESCO World Heritage site and to promote new activities. Toledo was an important center under the Romans, Visigoths, and Moors, and was the capital of Catholic Spain for nearly 600 years before enduring centuries of decline. More recently, the regional government of Castile–La Mancha and a public university have occupied many of its historic buildings, bringing greater diversity but worsening traffic congestion. Busquets's plan included new parking areas at the hill's base, with escalators to the city above. Working with the planner, Moneo suggested moving the parking to the site of an unattractive existing garage, replacing the structure with a new building that also includes a conference facility originally planned for another site.

The center's outer wall replaces sections of old rubble walls, in poor condition and of no historical value. The excavation behind it accommodates five levels of parking for 600 cars and the convention center with a 1,000-seat auditorium, a multipurpose hall with a capacity for 500, a restaurant, and four smaller conference rooms, all topped by a terracelike roof that has become a popular evening attraction.

Moneo marks the entry to the building with a series of studied formal gestures that constitute his contemporary contribution to the urban fabric. A covered, porchlike plaza connects to the Paseo del Miradero via various ramps and stairs, including a pedestrian bridge that swoops out from the walls over the void below, supported by a sculptural, three-armed concrete pillar. Runs of escalators descend from the plaza along the inside face of the building's exterior wall to the street below, where they connect with a drop-off point for tour buses and to the main bus and train stations, located a few blocks away. The building thus functions as a key connector between transportation hubs and the city.

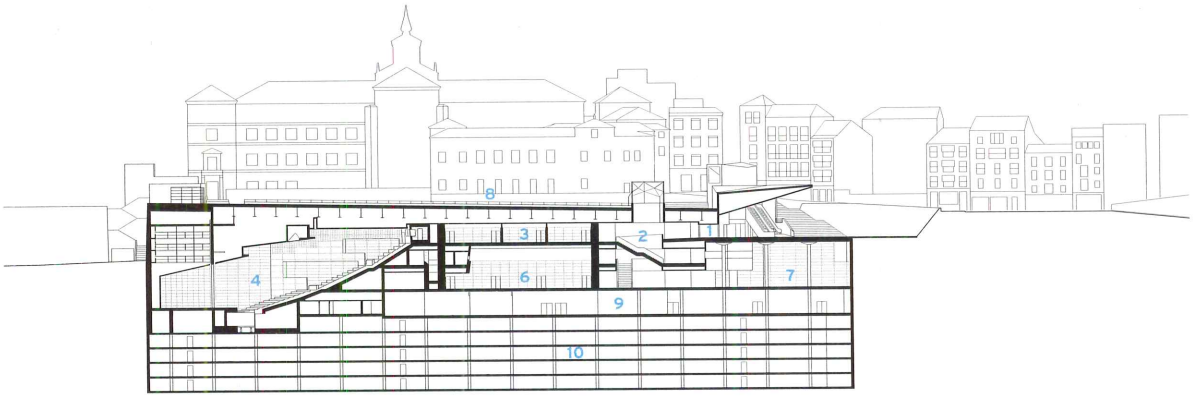
Moneo developed the project over 12 years, adjusting the design in response to severe



TOP FLOOR

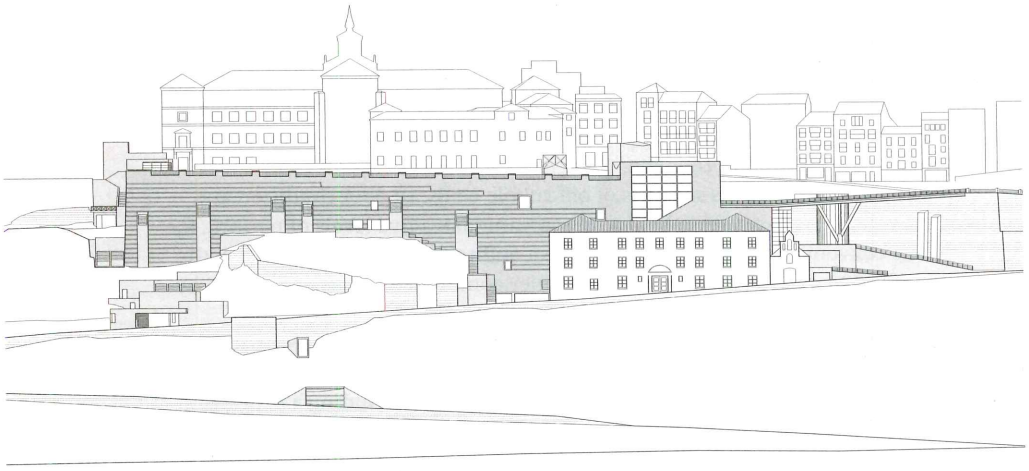
0 50 FT. 15 M.

1 MAIN ENTRANCE
2 FOYER
3 MEETING SPACE
4 AUDITORIUM
5 OFFICE
6 MULTIFUNCTION
7 RESTAURANT/EXHIBITION
8 ROOF TERRACE
9 SERVICE FLOOR
10 PARKING



SECTION A - A

0 50 FT. 15 M.



NORTH ELEVATION

0 50 FT. 15 M.

credits

ARCHITECT: Rafael Moneo – Oliver Bieniussa, project architect; Julie Hui-Guang Kaufman, Fernando Iznaola, Edgar Sarli, Dirk Schluppkotten, team

ENGINEERS: Jesús Jiménez (structural); Rafael Úrculo (mechanical)

CONSULTANT: Higini Arau (acoustic)

GENERAL CONTRACTOR: Acciona

CLIENT: Ayuntamiento de Toledo

SIZE: 487,800 gross square feet (including parking and outdoor spaces)

COST: $56 million

COMPLETION DATE: December 2012

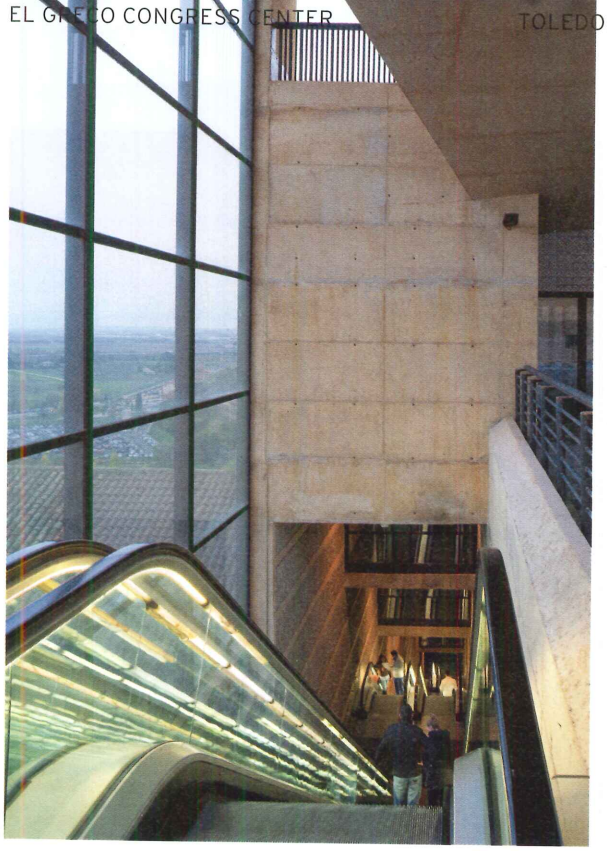
SOURCES

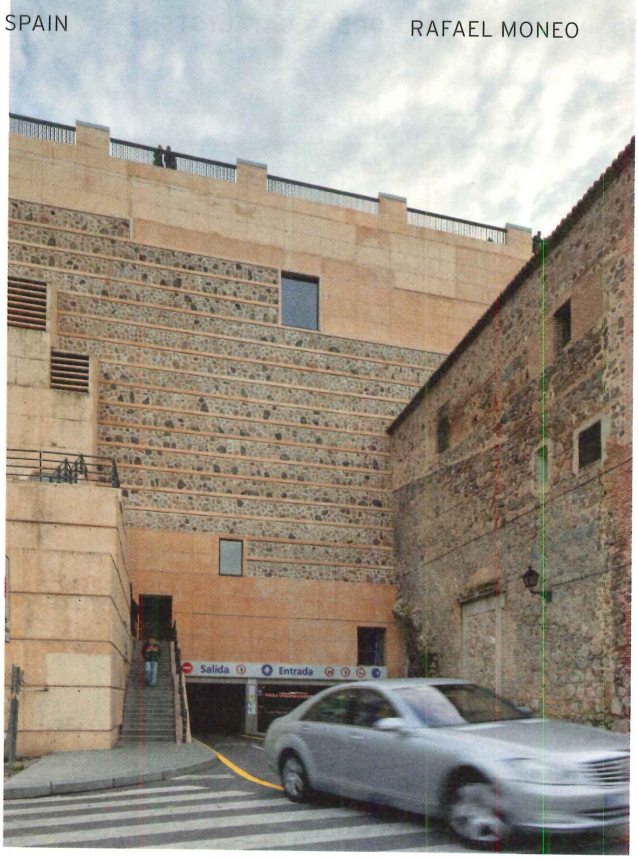
ELEVATORS/ESCALATORS: ThyssenKrupp

ACOUSTIC CEILINGS, CUSTOM WOODWORK: Frapont

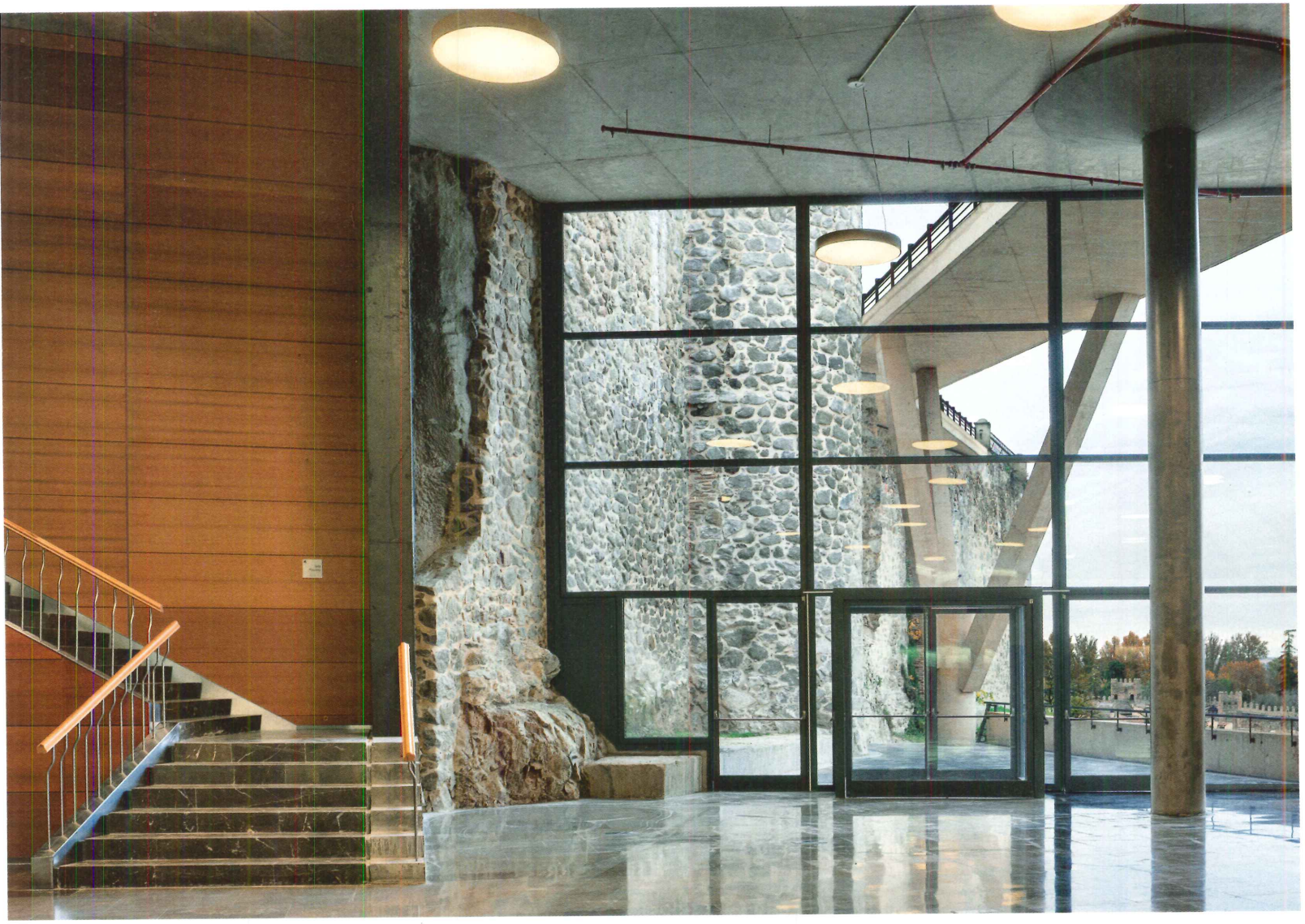
HARDWARE: Assa Abloy

FIXED SEATING: Rafael Moneo for Poltrona Frau





STITCH IN TIME
The facade (left), which abuts existing structures, consists of granite rubble bands with concrete trim. The "buttresses" are vents for the parking garage. Escalators (far left) drop nine levels from the entry plaza to link the city center to nearby bus and train stations. Moneo designed the signage for the porchlike entry (below), which opens to the street leading up to the city center. Stairs and exterior paving are made of basalt, and walls are of poured concrete.

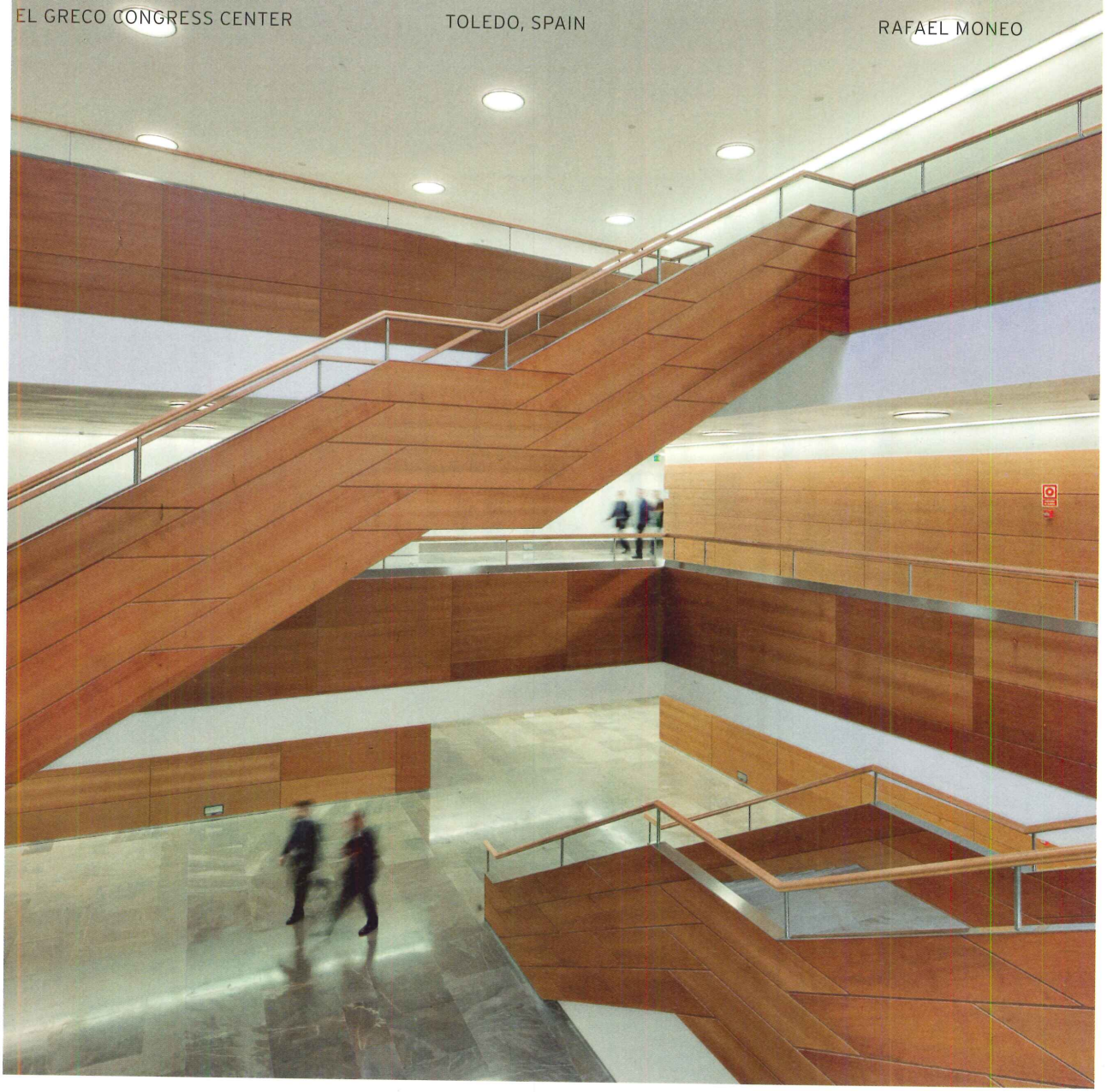


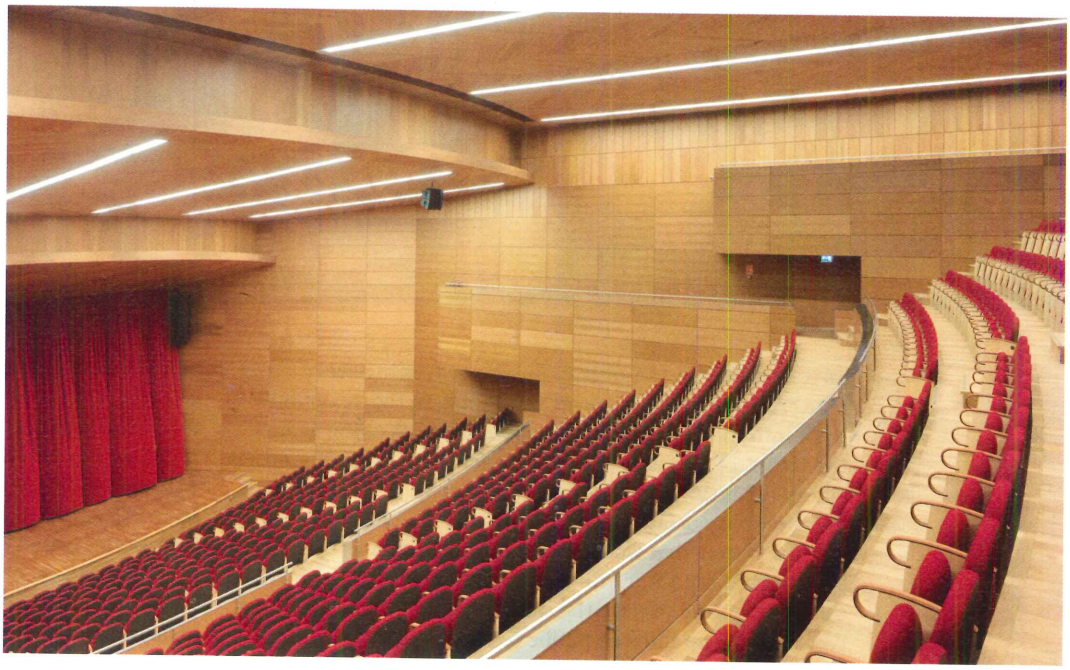
cost restrictions and construction delays. Some of the center's weaknesses might be attributed to these factors, particularly the rough quality of the exposed concrete, whose defects are magnified by its yellowish pigmentation, which was selected to blend into the color palette of the city but remains jarring to the eye.

The main facade, which is highly visible when seen from below, is finished to resemble other sections of the city walls, although in broader, contemporary proportions, with horizontal strips of coarse granite stonework separated by bands of concrete. The surface is interrupted by the vertical piping of vents for the parking garage, which emulate the stone and brick buttresses of nearby retaining walls. The vents are another discordant presence, finished in concrete and arranged rather weakly at different heights and spacing. A more regular spacing, like that employed by the surrounding houses, might have been more convincing.

"We had to make many adjustments over many years, and worked with very limited resources," says Moneo in response to these criticisms, while underscoring the relevance of his imitative approach. "We were always clear about the basic strategy—and that is what's important. If the strategy is correct, everything that accompanies the project becomes secondary. And so it can be forgiven that the masonry is not strictly traditional, or its trimming is of concrete instead of brick."

To what degree does Toledo's memorable cityscape depend on the quality of each of its individual buildings? Zeroing in with a critical eye on any one of the anonymous structures that make up most of the urban fabric, you may find it lacking in one way or another—a dubious modernization, a drab exterior finish. Likewise, the crude workmanship, jarring color, and busy entry structure of Moneo's design may strike a discordant note at first sight. But take a step back, and everything blends into a harmonious whole. Given time and familiarity, Moneo's convention center will certainly join in Toledo's forgiving accumulation of historical periods. As the architect explains, "The building is there, but it is inconspicuous. It contributes to the life of the city, but it doesn't declare its presence." But had he chosen to make it more decidedly of its own period, perhaps its contribution to Toledo's image would have been more positive—one of dialogue and encounter. ■





TOP DOWN A stair (above) descends from the entry level through a skylit well. It is the focal point of the circulation spaces, which have floors of gray Sierra Elvira limestone and cedar-paneled surfaces. The main auditorium (right), finished in cedar and oak, rises four levels from the stage, with upper seats close to the ceiling due to height limits. Moneo first designed the seating for his Kursaal Auditorium in San Sebastián, Spain (RECORD, May 2000). The restaurant space on the lowest level (opposite) opens to a terrace at the foot of old city walls uncovered during excavations.

SFJAZZ Center | San Francisco | Mark Cavagnero Associates

A new center for jazz in San Francisco invites the public in for more than musical riffs.

TAKE IT FROM THE TOP

BY LAMAR ANDERSON

PHOTOGRAPHY BY TIM GRIFFITH

AS A LATECOMER to San Francisco's performing-arts district, SFJAZZ, a 30-year-old concert series, had to figure out how to fit into the Hayes Valley neighborhood. Working against the backdrop of the Beaux Arts–styled San Francisco Conservatory of Music and War Memorial Opera House, Mark Cavagnero Associates set out to design a modern building for the jazz center that would look as if it had always been there. "We wanted to lock it into the street," says principal Mark Cavagnero, "and to have the sidewalk and the lobby and the café all open up into the public realm." Pointing out the center's diaphanous glass facade, he adds, "There's no opaque wall between you and the SFJAZZ Center. It's as transparent as we can make it."

When the new building for SFJAZZ opened in January, it became the first stand-alone venue specifically built for jazz in the U.S. (Jazz at Lincoln Center's Rose Hall in New York is part of the Time Warner Center.) This musical arrival to the neighborhood replaced a muffler shop that had not extended all the way to the sidewalk. To integrate the center into the streetscape, the architects massed the upper two levels of

View additional images at architecturalrecord.com.

the three-story building to align with those of neighboring structures and pulled back parts of the top floor to echo, in an abstract manner, the pattern of a mansard roof next door. Along the building's south side, a concrete wall bookending the upstairs balcony juts out in front of a neighboring church. To avoid blocking the sun on the church's facade, the architects added a slotted opening that lets daylight through.

The architects conceived the 36,550-square-foot structure as a living room for the neighborhood. The central volume, a concrete box housing a state-of-the-art auditorium, carries the building's entire seismic load so the L-shaped perimeter, containing public amenities, can have as much uninterrupted glass as possible. Such spaces—including porchlike lobbies on the first and second levels, a sidewalk café run by restaurateur Charles Phan, and an ensemble room for rehearsals or smaller performances, which are visible to passersby—stay open both day and night.

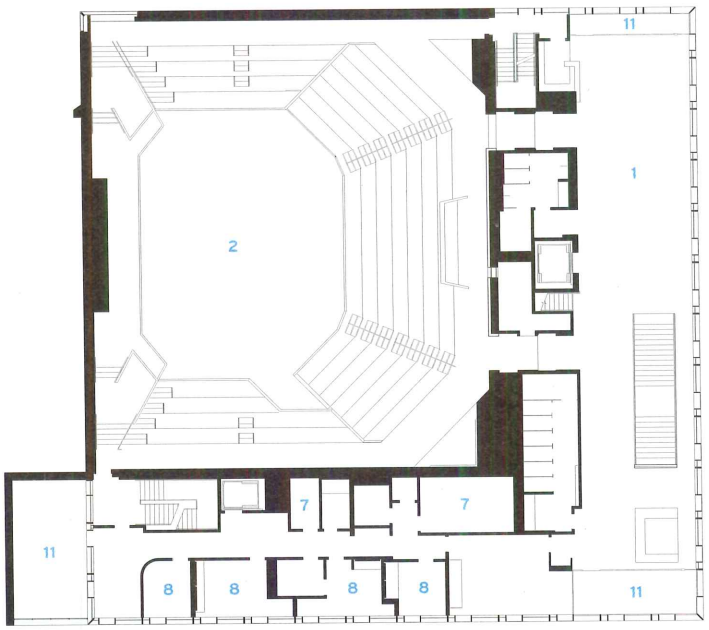
To build an auditorium that would recall the intimate experience of a jazz club, the architects discarded the traditional shoebox layout with a proscenium stage and a narrow block of seats. Instead, they took inspiration from a nonmusical typology: a cube-shaped community room along the lines of Frank Lloyd Wright's Unity Temple in Oak Park, Illinois (1908). With a customized acoustics system aided by a large steel-tube canopy and baffles behind the musicians, the architects (with theatrical consultants Auerbach Pollock Friedlander) were able to arrange seating on all sides of the performers. Flexible elements, such as movable risers, an adjustable stage, and acoustic screens—which block unfilled seats from view—allow the space to make a transition in scale and configuration from a small dance floor surrounding the musicians to a 734-seat concert hall.

By giving the seats a steep rake, the architects set up a personal relationship between the audience and performers. "The musicians look at people's faces and not at the tops of their heads," says Cavagnero. "They like that feeling of being

DISCREET TRANSPARENCY
The architects pierced the poured-in-place-concrete structure with glass window walls so pedestrians standing outside the south facade (right) or the north facade (opposite) can observe activities within.

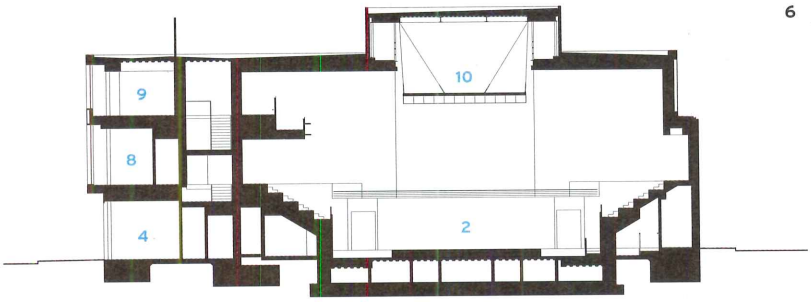
FIRST FLOOR

0 20 FT. 6 M.

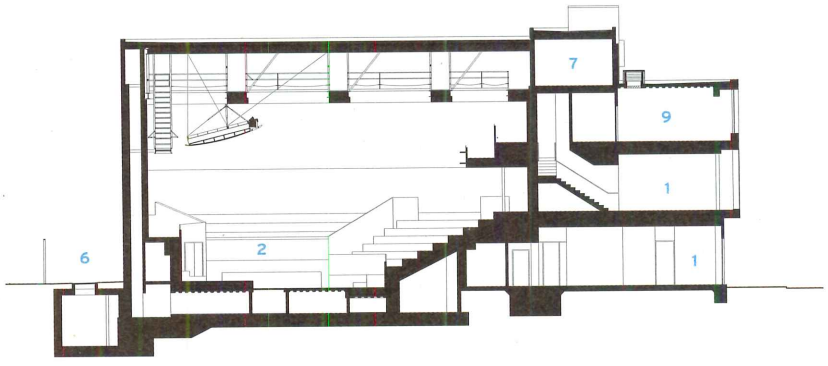


SECOND FLOOR

1 LOBBY
2 AUDITORIUM
3 ENSEMBLE ROOM
4 CAFÉ
5 EDUCATION SUITE
6 LOADING DOCK
7 SUPPORT
8 DRESSING ROOM
9 OFFICE
10 TECHNICAL MEZZANINE
11 OUTDOOR TERRACE



SECTION B - B



SECTION A - A

0 20 FT. 6 M.

credits

ARCHITECT: Mark Cavagnero Associates – Mark Cavagnero, design principal; Kang Kiang, principal in charge; Goetz Frank, project architect; Cameron Cooper, job captain

ENGINEERS: Forell/Elsesser Engineers (structural); WSP Flack + Kurtz (m/e/p, lighting)

CLIENT: SFJAZZ

CONSULTANTS: Auerbach Pollock Friedlander (theater); SIA Acoustics (acoustical); McClintock Facade Consulting (facade)

SIZE: 36,550 square feet

COST: $33 million

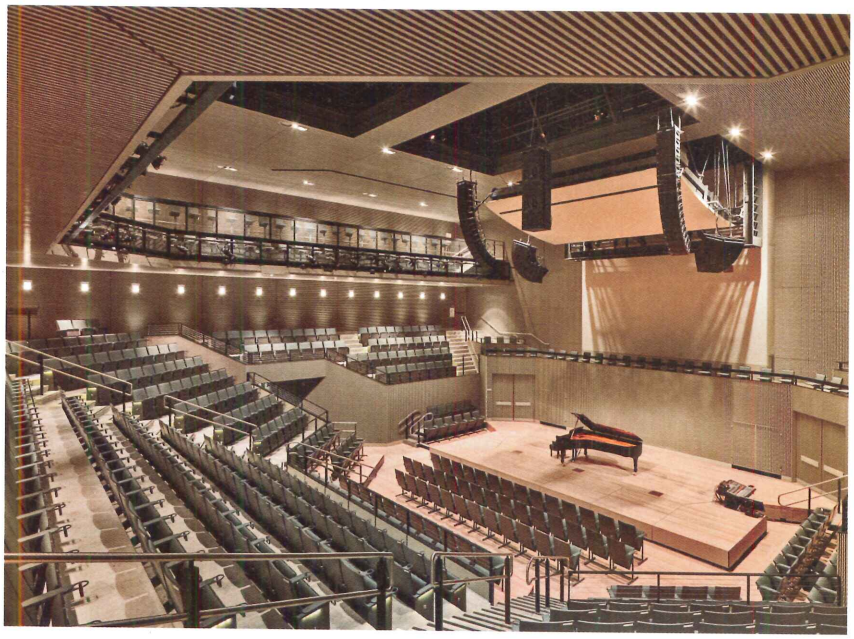
COMPLETION DATE: January 2013

SOURCES

RAINSCREEN: Swisspearl

METAL AND GLASS CURTAIN WALL, GLAZING: Zetian Systems West

ENTRANCE DOORS: PRL Glass Systems; Dorma USA (floor closers)



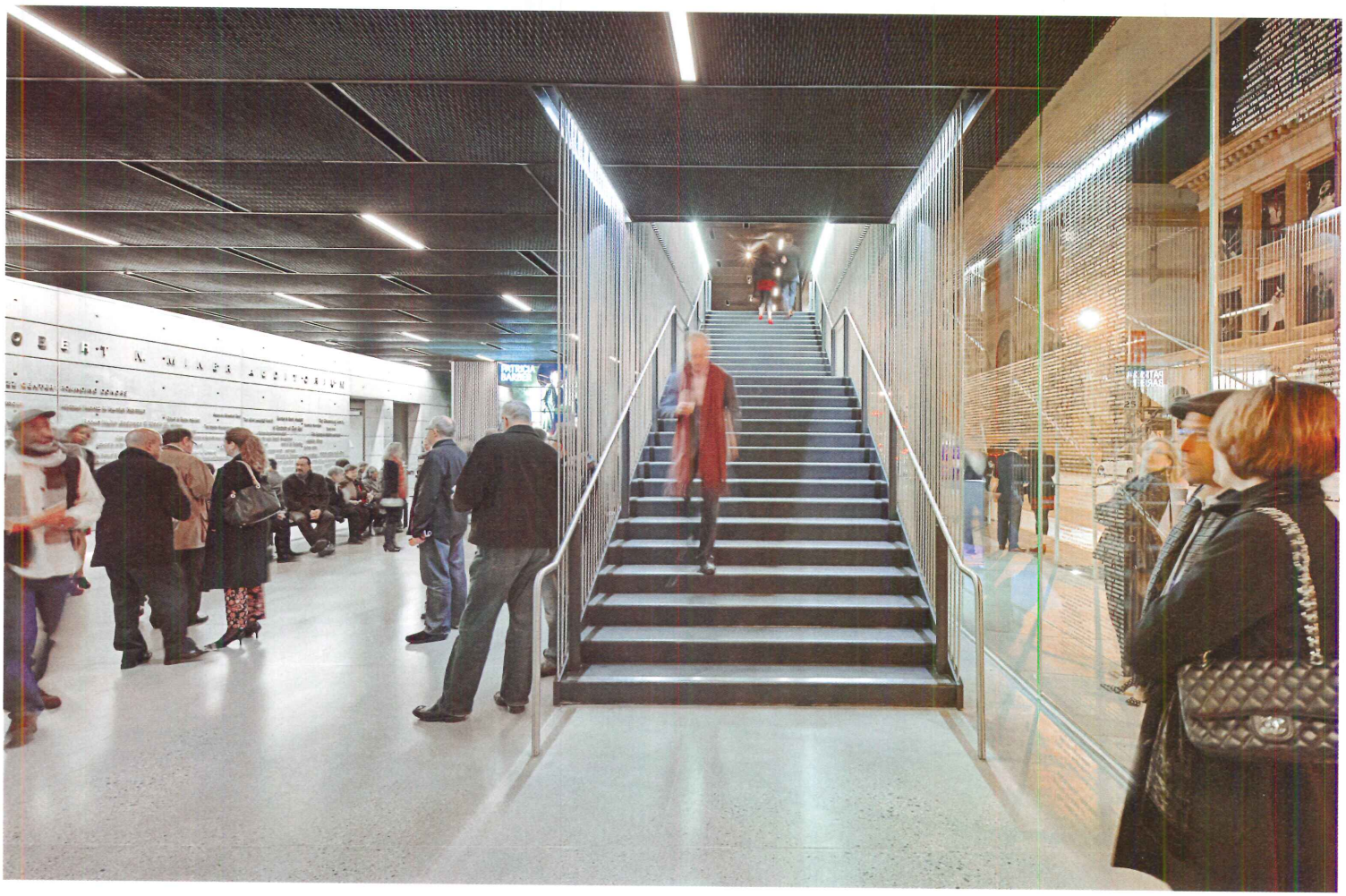
FLEXIBILITY REIGNS Asymmetrically arranged seating for more than 700 wraps the auditorium stage on four sides (above). The center is designed to draw the public inside day and night (below) with a lobby on two levels and other amenities.

immersed in the audience. There's a sense of energy they get from a steeply raked house."

To extend that spirit of exchange to the building edge, the architects used low-iron glass for the facade. Its balance of transparency and reflectivity picks up nearby buildings, trees, and passing cars so that the perimeter seems to dissolve into the cityscape in the daytime. At night, the center's lights restore the building's edge, revealing the activity within. Through a swath of glass that cuts from the café to the stage, passersby looking in before a concert can see the piano bathed in a spotlight.

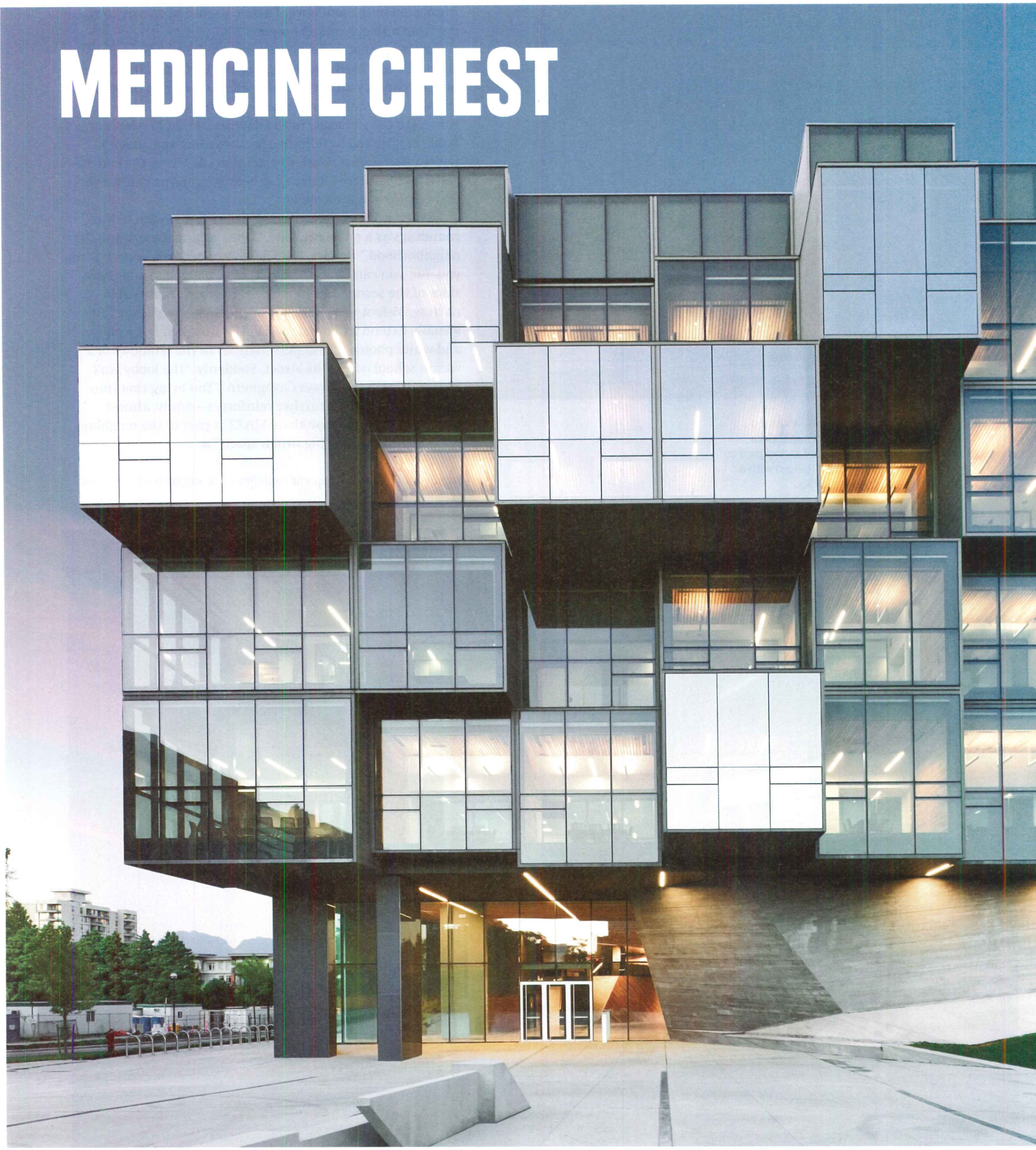
Cavagnero sees the building's relationship with its surroundings as a reciprocal one. "Once you start engaging the neighborhood," he says, "the neighborhood can benefit from you. But you can benefit from it, too." Using glass on three sides of the second-floor lobby, for instance, makes the narrow, 25-foot-wide hall appear much more spacious. To visually extend its boundary, SFJAZZ installed large black-and-white photos of jazz personalities in the windows of a vacant school across the street. Suddenly, "the lobby isn't 25 feet, it's 125 feet," says Cavagnero. "You bring that into your building, and it further reinforces—subtly, almost subliminally—the sense that SFJAZZ is part of the neighborhood. It's all just one big urban space." ■

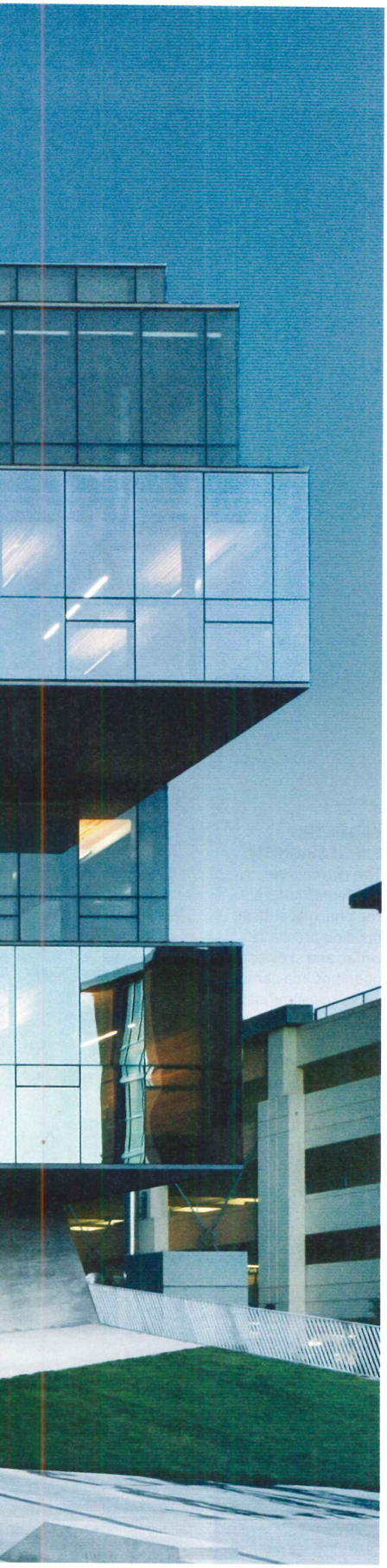
Lamar Anderson is a frequent contributor to RECORD *who is based in San Francisco.*



UBC Faculty of Pharmaceutical Sciences | Vancouver, British Columbia | Saucier + Perrotte Architectes and HCM/

MEDICINE CHEST





In Vancouver, a new campus building for pharmaceutical studies conceived by Gilles Saucier makes a bold statement while reshaping its context.

BY JAMES GAUER

PHOTOGRAPHY BY MARC CRAMER

ICONIC DESIGNS don't always make good places. Photogenic buildings that assert themselves as individual landmarks may ignore their context and fail to enhance the public realm. Yet the University of British Columbia (UBC) Faculty of Pharmaceutical Sciences and Centre for Drug Research and Development, a new 275,870-square-foot research, teaching, and office facility, succeeds on both individual and community levels. Designed by Saucier + Perrotte Architectes (S+P) of Montreal with Hughes Condon Marler Architects (HCMA) of Vancouver, it's already famous for the Cubist collage of glass volumes that animates its west facade. The entire structure, intended to promote creativity and collaboration among its 790 students and 55 faculty members, provides UBC with a state-of-the-art building worthy of its international reputation. And it transforms a nondescript corner of the campus into a prominent gateway.

GLIMMERING ABSTRACTION
The west facade of the pharmaceutical building provides a showstopping entrance, where glass-clad cubes are pulled out of the volume (opposite). Occupying a corner site on the UBC campus, the rectilinear structure hovers above a base where sleek glass walls alternate with sturdy poured-in-place concrete, as shown on the south facade (above).

UBC occupies 1,005 acres eight miles west of downtown Vancouver and serves almost 50,000 students. Its architecture ranges from Collegiate Gothic to an International Style of concrete, brick, and glass. The campus enjoys a natural setting of breathtaking beauty on a wooded promontory overlooking the Strait of Georgia—but not on its lackluster southeast edge, where the pharmacy school occupies a 2-acre site. Yet the building more than fulfills new campus guidelines intended to increase density, strengthen a sense of place, and promote design quality. Its powerful rectangular form, cantilevered over a recessed ground floor, anchors a busy intersection and a well-traveled pedestrian path. It also frames outdoor space and displays its academic activities in a highly transparent, signature work, whose taut glass skin—in six shades from clear to black—provides a suave counterpoint to a banal parking garage next door and the trio of red-brick masses across the road that house the life-sciences department.

Saucier + Perrotte and HCMA articulated the building's program by looking to nature. "The idea of a root system growing over time into a tree with an extensive network of branches serves as an allegory for the development of modern medicine," says S+P design principal Gilles Saucier. "The image of two trees and their foliage, fused and intertwined, provided the conceptual underpinning of the building."

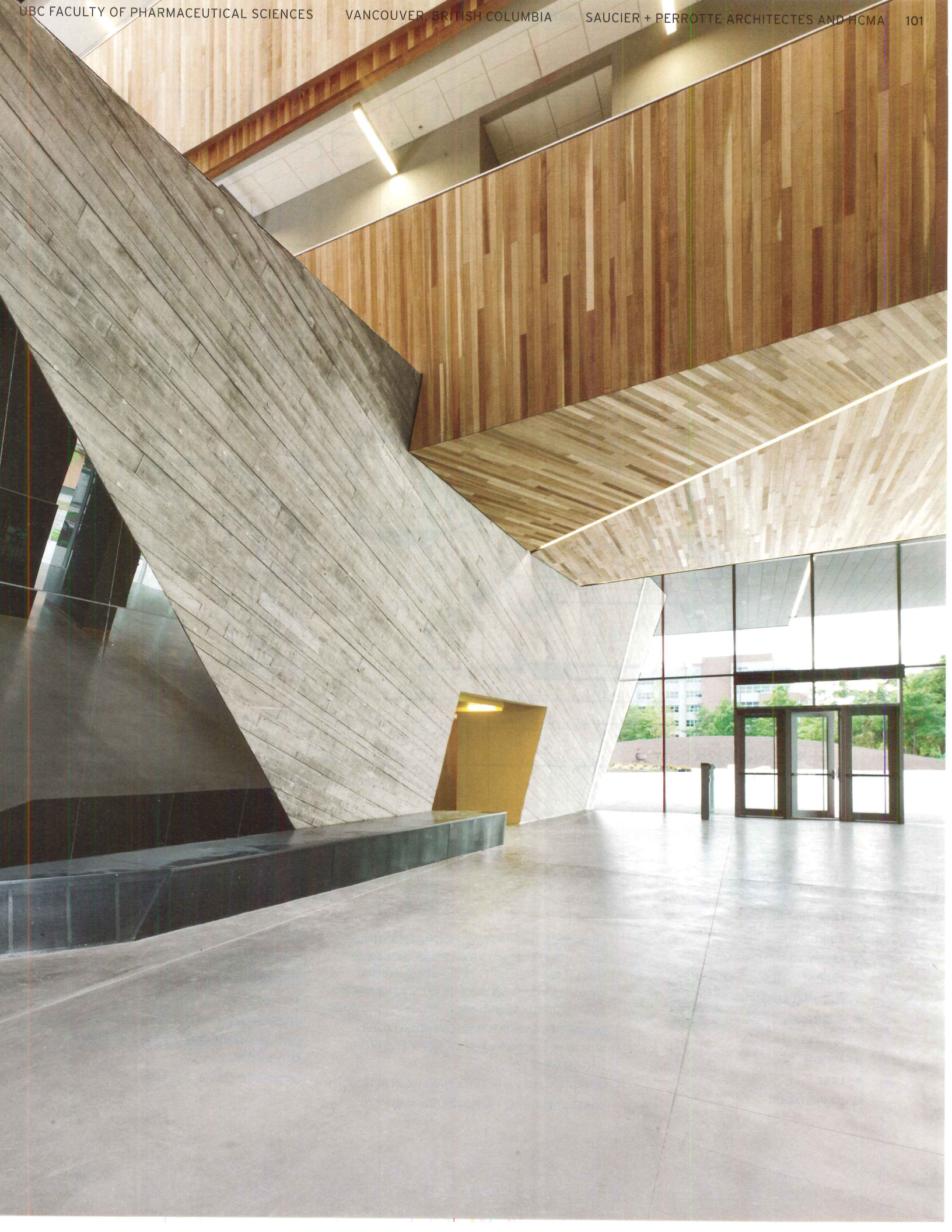
In trying to link the metaphor of trees to a sleek glass enclosure, Saucier urges you to "think of the image of two trees with overlapping canopies. Then visualize this image pixelated, transforming the

Watch a video of this project at architecturalrecord.com.

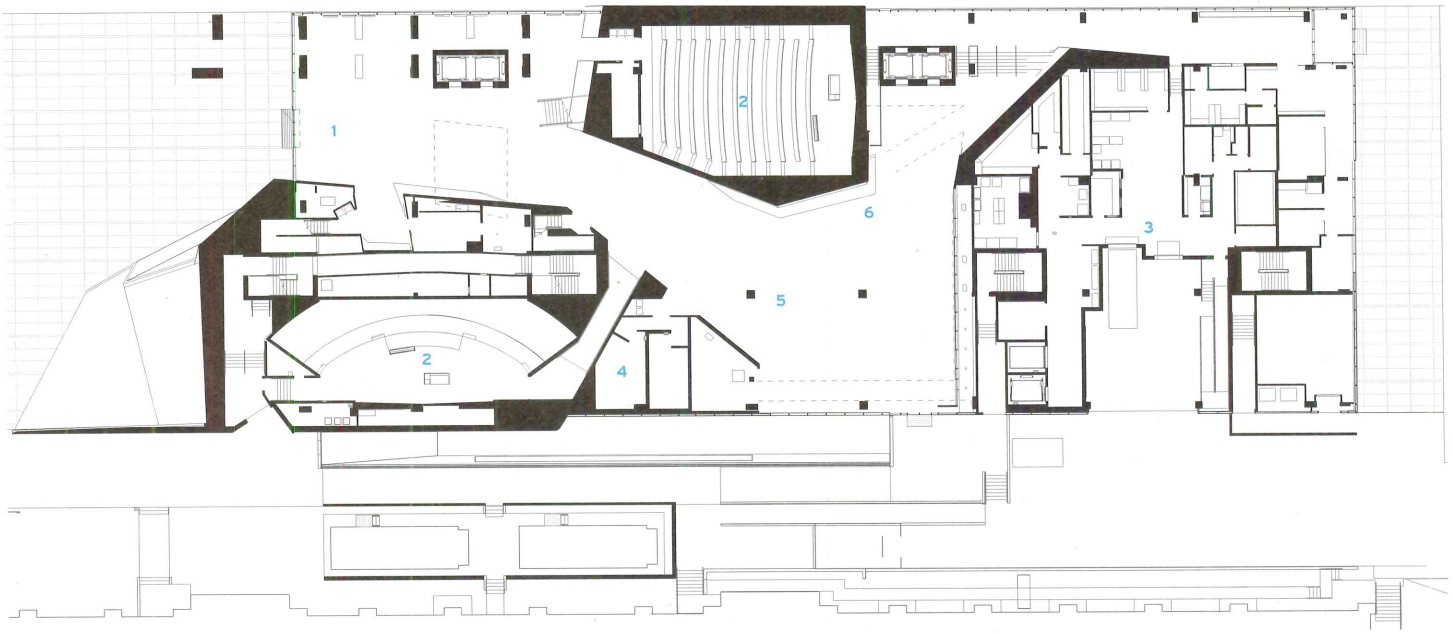
GEOMETRIC EXPRESSIONISM The two wedge-shaped atriums of the pharmaceutical building are clad in cedar, and skewed openings in a canted white gypsum-board wall along the south end of the east atrium reveal glimpses of the perimeter circulation (left). Cedar also lines the cubiform offices (below). In the lobby (opposite), the poured-in-place-concrete structure looks like an angular tree trunk.

organic shape of the foliage into a more Cartesian geometry." (You have to squint a bit, but it works.)

The pixelated geometry reaches its climax on the iconic west facade, where the planar glass curtain wall that clads the other facades explodes into a sculpture of cantilevered cubes. This tectonic tour de force overlooks a plaza whose abstract design extends the building's ground plane into the landscape with concrete and wood benches meant to evoke tree roots. Above, the glazed cubes contain seminar rooms, some clad in mirrored glass, which will reflect foliage at the opposite end of the plaza once the trees have grown tall enough.



FIFTH FLOOR



GROUND FLOOR

0 30 FT.
10 M.

1 ENTRANCE
2 AUDITORIUM
3 RECEIVING AND STORAGE
4 FOOD SERVICES
5 INFORMAL LEARNING
6 COMMONS
7 OFFICES
8 ATRIUM
9 LABS
10 WORKSTATION

credits

ARCHITECT: Saucier + Perrotte Architectes and Hughes Condon Marler Architects – Gilles Saucier (S+P), design principal; André Perrotte (S+P), Roger Hughes (HCMA), managing principals; Bill Uhrich (HCMA), Craig Lane (HCMA), project architects; David Moreaux (S+P), design coordinator

ENGINEERS: Glotman Simpson Consulting Engineers (structural); Stantec (mechanical); Applied Engineering Solutions (electrical)

CLIENT: University of British Columbia Properties Trust

CONSULTANT: Perry + Associates (landscape)

SIZE: 275,870 square feet

COST: $90.5 million

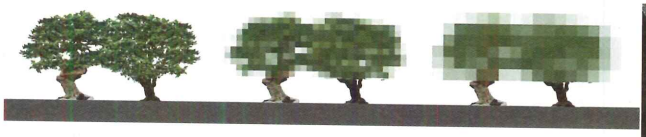
COMPLETION DATE: September 2012

SOURCES

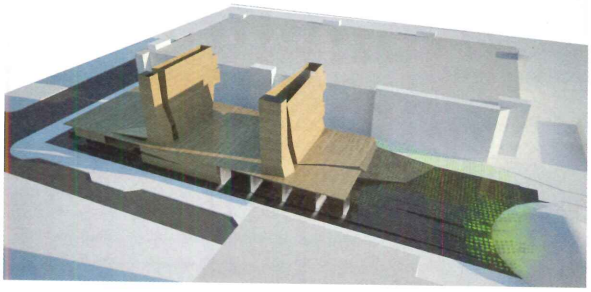
CURTAIN WALL: Inland Glass and Aluminum; Glasstech

ZINC AND ALUMINUM SOFFITS AND ROOFING: Kerrian Metalhouse

SKYLIGHTS: Echo Glass Installations



The architects pixelated an image of two trees to morph the organic form into Cartesian geometry for the building's design.



The poured-in-place-concrete base rises up to enclose two atriums.

Cubiform offices on the perimeter wrap around white laboratory volumes separated by the atriums.

The tree analogy serves as a placemaking exercise inside as well, where a monumental public space on the ground floor makes the organic parti palpable. There, within the pharmaceutical center's sleek glass enclosure, the metaphorical tree roots are tilted planes of rough, board-formed concrete, resawn cedar planks, and black glass, which dramatically heave up from a polished concrete floor. The cedar planks extend upward to cover skewed ceiling planes and parapets edging two obliquely shaped atriums. Concrete elevator cores are painted black, as are steel stairs leading to a mezzanine surrounded by a black glass railing. Recessed theater entrances, painted bright yellow, provide relief from the otherwise somber palette.

The amorphous space around the theaters is a lively if dimly lit student commons with a café and an exhibition on the history of medicines, elegantly installed in vitrines and wall panels. With entrances on all four sides and an envelope of clear glass, this dynamic and densely textured public space can be easily seen by passing pedestrians.

High above, the "tree trunks" grow into two light wells that naturally illuminate the interior. Cubic white "treehouses" of fritted glass and crisply detailed wall panels contain laboratories for pharmaceutical research and development. Offices and meeting rooms are placed at the perimeter, like branches and foliage. "The difficulty of this project," Saucier notes wryly, "was knowing when to stop referring to the transformation of trees, because, of course, in the end it's about the spaces." Luminous circulation paths wrap around the skylit atriums in an arrangement that provides, according to HCMA managing principal Roger Hughes, "spaces for chance encounters and cross-pollination of ideas."

Metaphors don't always yield good architecture, but Saucier's building-as-trees is surprisingly and subtly successful. Its elegant glass volume gives the site a much-needed dose of urbanity, enlivening the pedestrian paths and open space that surround it while showcasing its functions in the highly articulated interior. If the finishes used on the ground floor to elaborate the metaphor create a rather lugubrious effect, apparently it hasn't dampened the spirits of the students and faculty. "I love it," says one undergraduate. "It's *our* building." Proof of their enthusiasm is the student-performed lip-dub video "It's Always a Good Time"—a bouncy, dance-along tour of the new UBC building that anyone can check out on YouTube. ■

James Gauer is an architect based in Victoria, B.C., and the author of The New American Dream: Living Well in Small Homes.

LIGHT BEAM
On the north edge of the sixth floor (above), a narrow skylit shaft brings natural illumination into the interior, separating the offices (banked on two levels) from the higher-ceilinged laboratories. The skinny light well runs perpendicularly to the two large cedar-clad atriums in the interior of the block.

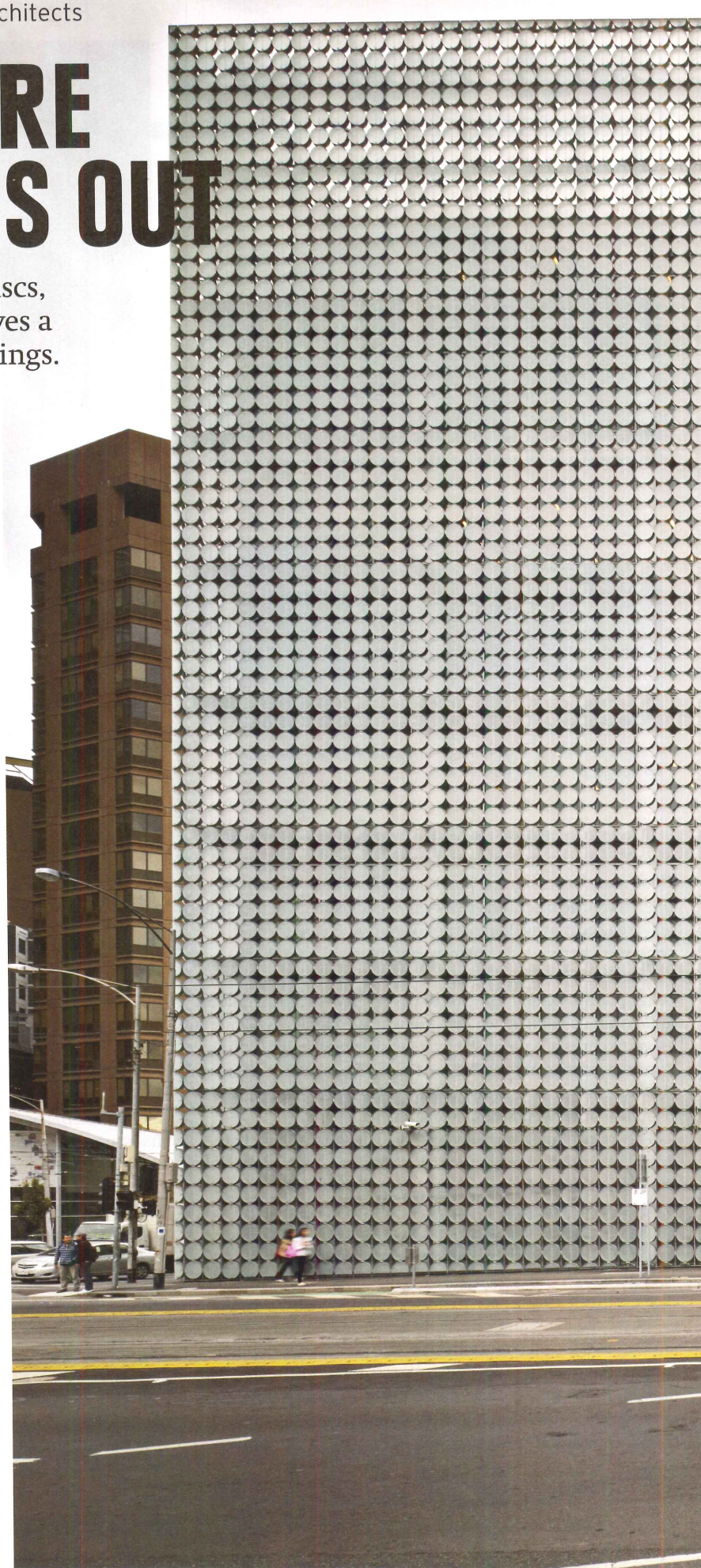
RMIT Design Hub | Melbourne | Sean Godsell Architects

WHEN A SQUARE BUILDING FLIPS OUT

With more than 16,000 rotating glass discs, a center for multidisciplinary design gives a new spin to engaging with its surroundings.

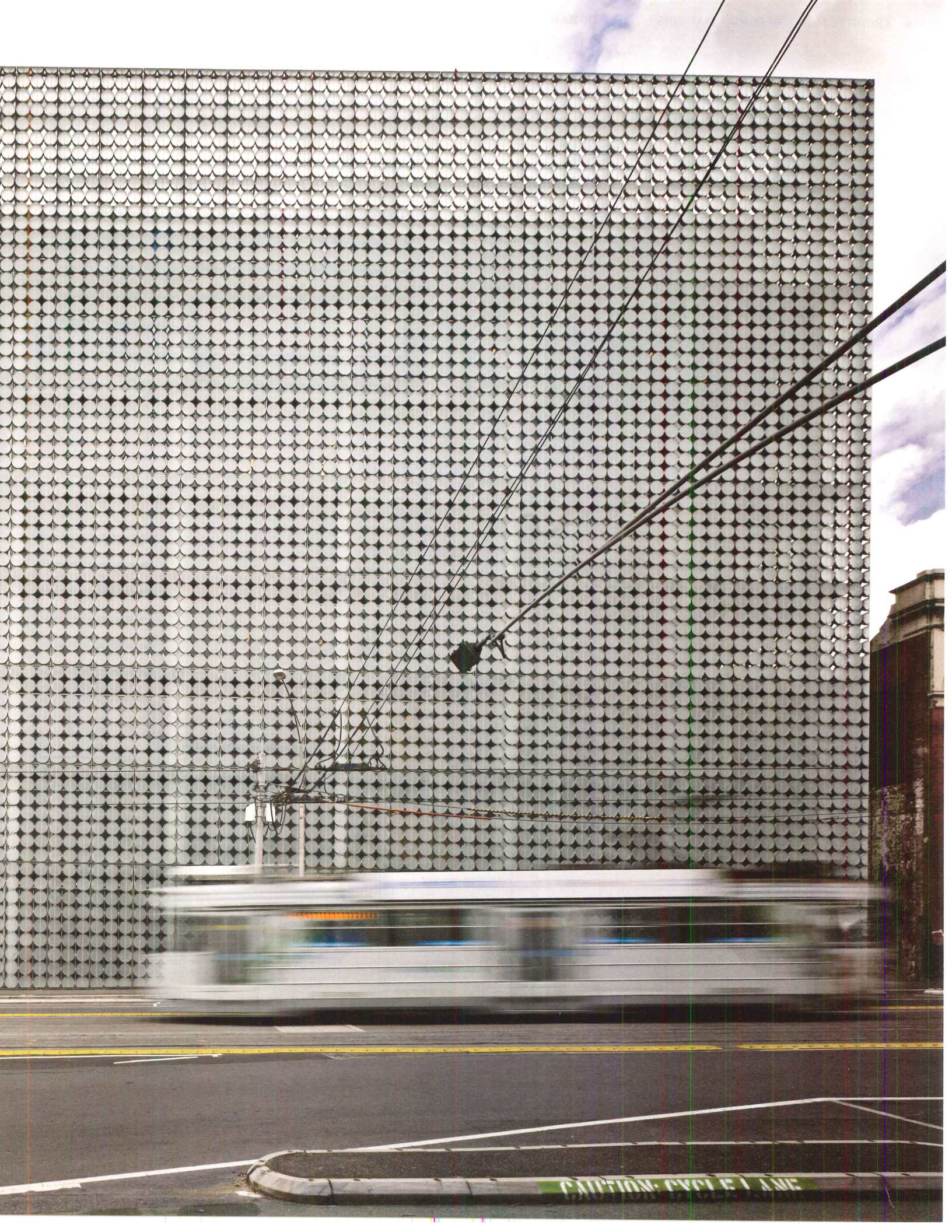
BY ELIZABETH FARRELLY

PHOTOGRAPHY BY EARL CARTER

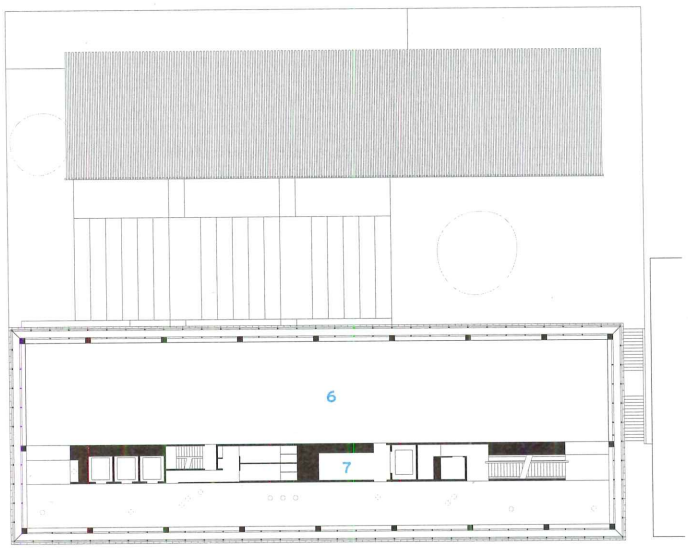


SEAN GODSELL is a surprise. I'm expecting a rising rock star of an architect, a Melbourne Bjarke Ingels, with more success than he knows how to use. The man I find is almost the opposite—more in the mold of Glenn Murcutt, with a small, dedicated practice, an intense seriousness about the job, and a staunch devotion to making architecture from first principles.

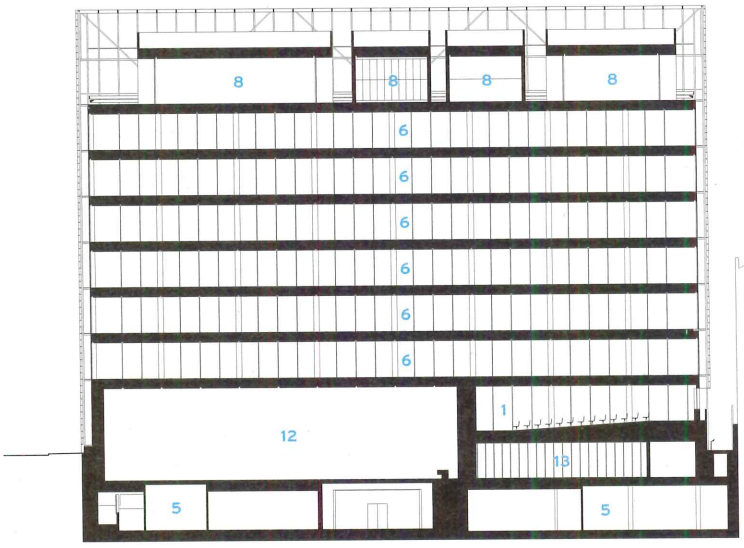
Godsell's reputation, like Murcutt's, is bigger than his buildings, which are themselves remarkably Murcuttesque, with their orthogonal forms, underdressed materials, and attenuated plans. Mostly boxes, they range from Future Shack, the 1995 parasol-sheltered habitable shipping container that first put Godsell on the international stage, through a series of widely published steel-and-timber houses (RECORD, April 2008, page 90). They stand in contradistinction to the typical Melbourne shtick, which implies that architecture is a bit of a giggle and repeatedly reenacts Venturi with the multicolored, the stuck-on, the decorative. Godsell is undisturbed by this, saying, "I'm happy to work in isolation."


CAUTION: CYCLIST AHE

FIFTH FLOOR

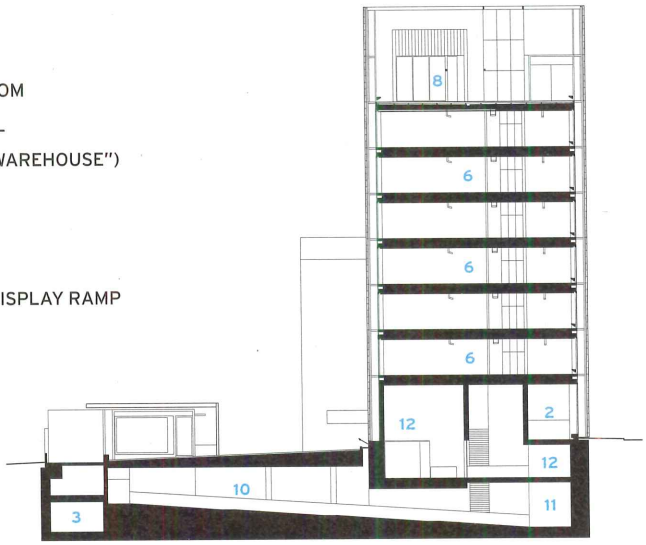


SECOND FLOOR



SECTION B - B

1 LECTURE HALL
2 LOBBY
3 ARCHIVES
4 MEETING ROOM
5 MECHANICAL
6 STUDIOS ("WAREHOUSE")
7 STORAGE
8 SEMINAR
9 KITCHEN
10 ARCHIVES-DISPLAY RAMP
11 DISPLAY
12 EXHIBITION
13 CAFÉ



SECTION A - A

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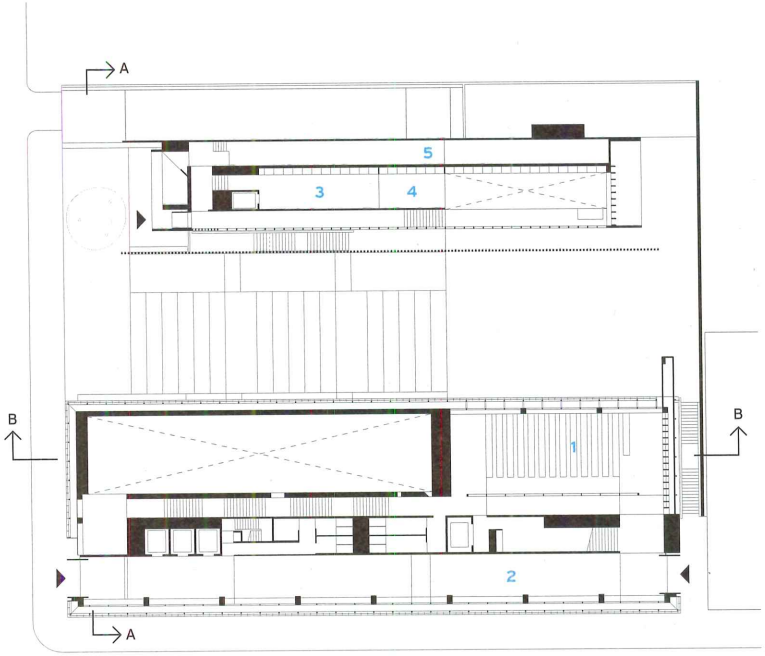
10 M.



GROUND FLOOR

0 30 FT.
10 M.

credits

ARCHITECT: Sean Godsell Architects – Sean Godsell, Hayley Franklin

ARCHITECT OF RECORD: Peddle Thorp Architects – Chris Godsell, James Hampton, Raf Nespola, project team

ENGINEERS: Felicetti (structural); AECOM (mechanical/electrical)

CONSULTANT: Aurecon (project manager)

GENERAL CONTRACTORS: Watpac (base building); Brookfield Multiplex Australia (fit-out)

CLIENT: RMIT University

SIZE: 140,000 square feet (gross)

COST: withheld

COMPLETION DATE: July 2012

SOURCES

FACADE: Permasteelisa Group

METAL PANELS ON ROOF PAVILIONS: Umicore Group

GALVANIZED-STEEL GRATING: Rhino Grating

Why the box? All architects fear being boring, says Godsell. The box is just the hardest form to make interesting. What is no surprise is that Godsell's latest triumph, the Royal Melbourne Institute of Technology (RMIT) Design Hub, is yet another box (or rather two), writ tall.

Highly nuanced and spatially serene, this project works on several levels and scales. From a distance, at the clash of two street grids that marks one of Melbourne's messiest and least charming precincts, it reads as an exercise in cool self-possession: translucent, ordered, its glowing skin folded with loose precision, kimono-like, about a solid core.

Closer up, you notice that the skin on one box has nearly 16,250 sandblasted-glass discs, which can be used for applied solar research and one day may fuel the building. (More on the facade on page 110.) Get even closer and you see that the discs become more opaque, their tessellation more dominant. The discs rotate (vertically on three walls, horizontally on the other) to reduce solar gain; when they do, the building becomes more textural, acquiring a reptilian scaliness.

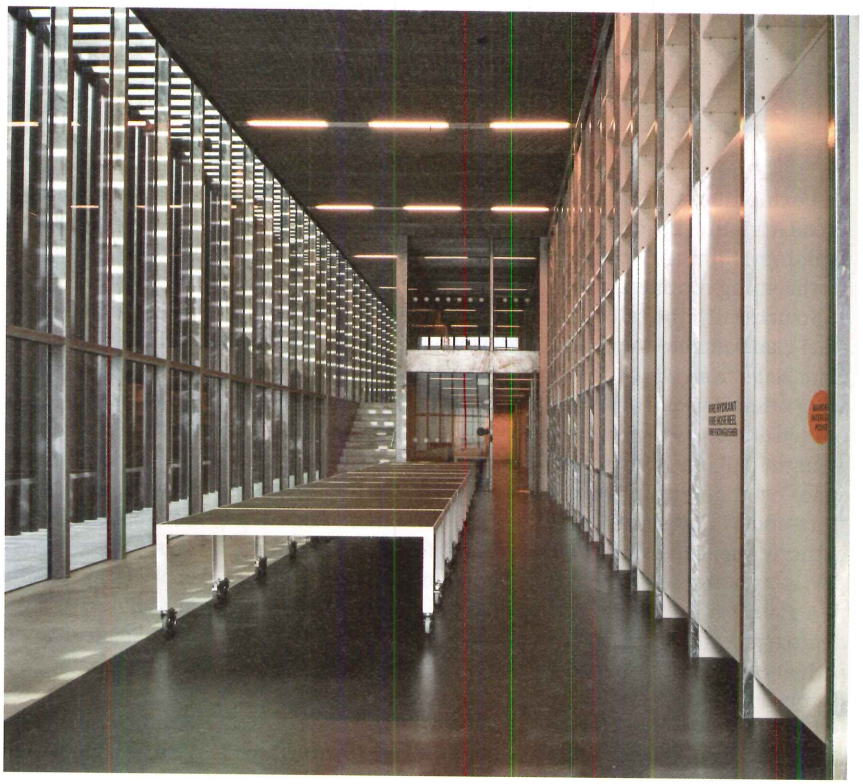
Australian universities can be divided into those established long ago on their own sprawling campuses and Johnny-come-lately institutions that are more scattered but also more urban. The latter stand at the forefront of current commitments to urban reinvestment and community connectivity, a vogue on which RMIT wholeheartedly capitalizes.

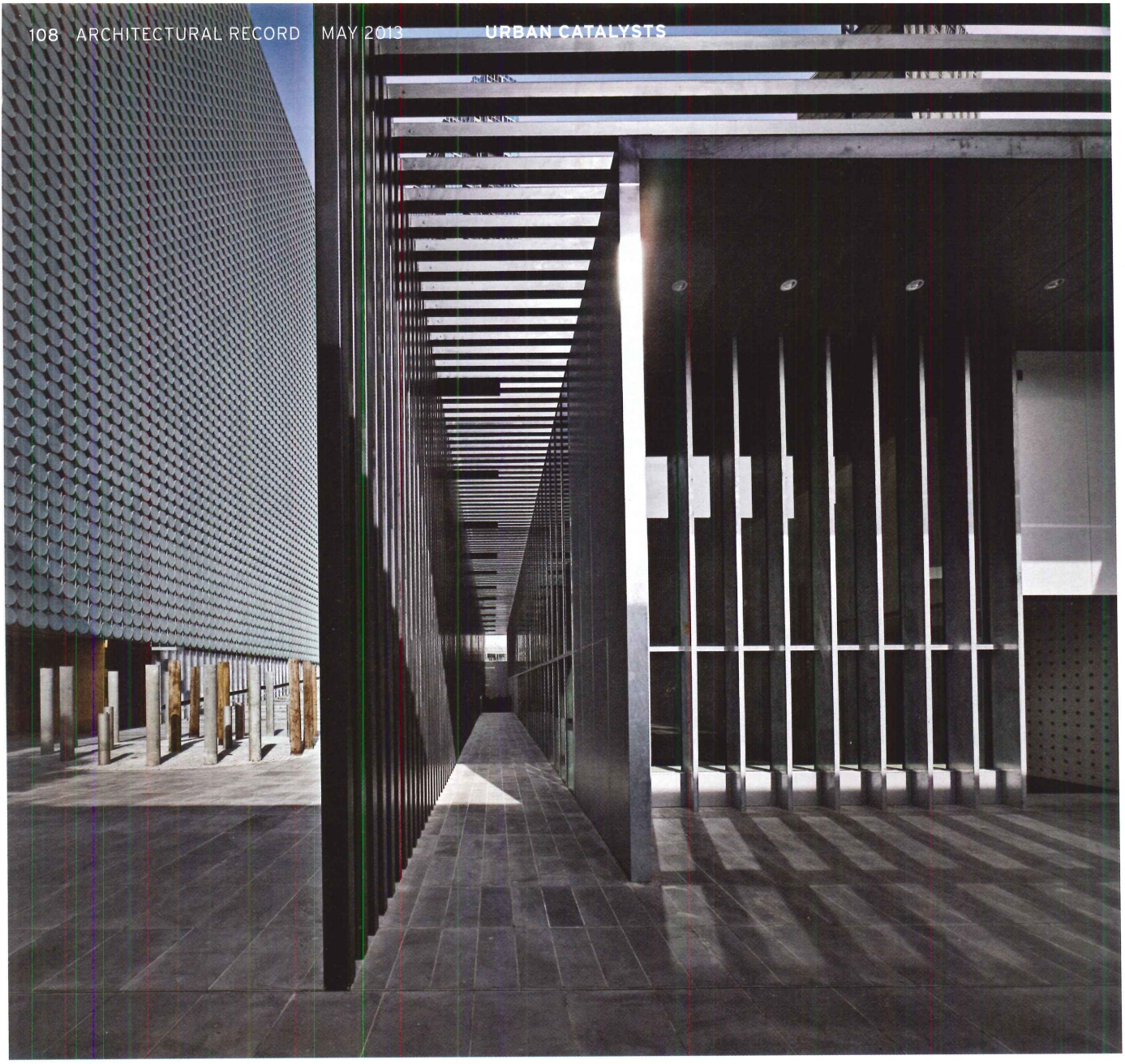
Margaret Gardner, RMIT's vice chancellor and the primary client for the Design Hub, says she wanted a building that would unify the design disciplines across this most urban of campuses, providing flexible studio spaces (or "warehouses") for transdisciplinary postgraduate research teams while drawing the life of the city in and through it.

It's a nice program and well fulfilled by Godsell's design, with its pair of boxes: an eight-story stack of flexible studio

STREET SMARTS The simple form of the main building (previous pages) provides a visual anchor at a messy intersection of two street grids. The 2-foot-diameter glass discs covering the building rotate to shade interiors and provide an animated skin that captures and reflects light in different ways.

AT WORK Most floors in the main building offer large "warehouse" spaces for transdisciplinary teams of designers to meet and work on changing projects (above). The lower building serves as the Design Hub's archives and has spaces for books, lectures, and exhibitions (below).





KEEPING COOL
The project earned the Green Building Council of Australia's highest rating at the time it opened, thanks to automated sunshading provided by movable and fixed discs on the main building (opposite), as well as perimeter-air intakes and fine-mist sprinklers in the double-glazed inner skin. The low archives building (at right in left photo) offers a visual and functional counterpoint to the tall main building.

and exhibition spaces, and a two-story archives wing. A broad, café-lined pedestrian space ramps between the two buildings, linking the street at one end of the site to a forthcoming commercial development at the other.

Structurally, the tall building is pretty conventional, with steel-clad concrete columns supporting partly-post-tensioned floor slabs from which the facade is hung. The low archives wing offers a visual and structural counterpoint, with a set of rectilinear steel tubes slipped one inside the other.

In the tall box, each main floor has a vast "warehouse" space for changing, project-based design teams and a parallel "long room" that serves as circulation, exhibition, and gathering space. On top of the building, four steel-portal pavilions house seminar rooms that open onto a roof deck.

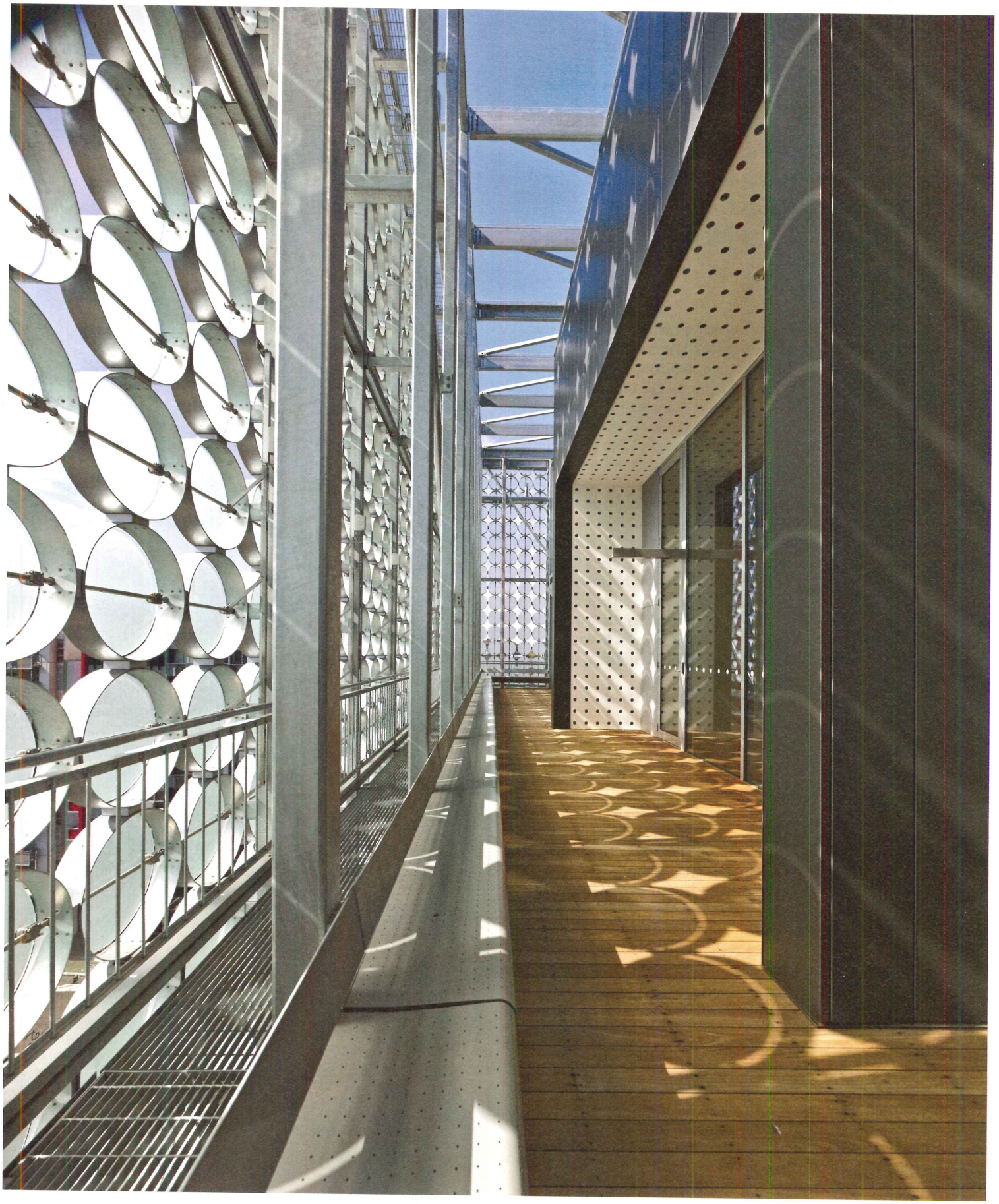
A glance at Godsell's oeuvre suggests a rationalist, Miesian approach. And Mies is certainly there. But less predictable influences can be seen too, in five "tributes"—to Shinohara, Corbusier, Palladio, Michelangelo, and Peter Corrigan.

Corrigan, father of Melbourne's Venturi-ism, taught Godsell and employed him briefly as a student (before the three years Godsell spent, more significantly, working in London with Denys Lasdun). The tribute takes the form of a wall-size supergraphic—"MOTHER KNOWS"—from a 1981 Corrigan artwork on a Melbourne tram.

The other tributes, being spatial, are more interesting. There's the door-within-a-door at one of the archives' entrances (Michelangelo's San Lorenzo Chapel), the archives' layered box front (Palladio's Il Redentore), the slender off-form columns in the main building's basement workshop and foyer (Corbu's Ahmedabad), and, most enchanting, the long, ruthless Shinohara stair that drops 29 feet in a slot 195 feet long and 6 feet wide that runs through the archives on the ground floor.

But one influence is the most surprising and entrancing of all—John Soane. At first glance, Soane's house in London seems to represent everything that Godsell's boxes preclude: complexity, darkness, symbolism, intrigue, romance. Yet Godsell says, "There's a lot of Soane in this building." He's right. The winding route, the choreographed glimpses (one spanning the length of the Shinohara stair), the use of darkness as a ground for light, the way delight is deployed to enrich commodity; pure Soane. If good architecture involves complexity that appears simple, minimalism that feels rich, and pragmatism fleshed out with beauty, then this is it. ■

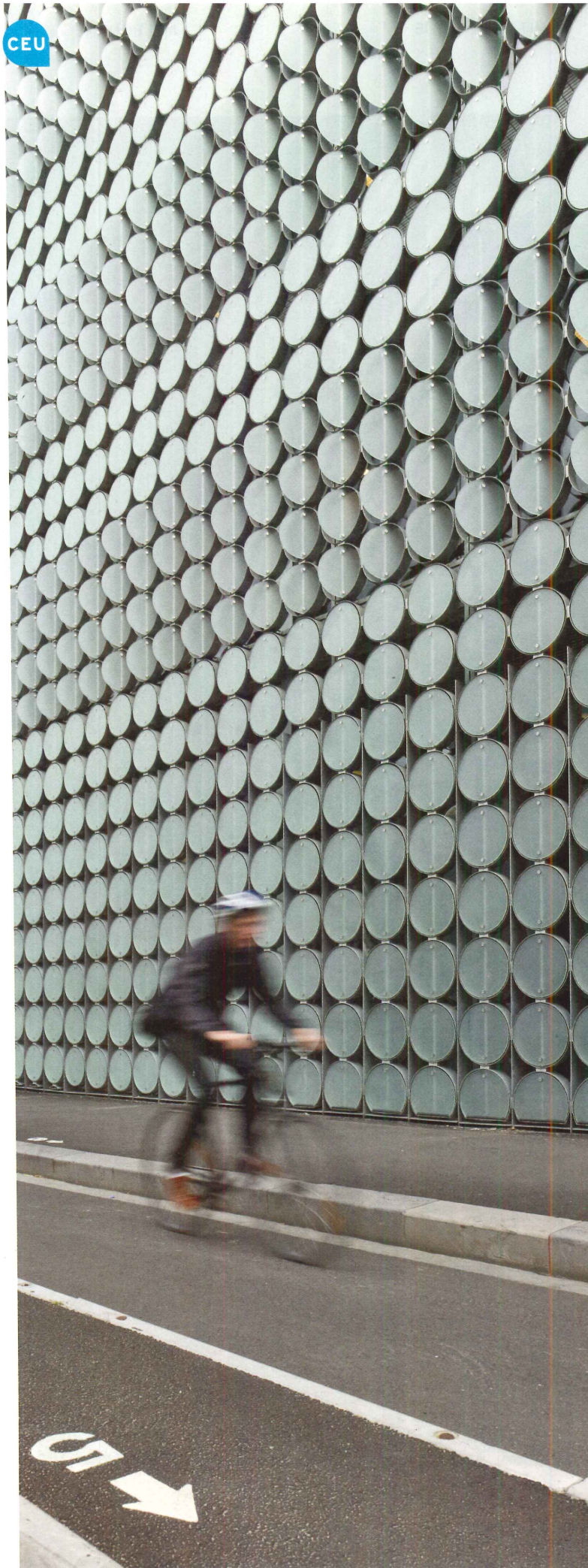
Elizabeth Farrelly is a Sydney-based columnist and the author of Glenn Murcutt: Three Houses; Blubberland: The Dangers of Happiness; *and* Potential Difference.



CEU

Buildings Show Off New Moves

To enhance environmental performance and create dramatic visual effects, architects devise facades that adapt to changing conditions. By Russell Fortmeyer



THE OUTER layer of the double-skin facade for the Design Hub at the Royal Melbourne Institute of Technology (RMIT) consists of more than 16,000 individually mounted translucent glass discs repeated on all four elevations of the eight-story main building. The repetition of cellular units has long interested the Design Hub's Melbourne-based architect, Sean Godsell, an alum of RMIT. In this case, selected groupings of the discs automatically pivot around a vertical axis in response to the sun's position. This use of a dynamic system represents the latest—and largest—investigation of kinetic technology by Godsell's eponymous firm (see page 104), as well as one of the more distinctive examples of the rapidly developing genre of dynamic facades.

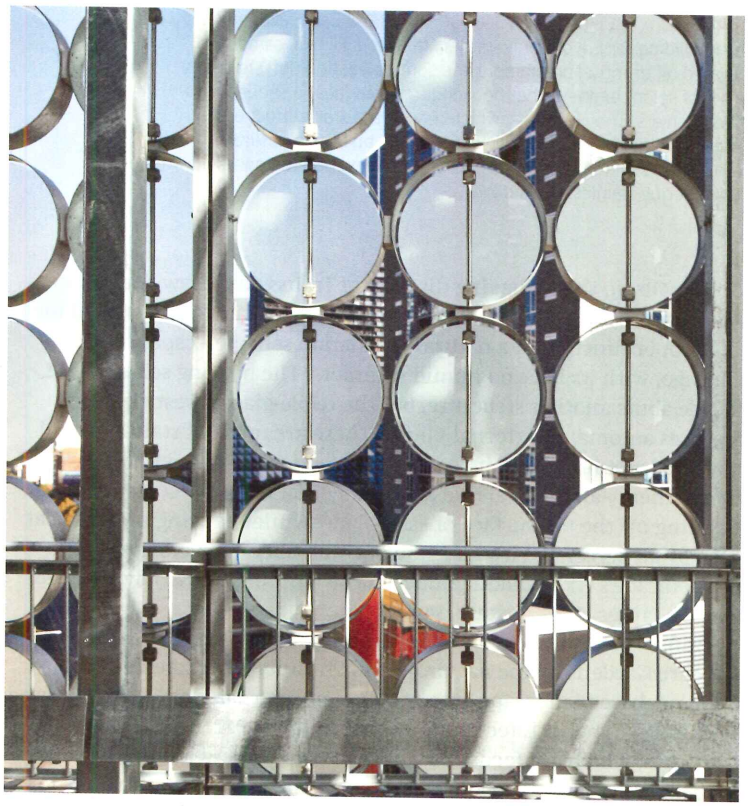
In past projects, such as a house in Glenburn, Australia, completed in 2007, Godsell has used low-tech devices like metal louvers or grid-like mesh screens to shade glazed facades, an approach adopted by other architects. For the Design Hub, he was asked to pursue a more innovative strategy that would speak to the multidisciplinary design programs planned for the building. "The university was keen to demonstrate its interest in solar technology and green buildings, so we gave them a smart facade that could evolve," he says.

The outer facade consists of 774 panels, each with 21 sandblasted glass discs, ⅜ inch thick. The panels sit in a steel frame separated by about 3 feet from the building's inner facade—a more conventional double-glazed, argon-filled curtain wall. In each seven-disc column of the outer skin's panels, the top three discs are fixed. The bottom four, which are in the occupants' line of sight, are operable.

The west, east, and north facades, exposed to the harsh Australian sun, contain the movable components. They pivot in waves based on the time of day and year. Over the course of an hour, the discs open as little as 5 degrees up to a maximum angle of 80 degrees. However, their movement, which is controlled by actuators, is so gradual it is hardly noticeable to passersby. The university has the option of one day installing electricity-generating photovoltaics on the discs as part of a technology-development and -testing program.

Dynamic facades, like the one cloaking the Design Hub, are a response to the industry's latest preoccupation: performance. With architects no longer satisfied to merely decorate a shed, facades have become the primary platform for energy efficiency, thermal comfort, cost savings, branding, and image.

The industry has yet to formally agree on terminology, so it's easy to find labels like *adaptive, transformable, movable,* and *kinetic* applied to these building-envelope systems. But *dynamic,* in its clear opposition to *static,* emerges most often as the choice among architects, facade consultants, and manufacturers. "In the most straightforward sense, a building with sensors, controllers for adjustable blinds, and dimmable lighting all tied together is a dynamic system," says Mic Patterson,



PHOTOGRAPHY: © EARL CARTER

RMIT DESIGN HUB This eight-story building in Melbourne is cloaked in more than 16,000 ⅜-inch-thick translucent glass discs (left). These are divided into 774 panels, each three discs wide and seven discs tall. Within each panel, the top three discs are fixed; the bottom four, which are in the occupants' line of sight, are operable. The movable discs pivot (far left and below left) based on the time of day and year, opening as little as 5 degrees up to a maximum of 80 degrees over the course of an hour.

director of strategic development for the national facade design-build contractor Enclos. He views projects like the 52-story New York Times Building, designed by Renzo Piano Building Workshop with FXFowle, as essentially dynamic (RECORD, February 2008, page 94). Even though the veil of 3-inch-diameter ceramic tubes that cloaks the Midtown Manhattan tower is fixed, he points out, the curtain wall, manufactured by Portland, Oregon–based Benson Global, is integrated with other building systems, such as lighting and interior shades, to affect solar-heat gain, daylighting, glare, thermal comfort, and, ultimately, energy performance.

The conventional wisdom regarding dynamic building envelopes is that they are costly, require burdensome ongoing maintenance, and are best suited to a Northern European climate. Such industry challenges did not deter architects at Solomon Cordwell Buenz (SCB) from proposing a dynamic facade for the Richard J. Klarchek Information Commons, completed in 2007 at Loyola University in Chicago (RECORD, May 2007, page 241). SCB's ultimate success with that building's double-skin, fully glazed curtain wall, automatic venetian blinds, and operable windows laid the groundwork for a series of recent projects for the university that deploy similar strategies, resulting in significant energy savings and highly transparent, comfortable facilities that have been a hit with Loyola's students, faculty, and administration.

Devon Patterson, the principal at SCB who has led the design effort for Loyola (no relation to Mic Patterson), built on his experience with the information commons to implement a natural-ventilation strategy for the university's Marcella Niehoff School of Nursing and Center for Collaborative Learning, a 60,000-square-foot, four-story classroom and office building opened in August 2012 at the medical school's campus in Maywood, Illinois. Working with a team that was almost identical to that on the earlier Loyola project—local mechanical firm KJWW Engineering Consultants, the New York office of the German energy-efficiency consultant Transsolar, and Enclos—the architects devised two glazed solar chimneys for the nursing-school building's south elevation. These bookend a glazed facade with fixed shading louvers. The chimneys feature double glazing with a low-emissivity coating and a relatively high solar-heat-gain coefficient (SHGC) of 0.62. (SHGC, expressed as a number between 0 and 1, measures the solar radiation transmitted through a glazed unit. The lower the number, the less radiation transmitted.) In contrast, the building's typical vision glass, enclosing spaces where heat gain is less desirable, has an SHGC of 0.25.

During the so-called shoulder seasons of the spring and fall, automated windows on the north facade open to provide cross-ventilation to the building's public spaces and offices. The air, assisted by a combination of the stack effect and external pressure differences, exits the building through the solar chimneys. In the winter, the operation of the chimneys is reversed, with air-handling units in the basement drawing fresh air from louvers at the roof. Solar gain along the glazed chimneys preheats the fresh air before it is distributed throughout the building. The strategy results in a 40 percent improvement over the ASHRAE 90.1-2007 energy standard and an energy-use intensity (EUI) of 43 kBtu/square foot (EUI is a standard way to gauge the annual energy consumption of a building relative to its size). Typical academic buildings have EUIs well above 50.

MARCELLA NIEHOFF SCHOOL OF NURSING Each facade on a new building for Loyola University's Maywood, Illinois, campus is treated differently. For example, the south elevation (left) features a set of solar chimneys that bookend a glazed facade shaded with fixed louvers. The chimneys, which rely on the stack effect and pressure differentials, play a key role in the building's natural-ventilation scheme. The triple-glazed west elevation (below left) has exterior stainless steel blinds.

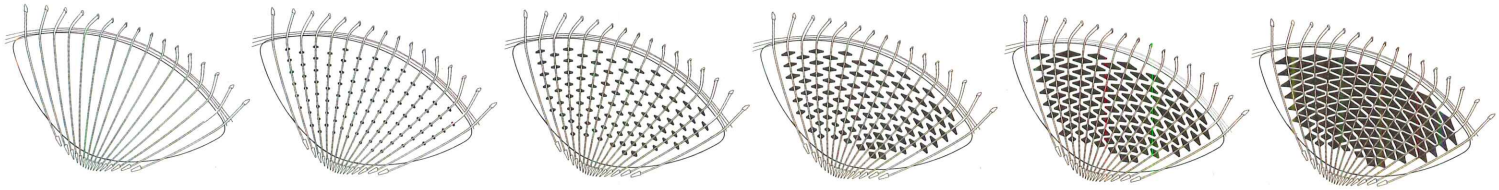
Erik Olsen, the managing director of Transsolar's New York office, says that shading devices, as well as dehumidification, are critical for the proper function of a natural-ventilation scheme—especially in Chicago, with its hot and humid summers. The nursing school's east facade abuts another structure, but the triple-glazed west elevation features automated external blinds. These are made of stainless steel blades approximately ⅛ inch square in section with 1/16-inch gaps between them—an interval that allows daylight to be reflected into the building off the top surface of each blade, while reducing radiant-heat gain by 90 percent. Without these operable shading elements or the south facade's fixed shading louvers, the building would have needed a much larger HVAC system, says Olsen.

Transsolar also advised on the master plan that informed the 133-acre Gardens by the Bay project in Singapore, designed by Bath, England–based landscape architects Grant Associates and London-based Wilkinson Eyre Architects and opened in June 2012. Unlike the Loyola buildings, which are focused on human comfort and energy efficiency, the Singapore project sought to maintain optimum daylight levels for the plants housed in two gridshell- and arch-supported glazed conservatories enclosing over 200,000 square feet. The architects needed to achieve approximately 4,200 foot-candles of sunlight without overheating the interior of the bulbous structures, which, from some angles, look like humpback whales surfacing in the ocean.

Singapore has a hot, humid climate with ample sunshine, but it is also cloudy and rainy for a large portion of the year. The envelope had to adapt to these changing conditions to maintain daylight levels and minimize heat gain. The design team investigated several options, including balloons tethered overhead and venetian blinds, but finally settled on external shades because they could be more easily integrated and automated, according to Matthew Potter, a Wilkinson Eyre associate director. "We also wanted the shades to have some spectacle," he adds, describing the fractal pattern of the deployed shades as similar to the surface of a pinecone or pineapple.

The shades are controlled by sensors that monitor light levels, as well as temperature and humidity, throughout the interior landscapes. When light levels increase beyond acceptable thresholds, motors automatically unfurl triangular pieces of tightly woven canvas rolled up and concealed within the buildings' structural components. The shades unroll from one arch, pulled in an almost continuous loop configuration by a cable that spools on a rod concealed in the opposite arch. As they are pulled across the double-glazed envelope, the shades visually interlock but allow some light transmission even when fully extended.

The movement of dynamic envelope systems isn't always as dramatic as at Gardens by the Bay. Sometimes a facade's operation is almost completely invisible, as it is at an office building designed by architects and engineers at Nikken Sekkei for Sony in Tokyo and completed in 2011. The 25-story, 1.3 million-square-foot structure, which the corporation recently sold as part of a reorganization of its assets, features a "bioskin" inspired by unglazed ceramic water jugs seen throughout Southeast Asia. As water evaporates through the porous walls of these traditional containers, it helps keep the drinking water inside cool on hot days, explains Tomohiko Yamanashi, chief architect on the

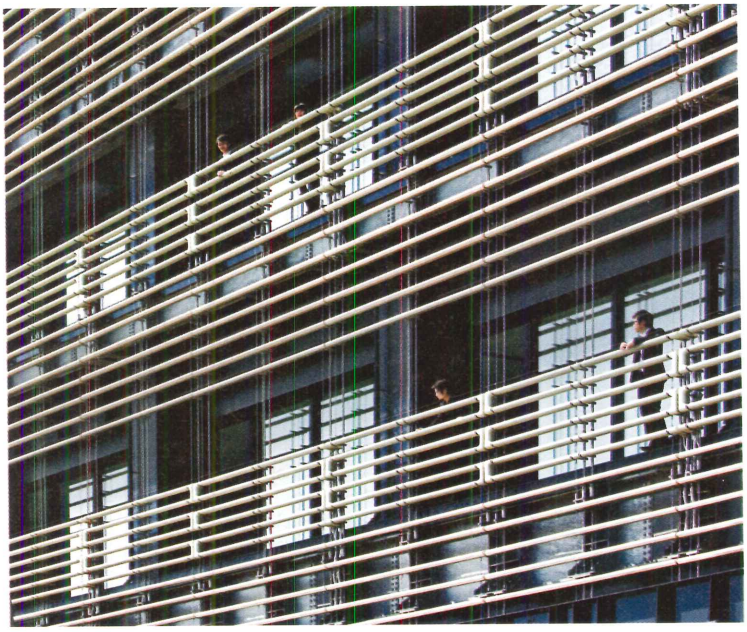


SHADE DEPLOYMENT DIAGRAM

GARDENS BY THE BAY
The shading system for a pair of glass conservatories in Singapore was conceived to maintain optimum light levels for the plants housed within the gridshell- and arch-supported structures. When rolled up (below), the triangular pieces of tightly woven canvas are concealed in the conservatories' structural elements. When fully deployed (left), the shades visually interlock but still allow some light transmission.

project. With that in mind, he and his Nikken engineering colleagues developed the steel-cable-framed structure that hangs approximately 7 feet off the exterior of the Sony building's double-glazed curtain-wall facade. The resulting cavity forms balconies for every floor, and the cable frame supports a series of horizontal ceramic pipes reminiscent of traditional Japanese bamboo-and-string curtains. Rainwater captured from the building's roof circulates within these porous elements.

Yamanashi's original hypothesis assumed that the evaporative cooling of the pipes, which are approximately 3 inches tall and 4 inches wide in section, would reduce solar gain on the building, resulting in improved energy performance. Nikken Sekkei extensively mocked up the facade, collaborating

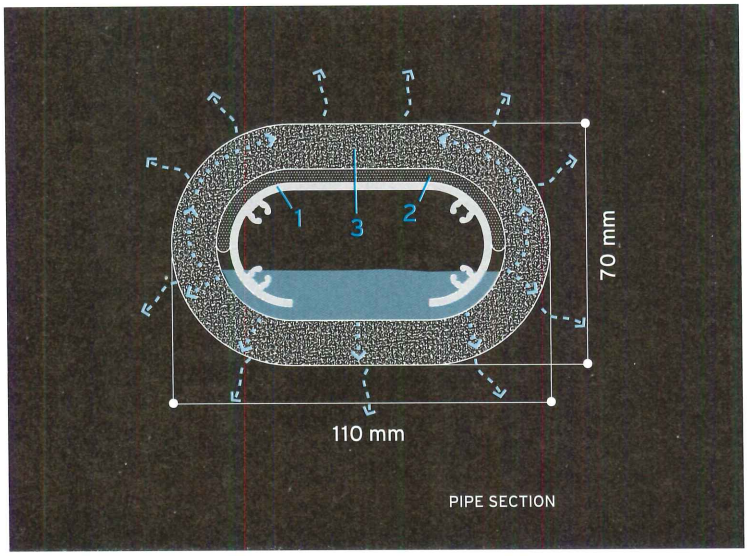


with toilet manufacturer Toto on the design of the ceramic pipes.

Simulation work carried out by the University of Tokyo predicted a reduction in surface temperature of the external facade layer, but not enough to warrant installation of a smaller mechanical-cooling system. However, the researchers discovered an unexpected benefit of the bioskin—the studies indicated that the facade would reduce ambient air temperatures in pedestrian areas surrounding the building by 2 degrees Fahrenheit. Yamanashi contends that the research was too conservative, but he is pleased that the system helps mitigate the urban-heat-island effect. "We tend to think of green architecture selfishly, as in having better energy efficiency for only our building," he says. "But the Sony building is more altruistic, and the bioskin can improve Tokyo's concrete jungle."

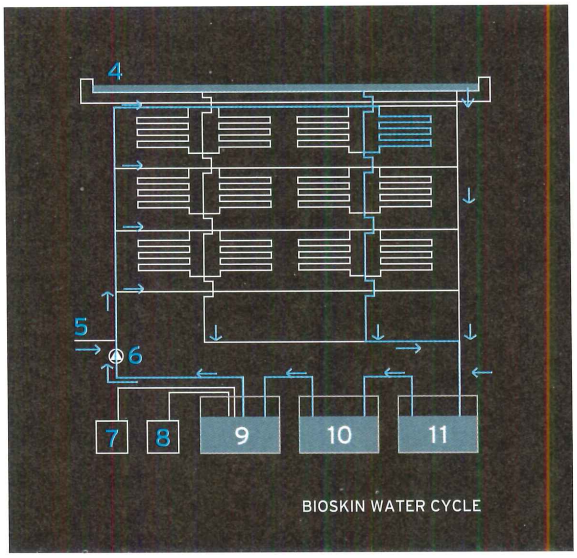
Subsequent monitoring has confirmed that ambient air temperatures at the building's ground level are consistently 3 degrees Fahrenheit lower than the rest of the neighborhood. Although the project didn't achieve its original ambitions, Yamanashi considers such experimentation with dynamic facades critical. Investigation is necessary for gaining a better understanding of the most effective ways of reducing buildings' environmental footprint, he says. It's a point on which many of his peers in architecture agree. ■

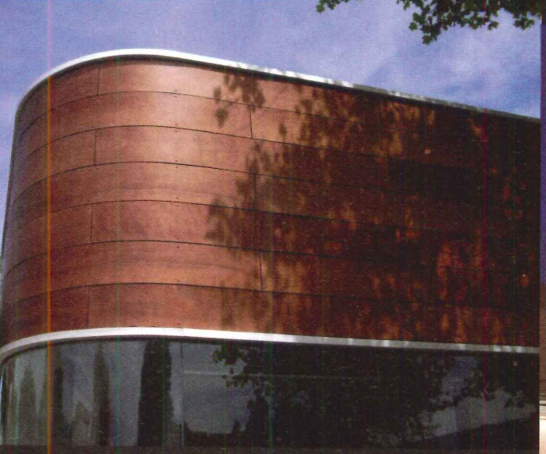
Russell Fortmeyer is a Los Angeles–based engineer and journalist. His book Kinetic Architecture: Designs for Active Envelopes, *written with Charles Linn, is due in July from Images Publishing.*



SONY CORPORATION
For a 25-story office building in Tokyo (above), designers from Nikken Sekkei created a hydronic facade they dubbed a "bioskin." The system, which is reminiscent of bamboo-and-string curtains, consists of hollow ceramic pipes supported by a cable-frame structure (above left). Rainwater captured on the building's roof circulates through the pipes, helping reduce outdoor ambient temperatures.

1 EXTRUDED ALUMINUM
2 ELASTIC ADHESIVE
3 TERRA-COTTA
4 ROOFTOP RAINWATER COLLECTION
5 MUNICIPAL WATER SUPPLY
6 PUMP
7 SCALE PREVENTION
8 CHLORINATION
9 STORAGE TANK
10 STERILIZATION
11 FILTERING





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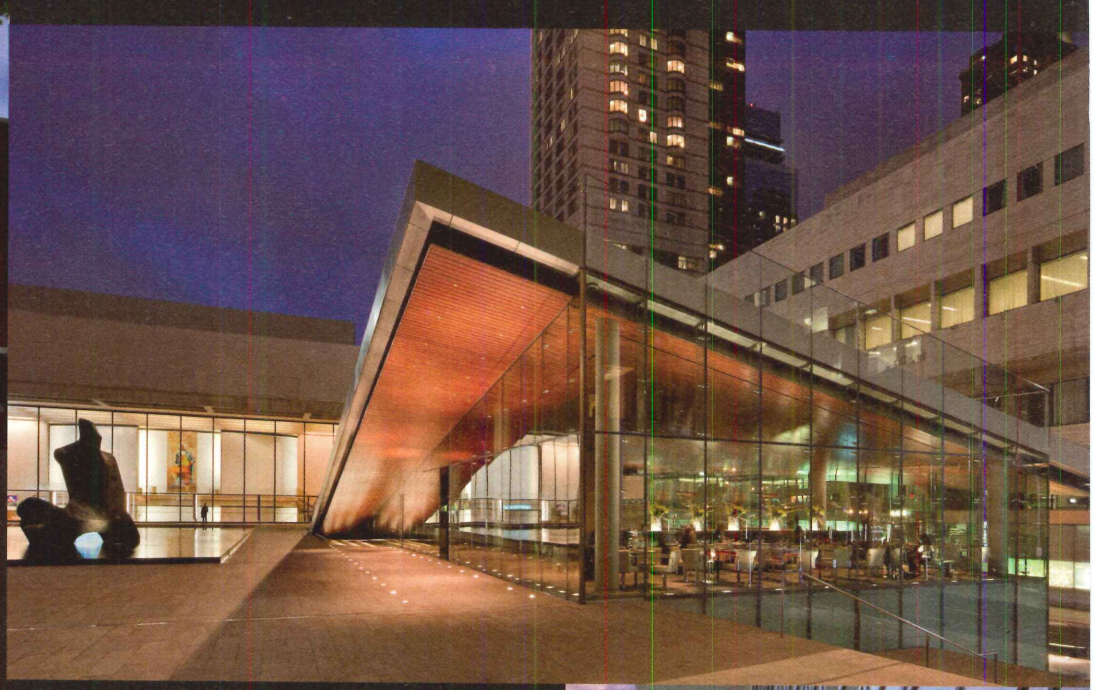
Architecture, Oakland, CA



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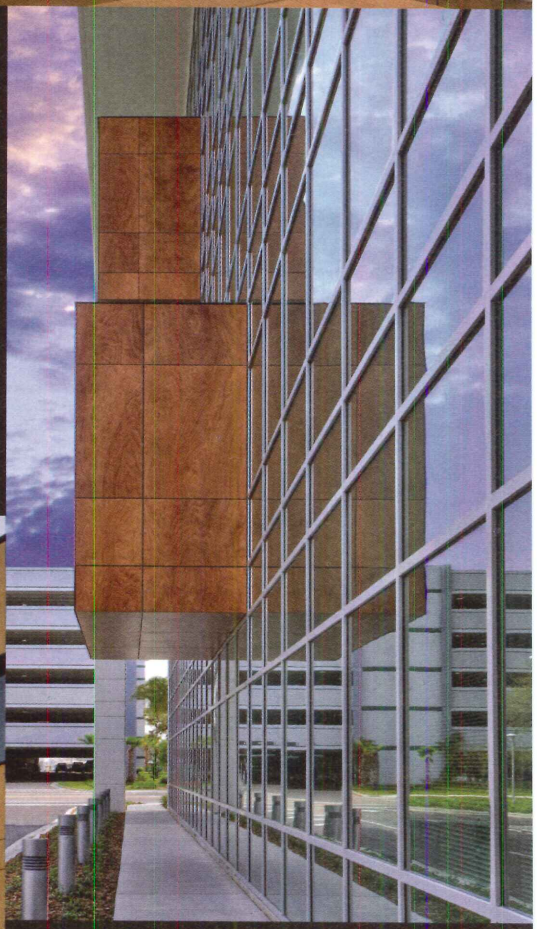

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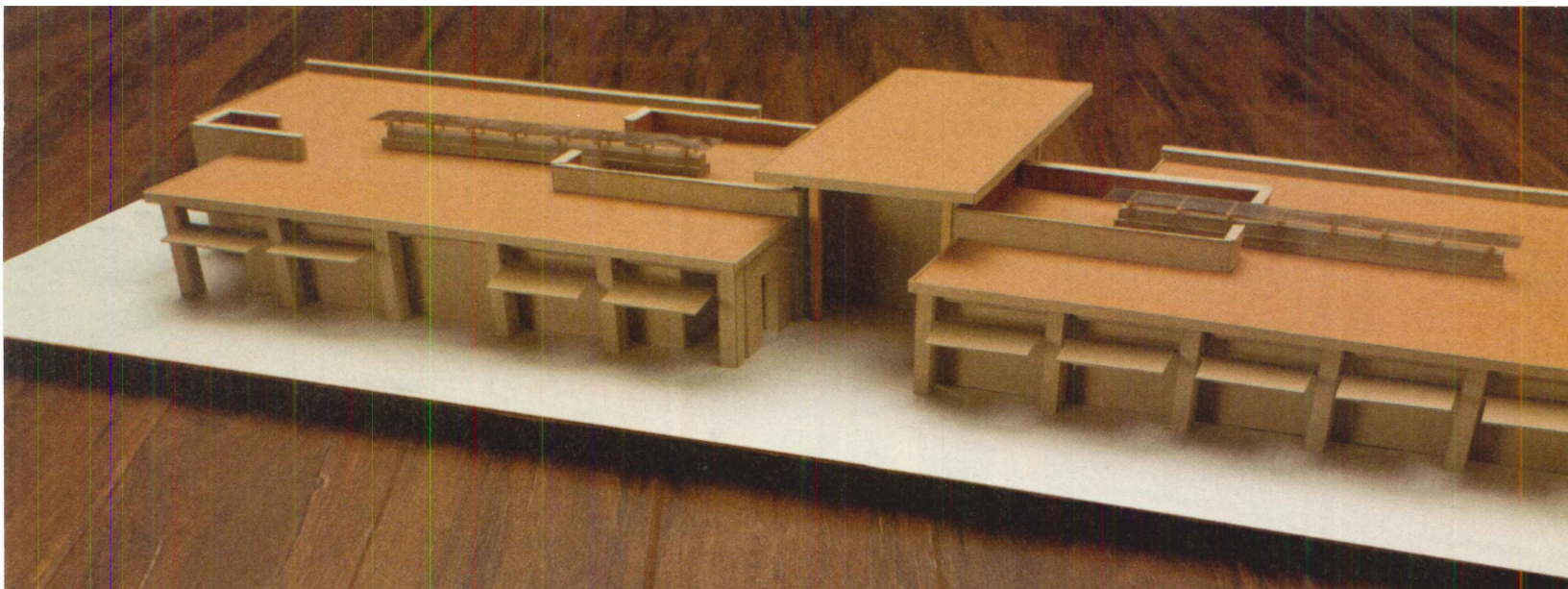

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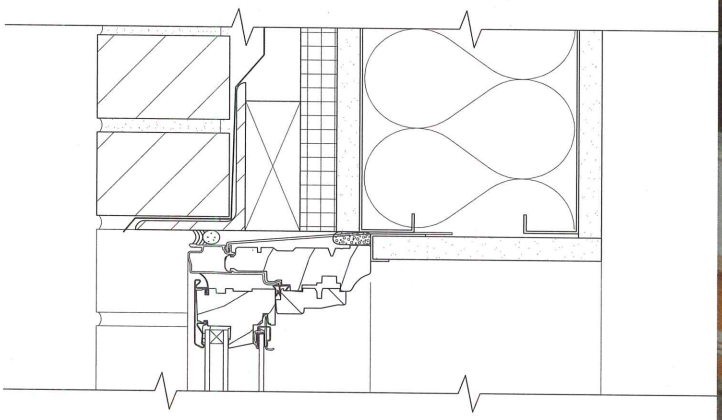

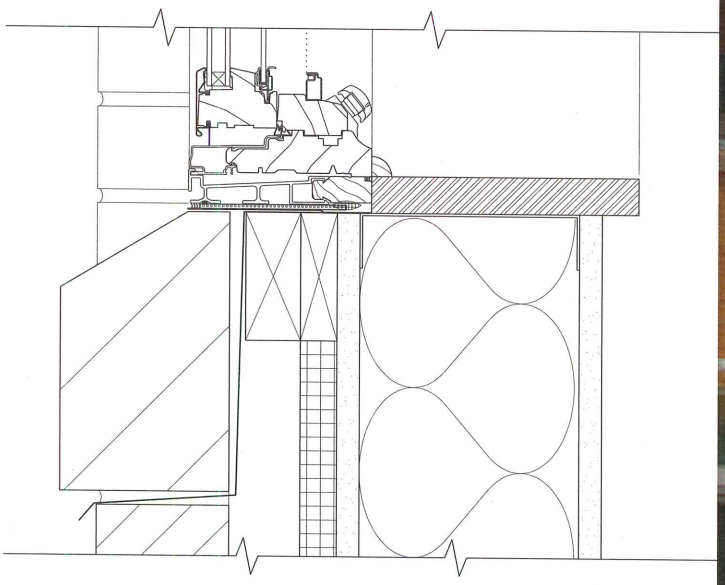

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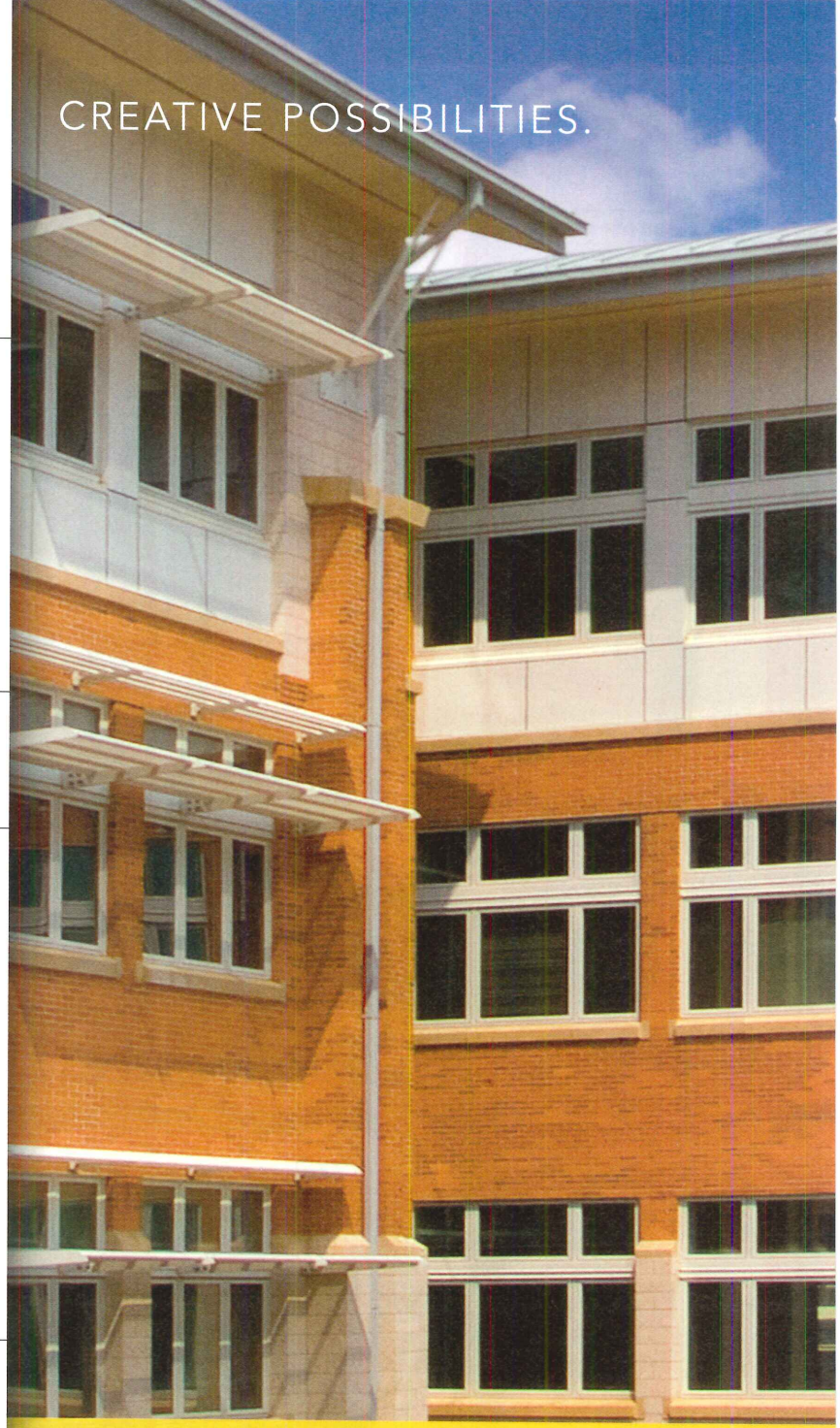

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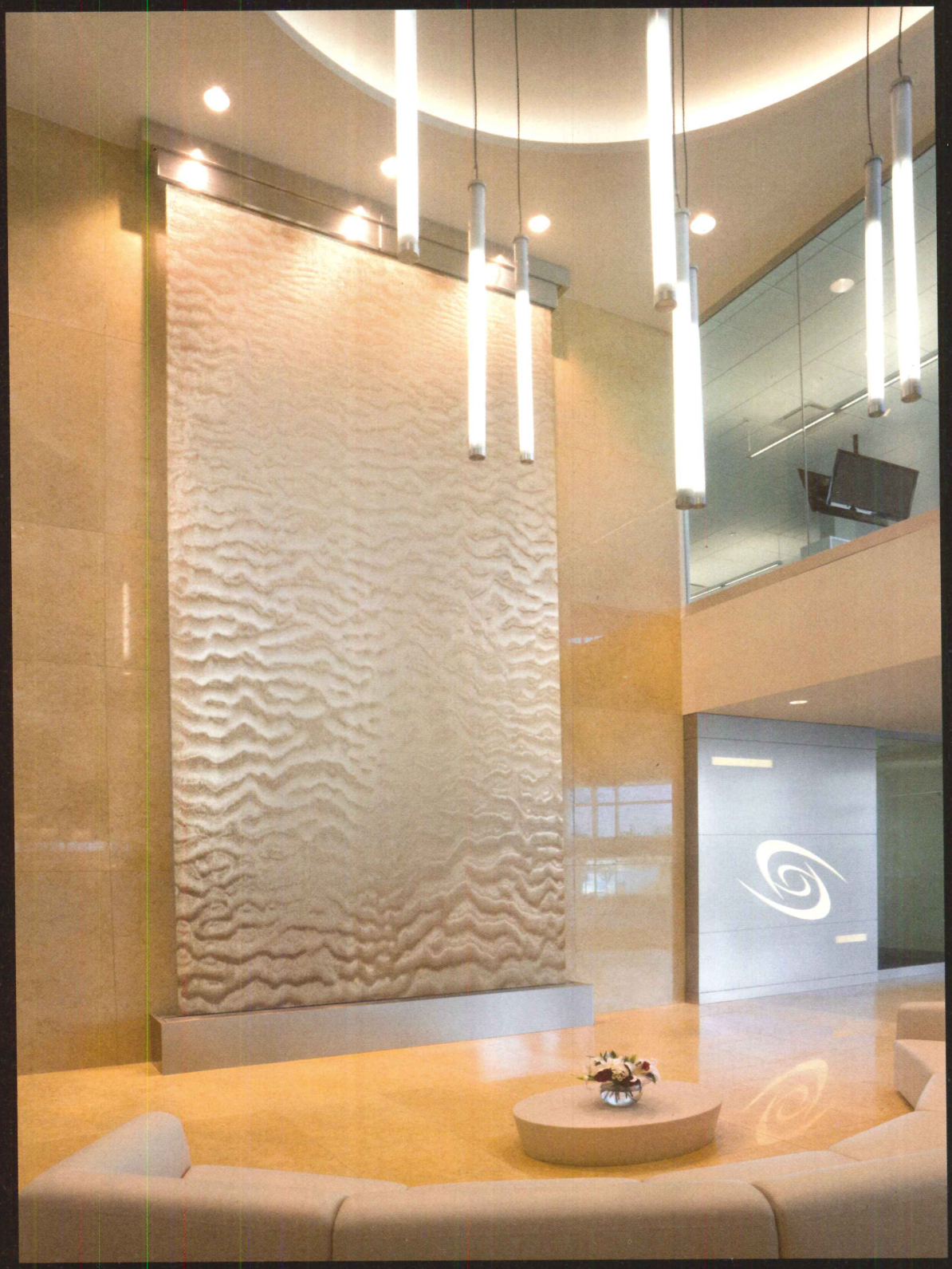

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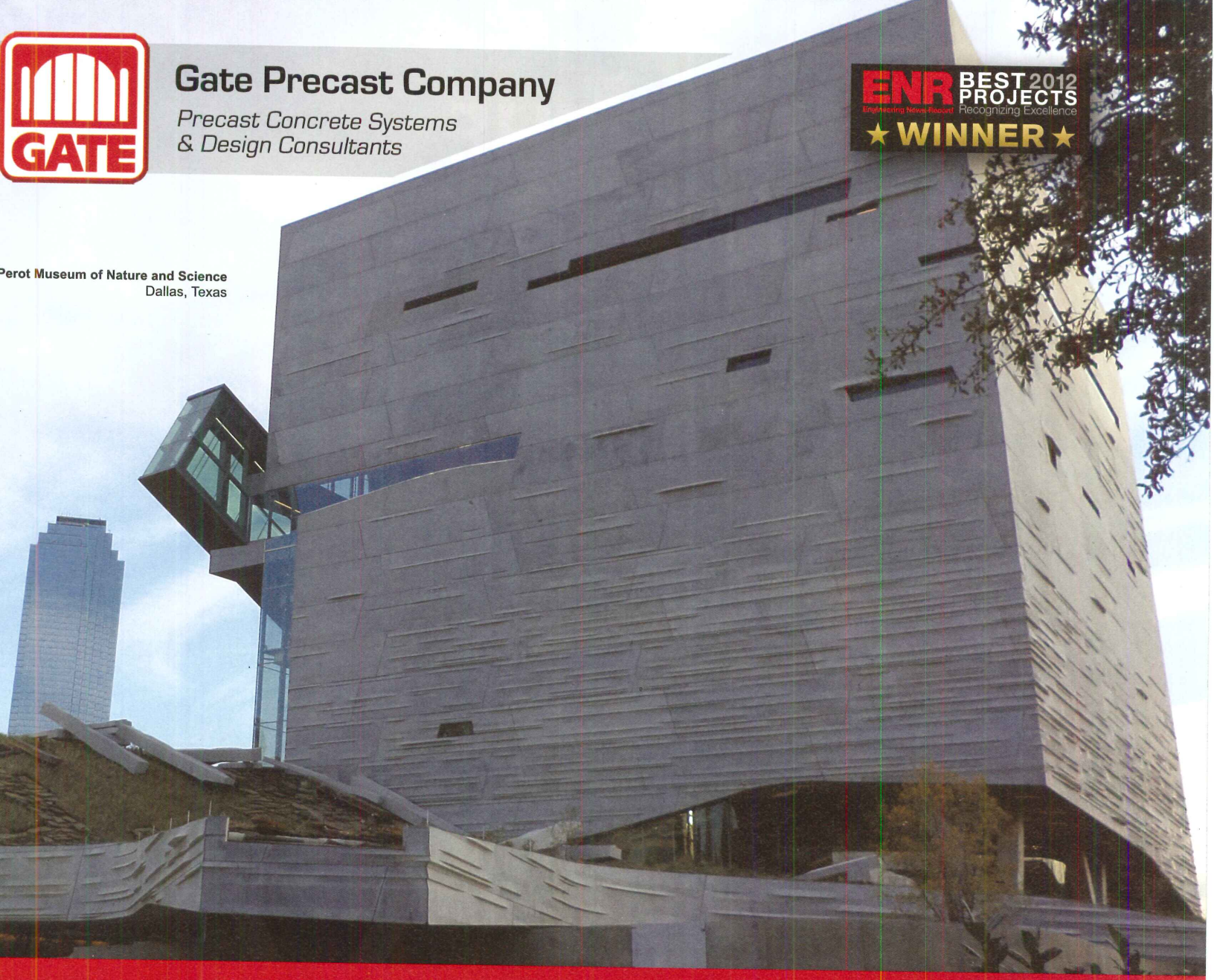

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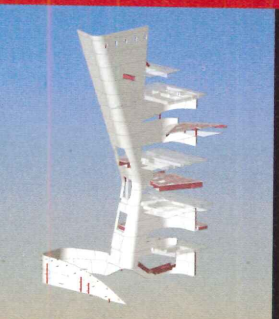

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Tailor Made

New York City

Adjaye Associates brings Proenza Schouler's brand of tough luxe to the fashion house's first store in its hometown.

By Asad Syrkett

DAVID ADJAYE, the Tanzanian-born British architect, and Jack McCollough and Lazaro Hernandez, the wunderkinder behind fashion house Proenza Schouler (pronounced pro-EN-za SKOOL-er), have a lot in common: both parties found relatively early success and have been hailed for pushing the envelope in their respective design fields. It's fitting, then, that Hernandez and McCollough commissioned Adjaye to create their company's first store in their home base, New York City.

The 3,000-square-foot boutique occupies a double-height ground-level retail space in a historic Neoclassical residential building on Manhattan's Madison Avenue. Sandwiched between a hair salon and a jeweler, its facade stands out, particularly with its bronzed-steel door, out of which dozens of triangles have been cut. This motif is a nod to both the fashion house's sumptuous garments—which are frequently woven, hammered, and scored with geometric patterns—and the hard-edged aesthetic that characterizes McCollough and Hernandez's work. "We played with using their name for a while, and their old logo, before settling on something more architectural," says Russell Crader, the project architect for Adjaye Associates. The store took five months to complete, with concept and design lasting about two months, Crader explains, and construction about three.

Certain aspects of the $1.5 million project, such as removing an existing floor to create the double-height entry space and replacing a masonry lintel in the entryway with a steel bar, required approval by the New York City Landmarks

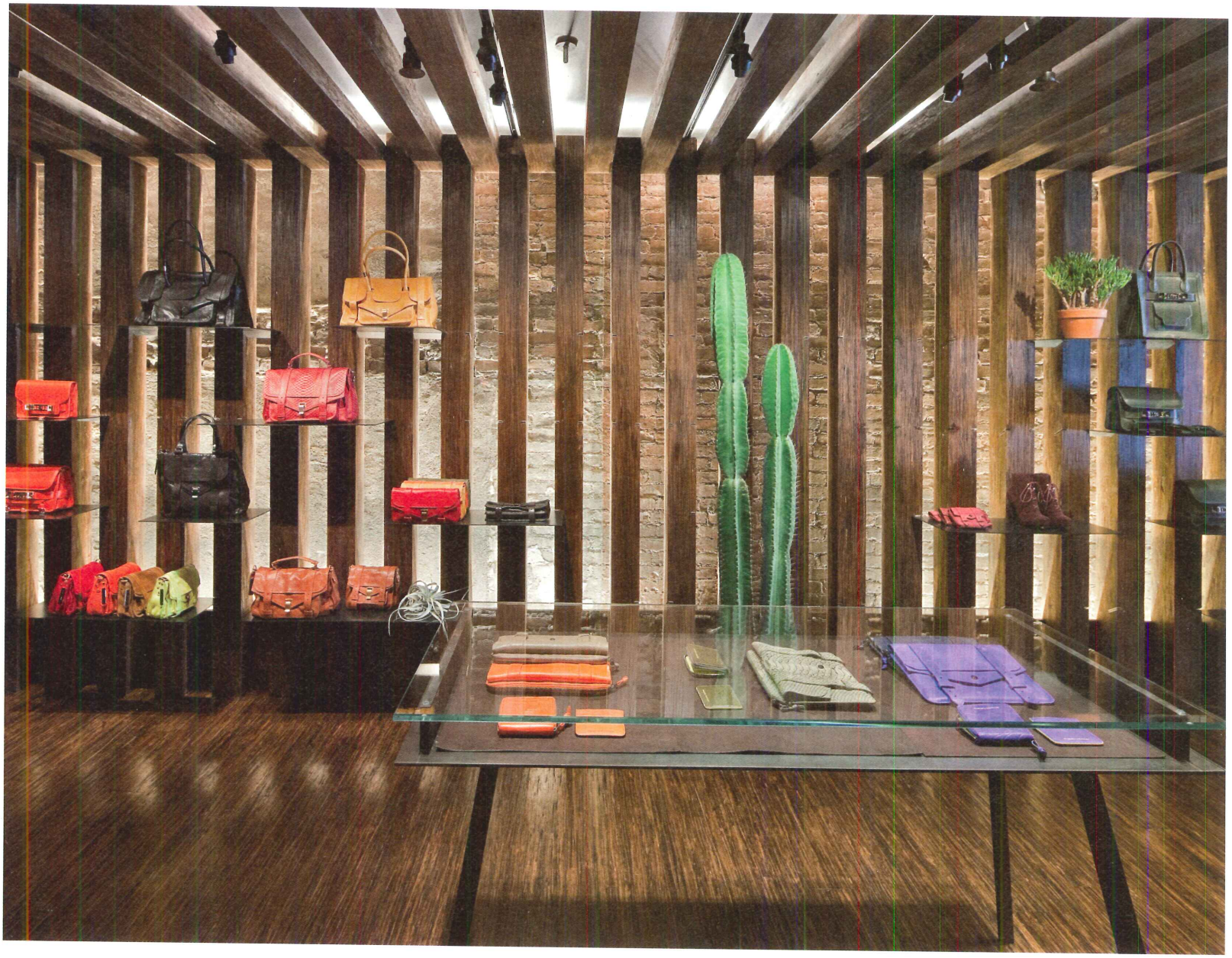
UPTOWN GIRL
The shop's presence (above) along Madison Avenue is striking for its graphic, Gothic appearance. Inside, pylons of walnut-stained Parallam-wood timber (opposite) give the first-level sales floor a cavelike feel and provide a neutral background for small leather goods from the Proenza Schouler collection. A platform at the rear of the store (left) allows for larger displays. A staircase to the right of the podium is partially enclosed by the same steel screen and geometric motif that appears on the boutique's exterior.

Preservation Commission. Luckily, the design passed scrutiny, as "the steel screen is really part of the overall Proenza Schouler strategy for identity," says Crader.

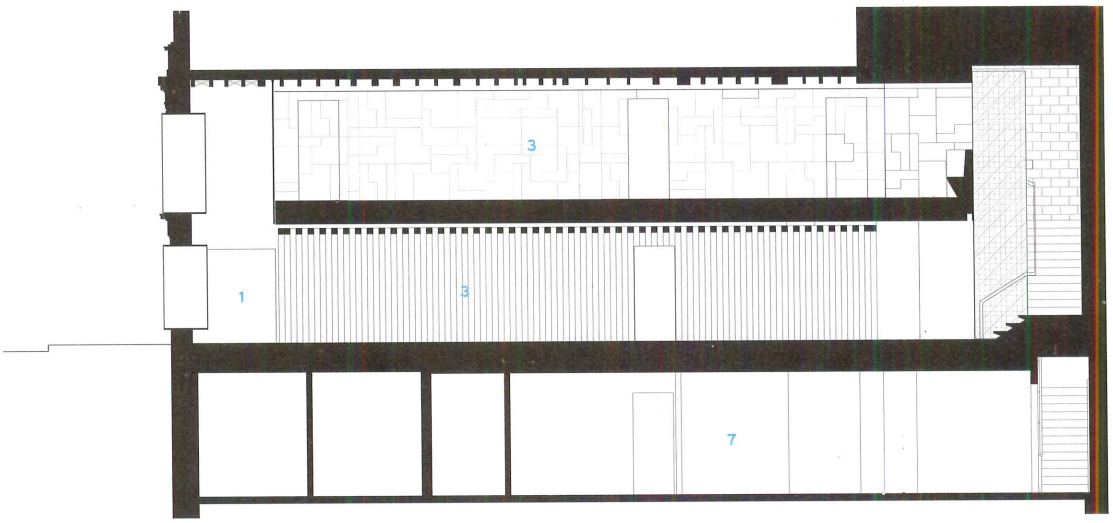
The exterior foreshadows the interior's rich yet rough-hewn aesthetic. In the entrance foyer, which separates the shop from the residences above, the design team treated the brick walls with an ash wash that's "rubbed in and gives the wall a stained effect," says Crader. Ghosts of structural elements past, like holes in the wall left behind by joists, or discolored masonry, remain and become points of aesthetic interest.

On the first of two sales floors (the second occupies a mezzanine level accessed via a staircase at the back of the store), the combination of walnut-stained Parallam-wood walls and ceilings and halogen spot lighting sets a mood akin to an haute cave. Smaller goods—accessories, handbags, and shoes—sit atop short metal shelves that employees can rearrange by positioning them in various notches in the timber columns that run the length of the store. A platform at the rear of the boutique also accommodates product displays. "When they want to pair items in a collection, they have the flexibility to choreograph the space however they want," says Crader.

Precast-concrete panels on the floors and walls of the second level lend the upper spaces heft without the darkness of the entry floor. Jackets, skirts, and larger ready-to-wear items hang from sales racks suspended from tubes of bronzed steel. Fitting rooms on this level are lined with soft, sandy-hued buffalo leather. On a recent visit, the punchy greens, yellows, and blues of the spring 2013 collection vibrated against the gray of the walls and floors. "While the space is not a blank canvas, it is a neutral environment," says Crader. "There's just enough of a background to allow shoppers to focus in on the colors. It gives everything a bit of life." ■

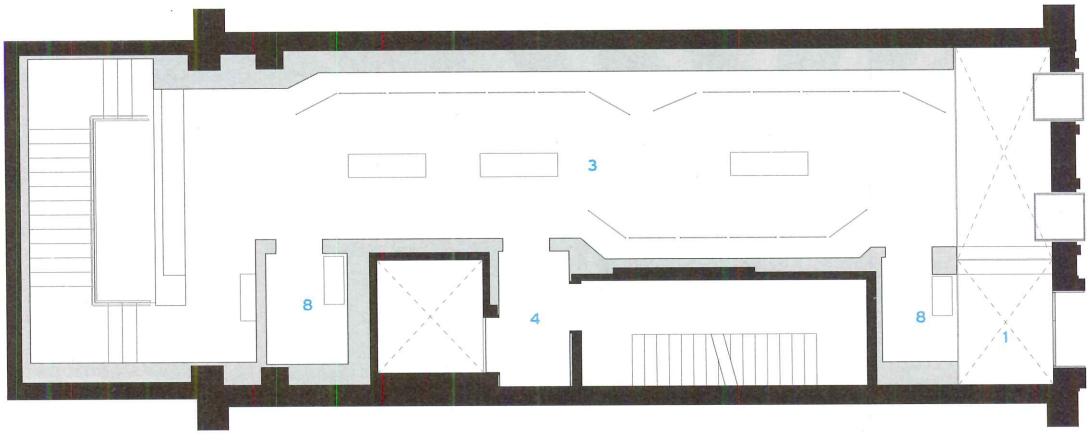


1 FOYER
2 DISPLAY WINDOW
3 SALES FLOOR
4 ELEVATOR LOBBY
5 POINT OF SALE
6 DISPLAY
7 BASEMENT
8 FITTING ROOM

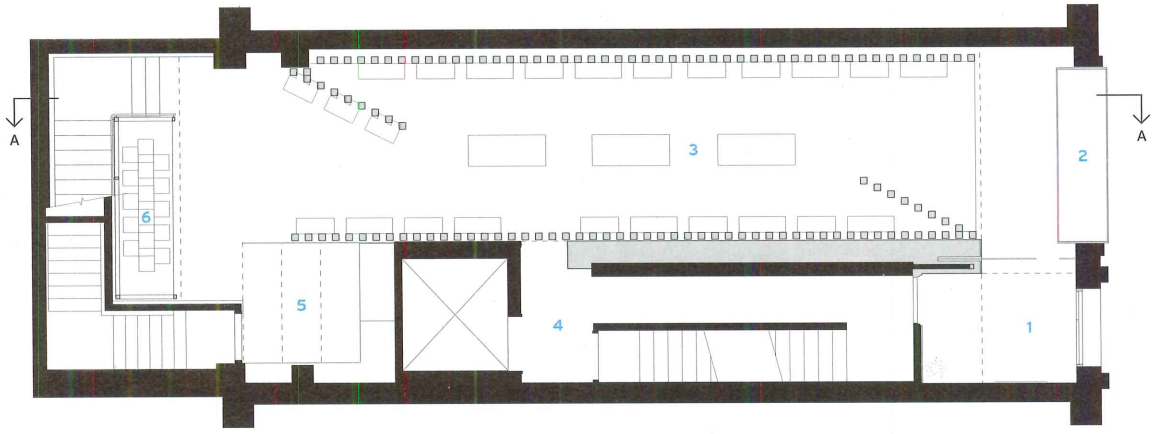


SECTION A - A

0 10 FT.
3 M.



SECOND FLOOR



GROUND FLOOR

0 10 FT.
3 M.

credits

ARCHITECT: Adjaye Associates – David Adjaye, principal; Russell Crader, project architect; Liz McDonald, Glenn DeRoche, project team

ARCHITECT OF RECORD: AS3 Design Studio – Al Smith III

ENGINEER: Buro Happold (m/e/p, structural)

CONSULTANT: Focus Lighting

CLIENT: Proenza Schouler

GENERAL CONTRACTOR: Apogee Construction

SIZE: 3,010 square feet

COST: $1.5 million

COMPLETION DATE: July 2012

SOURCES

METAL PANELS: Mistral Architectural Metal + Glass

CONCRETE: Terrazzio (precast panels)

PAINTS AND STAINS: Dyebrick (soot wash)

LIGHTING: Lightolier (downlights)

CITY SLICK Precast-concrete panels reminiscent of New York City's sidewalks line the floors and walls of the second-level sales area.

T TIME "We see the inside and outside acting as one," says KDa principal Mark Dytham. Merging the two together, low-E glass encases most of the shop, while textured screens composed of individual T-shaped concrete blocks– 13,750 in all–make a bold statement to the street. Signage by graphic designer Kenya Hara points the way in.

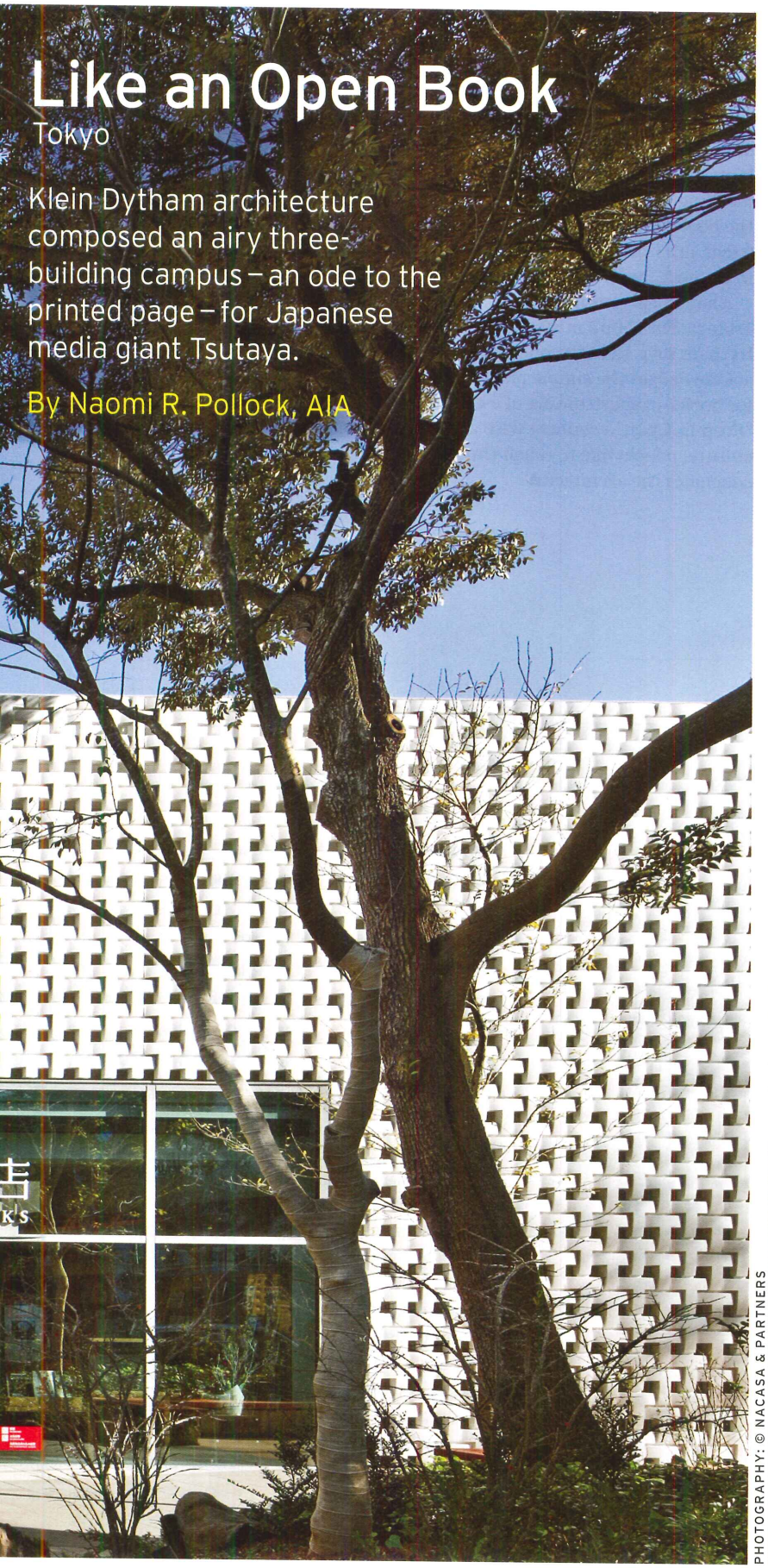
View additional images at architecturalrecord.com.

Like an Open Book

Tokyo

Klein Dytham architecture composed an airy three-building campus – an ode to the printed page – for Japanese media giant Tsutaya.

By Naomi R. Pollock, AIA



PHOTOGRAPHY: © NACASA & PARTNERS

BOOKSTORES MAY be closing right and left in cities all over the world, but in January 2012 Tokyo welcomed Daikanyama Tsutaya Books with an enthusiastic embrace. A new, 140,000-volume shop designed by the Tokyo-based firm Klein Dytham architecture (KDa), the building started out as a rebranding project for the media giant Tsutaya, which has 1,440 bookstores and CD-rental outlets throughout Japan. In addition to upgrading the company image, it resulted in a novel retail destination.

From competition to completion, the project took just 20 months, despite delays during construction caused by the 2011 earthquake. KDa's winning solution entailed three discrete, staggered volumes connected by a web of external walks and internal axes. Known for eye-popping elevations and clever contextual engagement, the architects got their conceptual foothold from the Tsutaya logo: a bold yellow T on a cobalt-blue background. "It was obvious what to do in three minutes," says KDa principal Mark Dytham.

To refer to the logo, large Ts adorn the three glass, shed-like spaces. Each large T is composed of small ones carved from glass-reinforced concrete. Nodding politely to the 45,274-square-foot site's surroundings—an elegant, leafy avenue in front, residential and small-scale commercial development in back, and Fumihiko Maki's Hillside Terrace complex next door—the letters subtly act as signage but are fully integrated with the architecture. While the large Ts' horizontal flanges turn into screening devices that wrap the building tops, their vertical spines correlate with the central cores running the length of each building.

The entire shop is equally accessible from all sides, thanks to 14 entrances distributed around its perimeter. (In Japan, where theft is rare, security is not an issue.) "It's a really permeable thing," explains Dytham. Inside, a matrix defined by the central cores and "Magazine Street," a 20-foot-wide corridor containing 30,000 periodicals, divides the ground floor into 11 discrete book-sales areas, a café, and a convenience store. The second floor holds six music spaces in the east wing, six film sections in the west wing, and a lounge in the two-story middle building. The third floors of the two end buildings contain rental apartments. Escalators, copper-clad stairs, and elevators link the levels, while the exterior walks at grade level and covered bridges at the second floor unite the three structures.

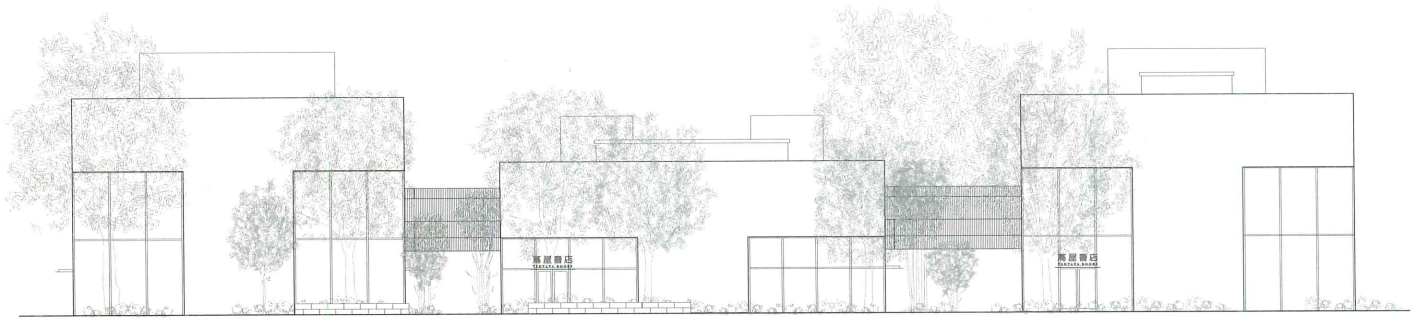
Unlike other large bookshops, Daikanyama Tsutaya does not carry a broad inventory. Instead, it caters to the predilections of 50-somethings—Japan's largest population segment. "With the kids gone, they have more time and money to hang out and shop," explains Dytham. Accordingly, the store stocks carefully chosen books and merchandise related to art, architecture, design, cooking, photography, cars, travel, and other topics of appeal to that age group. In addition, each section employs concierges, or specialists in their subject matter who offer advice, source hard-to-find titles, and even, in the case of the travel section, book hotel reservations.

The unique book selection, the high level of service, and the extended business hours (the shop is open daily from 7 a.m. to 2 a.m.) are not the only reasons people of all ages are flocking to the store. "The client envisioned a new cultural center, kind of like a living room for Tokyo," says Dytham. In keeping with this concept, KDa chose warm, friendly materials and fashioned custom furniture and lighting to match.

Blending inside and out, exterior stone pavers become interior flooring and the full-height glass skin yields light-filled, airy spaces where the ceiling soars to 11 feet. To preserve this openness, KDa lined the window walls with movable furnishings, such as shelves, seats, lamps of various shapes, and, in the music areas, listening tables, which clip onto the building's steel-frame structure. Overhead, large, lanternlike pendant fixtures provide soft lighting while masking exposed ductwork and steel decking. By contrast, the book areas within the cores, where the ceiling drops to 9 feet, are lined with unpolished wood flooring and shelves to create a "bookstore-y feel," says Dytham.

Though there is nothing nostalgic about Daikanyama Tsutaya, the shop's mission is to "welcome back books," Dytham says. In both conceptual and concrete terms, it acknowledges the simple pleasure of reading and browsing for books—a shortcoming of e-commerce and even e-books. "Even in Japan, a country with a highly developed Internet culture, people like to touch things, to own things," concludes the architect. ■

PLUG IN Upstairs (opposite, top), customers can have a drink and charge their laptops at the lounge bar made of books that have been sliced, stacked, and secured together. Also on the second floor is the music area (opposite, bottom), where seating and listening stations line the window walls.



ELEVATION 0 30 FT.

GROUND FLOOR 0 30 FT. 10 M.

1 ENTRANCE
2 MAGAZINE STREET
3 CAFÉ
4 TRAVEL
5 COOKING
6 STATIONERY
7 DESIGN
8 ARCHITECTURE
9 CARS
10 FASHION
11 PHOTOGRAPHY
12 ART
13 PHILOSOPHY
14 LITERATURE
15 INFORMATION
16 CONVENIENCE STORE

credits

ARCHITECT: Klein Dytham architecture (KDa) – Astrid Klein, Mark Dytham, partners in charge; Yukinari Hisayama, Yoshinori Nishimura, project team

ARCHITECT OF RECORD: RIA (Research Institute of Architecture)

ENGINEERS: Structured Environment (structural); EOS Plus (electrical); Nichiei Architects (mechanical)

CONSULTANTS: Furuuchi Design Studio (landscape); FDS Corporation, EOS Plus (lighting)

GENERAL CONTRACTOR: Kajima

CLIENT: SO-TWO

SIZE: 60,358 square feet

COST: withheld

COMPLETION DATE: January 2012

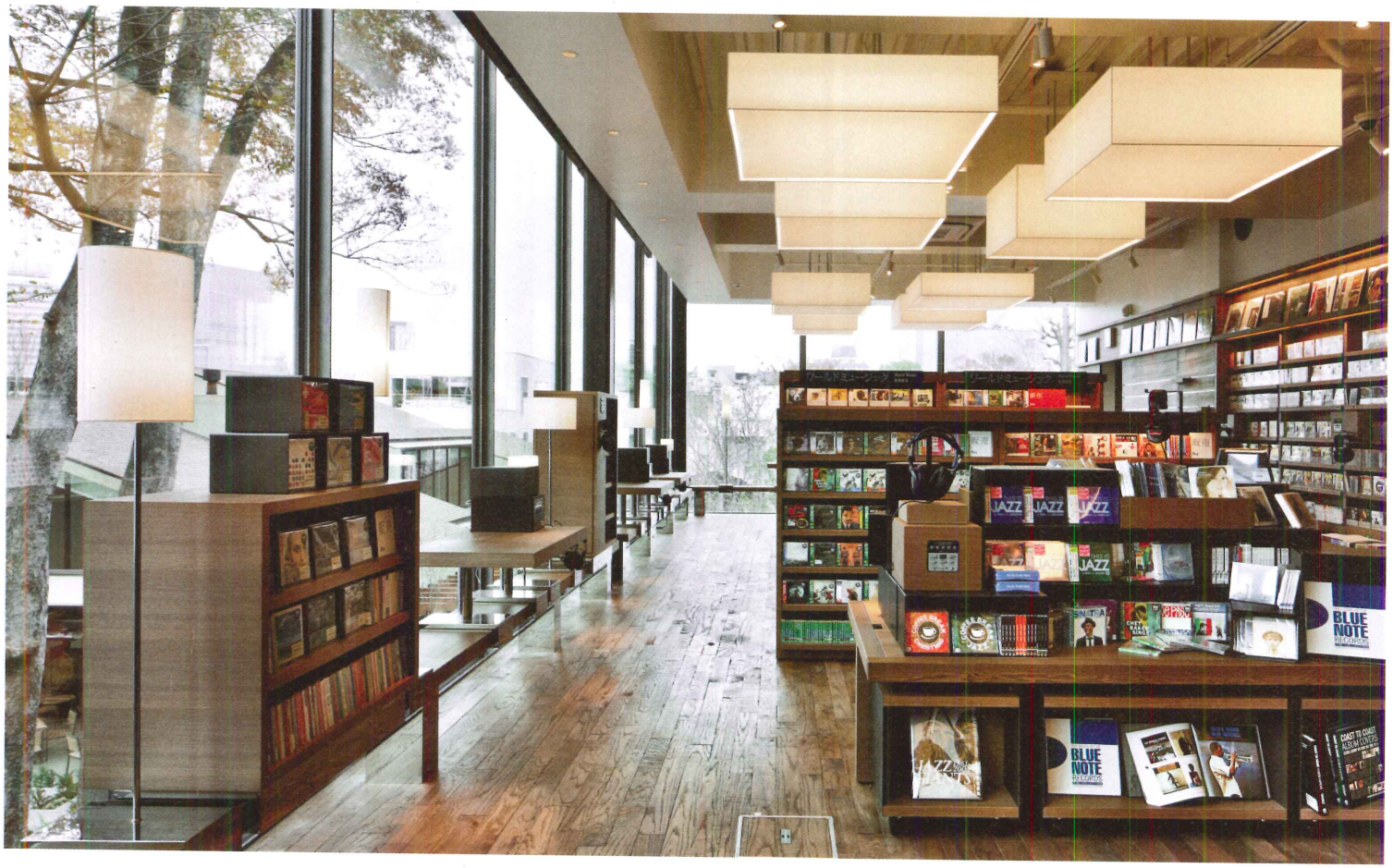
SOURCES

STEEL FRAME: Kawagishi Bridge Works

CURTAIN WALL: Yamaki Kogyo

T PANELS: Asahi Building Wall

CUSTOM WOODWORK: Bauhaus Maruei

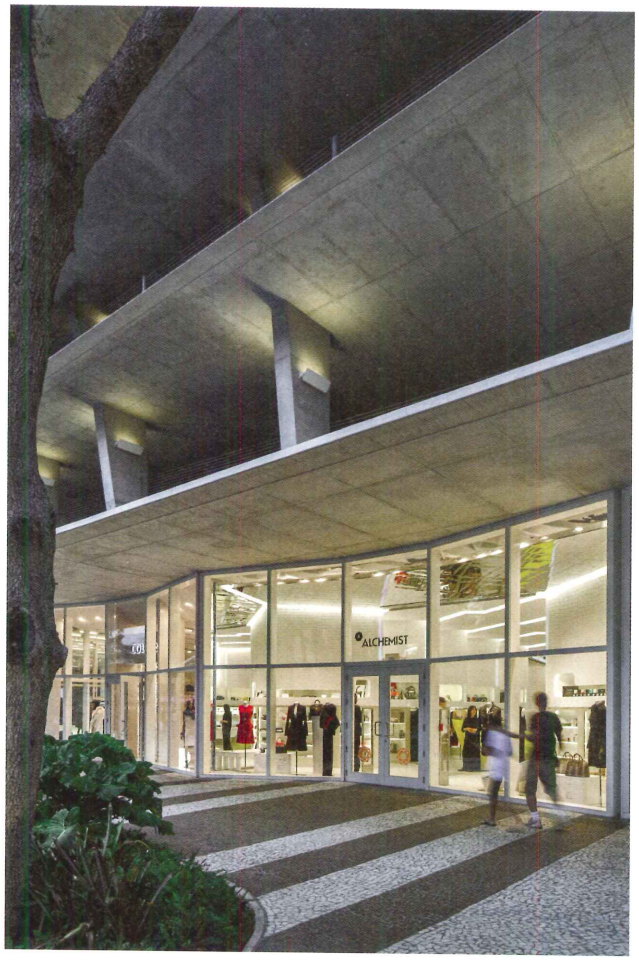

JAZZ
JAZZ
JAZZ
JAZZ
BLUE NOTE
BLUE NOTE

Couture Cabana

Miami

Rene Gonzalez's second Alchemist store in the famed 1111 Lincoln Road parking garage is a cool respite from a hot city.

By Linda Lee



BEACH COOLER The architects angled the walls and sheathed them and the ceiling in melamine foam. Merchandise is easily accessible in carved-out shelves. One of Zaha Hadid's benches (opposite) holds a cooler of juices. Whereas the fifth-floor Alchemist has a serene, gallerylike atmosphere, the ground-floor store draws on the energy of the street outside (left). The mirrored ceiling at the front reflects the exterior (below left). Below, Herzog & de Meuron's 1111 Lincoln Road garage in 2010.

PHOTOGRAPHY: © MICHAEL STAVARIDIS; IWAN BAAN (FAR RIGHT)

RENE GONZALEZ'S new Alchemist shop on Miami's Lincoln Road has some tough competition. It stands on a popular plaza opposite a garish movie theater, the Regal South Beach. It is at the base of the 1111 parking garage by Herzog & de Meuron (RECORD, June 2010, page 134), a destination for architourists and the star of numerous photo shoots and television ads. And it has to, if not best, then at least match the success of Gonzalez's previous Alchemist store on the fifth floor of the garage, notable for its austere glass-box beauty and the tightly curated high fashion inside, including the designs of Rick Owens and Givenchy.

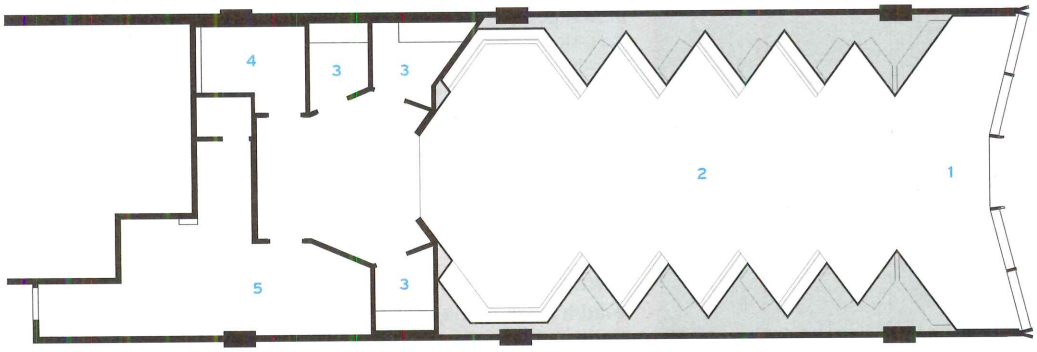
The fifth-floor shop, which opened in May 2010, has been widely published and is a financial success. Gonzalez compares it to elite stores like Colette in Paris and the boutiques on Corso Como in Milan, known to the discerning few: "If you are a follower of these brands, you go to Milan, you go to Corso Como; you go to Paris, you go to Colette. People who come to Miami come here."

Roma Cohen, owner of Alchemist with his wife, Erika Sussman, says Alchemist on the fifth floor and the 1111 parking garage complement each other. "People come to see the building and then they see our store, or they come to see our store and then they see the building," he says.

But for an outpost on the ground floor, a different approach was needed. "We wanted to connect with the traffic and the people outside," Cohen says, referring to foot traffic on the plaza, also designed by Herzog & de Meuron, in collaboration with landscape architect Raymond Jungles. So he and his wife turned again to Gonzalez. Their conversations, which started in 2011, focused on mood and materials. The word "energy" was tossed around; the Cohens in particular liked the youthful feel of the Harajuku and Aoyama shopping streets in Tokyo. "We were very much inspired by the visual energy there," says Cohen.

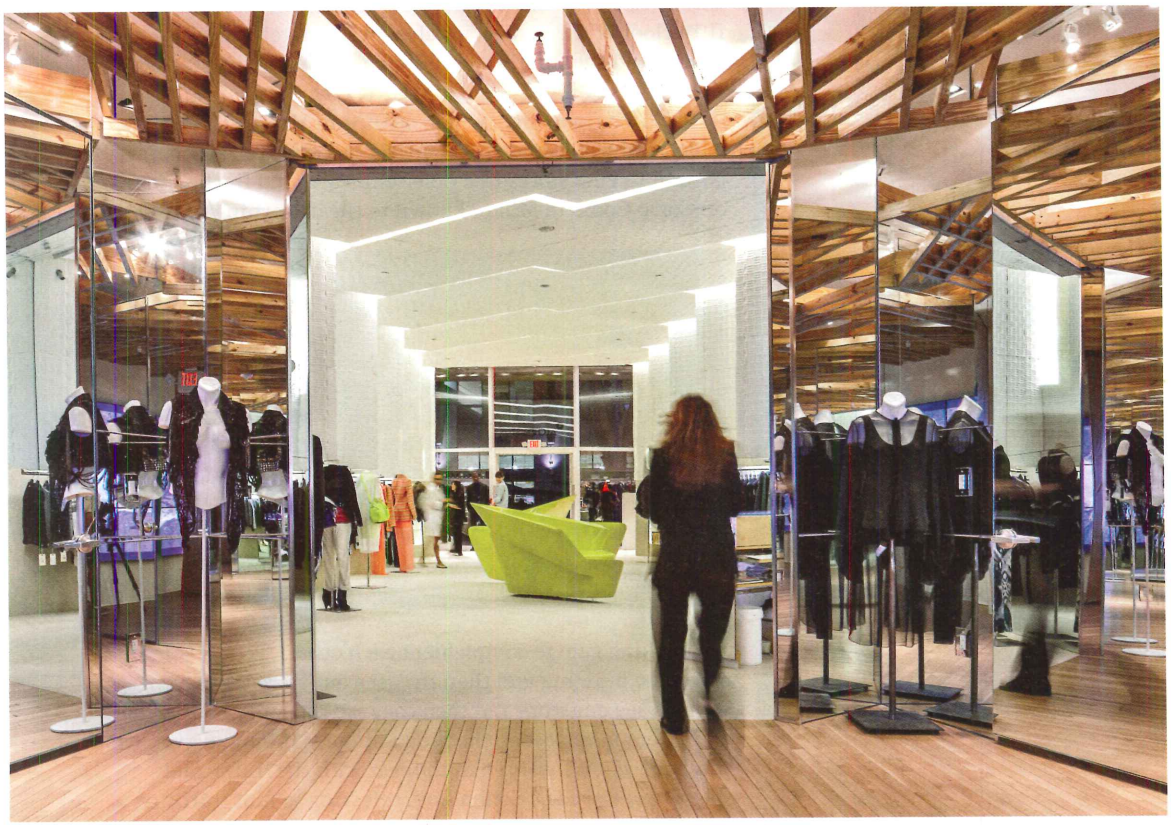
Gonzalez, meanwhile, was thinking in a different direction. The glass box upstairs was all about ethereality, looking out to the sky, the views. The new Alchemist shop would look inward; it would be a refuge. "Rene's idea was that it would be a cocoon setting," Cohen says. "We were even thinking about it as a Styrofoam cooler dropped on the beach."

In common with all the other storefronts at the base of 1111, the entry facade has glass walls in a sawtooth pattern. Gonzalez carried the sawtooth inside, with melamine foam



FLOOR PLAN

1 ENTRANCE
2 SALES FLOOR
3 CHANGING ROOM
4 BATHROOM
5 BACK OF HOUSE



credits

ARCHITECT: Rene Gonzalez Architect – Rene Gonzalez, principal; Monica Vazquez, associate; Kevin Regalado, project director; Marija Brdarski, project team

ENGINEER: Vidal & Associates (m/e/p)

CONSULTANT: G2J Design (lighting)

GENERAL CONTRACTOR: Aaron Builders & Development

CLIENTS: Erika Sussman and Roma Cohen

SIZE: 2,500 square feet (gross)

COST: withheld

COMPLETION DATE: December 2012

SOURCES

CEILING AND WALL COVERING: Pinta Acoustic (white foam)

LIGHTING: Oracle Lighting; Lightolier; Dasal Architectural Lighting; Philips; Lumiron

BENCHES: Zaha Hadid

SEEING TRIPLE
At the rear of the store in the dressing-room "cabana," the foam paneling is replaced with pine boards on the floor and the ceiling. Cove LEDs accentuate the drama of the angled walls.

cladding the ceiling and walls. The niches in the walls hold merchandise within easy reach. At the front of the store, in foam shelves angled toward the street, are items deemed more informal than those sold at the upstairs Alchemist. Sunglasses (a top seller), books, skin-care products, flashy Pierre Hardy shoes, and smartly tailored cropped jackets and relaxed dresses hang in serried ranks that peek out from behind the angled walls.

The ground-floor store draws people inside—it's like entering a white tunnel, an effect accentuated by LED lights behind the foam. Especially after dark, those lights create a forced perspective. The mood changes at the rear of the store, where the 2-inch-thick foam is replaced by pine boards in the dressing rooms. Gonzalez refers to this space as the "cabana." A pair of Zaha Hadid's zoomy benches provide places for friends to perch and wait. Inside one custom bench is a foam cooler holding Jugofresh juices, a new Miami cult. "That's to get people excited about coming in," says Cohen. Animating the cabana area, and entertaining those waiting, are high-resolution art films (palm trees, sunsets, waves) made by the Cohens' friend Paris Kane.

The owners, who wanted youthful energy, and the architect, who wanted a cocoon, are both happy with the result, and especially with the attention it drew from high-profile visitors (and spenders) during last December's Art Basel. "It's important that a place be cared for by the owners," says Gonzalez. "So it's important that they love it." ■

Linda Lee, a former writer and editor at the New York Times, *was the founding editor of* Florida InsideOut *magazine.*

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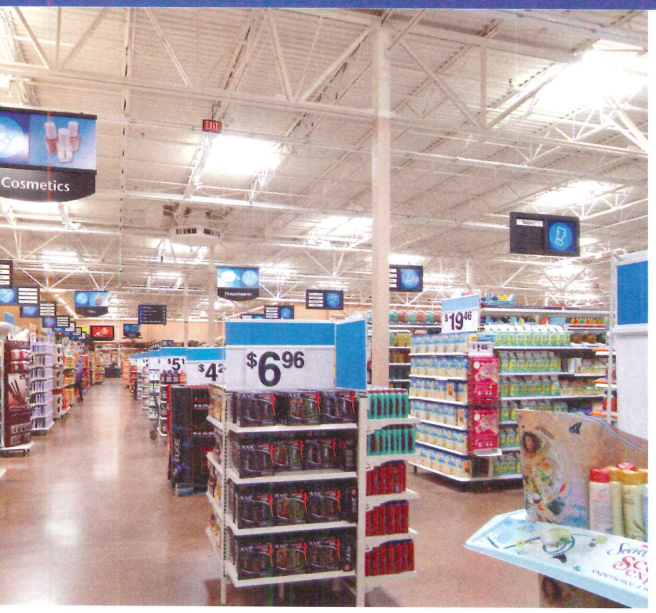

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CIRCLE 14

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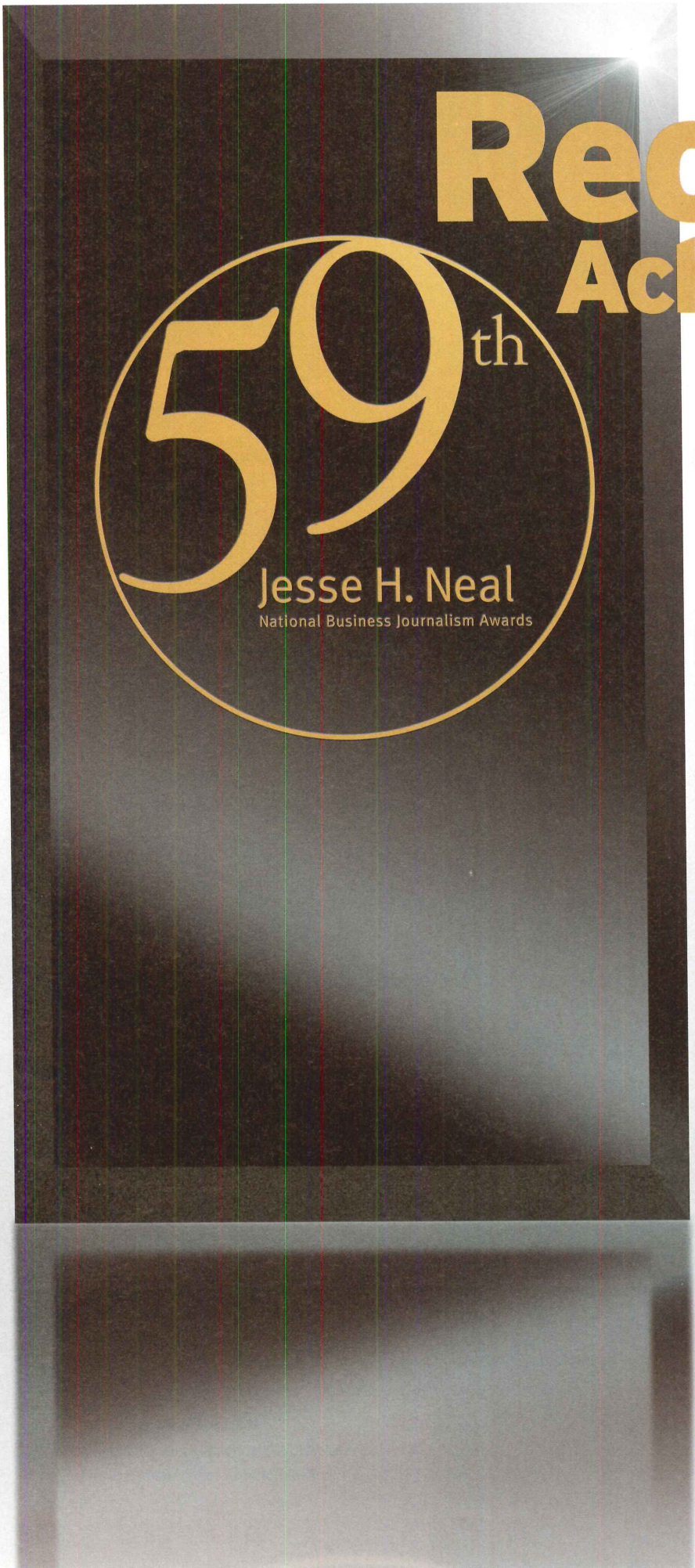

Record Achievements

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BEST CROSS-PLATFORM PACKAGE
Building for Social Change

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BEST WEBSITE:
ArchRecord.com: Building a Community

BEST TECHNICAL CONTENT:
"Revival of an Icon" (September 2012)

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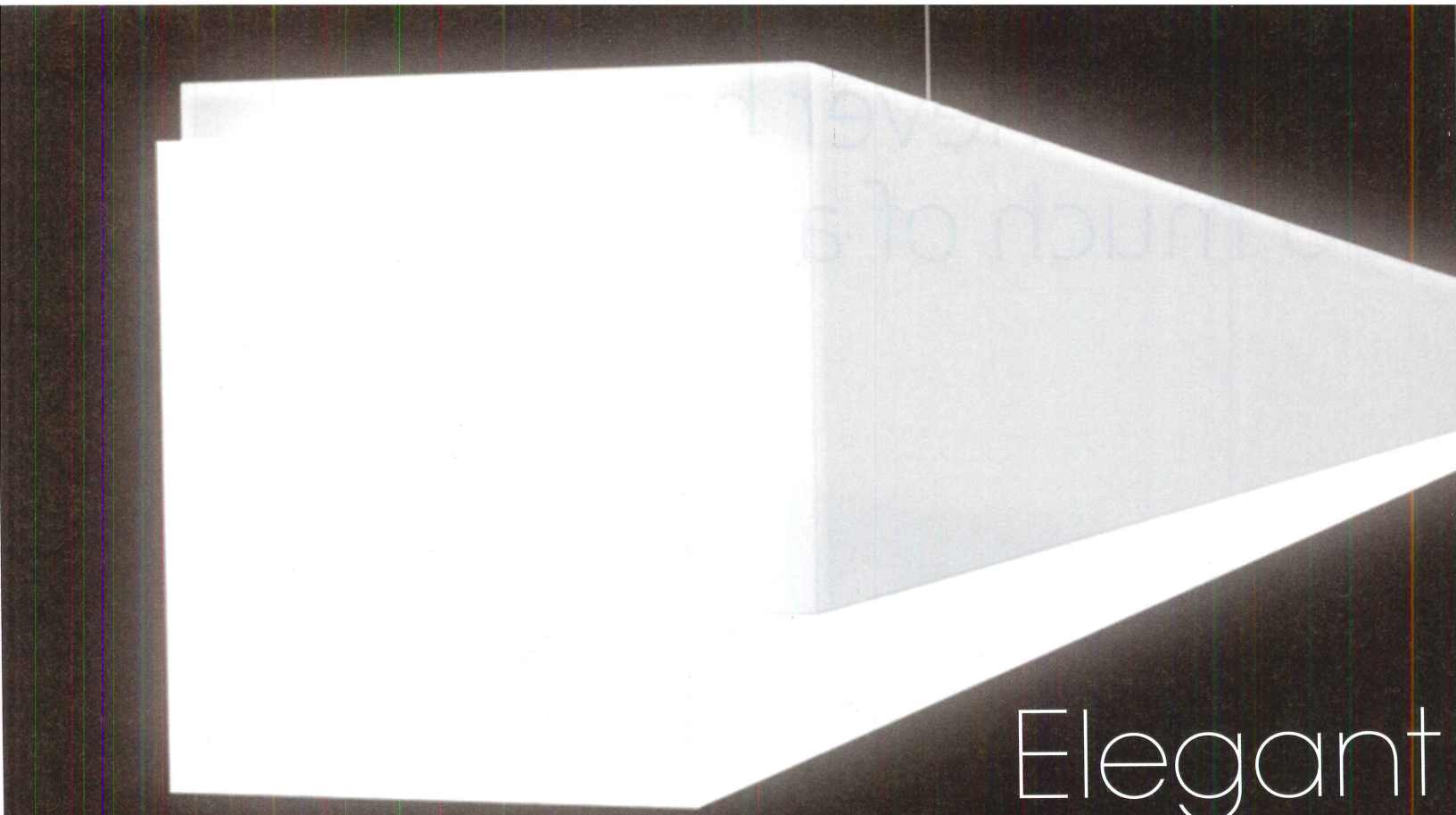

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CIRCLE 43

LIGHT & DAY

A dynamic image-arts center emerges from a former brewery warehouse; a new public library shines from within a wooded setting; an overlooked Ivy League library moves into the 21st century. Each is a hub of inspiration and study transformed by an infusion of daylight offset by creative lighting systems. All three projects not only serve their users but also reach out to their respective communities with an assertive—and welcome—presence.

RYERSON IMAGE CENTRE, TORONTO

PHOTOGRAPHY: © RYERSON IMAGE CENTRE, EXCEPT AS NOTED
IMAGE: COURTESY DIAMOND SCHMITT ARCHITECTS (OPPOSITE, BOTTOM RIGHT)

THE MESSAGE IS THE MEDIUM

Ryerson Image Centre
Toronto
Diamond Schmitt Architects/Consullux Lighting

By Linda C. Lentz

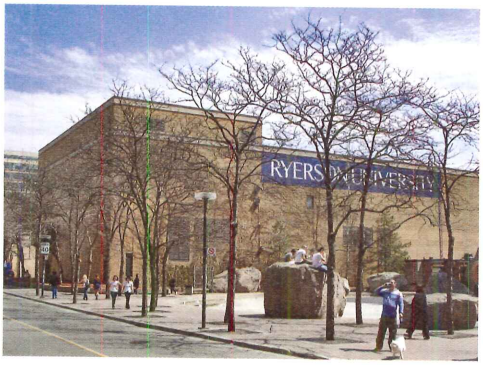
LUMINOUS STRATEGY A 1950s former warehouse (right) was transformed by layers of transparency and dynamic lighting that reflect the media-rich programs and exhibits within the Ryerson Image Centre. Lighting designer Ion Luh used a combination of warm, dimmable fluorescent and halogen lamps in the visible public areas to balance with the LED media wall and inner halogen-lit galleries.

THE INDUSTRIAL yellow-brick building one block north of Toronto's Dundas Square in the heart of the city has been home to the Ryerson University School of Image Arts since the late 1960s. But it was no match for the school's growing reputation in photography, film, and digital media. The former brewery warehouse and bottling plant, built in 1953, was windowless, cramped, and technologically out of date. It also lacked good exhibition spaces. But the recent gift of one of the most significant compendiums of 20th-century photojournalism—the Black Star Collection—motivated the university to transform the serviceable building into a dynamic media center that radiates with the energy of the activity and contents within it.

Given by an anonymous donor, the nearly 290,000 black-and-white photographs, amassed by the New York–based Black Star agency between 1910 and 1992, came with $7 million in seed money. Initially, university officials wanted to modify the existing structure to accommodate conservation-standard storage, curatorial spaces, and a rooftop gallery for the collection, which would be managed as a separate entity from the school program. But according to architect Donald Schmitt, as the administrators reviewed the options it became clear that the time was right for a more extensive overhaul.

"On the one hand, they needed to have total darkness and cool temperatures to preserve the delicate artifacts," says Schmitt, design principal at Diamond Schmitt Architects (DSA). "On the other hand, photography is about light. So we explored the potential for establishing a luminous presence in the city, one that could be understood as a place for viewing artwork made with light."

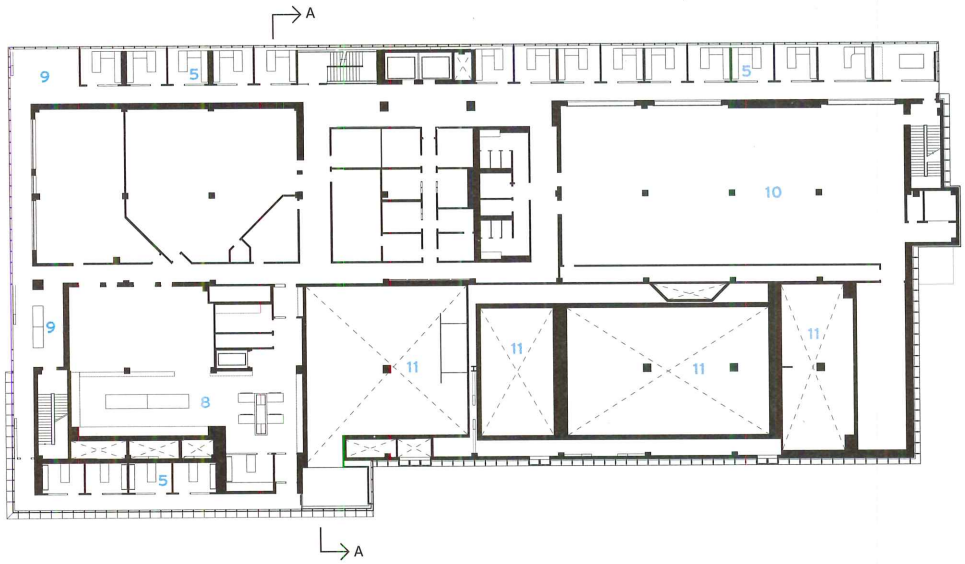
Stretching the limits of the tight urban site, the architects organized the building to create distinct yet linked entrances and domains for the School of Image Arts and the newly created Ryerson Image Centre (RIC),



SECTION A - A

0 30 FT.
10 M.

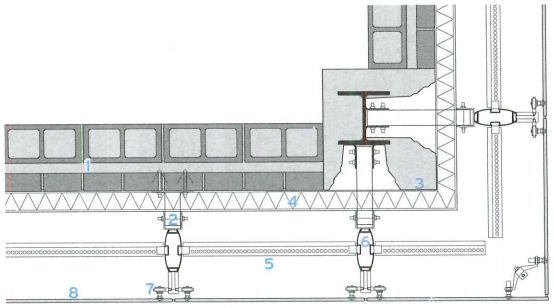
1 RIC ENTRY PORTICO
2 GREAT HALL
3 ENTRANCE HALL
4 CORRIDOR
5 OFFICE
6 STUDIO
7 MECHANICAL
8 RIC RESEARCH CENTER
9 STUDENT LOUNGE
10 STUDIO
11 OPEN TO BELOW



SECOND FLOOR

0 30 FT.
10 M.

1 EXISTING WALL
2 LATERAL CONNECTION
3 AIR/VAPOR BARRIER
4 INSULATION FINISHING SYSTEM
5 LED LUMINAIRE
6 VERTICAL MULLION
7 STRUCTURAL GLASS FITTING
8 LAMINATED-GLASS PANEL



FACADE DETAIL

0 3 FT.
1 M.

which will manage the collection. They added seismic reinforcement, IT infrastructure, and a state-of-the-art HVAC system, then extended the building out as much as 16½ feet around three sides, opening the lower floors with fritted glazing to bring sunlight into public areas, faculty offices, and student lounges. This added layer of transparency also provides welcoming views into the once impenetrable facility, inviting the public to enter through a glass portico and visit the RIC or one of the student galleries DSA tucked into the ground floor. Large translucent photo images, printed on vinyl, along the window bank above this long entry foyer serve as a subtle "sign" and an outdoor extension of the works on display.

A vibrant LED double-skin facade wraps the remainder of the old brick, luring passersby after sundown with a colorfully curated digital display. Developed by DSA together with Consullux Lighting, the curtain wall is made of removable 3-by-8-foot panels of white laminated glass held by an aluminum support system. To prevent shadows and hot spots, the cross-framing at the base of each panel is bordered with a strip of individual, addressable DMX-controlled RGB LEDs that reflect off the existing reclad building envelope, which has been insulated and coated with white stucco.

The designers wanted the lighting to be intelligent and as future-proof as possible, so the system is Ethernet-capable, explains lighting designer Ion Luh. But neither she nor the architects realized the implications of its potential until the building's creative occupants got involved. Intrigued by the protocol, new-media faculty member David Bouchard, along with students and artist-in-residence David Rokeby, took it upon themselves to create an interactive smart-phone application, accessible and free to the public via the Internet. So anyone can use a touch screen to draw sweeping lines around the walls that mingle with other emerging artworks to form a spirited communal mural—in a range of over 13 million possible color combinations.

"It's fantastic," says Schmitt. "The university controls the gate, but when it's open there are at least 50 students, or whoever, around the building playing with the surface."

The Black Star Collection and the new-media wall attracted over 67,000 visitors when the RIC opened during Toronto's 2012 Nuit Blanche, an all-night arts festival in September. It continues to draw 200 or more museumgoers a day, plus plenty of students gravitating to the playful skin and daylit lounges. Renewed and illuminated, the quiet institution has become a lively destination generated by the power of light. ■

LIGHT BOX Wrapped in fritted, low-iron glass, the building is pristine by day, a serene backdrop for the pedestrian plaza, once a vehicular route (above). The student lounge features birdlike Artemide Mouette fixtures (left).

credits

ARCHITECT: Diamond Schmitt Architects – Donald Schmitt, principal in charge; Peggy Theodore, project architect; Steve Bondar, Liviu Bondar, Zvonimir Cicvaric, Andreas Sokolowski, architects

LIGHTING DESIGNER: Consullux – Ion Luh, designer

ENGINEERS: Halcrow Yolles; CEL (m/e/p)

CLIENT: Ryerson University

SIZE: 100,000 gross square feet

COST: withheld

COMPLETION DATE: September 2012

SOURCES

CURTAIN WALL: Kawneer; Viracon; Schott

EXTERIOR LIGHTING: GVA (fixtures); E:cue (controls)

INTERIOR LIGHTING: Sistemalux; Lightolier; Selux (ambient, downlights); Lutron (controls)

View additional images and watch video at architecturalrecord.com.

A GLOWING RESOURCE

Los Gatos Public Library
Los Gatos, California
Noll & Tam Architects / Illuminosa

By Lamar Anderson

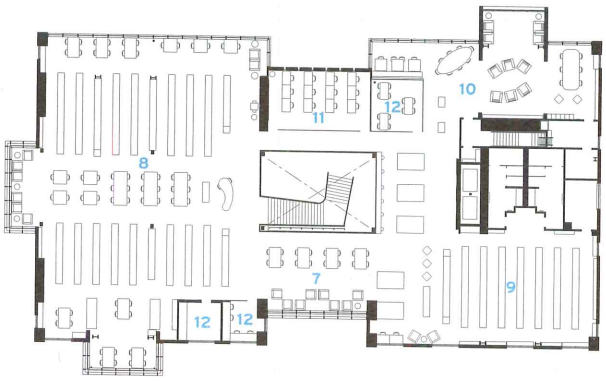
COMMUNITY BEACON Like a lantern in the woods, the modern library is visible from a distance despite a setback site and plentiful tree cover. The design team infused the LEED Gold–certified building with carefully shaded daylight and installed an energy-efficient lighting system that enhances the user experience and establishes a welcome presence in the community as it radiates a gentle luminance.

WITH AN expansive glazed facade and warm wood ceilings that subtly reflect light, the Los Gatos Public Library emits a soft glow at all waking hours, but the best time to see it is at dusk. That's when the lighting program switches on and slowly sends a wash of amber (or blue or purple) across a band of frosted-glass panels tucked at the base of the second-floor windows. The color change, which spreads from the center of the facade outward, takes about 40 minutes to complete and happens almost imperceptibly. It's the kind of touch that helps the already lamplike library advertise itself as a beacon for this small, mountain-edged city south of San Francisco Bay. The stretch of glass that houses RGB color-changing LEDs was originally meant to be empty, a leftover space from the raised-floor ventilation and electrical system. "We were just going to put a blank thing there," recalls Chris Noll, principal of the Berkeley, California–based firm Noll & Tam Architects. "And I went, 'Oh, I want to do something with that. Why don't we have some fun?'"

Working with Illuminosa lighting consultants, the architects chose the concept of a lantern in the woods for the usual associations between knowledge and light, but also to help the public see the building on a site with a large setback and ample tree cover. They designed the steel-frame building as a long, transparent rectangle and oriented the facade to capture northern light. At two stories and 30,250 square feet, the LEED Gold–certified library triples the size of its old quarters inside the neighboring civic center. The new building,

1 ENTRANCE
2 LOBBY
3 CIRCULATION DESK
4 CHILDREN'S LIBRARY
5 PERIODICALS
6 ADMINISTRATION
7 LOUNGE
8 NONFICTION/HISTORY
9 FICTION
10 TEEN LIBRARY
11 TECHNOLOGY LAB
12 WORK/STUDY ROOMS

FIRST FLOOR



SECOND FLOOR

LIGHT LINE The architects inserted a 35-foot-high central spine along the length of the structure and installed clerestory windows on either side to bring light all the way through the core of the 175-foot-long building. Comfortable, pop-out reading rooms are surrounded by louvered windows, which provide sun and heat protection as well as a bit of privacy.

which opened in February 2012, includes stacks and storage for the library's 120,000-item collection, a children's library, a reading room, a computer lab, and a community meeting room, as well as a teen center and a local-history section that pop out from the north and south facades, respectively, in a matched pair of cantilevered bay windows.

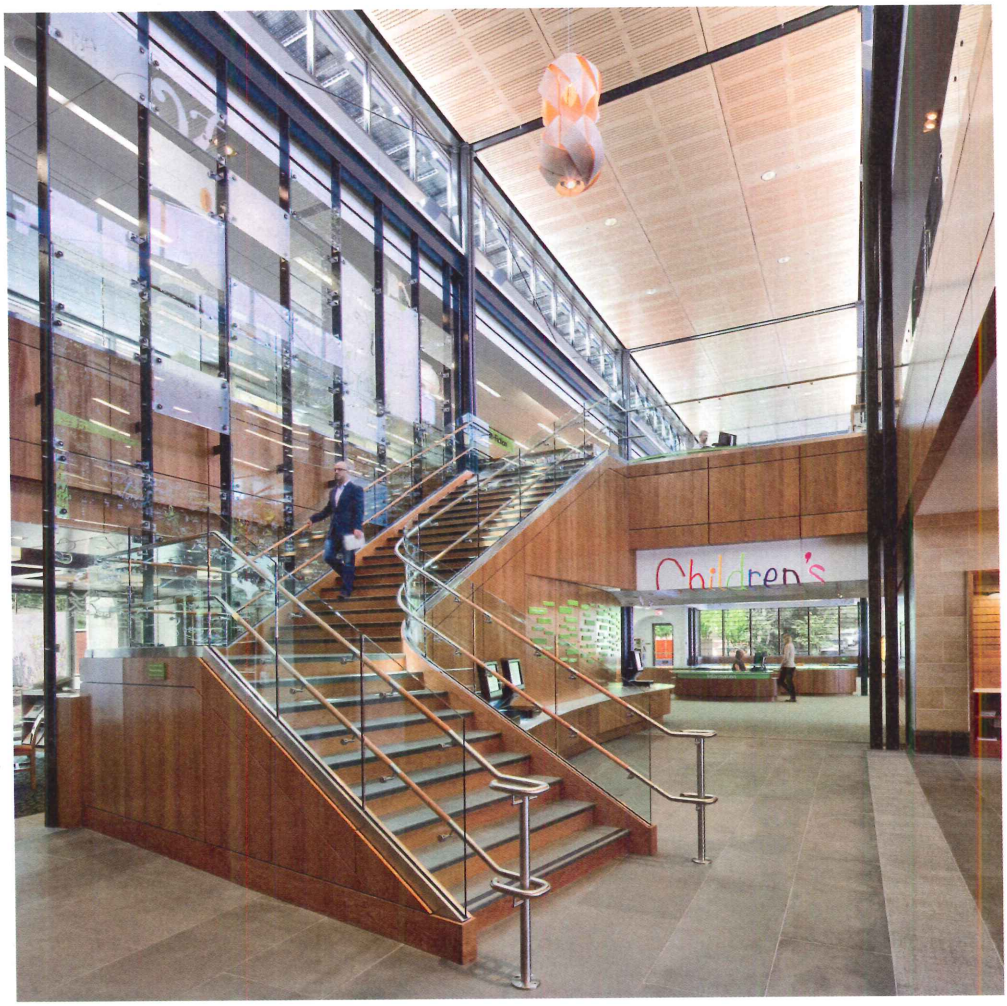
In keeping with the woodsy setting, the architects surfaced the facade with a natural palette of stone veneer, wood-veneer composite paneling, and ceramic tile. These choices, though, almost read as the backdrop for the interior of the library, whose light-washed maple ceilings seem to push out through the windows and become part of the exterior. "You don't see the vertical surfaces when you're approaching the building; you see the lit ceilings," says Alice Prussin, principal of Illuminosa. "If there's light bathing those surfaces, that is what reflects through the windows."

Though the wide site gave the architects an ideal north-south orientation, the designers needed to bring light all the way through the 175-foot-long building. They solved this problem by inserting a tall central spine along the length of the structure, 35 feet above the ground floor. Then they lined the length of the raised roof with clerestory windows that bring

daylight into the core. Lower wings on either side provide cozy dropped ceilings over the stacks that enable the light from recessed fluorescent strips to reach the bottom shelves. Along the north and south faces of the building, the ceiling kicks back up a foot to boost the amount of daylight at the perimeter. As dusk approaches, additional fluorescent ceiling fixtures, on dimming and sensor controls, gradually illuminate the extended window walls. "You need a space that's filled with light to make the building glow," says Noll. "If we brought the stacks out to the edge, it wouldn't work as a concept."

Punctuating the rows of stacks, large, loopy wood-veneer fixtures by Spanish designer Miguel Herranz hang from the ceiling. "With such a long spine, you want to help people be aware of the whole volume but not make it seem too narrow," says Prussin. On the ground level, the children's library gets even more playful. Because of structural beams above the ceiling here, the architects couldn't jack up the height the way they did on the floor above. Instead they captured the space between the beams with a custom-fabricated undulating aluminum ceiling. Cutouts of spaceships and galaxies, backlit by yellow pendant fixtures, give the room a celestial theme.

It was the library-as-lantern approach that helped sell the tradition-minded town on a modern building, says Noll. "They were going, 'Ahh! It's going to be steel and glass and stone; it's going to be cold and modern and not inviting,'" he recalls. "The lighting is a big part of achieving that warm and welcoming feeling. So we got a very modern building past the design-review people." ■



SPECIAL EFFECTS The children's area (above) features an undulating aluminum ceiling with an outer-space theme lit from above. Walls are punctuated with fanciful, circular reading nooks and sconces backed by illuminated recycled-plastic discs. Below, a low lobby ceiling opens suddenly onto a two-story main staircase. Wood-veneer fixtures by Miguel Herranz for LZF drop from the ceiling, and a crystalline, double-height art wall by Sheri Simons lines the stair with alternating panels of clear and frosted etched glass.

credits

ARCHITECT: Noll & Tam Architects – Christopher Noll, principal in charge; Dannielle Sergent, design project manager; Abraham Jayson, construction manager; Matthew Wadlund, project designer; Tad Costerison, project architect; Trina Goodwin, interiors architect

LIGHTING DESIGNER: Illuminosa – Alice Prussin, principal

ENGINEERS: Ingraham DeJesse Associates (structural); Glumac (m/e/p); Sandis (civil)

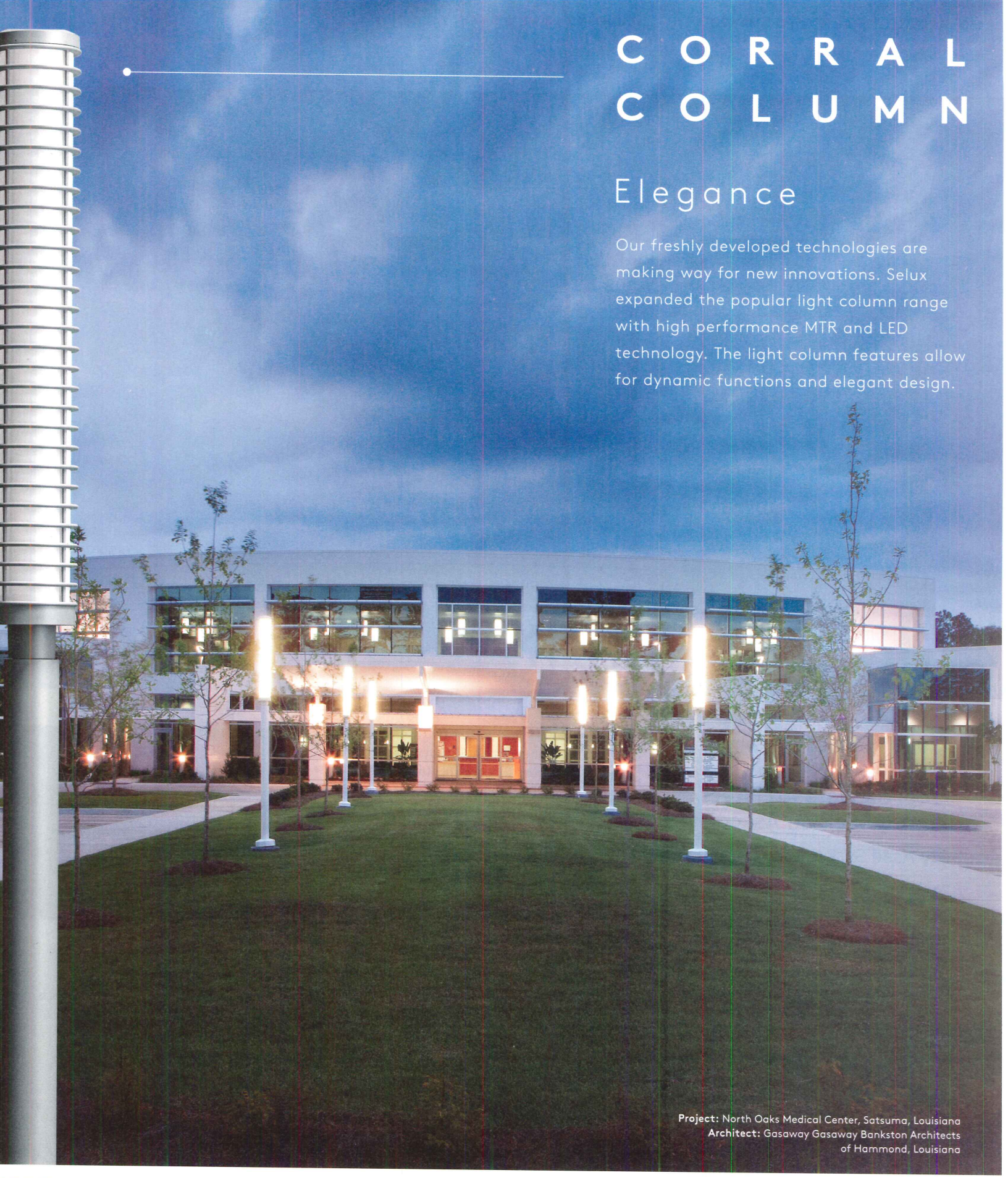
SIZE: 30,250 gross square feet

COST: $12.7 million

COMPLETION DATE: February 2012

SOURCES

LIGHTING: Zumtobel, Linear, Vode, Peerless (linear); Lighting Quotient (uplights); Finelite, Philips (cove); Amerlux, Vode (task); Kurt Versen, Lightolier, Gotham (downlights); LZF, Poulsen, Limberg, Bruck (decorative); Bega, Versen, Winona, HDI, Philips (exterior)



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CIRCLE 71

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BRIGHT MINDS

Julian Street Library Princeton, New Jersey Joel Sanders Architect/ George Sexton Associates

By Asad Syrkett

IN AN age of lightning-fast mobile devices that provide access to information with the swipe of a finger, books can seem archaic. So libraries, once bastions of the printed word, have evolved to fit the new, digitized needs of their users while continuing to do something the Internet cannot: provide a centralized, three-dimensional space dedicated to writing, reading, and research. This was the impetus for revamping Princeton University's 3,100-square-foot Julian Street Library, a media center and social lounge for students belonging to Wilson, one of Princeton's six residential colleges.

To foster a sense of place in the renovated reading room, New York–based Joel Sanders Architect (JSA) devised a carefully considered lighting scheme that creates two discrete "zones," one for communal studying and reading, the other for relaxing. In doing so, JSA has given the students of Wilson College a more modern, comfortable place to work and gather.

The library, which occupies a 1960s-era concrete building called Wilcox Hall, was founded as a "gentleman's library," says Wilson College master and English professor Eduardo Cadava. "The idea was to fill it with the books that all gentlemen ought to be familiar with," Cadava explains with a laugh. In its 21st-century iteration, "Princeton wanted a dynamic space that allows students to gather around digital devices," says architect Joel Sanders.

The primary challenge presented by the old library was its compartmentalization. So JSA opened up the space by removing a masonry wall in the foyer and installing wide, tiered seats that step up toward a large communal workbench. This amphitheater-like area serves as a visual and spatial link between the entry and the main reading room, which is accessed via a ramp to the right and brings daylight beyond the entry and into the whole space.

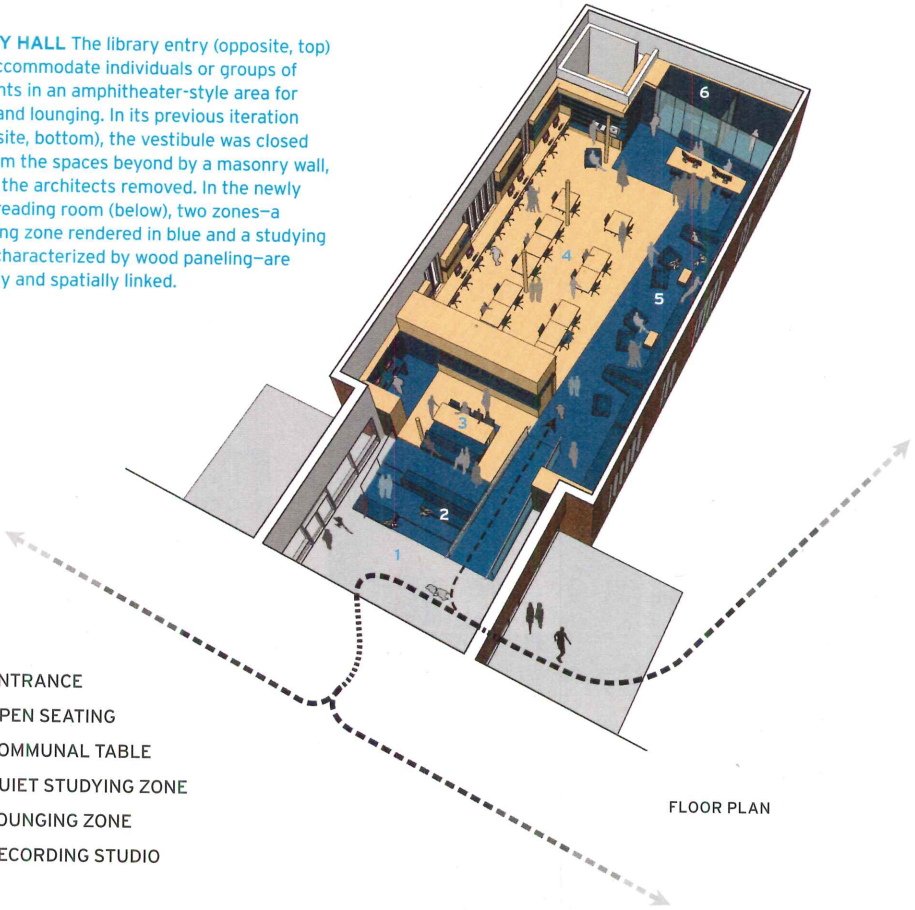
credits

ARCHITECT: Joel Sanders Architect
LIGHTING CONSULTANT: George Sexton Associates
CLIENT: Princeton University
SIZE: 3,100 square feet
GENERAL CONTRACTOR: Epic
COST: withheld
COMPLETION DATE: September 2011

SOURCES

LIGHTING: USAI Lighting, Cooper, Selux (interior ambient); Prudential (task lighting); Lutron (controls)
DOORS: Dorma (entrances/sliding doors, hardware)

STUDY HALL The library entry (opposite, top) can accommodate individuals or groups of students in an amphitheater-style area for work and lounging. In its previous iteration (opposite, bottom), the vestibule was closed off from the spaces beyond by a masonry wall, which the architects removed. In the newly open reading room (below), two zones—a lounging zone rendered in blue and a studying zone characterized by wood paneling—are visually and spatially linked.



1 ENTRANCE
2 OPEN SEATING
3 COMMUNAL TABLE
4 QUIET STUDYING ZONE
5 LOUNGING ZONE
6 RECORDING STUDIO

FLOOR PLAN

Sixteen round lighting fixtures, installed within a ceiling grid painted the same shade of bright blue as the furnishings in the space, provide an ambient glow over the seating area.

JSA carried this circular motif into the main reading room, installing disk-shaped fixtures that create pools of light along the area designated for lounging and reading (also dressed in the punchy blue of the vestibule soffit). "We thought a lot about using lighting to differentiate spaces from one another," says Sanders. Bands of fluorescent strips above communal tables in the "quiet studying" area provide even, bright illumination. "We're also highlighting some vertical surfaces and, in doing so, making the space seem more generous overall," says Washington, D.C.–based lighting designer George Sexton, who worked with JSA on the project. Halogen lamps highlight shelves built into the reading-room walls and give computer stations a bit of vibrancy.

All these changes have brought a welcome contemporary edge to the mid-century library, says Cadava. "We really wanted to provide students with a space that was more useful and relevant to the ways they're learning today," he says. "It's been a real success." ■

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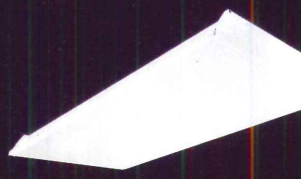

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CIRCLE 18

Lightfair Roundup

A look at some of the latest LED technologies and systems on display at Lightfair International, North America's largest annual architectural and commercial trade lighting show, held in Philadelphia in April.

By Rita Catinella Orrell

BoldPlay

BoldPlay is a new portfolio of high-performance LED lighting systems from Philips Ledalite that are 28% more energy-efficient than traditional technologies such as fluorescents, with efficacies 44% higher. Delivering up to 106 lumens per watt, one of the highest ratings in the industry, BoldPlay allows for wide row spacing at up to 20' apart while maintaining uniformity on the ceiling and work plane. Optional Response Daylight harvesting sensors can further reduce energy consumption by up to 35%. BoldPlay offers a range of LED color temperatures and distribution choices, and has a coordinating wall-mount version. ledalite.com/boldplay CIRCLE 211

AR Series LED Architectural Troffer

Cree's new AR Series LED Architectural Troffer distributes high-quality light with efficacy of 100 lumens per watt and a 33% energy savings versus standard T8 fluorescents. Its flush-mount white housing allows the AR Series to blend seamlessly into almost any ceiling design and softly illuminate a space through highly diffused performance optics. The troffers are available in two models and a range of color temperatures to match existing fluorescent technologies (3,500K and 4,000K). The series supports dimming down to 5% with industry-standard 0–10V controls. cree.com/lighting/ARseries CIRCLE 212

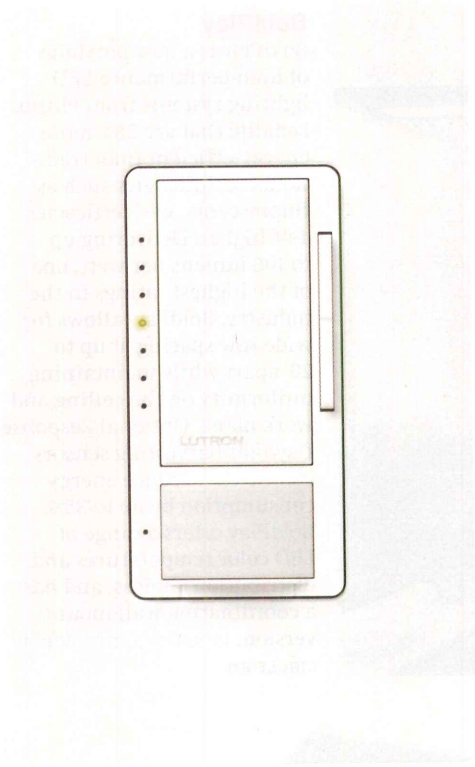
TPS2 LED Floodlights

Acuity Brands has expanded the TPS floodlight series with the TPS2 LED luminaires from Hydrel. The TPS series utilizes a dedicated optical system and internal electronic ballasts and drivers to deliver an ideal output for LED outdoor lighting applications. The luminaires feature a compact, axial design that allows light to weave into decorative displays and other floodlighting applications. Available in 9.75", 11", and 15" dimensions, the fixtures can replace 50- to 150-watt HID floodlights; they have a robust die-cast housing and durable powdercoat finish. hydrel.com CIRCLE 213

Aphos LED Luminaires

Eye Lighting manufactures lamps, luminaires, controls, and related lighting products out of a 100,000-square-foot factory located near Cleveland. The company's Aphos LED luminaires offer multiple designs and mounting options—ceiling-mount, wall-mount, and pole-mount—for indoor and outdoor applications, including warehouses and manufacturing, parking garages, canopies, roadways and parking lots, and facades. Rated at 60,000 hours of life, Aphos is built to withstand harsh environments and temperatures as low as –31° Fahrenheit. eyelighting.com CIRCLE 214

For more information, circle item numbers on Reader Service Card or go to architecturalrecord.com/products.



Radii Pendant

The newest addition to Io Lighting's Radii fixture family is adjustable up to 45 degrees and offers the ability to insert additional control media including a soft-focus beam, linear-spread lenses, and colored lenses. This 50,000-hour accent light delivers center-beam candlepower equivalent to a 100-watt ceramic-metal-halide lamp at one-third the watts. Available in two different light outputs (standard and high), three color temperatures (2,700K, 3,000K, and 5,000K), and three paint finishes: silver, black, and white. cooperindustries.com CIRCLE 215

Maestro C·L Occupancy Sensor Dimmer

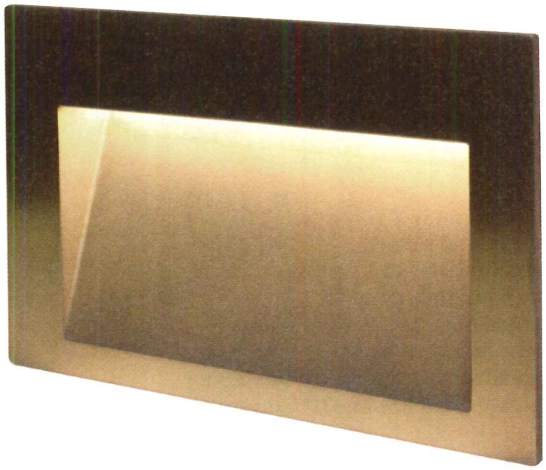
Lutron has combined two signature technologies to create one new product. The Maestro can dim all energy-efficient light sources (dimmable LEDs, dimmable CFLs, and incandescent), and it is also an occupancy sensor. C·L dimmers utilize High Efficiency Discharge (HED) technology, which improves the dimming performance of dimmable CFLs and LEDS by keeping the lights on as they are dimmed, making sure lights turn on at all levels, eliminating or reducing excessive flicker, and keeping lights on even with line-voltage fluctuations. lutron.com CIRCLE 216

Warm Glow Dimming

Offering a customizable LED color palette within a range of 2,200K to 3,500K, USAI Lighting's patent-pending Warm Glow Dimming technology is now available for the BeveLED 2.0 and BeveLED Mini downlight families. Utilizing the company's proprietary algorithm and circuitry, Warm Glow Dimming precisely mirrors the black body curve of a standard incandescent when dimmed from 2,700K or 3,000K down to 2,200K, providing incandescent-like warmth to any space. usaillumination.com CIRCLE 217

Double-Impact ISL-2-ALED

This sleek, compact 6-watt dimmable AC LED luminaire from Lucifer Lighting is perfect for interior or IP65 exterior applications requiring discreet illumination for paths, steps, egress, or accent lighting. Measuring just 4.28" x 2.75", it is constructed of cast 316 stainless steel or bronze and is offered in a wide variety of finishes. It is available standard with a warm 3,000K color temperature, and has optional custom theatrical gels for specific color temperatures. A tamper-proof locking version is available. luciferlighting.com CIRCLE 218



2' x 2' FlatLight

Pixi Lighting's FlatLight recessed fixtures are designed to be LED replacement fixtures for existing luminaires. Available in 1' x 4' and now 2' x 2' configurations (with a 2' x 4' coming soon), they are ideal for under-cabinet, flush-ceiling, T-bar, drop-ceiling, and wall lighting, as well as dry and damp locations. FlatLight's internal power supply allows for TruFlat mounting, and its 90° bezel edge is suited for commercial applications. FlatLight is available in a 4,000K color temperature, is RoHS-compliant, and features a five-year limited warranty. pixi-lighting.com CIRCLE 219

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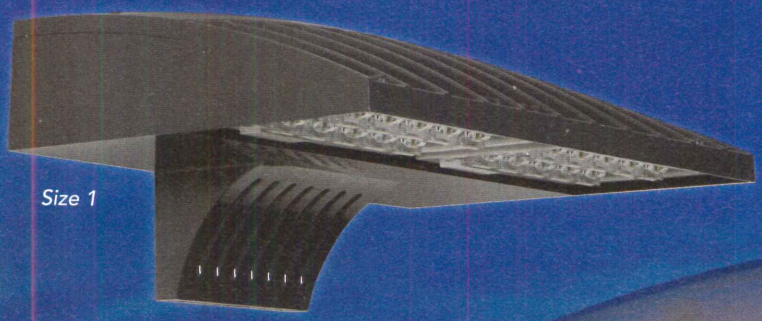

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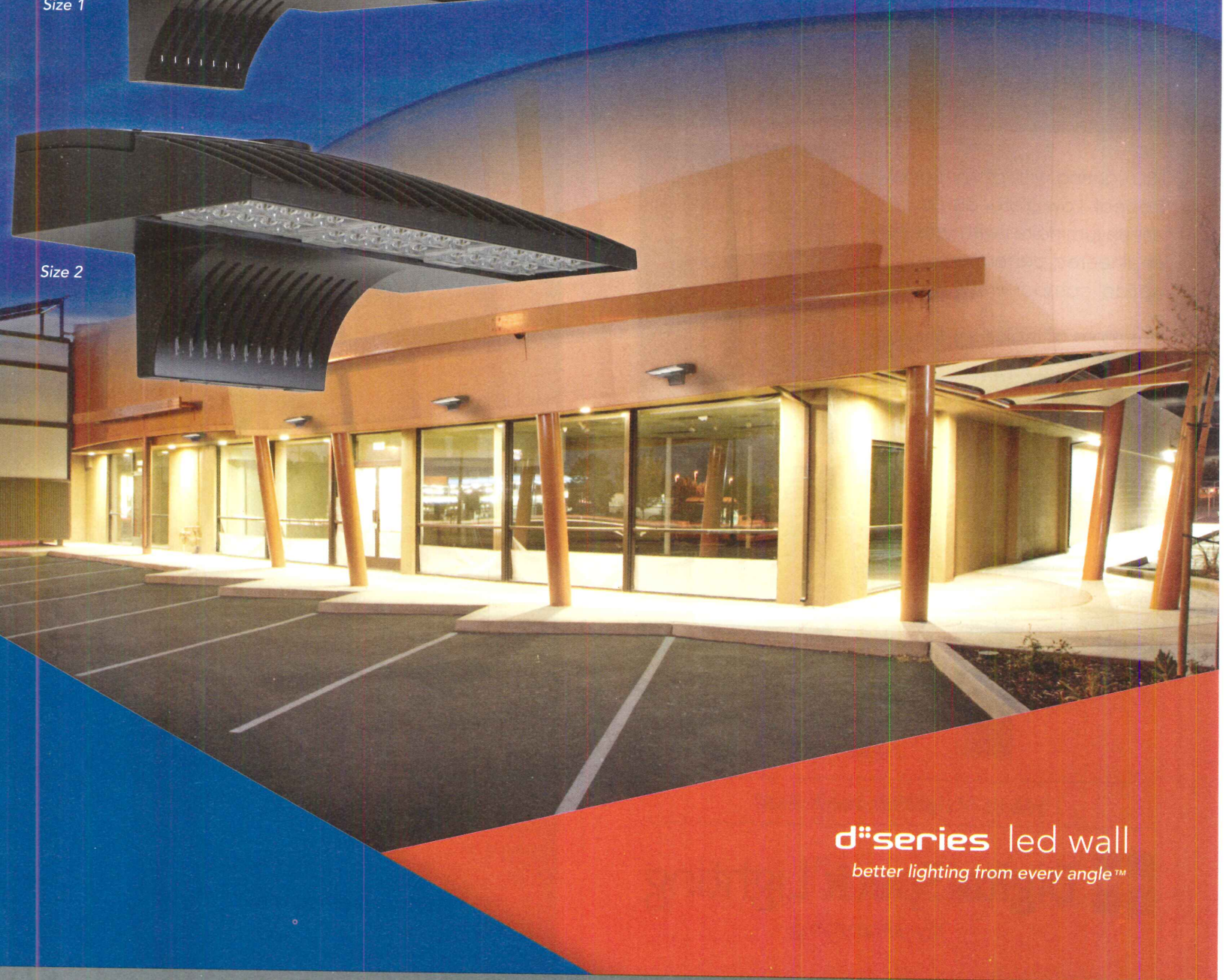

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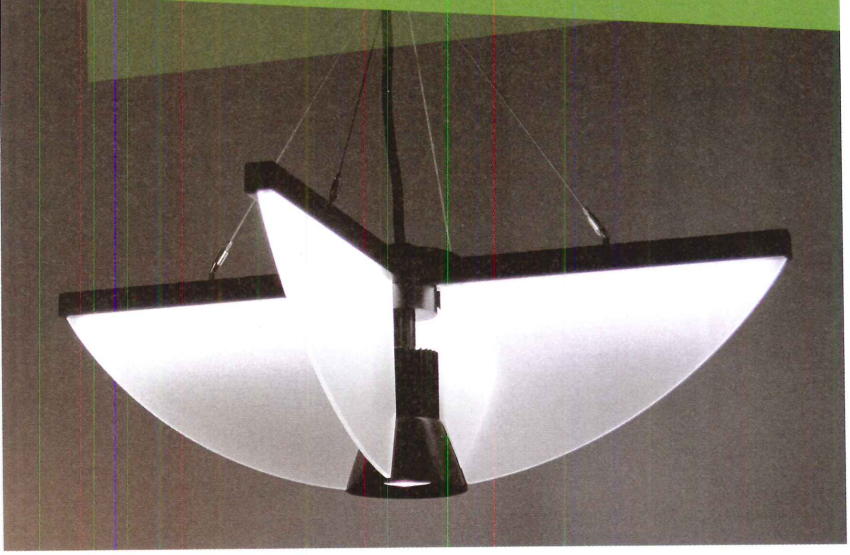

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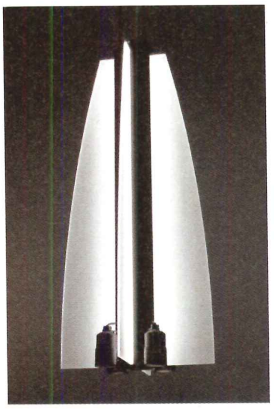

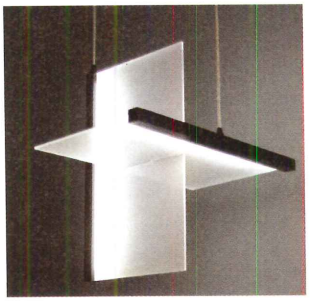

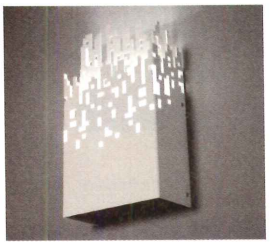

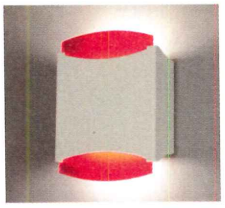

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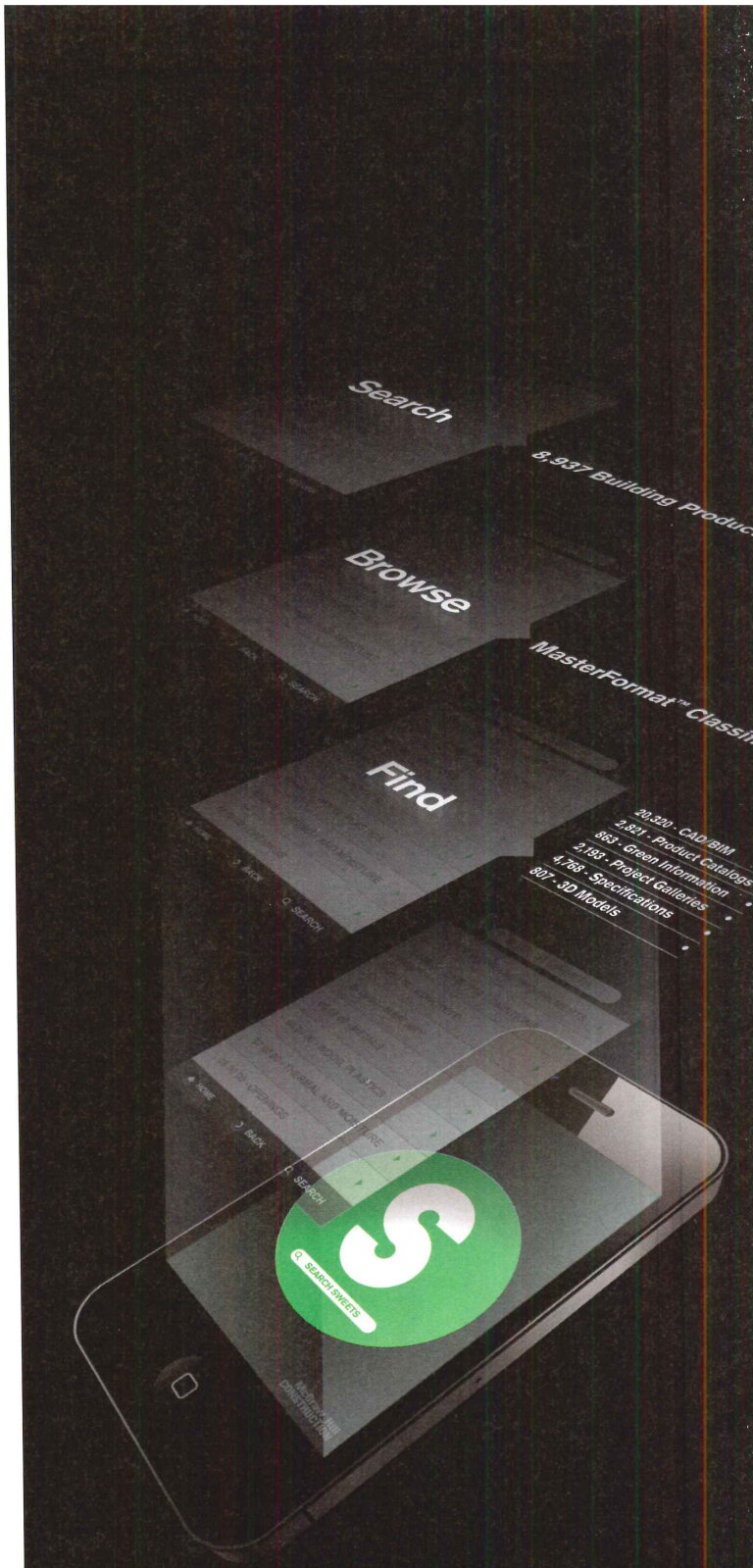

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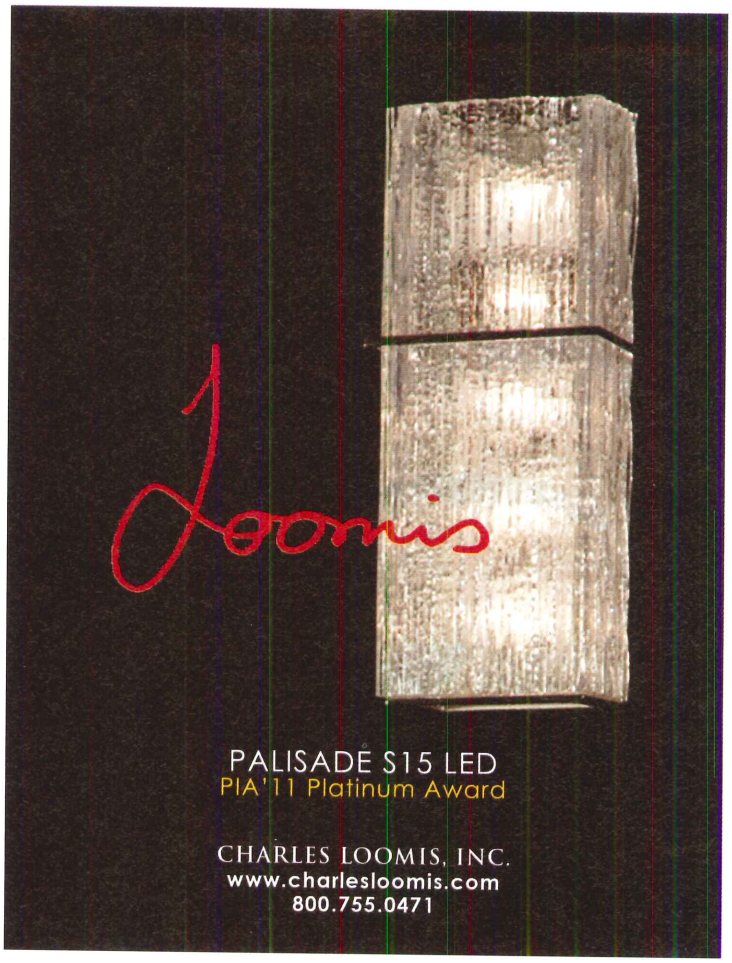
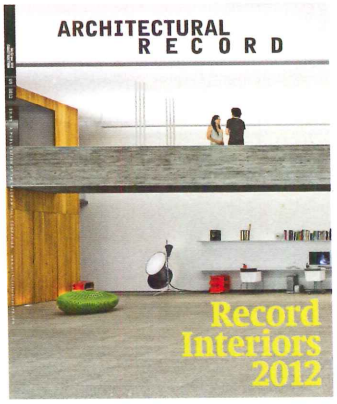


CIRCLE 30

CIRCLE 31

2013 CALL FOR ENTRIES
Record Interiors



The editors of ARCHITECTURAL RECORD are currently inviting submissions for the **2013 Record Interiors** issue. All architects registered in the United States or abroad, as well as interior designers working in collaboration with architects, are welcome to submit interiors-only projects that have been completed in the last year. The projects may be new construction, renovation, or adaptive reuse; commercial or residential; domestic or international. Special consideration will be paid to works that incorporate innovation in design, program, building technology, sustainability, and/or materials. The winning projects will be featured in the September 2013 issue.

The fee is US$75 per entry. Download the official entry form with submission and payment instructions at architecturalrecord.com/call4entries. E-mail questions and submissions to ARCallForEntries@mcgraw-hill.com. (Please indicate **Record Interiors** as the subject of the e-mail.) **Submissions are due May 31, 2013.**

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Record Kitchen & Bath

The editors of ARCHITECTURAL RECORD are currently accepting submissions for the **2013 Record Kitchen & Bath** competition. Entry is open to any registered architect who has completed an innovative residential and/or commercial kitchen or bath project in the last year. We are looking for projects that feature unexpected materials, address unique client needs, or are designed in a manner that allows these utilitarian spaces to be functional, sustainable, and beautiful. Winning projects will be featured in the September 2013 issue.

The fee is US$50 per entry. Download the official entry form with submission and payment instructions at architecturalrecord.com/call4entries. E-mail questions and submissions to ARCallForEntries@mcgraw-hill.com. (Please indicate **Record Kitchen & Bath** as the subject of the e-mail.) **Submissions are due May 31, 2013.**

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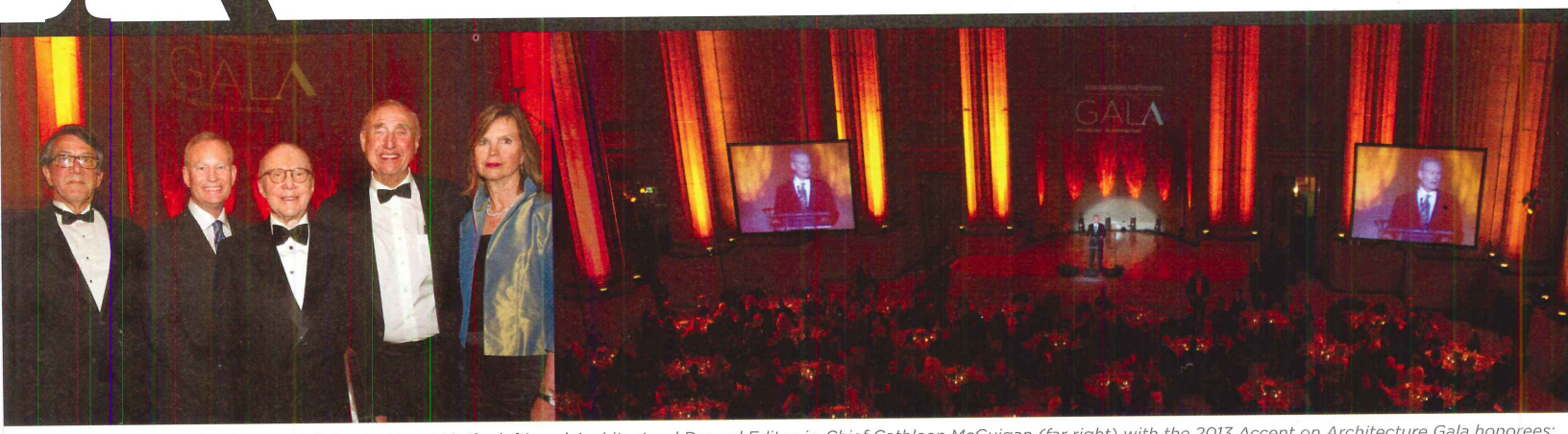

AAF President and CEO Ronald E. Bogle, Hon. AIA (far left) and Architectural Record Editor-in-Chief Cathleen McGuigan (far right) with the 2013 Accent on Architecture Gala honorees: (from left to right) Oklahoma City Mayor Mick Cornett, Gerald D. Hines, and Peter Q. Bohlin, FAIA. Mayor Cornett received the 2013 Joseph P. Riley Jr. Award for Leadership in Urban Desig presented by AAF in association with the United States Conference of Mayors. Mr. Hines and Mr. Bohlin represented their firms Hines and Bohlin Cywinski Jackson, respectively, which rec the Architectural Record Good Design is Good Business Lifetime Achievement Awards, presented by Architectural Record in association with AAF.

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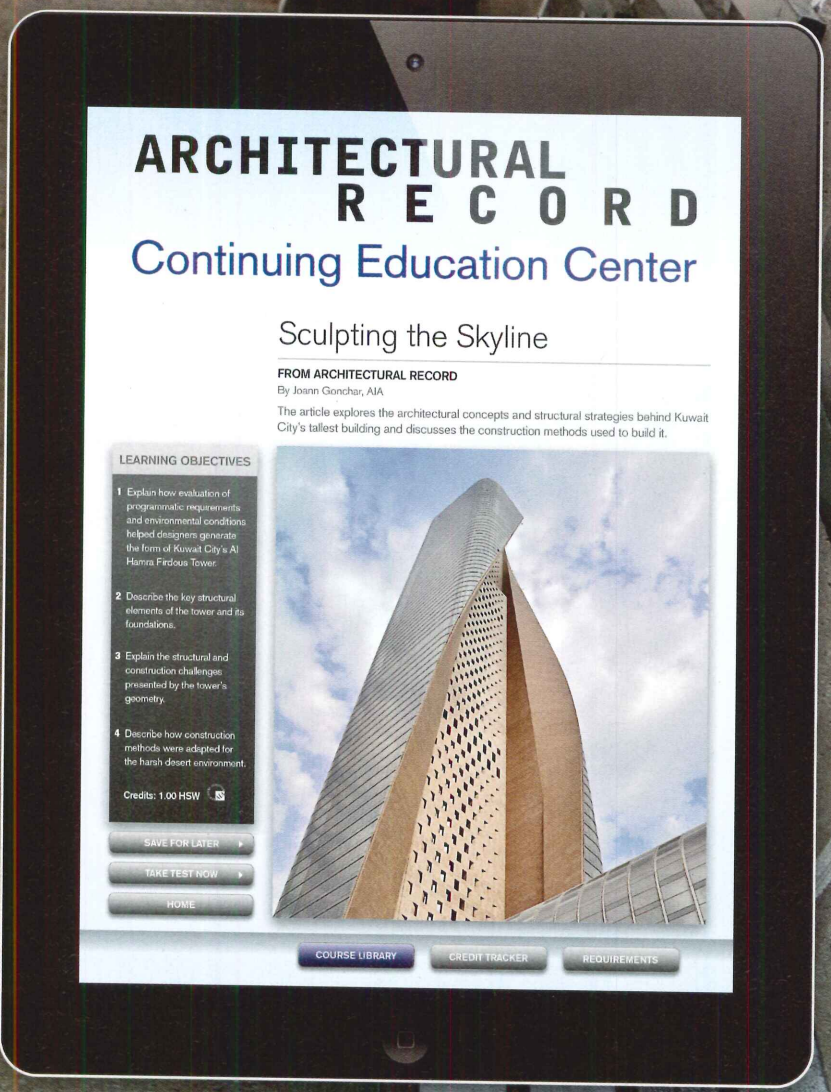

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More Than One Way to Skin a Building

Four curtain wall case studies show different ways to address daylight while achieving superior aesthetics and performance in new and renovated buildings

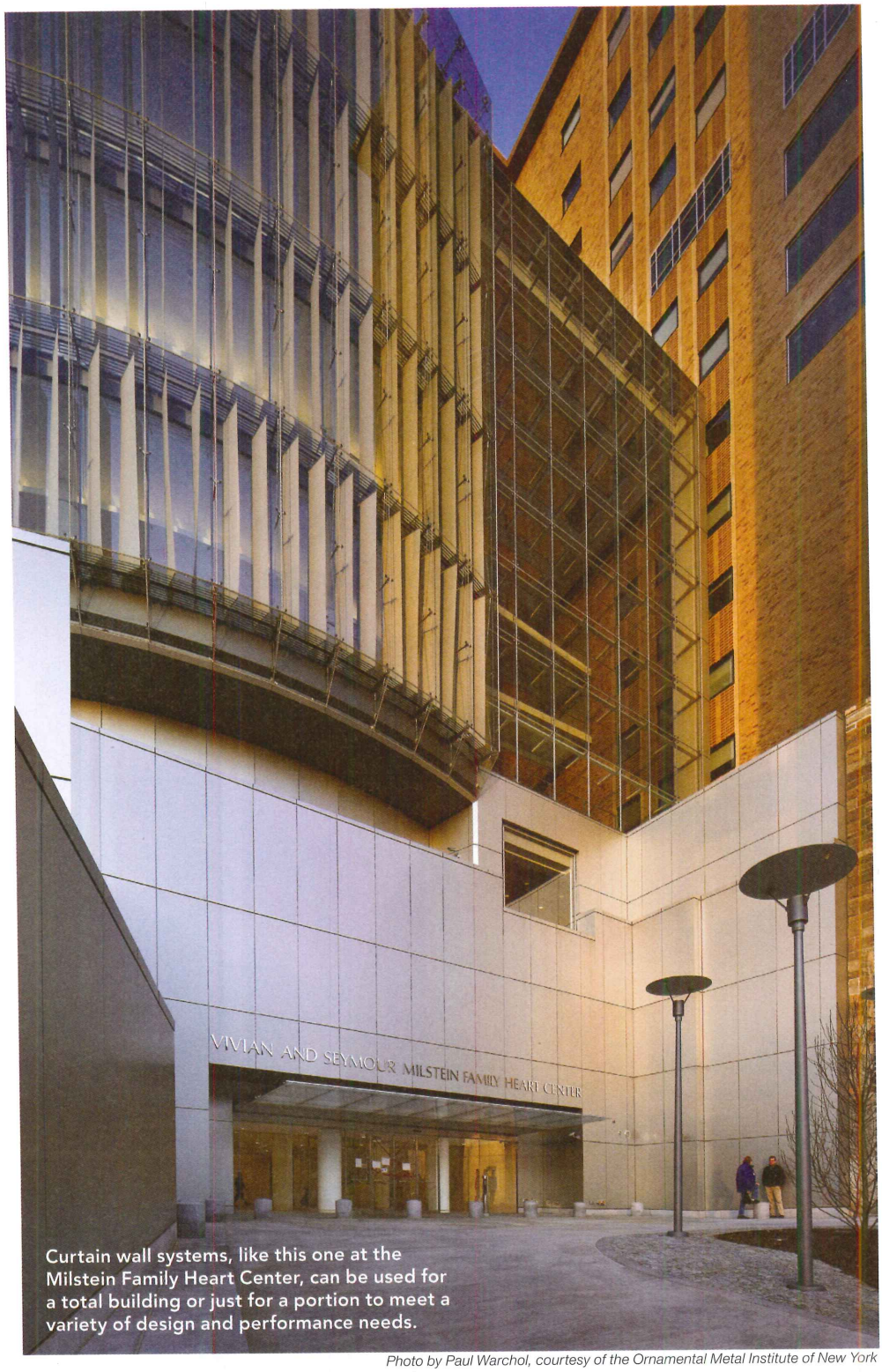
Sponsored by the Ornamental Metal Institute of New York | *By Peter J. Arsenault, FAIA, NCARB, LEED AP*

Building facades have become more than the sum of their parts, particularly when curtain wall systems are used. Advances in materials, digital tools, fabrication techniques, and multidisciplinary collaboration mean that modern facades are being used to regulate entire building environments in terms of daylight, ventilation, and energy use. The cutting-edge technology of many curtain wall systems, coupled with good design principles, is saving energy while providing indoor environments that are focused on the needs of the users. The result is an impressive combination of design and performance coming together for new and renovated buildings.

OVERVIEW OF CURTAIN WALL SYSTEMS

A curtain wall system is defined as a complete exterior envelope facade system which provides a non-structural, relatively lightweight, weather-tight covering on buildings. Being lightweight, it reduces both the load that must be supported and the manpower needed to erect it. In the case of small, low-rise projects, the system may be field fabricated or "stick built" and glazed using standard components similar to a storefront system. However, curtain wall components are notably different in design and performance characteristics with typically much better results compared to storefront components. Larger projects may justify full factory fabrication with panels prepared and glazed ready to be placed directly onto the building structure, minimizing the number of joints in the facade. Curtain wall systems are generally installed outside of the structural system of a building running past floor slabs and other structural elements. They are then attached via tiebacks directly to the building structure at floors, columns, and beams. This installation process means that all wind loads and dead loads imposed on the system are compartmentalized and transferred directly to the building structure. Hence the curtain wall system carries only its own weight and loading while the building structure absorbs all imposed loads.

The strength of curtain wall systems lies in its high overall performance, particularly when compared to a storefront system. This is true in terms of wind resistance, water management, and thermal performance. From a design standpoint they are easy to customize, are available with a variety of interior and exterior aesthetic appearances, and allow a virtually



Curtain wall systems, like this one at the Milstein Family Heart Center, can be used for a total building or just for a portion to meet a variety of design and performance needs.

Photo by Paul Warchol, courtesy of the Ornamental Metal Institute of New York

unlimited range of installation locations, configurations, and opportunities. Specific decisions can be made early related to anchoring options, accommodation of specified glazing thickness, and other details. Most curtain wall manufacturers also offer accessory items such as sun shades or light shelves to enhance daylighting approaches for the overall building.

Perhaps the single most important material common to curtain wall facades is glazing using all manner of glass products. Long marketed as architectural statements, the current generation of all-glass buildings is increasingly being promoted as an energy-efficient, environmentally friendly solution that enhances occupant experience as well as building performance. Technological advances are responsible for this performance boost with glazing currently available that can manage heat and glare, feature low-emissivity, and provide user privacy without compromising light transmission.

In concert with the pace of technological innovation, it has become increasingly important that good architectural design respond to a variety of basic human needs. In particular, recent investigations into the effect of the indoor environment on people suggest that basic design choices regarding the building facade—notably natural daylighting and ventilation—can dramatically affect the performance of a building, and by extension its users. No longer viewed as just an assembly of materials providing environmental separation between conditioned space and the exterior environment, the curtain wall facade is now recognized as an integral component of high-performance building systems.

With all of the above in mind, we will explore four very different buildings that have successfully achieved the appropriate balance of technology, design, installation, and user satisfaction that each of these well-designed projects required.

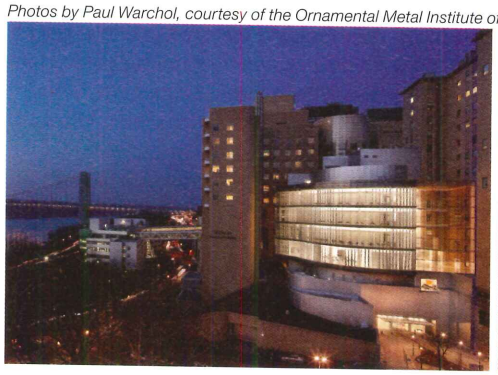
1 MILSTEIN FAMILY HEART CENTER
DESIGNING FOR DAYLIGHT AND ENERGY

The Vivian and Seymour Milstein Family Heart Center at New York Presbyterian Hospital in New York City is one of the world's leading pioneers of cardiac treatment. In order to maintain this edge, the institution recently built a $240-million, 125,000-square-foot addition to its 165th Street hospital complex.

Design Program: Improved Patient Care Through Daylight

Seeking to provide more than just room for the latest in medical advances, the hospital leadership and key donors, including the Milsteins, wanted a building that would buoy its patients' morale—giving the gift of hope to those facing life-threatening illness.

Photos by Paul Warchol, courtesy of the Ornamental Metal Institute of New York



A dynamic double curtain wall delivers energy performance and optimism for the cutting-edge medical community at the Milstein Family Heart Center.

Design Approach–A Very Transparent "Climate Wall"

Ian Bader, the project's lead designer for architects Pei Cobb Freed & Partners, knew immediately how to deliver this kind of reassurance in the form of architecture: The site, a cramped plot at the southern edge of the hospital's upper West Side campus, overlooked a breathtaking panorama of the Hudson River and Palisades. Bader intended to bring this view to the interior, opening up the Milstein Family Heart Center facility to the soothing effects of unfiltered daylight in the process. The problem was how to do so without also causing wild swings in temperature. His solution was to enclose the building in a four-story-high glass climate wall—a dynamic double curtain wall that tracks the diurnal course of the sun, controlling incoming daylight while keeping the hospital's occupants in immediate touch with the glory of the natural world. "Looking outwards becomes an event of hope," explains Bader. Thanks to superb thermal performance and unrivaled craftsmanship, the facade system also helped the project to earn a LEED Gold rating.

More than just an expansion of the hospital's facilities, the addition creates a new entry sequence to the Milstein Heart Center, ushering visitors in from Fort Washington Avenue along a curving passageway that opens into a naturally illuminated four-story atrium. Glass-floored bridges cross the atrium, spanning between the addition and the existing Irving Pavilion and linking directly to corridor waiting areas that abut the curving climate wall. Constructed of custom steel box beams, the bridges support a structural glazing floor system that allows daylight to pass freely through the space's water white glass curtain wall and skylight. A single, mid-span vertical cable suspended from the atrium roof above is used only to control deflections and vibrations. The bridges connect the neighboring Irving Cancer Center with the floors of the new building, facilitating continuity between medical departments.

Structural System Coordination–Cables Tie into Building Structure

The four-story atrium is constructed with both a glass ceiling and an approximately 45-by-70-foot glass facade. The paramount aesthetic goal was that the structural support of the atrium facade be as willowy as possible in order to leave views of the Hudson River and beyond unobstructed. An efficient single-plate steel girder system spanning between the new addition and the existing Irving Pavilion supports the atrium roof. The gravity load of the atrium wall is supported by small-diameter bright drawn stainless steel 316 S 1x19 strand cables hung from the atrium trusses above. The lateral support of the vertical wall is provided by pre-stressed, Vierendeel horizontal trusses,

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Learning Objectives

After reading this article, you should be able to:

1. Identify and recognize the characteristics of high-performance curtain walls that can be used in a variety of settings.
2. Investigate the design potential and innovative opportunities to create building curtain wall system installations that add and control daylight.
3. Assess the functional contributions of curtain walls towards improved interior environments and creative exterior applications.
4. Specify and design curtain wall systems using construction details that integrate with structural systems appropriate to new and renovation applications.

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constructed of a thin plate and pre-stressed horizontal cable.

Curtain Wall System–Cable Support System and Cavity

The glazing is supported from the structural systems with stainless steel glass point support hardware. Rising to the west of the atrium, the addition's climate wall is composed of a 22-millimeter-thick laminated glass outer wall and a 44-millimeter-thick insulated glass inner wall separated by a 3-foot cavity. The layer of air in the cavity mediates solar heat gain in warm months and acts as insulation during the winter. When outdoor temperatures rise, the building's exhaust air is drawn into the lowest level of the wall by convection currents, allowing built-up heat to rise naturally to the top elevation where it is expelled through a rooftop vent. In winter, this vent is closed off, holding in the air and creating a thermal blanket for the building.

The wall's double-laminated glass panels are a variety of sizes, though they are generally 5 feet wide and 16 or 17 feet high depending on floor-to-floor heights. The wall does not rely on a mullioned framing system, but upon structural glazing and custom-designed point supports. The point supports attach to a system of crisscrossing post-tensioned fine ground brush drawn 304 stainless steel rods that hang from the ceiling and are drawn down by coil springs at the wall's base. This system kept the 3/8-inch-diameter rods as slim as possible, as the structures in tension require significantly less material to handle the applicable loads. Rods also tie the tensioned system back to the floor plates to absorb lateral forces, primarily wind loads.

Daylight Control Strategies–Adjustable Vertical Shades Move with Sun Patterns

As with the atrium, the climate wall's glass panels are composed of clear insulated glass units, meaning that the light that comes through is unadulterated by high-performance coatings, which tend to taint the sun's full-spectrum rays. "We live in a filtered world," muses Bader. "I tried to avoid that here." The tradeoff, of course, is that the glazing offers little in the way of shading. To make up for this, Bader and his team designed a system of computer-controlled fabric louvers, essentially motorized vertical blinds that track the trajectory of the sun. In the evening, the system is completely open, at midday it is closed, and between these two extremes the panels adjust accordingly, optimizing the amount of light passing through at any given time. "Typically, a high-performance glass would have a shading coefficient of .6 to .45," says Bader. "The shading coefficient of this system is very low—.1 or .05. You would have to have a virtually opaque wall to get that." In addition to the blinds, the airspace features a stainless steel catwalk system, a custom grating supported by small-diameter pipe members integrated into the climate wall support structure that allows easy access for maintenance.

Behind its sophisticated stainless steel and glass corset, The Milstein Family Heart Center now stands as a hopeful refuge for patients and their families, with enlarged details of Hudson River School painters' landscapes on the walls of the waiting areas and lobby imbuing a natural vibrancy and depth to the center's interior and reiterating the addition's strong ties with the natural world. Luminous between New York Presbyterian's older masonry structures, "all the elements of the center were carefully engineered like pieces of jewelry—each item has its own special identity and purpose," says Bader. "And while the existing buildings are not architecturally distinguished, they are of archaeological value, allowing a layering of stories to happen. The dialogue is alive and well here."

2 HARLEM HOSPITAL PATIENT PAVILION
MAKING A STATEMENT

The new patient pavilion at Harlem Hospital is proving that modernization need not be at the expense of historical significance.

Design Program–Create a Unified, Modernized Complex

The modernization of this 100-plus-year-old teaching hospital was needed to make room for improved patient care and community outreach in the Harlem section of New York City. The recently completed project will house new emergency and surgery departments, diagnostic and treatment services, a critical care suite, and a modern radiology center—all centered around an expansive full-height atrium to create a unified health care complex out of seven disparate structures spread over two city blocks.

Design Approach–A Unifying Facade

The project's design, undertaken by HOK's New York office in association with Bronx-based architect Jack Travis of Studio/JTA called for constructing a new six-story, 150,000-square-foot pavilion to connect to the existing Martin Luther King Pavilion and the existing Ron Brown Ambulatory Care Pavilion. Though the plan is rooted in bringing the most up-to-date medical care and teaching facilities to Harlem, at its creative center is the restoration of the hospital's historic WPA-era murals painted by some of the most famous African American artists of the 1930s, including Charles Alston and Vertis Hayes. While the original artwork, depicting themes of medical science, life in Harlem, and experiences of black people in America, will be displayed in the new pavilion's lobby gallery, Hayes's work Pursuit of Happiness is replicated on the building's six-story curtain wall facade in the form of a 180-by-65-foot glass mural mounted on a concealed steel structure.

Structural System Coordination

The unusual project posed several challenges to the design team, who worked with structural engineer Robert Silman & Associates to realize the new pavilion's structural design. Pavilion spaces needed to be organized to flow into existing portions of the hospital campus. Perhaps most importantly, the design had to anticipate plans to build two additional floors atop the new pavilion in the future. Using steel for the structural frame provided the necessary flexibility in both cases, but the team found that the unique mural curtain wall design approach prevented them from using more efficient cross-braced

Photo by Dominick Reda/TDX Construction Corp., courtesy of the Ornamental Metal Institute of New York

The curtain wall facade on the Harlem Hospital New Patient Pavilion features a digitally applied artistic mural that provides light control while still allowing vision out.

frames to address lateral loading. Therefore, the building's lateral system (with the exception of a double-height mechanical space) is designed as a series of moment frames. This required large W14 x 342 and W24 x 117 girders, both of Grade 50, A992 steel, to keep lateral drift to acceptable limits. The double-height mechanical space at the seventh floor created a "soft story" where moment frames were inefficient, so the design team instead used perimeter-braced framing for better lateral load resistance.

With the facility's expansion goals in mind, the structure is designed to carry two more floors in the future. In order to anticipate the additional stresses on the building that those future floors presented, the team developed several structural models to determine appropriate seismic and wind requirements both before and after their addition. Because the hospital is set back one bay at the sixth floor, large W44 x 335 transfer girders support the new floors and the potential floors above.

Column layout also presented a challenge to the design team. Because of the hospital's desire to create open, light-filled spaces in line with modern health care standards, the architects set column lines on the north and west sides of the building 9 feet 6 inches back from the building edge. The design team used cantilevered stub beams moment connected to the columns to create corridor areas free of vertical structural elements.

Curtain Wall System–Digital Printing on Glazing

The unique space created by the structural alignments was designed to accommodate the hospital's new Pursuit of Happiness glass mural onto Lenox Avenue. Aside from visible horizontal mullions at each floor line, the atrium's west wall is structurally glazed, presenting an uninterrupted canvas for Hayes's work. Each of the curtain wall's 429 panels was printed with a new digital, direct-to-glass colored ceramic printing technology much like putting ceramic frit on glass. The digitized artwork is printed on the #3 surface of the six-layer insulated glass units, directly under a PVB interlayer laminating it to the outer lite. To accommodate the building's show-stopping curtain wall, bent plates of 3/8-inch-thick A36 steel form the edge of the slab along the west facade. Three quarter-inch-diameter, embedded head steel studs (attached to the inside face of the bent plates) provide the additional capacity necessary at the slab edges for the curtain wall attachment. Because the printed curtain wall was part of a separate design-build contract, Silman's engineers worked with curtain wall engineer Arup to develop connections to the bent plates that could accommodate the necessary vertical deflection at the slab edge, as well as the lateral movement of the building. As with many design-build curtain wall systems, the hospital's steel sub-frame needed to be designed for maximum flexibility at the attachment points. Because the slab edge at the west mural wall was cantilevered out as much as 1 foot – 10-1/2 inches, the spandrel beam design uses HSS members connected with full-height stiffeners to keep them from rotating.

Strategy at Night–Backlighting

Because interior corridors pass behind the glass, it will remain unobstructed by furniture. At night, the fluorescent back-lit image comes alive thanks to the illuminated column-free space behind it, highlighting the historic scene from the past—the hospital's new face—for all who pass by.

3 LEARNING SPRING SCHOOL
CONTROLLING LIGHT

The Learning Spring School (LSS) is not your average New York City independent educational institution. Established by a group of concerned parents in the fall of 2001, LSS was conceived, built, and staffed for children with high-functioning autism spectrum disorders.

Design Program–Educating Children With Autism

Not long after opening up in a small commercial building, the school realized that its facilities were inadequate to meet the very specialized needs of its student body. Adding to the challenge, as early intervention for children in the autism spectrum became more and more prevalent, admissions applications began pouring in, and enrollment quickly exceeded the capacity of the space. To address both of these shortcomings, LSS commissioned New York architectural firm Platt Byard Dovell White (PBDW) to design a dedicated building that would meet the school's growth projections and create an environment conducive to educating children with autism.

Design Approach–A Sheltering Curtain Wall

Whereas in some projects the purpose of a curtain wall system is to maximize views and daylight, the objectives in this specialized urban school were to mitigate harsh sunlight and minimize visual stimuli. With complete transparency not an objective, the architects initially explored a window wall system because of cost, but changed to a curtain wall system in order to ensure a more reliable enclosure. The design was made of glass, zinc, and an aluminum sunshade system that lets filtered daylight in while keeping autistic students calm and focused on the lessons at hand. What makes the facade unusual is that such systems are not generally used to enclose educational settings. However, to help foster the school's mission of enabling autistic children to succeed academically as well as socially and emotionally, PBDW laid out an extensive 34,000-square-foot building accommodating occupational therapy, drama and music, lifestyles, culinary arts, fine arts, science and computer labs, plus a library.

Photo by Fredrick Charles, courtesy of the Ornamental Metal Institute of New York

The Learning Spring School curtain wall facade integrates with the rest of the building.

For the fourth case study and complete project details, see the online version of this article.

Continues at ce.architecturalrecord.com

Peter J. Arsenault, FAIA, NCARB, LEED AP, *practices, consults, and writes about sustainable design and practice solutions nationwide.*
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Double Acting Traffic Doors Provide An Entrée to Efficiency

Facilitating accessibility and screening for aesthetic and environmental effect

Sponsored by Eliason Corporation

As a movable structure used to open and close an entrance, a door has many jobs. Doors admit people, ventilation, and light. They create privacy, distance, and space from the other aspects of a building. They keep cold or heat in or out, control the spread of dust, and noise, and provide security. In commercial applications, the list of door functions and objectives grows to include the efficient passage of people and goods, the ability to withstand moderate and heavy traffic, and the capacity to separate building functions coupled with ease of maintenance and aesthetic qualities consistent with the look of the facility.

Opening with a light assist and closing automatically in a safe, gradual manner, double acting traffic doors are one option that achieves these goals. As opposed to doors that swing one way, and open and close manually via a knob, lever, push bar, or related device, double acting traffic doors open easily in both directions, simply by pushing on them, after

Double acting traffic doors promote efficient movement while acting as a barrier for visual, sound, and environmental purposes.

All photos courtesy of Eliason Corporation

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Learning Objectives

After reading this article, you should be able to:

1. Identify where and when to specify double acting impact traffic doors for increased operational efficiency.
2. Discuss the types of hinge configurations to meet operational goals in various commercial applications.
3. Compare the styles of double acting traffic doors, their composition, and installation considerations.
4. Describe the range of considerations in proper specification of double acting doors including expected traffic level, finish material, regulatory concerns, and other factors.

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which they automatically return to their closed position. Used extensively in restaurant, retail, institutional, and industrial situations, double acting doors allow personnel and materials to travel more quickly between two sections of a building while acting as a separation between public and backroom operations. In commercial scenarios where bottom line considerations are key, double acting impact traffic doors represent a basic cost-effective strategy for efficient movement, while providing necessary screening functions. This article will discuss the basics of double action doors, their applications and various hinge scenarios, focusing on where and how to specify them to meet goals.

DOUBLE ACTING TRAFFIC DOORS—THE BASICS

Double acting describes a door that swings in both directions, in and out. Because of this feature, the door always swings away from the person or load passing through it, allowing easy and safe passage. In addition to being bi-directional, double acting doors open upon impact, automatically center in the opening upon closing, and do not typically close against a door stop. Double acting doors facilitate small or very large openings by using a single panel or a double panel, or a pair configuration. In the most efficient double acting traffic doors, impact "shock" is spread throughout the door components so it is absorbed without damage. The doors open with minimal impact (typically less than 10 pounds of pressure) and then automatically return to the closed position.

Impact traffic doors are constructed utilizing a variety of core and cladding materials and construction methods. Panel cores can be wood or foam and are clad with high-pressure laminate (HPL), stainless steel, aluminum, or impact-resistant plastic. Some models feature stainless steel edge caps or internal steel reinforcements for increased durability. Some typical benefits include:

Efficiency

Because double acting doors do not close against a stop, they facilitate smooth, efficient traffic flow in either direction. There is no need to stop to open the door, operate knobs or levers. The doors simply open upon impact from personnel, hand trucks, pallet jacks, or even forklifts and then close automatically after the traffic has passed through the opening.

Physical and Psychological Screens

Double acting traffic doors act to separate various functional spaces in a facility, restricting access and screening cluttered or unsightly work areas, stockrooms, and the like. In addition to visual separation, they provide thermal and environmental separation and sound attenuation as well as a visual barrier between disparate operations that reinforces the facility's commitment to maintain an aesthetic public space for customers and patrons.

Quick Installation

As a result of pre-drilled frames that are correctly sized for the door opening and reinforced at all hinge locations, some 36-inch by 84-inch traffic doors can be installed in 30 minutes or less by one person, while other traffic doors take more than 60 minutes to install with a two-person crew—a factor that can result in a significant cost savings, particularly when numerous doors are required in one facility or in a chain with multiple facilities. By eliminating on-site drilling for the hardware, hole location errors are minimized, further reducing installation time and costs.

Energy Efficiency

Double acting doors improve efficiency and reduce energy costs as they are less likely to be propped open during loading and unloading of product in refrigerated areas such as coolers and freezers and in temperature-controlled processing areas.

Insulated double acting doors provided with perimeter gasket seals are effective in minimizing the flow of air, moisture, dust, and particulate matter through the opening. This is particularly important in temperature-controlled environments.

APPLICATIONS

No one door will fit all requirements, and there are a multitude of models available on the market to suit a wide variety of applications. Cladding materials are available to match the surrounding décor and options can be applied to the door to provide protection against impact from pallets, carts, forklifts, and other traffic utilizing the opening. Vision panels can be sized and located to meet regulatory and safety needs.

As has been mentioned, double acting doors are used primarily where a separation of areas is needed for visual, thermal, environmental, or sound control. For example, kitchens in restaurants, hotels, resorts, and institutions take advantage of the easy passage for waiters to carry food to and from the customers' dining area without having to use their hands to open the door. Retail stores use double acting doors to maintain a separation from the not-so-attractive warehouse area to the customer sales area. Gate or café-style doors are popular options in restaurant and retail environments, particularly in convenience store applications. Food markets also find the doors useful for efficient stocking from the storage areas. Perimeter gaskets allow double acting doors to be used in an area where a temperature differential exists as in walk-in coolers. See above chart listing applications for double acting doors.

APPLICATIONS FOR DOUBLE ACTING DOORS

Manufacturing Facilities
Between processing areas and in loading dock areas

Hotels and Casinos
In dining, dock, and service areas

Food Processing Facilities
Between processing areas, in coolers, and in dock areas

Hospitals
In dining facilities, walk-in coolers, and in surgical prep areas

Pet Care Facilities
In pet grooming and vet service areas

Country Clubs, Banquet Halls
Between dining and kitchen facilities and in coolers

Pharmaceutical Plants
In processing areas

Restaurants
Between kitchen and dining areas and in coolers

Retail Stores
Between sales floors and stockroom and in loading dock areas

Supermarkets
Between sales floors and stockroom in walk-in coolers and in loading dock areas

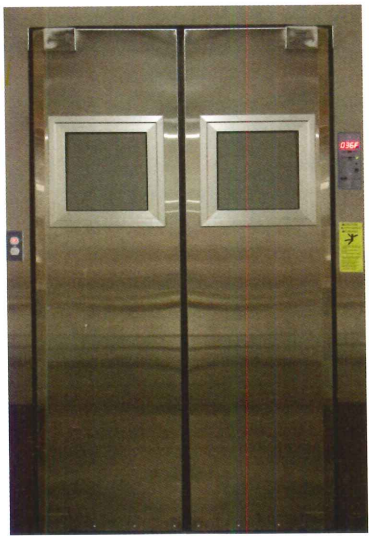
With restaurants, presentation is key. Double acting doors are a good choice for kitchen to dining area openings where it is important to separate the sights and sounds of the kitchen from patrons. New product options for double acting doors include flush windows and internally hidden or externally concealed hinges. Doors with internally hidden hinges are typically 1-1/2 inch thick overall and doors with externally concealed hinges are typically 3/4 inch thick overall. A combination of flush windows and hidden or concealed hinges creates a sleek, attractive door panel suitable for upscale restaurants, banquet halls, country clubs, and hotels. The surface of the door panel is available in an almost limitless selection of HPL choices or stainless steel.

With a wide range of door construction, cladding, and custom graphic options, decorative possibilities abound. Some choose

to design the look of their double acting doors simply for aesthetic appeal, while others choose a more functional approach. For example, some restaurants utilize two separate door openings allowing for one-way traffic into the kitchen through one opening and one-way traffic into the dining area through the other. In one case, a restaurant owner designed these one-way doors with red laminate on one side and green on the other so that his employees knew which door to safely pass through. With the use of vinyl overlays and silk screening, double acting doors can be designed to include logos and graphics. Sports bars, for example, have opted to incorporate images of beer bottles and sports images into their double acting doors. Double acting doors can even be built with a white board laminate so that management can remind servers to ask about dessert or to inform customers about the "special of the day."

Doors for retail environments tend to be unique, with solutions customized to a particular style from elegant to contemporary to playful. For example, a national sporting goods chain that sought a rough, rustic look to match the appearance of their distressed wooden door frames opted for a "hammered" metal finish on their double acting door. Custom graphics can work to inform and reduce maintenance costs. A national arts and crafts chain attached an "Employees Only" sticker to their traffic doors. Over time, the stickers peeled off, leaving a gummy residue on the doors. They opted to have their message silk screened on the vision panel, which proved to be more attractive and eliminated the cost and issues associated with the sticker.

Double acting doors are well suited for use in supermarkets as they open and close easily and are built to take the abuse present in sales to stockroom applications. The double acting nature of these doors maximizes efficiency as pallet after pallet of groceries and dry goods slam through these openings on a daily basis. Insulated models are frequently used in coolers as the primary door and in freezers as a secondary door.



Solutions for walk-in coolers and freezers help ease access to the cooler while complying with the Energy Independence and Security Act of 2007. For situations where there is an existing freezer door, flexible doors or strip doors can help to save energy and money when the door is open for stocking.

It is important to note here the requirements of the Federal Energy Independence and Security Act (EISA) of 2007, which became effective January 1, 2009. The purpose of the act is several fold: to move the United States toward greater energy independence and security; to increase the production of clean renewable fuels; to protect consumers; to increase the efficiency of products, buildings, and vehicles; to promote research on and deploy greenhouse gas capture and storage options; and to improve the energy performance of the federal government. To be in compliance with the act, walk-in coolers and freezers installed in the U.S. and occupying less than 3,000 square feet in floor space have to meet a new set of rules. Among them, there must be:

- Automatic door closers that firmly close all walk-in doors that have been closed to within 1 inch of full closure, with the exception of doors wider than 3 feet 9 inches or taller than 7 feet.
- Strip doors, spring hinged doors, or other method of minimizing infiltration when doors are open.
- Wall, ceiling, and door insulation of at least

Double acting traffic doors are used extensively in supermarkets between sales and stockroom areas.

R-25 for coolers and R-32 for freezers.

- If the walk-in cooler/freezer has reach-in doors, it must have a window of triple-pane glass with either heat-treated reflective gas or gas fill. Alternatively, the window must comprise double-pane and heat reflective treated gas *and* a gas fill.

Double acting EISA-compliant cooler doors are available in several finishes, including ABS, anodized aluminum, and stainless steel. Each model is filled with CFC-free high-density urethane foam. Optional triple pane, argon gas-filled windows are available as required. As with all double acting doors, these R-25 cooler doors open upon impact and close easily, maximizing efficiency.

HINGE CHOICES

The service life of a double acting traffic door depends on the integrity of its hinge. No one hinge serves all applications, so it is important to make an appropriate selection based on the required function of the door. Each hinge type offers distinct features and benefits, with typical options including:

- Roller and cam gravity hinge
- V-Cam hinges (90 x 90 degree)
- V-Cam hinges (90 x 180 degree)
- Top-mounted only gravity hinges

Roller and Cam Gravity Hinge

Top-mounted hardened steel cam plate and rollers, combined with a hardened steel bottom pivot pin, create a durable and dependable hinge system that allows the door to open with minimal impact and close automatically, while offering smooth, quiet operation. Because these hinges open with minimal impact, the force required to open them is reduced, thereby minimizing damage to the door panel itself. Roller and cam gravity hinges are faster and easier to install than V-Cam double acting door hinges. Doors equipped with these hinges easily meet ADA requirements regarding the amount of force required to open a door.

This type of hinge is available in several configurations, including gate and café models and double Dutch configurations in which one door is mounted above the other to fill extremely high openings. Optional features include lower hinge guards as well as an integrated hold open feature that allows the door to be propped open for clean up or at stocking time.

Various door types are suitable for this type of hinge, including the following:

Lightweight partition doors. These doors can be fabricated from a variety of materials suitable for different applications. Material options range from .063 aluminum (tempered and anodized), 16-gauge stainless steel, or .063 anodized aluminum with a high-pressure laminate.

Solid core partition doors. Core consists of exterior grade plywood clad with aluminum (tempered and anodized), 20-gauge stainless steel, high-pressure laminates, or ABS.

Insulated partition doors. Core consists of a rigid PVC full perimeter frame filled with CFC-free urethane foam. Panel thickness options are 1.5 inches and 3.5 inches (EISA compliant). Cladding options include ABS impact-resistant thermoplastic, anodized aluminum, or stainless steel.

Rotationally molded insulated doors. The 1.5-inch-thick monolithic door panel is rotationally molded and features an outer skin made of recyclable linear low-density polyethylene (LLDPE). The core is foamed-in-place with CFC-free urethane foam for enhanced insulation properties. Internal vertical tubular steel reinforcements stabilize the panel. This type of door is suitable for retail, walk-in coolers, and light industrial applications.

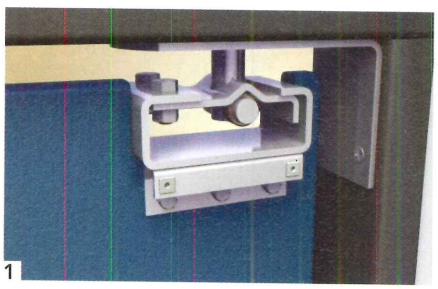
V-Cam Hinges

Typically the upper V-Cam casting is ductile iron or stainless steel and features a ramp that is available in low or standard rise configurations. The roller assembly attaches to the upper hinge post and the door rises upon opening as the roller travels up the ramp in the V-Cam.

Because they offer greater resistance to opening, doors equipped with V-Cam hinges are more resistant to blowing open due to high wind or negative or positive pressure in the opening. V-Cam hinges are usually preferred when the impact traffic door will be subjected to high volume or highly abusive forklift traffic. A spring assist option is available for applications where increased resistance to opening is desired, typically where high wind or draft, or pressure conditions exist, such as on dock openings.

V-Cam hinges are typically more difficult to install as a top seal must be used and the roller assembly must be drilled and pinned to the upper hinge post. Greater impact is necessary to open these doors, but they are usually compliant with ADA opening force requirements (unless equipped with spring assist).

Typically, V-Cam hinges are available in 90- x 90-degree or 90- x 180-degree configurations. The 90-degree x 90-degree swing configuration



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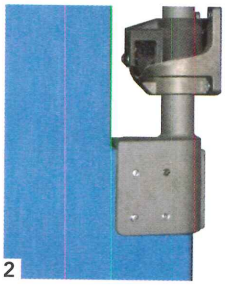

2

1. Roller and cam gravity hinge

2. V-Cam hinge

mounts in the center of the doorjamb and allows the door to travel 90 degrees in each direction. The 90-degree x 180-degree configuration mounts on the corner of the door jamb and allows the door panel to travel 90 degrees in one direction and 180 degrees in the other direction. The 90-degree x 180-degree cam allows the door panel to literally "wrap around" the wall in one direction in applications where traffic passing through the opening makes a sharp turn before clearing the leading edge of the door. Other options include low or standard rise cams, lower hinge guards, and spring assist for high draft or pressure conditions.

Designed for heavy-duty industrial impact traffic situations, doors with V-Cam hinges are designed with a heavy-duty internal steel framework or are monolithic in design with internal steel reinforcements. Typically, the outer cladding is either ABS impact-resistant plastic or rotationally molded LLDPE. In either case, the core is foamed in place with high-density CFC-free urethane foam.

One factor to note is that in order for traffic doors with V-Cam hinges to center properly in the opening, the supplied roll pin used to lock the roller assembly in the proper position must be installed. Otherwise, frequent adjustments may be required, as the roller assembly mounted to the upper hinge post will move as the door is impacted.

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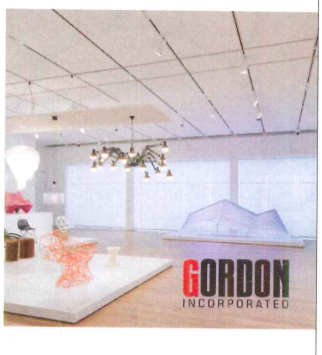

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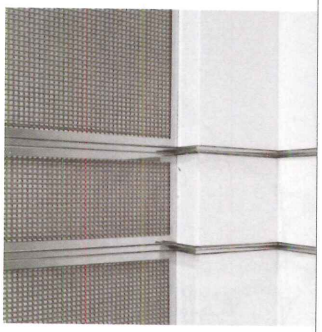

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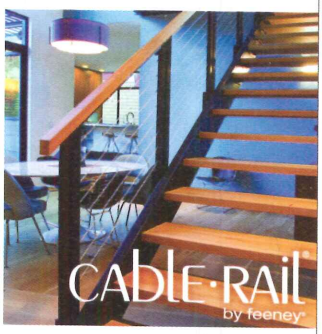

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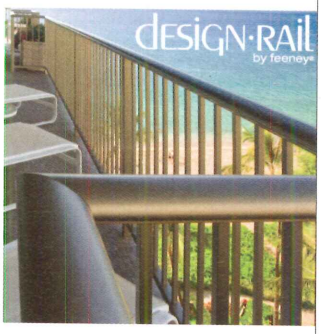

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New and Upcoming Exhibitions

Folly 2013
Queens, New York
May 12–August 5, 2013
Folly is a competition cosponsored by the Architectural League and Socrates Sculpture Park that invites emerging architects and designers to propose contemporary interpretations of the architectural folly, traditionally a fanciful, small-scale building or pavilion sited in a garden or landscape to frame a view or serve as a conversation piece. The 2013 Folly winner is *tree wood*, designed by Toshihiro Oki, Jen Wood, and Jared Diganci. For more information, visit archleague.org.

Theaster Gates: 13th Ballad
Chicago
May 18–October 6, 2013
Chicago-based artist Theaster Gates has designed a new large-scale installation at the Museum of Contemporary Art Chicago. The installation consists of objects and materials from the Huguenot House, a public-architecture project in Chicago and Germany, a set of repurposed pews from the University of Chicago's campus church, and a monumental double-cross sculpture. Gates created an ecclesiastical ambience to suggest that art museums, like churches, are sites of pilgrimage and thoughtful contemplation. *13th Ballad* is accompanied by a series of collaborative performances. For more information, visit mcachicago.org.

A New Sculpturalism: Contemporary Architecture From Southern California
Los Angeles
June 2–September 2, 2013
The Museum of Contemporary Art Los Angeles presents the first extensive, scholarly examination of the radical forms that have become prolific in Southern California architecture during the past 25 years. The exhibition aims to rethink how museums display architecture, allowing visitors to experience architecture primarily in its three-dimensional form with models, full-scale maquettes, and full-size built structures. For more information, visit moca.org.

Ongoing Exhibitions

Voices of Design: 25 Years of Architalx
Portland, Maine
Through May 19, 2013
This interactive exhibition at the Portland Museum of Art celebrates the 25th anniversary of Architalx, a nonprofit organization that hosts talks and other educational programming for architects and designers in Maine. Visitors can browse Architalx's archive of voice, text, and images from lectures by many of the leading architects and designers of the last quarter-century. For more information, visit architalx.org.

Lebbeus Woods, Architect
San Francisco
Through June 2, 2013
This exhibition at the San Francisco Museum of Modern Art brings together 75 works from the past 35 years by one of the most influential architects working in the field. Recognized beyond architecture, Woods (1940–2012) has been hailed by leading designers, filmmakers, writers, and artists alike as a significant voice in recent decades. His works resonate across many disciplines for their conceptual potency, imaginative breadth, jarring poetry, and ethical depth. For more information, visit sfmoma.org.

Jim Olson: Art in Architecture
Bellingham, Washington
Through June 9, 2013
This retrospective at the Whatcom Museum is devoted to the career of Jim Olson, one of the Northwest's most significant architects and founder of the Seattle-based firm Olson Kundig Architects. The exhibition spans Olson's first 50 years in architecture, exploring his built work as well as his artistic, cultural, natural, and personal influences. For more information, visit whatcommuseum.org.

Loos: Our Contemporary
Vienna
Through June 23, 2013
The continuous influence of Adolf Loos (1870–1933) on the building culture of the past 100 years is the focus of the exhibition *Loos: Our Contemporary* at the Austrian Museum of Applied Arts (MAK). Loos's minimalist-aesthetic paradigms and concept of ethical architecture influenced the oeuvres of numerous modern-era architects. For more information, visit mak.at.

The Woolworth Building @ 100
New York City
Through July 14, 2013
A masterpiece of early-20th-century art and technology, the Woolworth Building celebrates its centennial year in the process of conversion, with office space remaining below and luxury residences planned for the upper

tower. Still radiant on the Lower Manhattan skyline, the landmark heralds both the past and future of New York. For more information, visit skyscraper.org.

Green Schools
Washington, D.C.
Through January 5, 2014
The National Building Museum is hosting the first-ever museum exhibition dedicated to the greening of American schools. Featuring more than 40 exemplary projects, from new construction to rehabs to modular classrooms, the exhibition will survey the breadth of green school design in the United States through sample building materials, photographs, video, and green products. For more information, visit nbm.org.

Lectures, Conferences, and Symposia

New Models for Modular Housing
New York City
May 9, 2013
A panel of architects will discuss the latest innovations in the design of modular multi-unit housing. Presented by ARCHITECTURAL RECORD and the Architectural League of New York, the event is being held at the McGraw-Hill Auditorium,1221 Avenue of the Americas, New York City. The symposium, sponsored by VaproShield, begins at 7 p.m. with a reception to follow. For more information, visit archrecord.com.

Sharjah Biennial 11
Sharjah, United Arab Emirates
Through May 13, 2013
For Sharjah Biennial 11, curator Yuko Hasegawa has solicited a selection of artworks that reassess the Western-centrism of knowledge in modern times. A selection of architects and cultural practitioners from Lebanon, India, Belgium, Japan, Spain, and elsewhere have been asked to create temporary architectural interventions that connect Sharjah's historic area and its courtyard typology with the larger city. For more information, visit sharjahart.org.

Modular Construction Summit
Brooklyn, New York
May 16, 2013
Do modular structures last as long as stick-built buildings? Are they environmentally sustainable? Can they be as attractive as their traditionally built counterparts? The answer to all of these questions is yes. This conference, cohosted by the Modular Building Institute and the Pratt Institute, will distinguish fact from fiction in the burgeoning field of modular design. For more information, visit modular.org.

Booming Boroughs: Redesigning Aging-in-Place in NYC
New York City
May 18, 2013
Organized to develop innovative urban-housing models that are socially and economically viable and sustainable for seniors, enabling residents to continue their lives happily, safely, and independently in urban communities, this charrette at the Center for Architecture hosts five interdisciplinary teams of participants that will produce innovative design solutions at a range of scales, from an individual apartment to an adaptive reuse of an entire building. For more information, visit boomingboroughs.org.

International Design Festival
Washington, D.C.
Through May 19, 2013
What makes an object useful, engaging, and beautiful? What is it about a distinct design that conveys calm, wonder, and excitement in the user and helps us recall a moment in time? This free, three-month-long multidisciplinary celebration of design at Artisphere features *The Next Wave: Industrial Design Innovation in the 21st Century*, a 4,000-square-foot exhibition exploring innovation in product design from Spain, Italy, Belgium, the U.K., Scandinavia, and the United States over the last 13 years. For more information, visit artisphere.com.

GIS International Architecture Expo Conference
Bucharest, Romania
May 27–28, 2013
The third edition of the GIS International Architecture Expo Conference focuses on interior architecture and design in offices, hotels, and commercial-building projects. General topics also include product design, lighting design, and engineering. Held at the JW Marriott Grand Hotel, the conference also features special guest Giorgio Borruso, an Italian architect and designer best known for his innovative experimental designs for fashion houses and retailers. For more information, visit iegis.ro.

Michigan Modern: Design That Shaped America
Bloomfield Hills, Michigan
June 13–16, 2013
This four-day symposium at the Cranbrook Educational Community brings together architects, critics, designers, historians, business leaders, and others to discuss Michigan's central role in the development of American Modernism, which created the foundation for Michigan's strong design and engineering industry today. This symposium and the companion exhibition celebrate Michigan's contributions to modern design and the stories of the people who made it happen. For more information, visit michiganmodern.org.

Competitions

2nd Annual PureBond Quality Awards
Submission Deadline: May 31, 2013
In this competition hosted by Columbia Forest Products, 12 winners will be chosen by a team of judges in four categories: residential kitchen, residential bath, other residential (furniture, fixture, etc.), and commercial. Each project submission must contain PureBond hardwood plywood in the construction. For more information, visit columbiaforestproducts.com.

7th International Cosentino Design Challenge
Submission Deadline: June 1, 2013
Cosentino, a producer and distributor of quartz, natural stone, and recycled surfacing, invites submissions for its annual design and architecture competition. Submissions must use Cosentino materials for a conceptual office space or outdoor kitchen space. The competition is open to current college and university students studying architecture or design. The submissions will be evaluated by a jury based on a number of criteria, including innovation, research, product adaptation, feasibility, conceptual and technical quality, and presentation. For more information, visit cosentinodesignchallenge.org.

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snapshot

PROJECT HELSINKI UNIVERSITY LIBRARY
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THE DRAMATIC WHITE interior of the University of Helsinki's new main library, by local firm Anttinen Oiva Architects, is striking for its curving travertine-marble staircase, its Finnish furnishings, and the oval-shaped voids the architects carved out of the center of the floor plates. The rotunda brings in daylight and helps visitors grasp the bu ing's spatial organization at a glance. Opened to the public last Septembe seven-floor urban-infill project w built on the site of an old depar store in the capital's downtow and consolidates libraries t had previously operated i 10 different locations.
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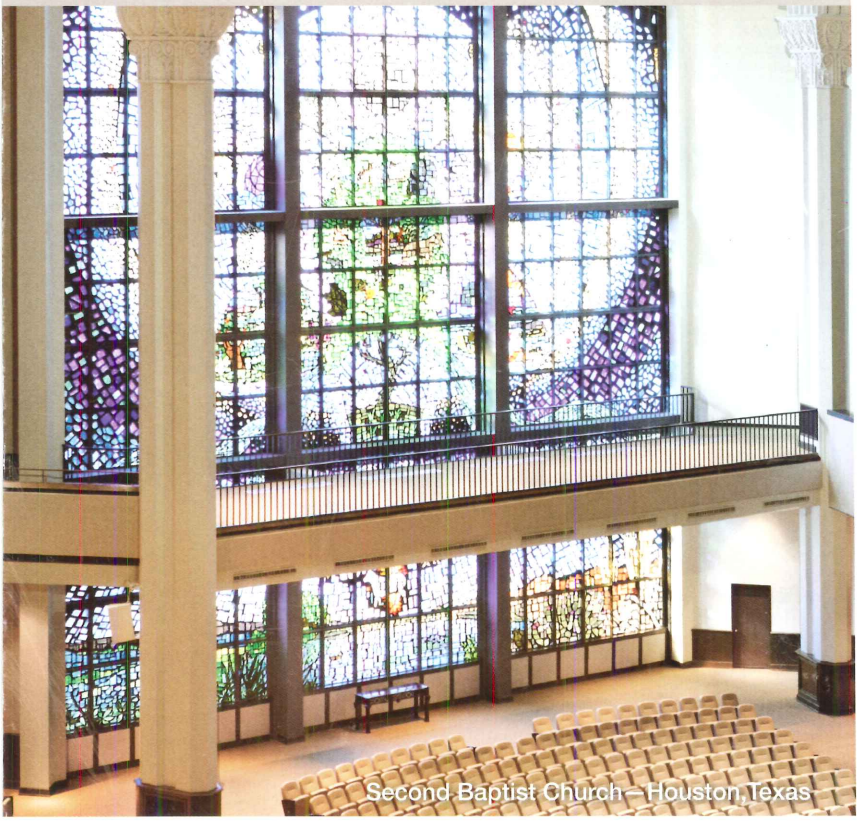

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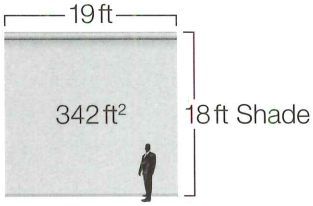

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