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SENIOR GROUP ART DIRECTOR**

Robert Ivy, FAIA, rivy@mcgraw-hill.com
Beth Broome, elizabeth_broome@mcgraw-hill.com
Francesca Messina, francesca_messina@mcgraw-hill.com

DEPUTY EDITORS

Clifford A. Pearson, pearsonc@mcgraw-hill.com
Suzanne Stephens, suzanne_stephens@mcgraw-hill.com
Charles Linn, FAIA, Profession and Industry, linnc@mcgraw-hill.com

SENIOR EDITORS

Jane F. Kolleeny, jane_kolleeny@mcgraw-hill.com
Joann Gonchar, AIA, joann_gonchar@mcgraw-hill.com
Josephine Minutillo, josephine_minutillo@mcgraw-hill.com

PRODUCTS EDITOR

Rita Catinella Orrell, rita_catinella@mcgraw-hill.com

NEWS EDITOR

Jenna M. McKnight, jenna_mcknight@mcgraw-hill.com

SPECIAL SECTIONS EDITOR

Linda C. Lentz, linda_lentz@mcgraw-hill.com

PRODUCTION MANAGER

Juan Ramos, juan_ramos@mcgraw-hill.com

EDITORIAL PRODUCTION

Rosa Pineda, rosa_pineda@mcgraw-hill.com

COPY EDITOR

Leslie Yudell, leslie_yudell@mcgraw-hill.com

CONSULTING ART DIRECTOR

Michael Mrak, michael_mrak@mcgraw-hill.com

ASSOCIATE ART DIRECTOR

Encarnita Rivera, encarnita_rivera@mcgraw-hill.com

EDITORIAL SUPPORT

Monique Francis, monique_francis@mcgraw-hill.com

EDITORIAL ASSISTANT

Aleksandr Bierig, aleksandr_bierig@mcgraw-hill.com

CONTRIBUTING EDITORS

Sarah Amelar, Robert Campbell, FAIA, Andrea Oppenheimer Dean,
David Dillon, Martin Filler, Blair Kamin, Jayne Merkel,
Robert Murray, B.J. Novitski, David Sokol, Michael Sorkin,
Ingrid Spencer

SPECIAL INTERNATIONAL CORRESPONDENT

Naomi R. Pollock, AIA

INTERNATIONAL CORRESPONDENTS

David Cohn, Tracy Metz

EDITORIAL DIRECTOR, DIGITAL MEDIA

Bryant Rousseau, bryant_rousseau@mcgraw-hill.com

WEB EDITOR

William Hanley, william_hanley@mcgraw-hill.com

WEB DESIGN DIRECTOR

Susannah Shepherd, susannah_shepherd@mcgraw-hill.com

WEB PRODUCTION

Laurie Meisel, laurie_meisel@mcgraw-hill.com

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VICE PRESIDENT, GROUP PUBLISHER

James H. McGraw, IV, jay_mcgraw@mcgraw-hill.com

VICE PRESIDENT, PUBLISHER

Laura Viscusi, laura_viscusi@mcgraw-hill.com

VICE PRESIDENT, MEDIA SALES

Paul Bonington, paul_bonington@mcgraw-hill.com

VICE PRESIDENT, MHC PRODUCT DEVELOPMENT

Kathryn E. Cassino, kate_cassino@mcgraw-hill.com

VICE PRESIDENT, INDUSTRY ANALYTICS & ALLIANCES

Harvey M. Bernstein, F.ASCE, harvey_bernstein@mcgraw-hill.com

SENIOR DIRECTOR, MARKETING COMMUNICATIONS

Katherine Malangone, kathy_malangone@mcgraw-hill.com

MANAGER, MARKETING

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VICE PRESIDENT, TECHNOLOGY

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Linda Brennan, linda_brennan@mcgraw-hill.com

VICE PRESIDENT, BUSINESS SERVICES

Maurice Persiani, maurice_persiani@mcgraw-hill.com

DIRECTOR, CIRCULATION

Brian McGann, brian_mcgann@mcgraw-hill.com

SENIOR DIRECTOR, MEDIA OPERATIONS

Brenda Griffin, brenda_griffin@mcgraw-hill.com

PRODUCTION MANAGER

Stephen R. Weiss, stephen_weiss@mcgraw-hill.com

SENIOR DIRECTOR, FINANCE

John Murphy, john_murphy@mcgraw-hill.com

FINANCE DIRECTOR

Ike Chong, ike_chong@mcgraw-hill.com

ADVERTISING SALES

BUILDING PRODUCTS

NORTHEAST: Joseph Sosnowski (610) 278-7829 Fax: (610) 278-0936, joseph_sosnowski@mcgraw-hill.com

SOUTHEAST: Susan Shepherd (859) 987-9913 Fax: (404) 252-4056, susan_shepherd@mcgraw-hill.com

MIDWEST: Martin McClellan (312) 233-7402 Fax: (312) 233-7430, martin_mcclellan@mcgraw-hill.com

SOUTHWEST/CENTRAL: Bret Ronk (972) 437-7877 Fax: (972) 437-7876, bret_ronk@mcgraw-hill.com

NORTHWEST: Bill Madden (503) 557-9000 Fax: (503) 557-9002, bill_madden@mcgraw-hill.com

PACIFIC: Sherylen Yoak (760) 568-0465 Fax: (720) 559-9818, sherylen_yoak@mcgraw-hill.com

ASSOCIATIONS: Charles Fagan (212) 904-2547 Fax: (312) 233-7488, charles_fagan@mcgraw-hill.com

TECHNOLOGY: Roy Kops (415) 357-8191 Fax: (415) 357-8005, roy_kops@mcgraw-hill.com

WORKFORCE/ RECRUITMENT: Diane Soister (212) 904-2021 Fax: (212) 904-2074, diane_soister@mcgraw-hill.com

PRODUCT NEWS SPOTLIGHT: Elise Rutkowsky (609) 426-7738 Fax: (609) 426-7136, elise_rutkowsky@mcgraw-hill.com,

Kameesha Saunders (609) 426-7703 Fax: 609-426-7136, kameesha_saunders@mcgraw-hill.com,

Evan Lauro (609) 426-7024 Fax: (609) 426-7738, evan_lauro@mcgraw-hill.com

INTERNATIONAL

GERMANY: Uwe Riemeyer (49) 202-27169-0 Fax: (49) 202-27169-20, riemeyer@intermediapartners.de

ITALY: Ferruccio Silvera (39) 022-846716 Fax: (39) 022-893849, ferruccio@silvera.it

JAPAN: Katsuhiko Ishii (03) 5691-3335 Fax: (03) 5691-3336, amkatsu@dream.com

KOREA: Young-Seoh Chin (822) 481-3411/3 Fax: (822) 481-3414

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ON THE COVER: Peter Bohlin. Photograph © Brian Smale.

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New this month, we take a close look at Miami, the host city for the American Institute of Architects' annual convention. In our **Record Reveals: Miami** section, local designers take us on video tours of Miami's best buildings, and they also recommend favorite restaurants, museums, and more.

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1 | Record Reveals: Miami
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2 | Rebuilding Haiti
In a new video, Andrés Duany, FAIA, shows us his prototype house for Haitians left homeless by January's earthquake.



3 | House of the Month
A Chicago residential neighborhood's 125-by-25-foot lot was a challenging but opportune site for Alexander Gorlin Architects. The firm designed a 2,800-square-foot Minimal home with a master bedroom suspended inside a continuous main living space.

[READER'S FORUM]

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— Anonymous, on "House of the Month, May 2010: Shavano Park House."

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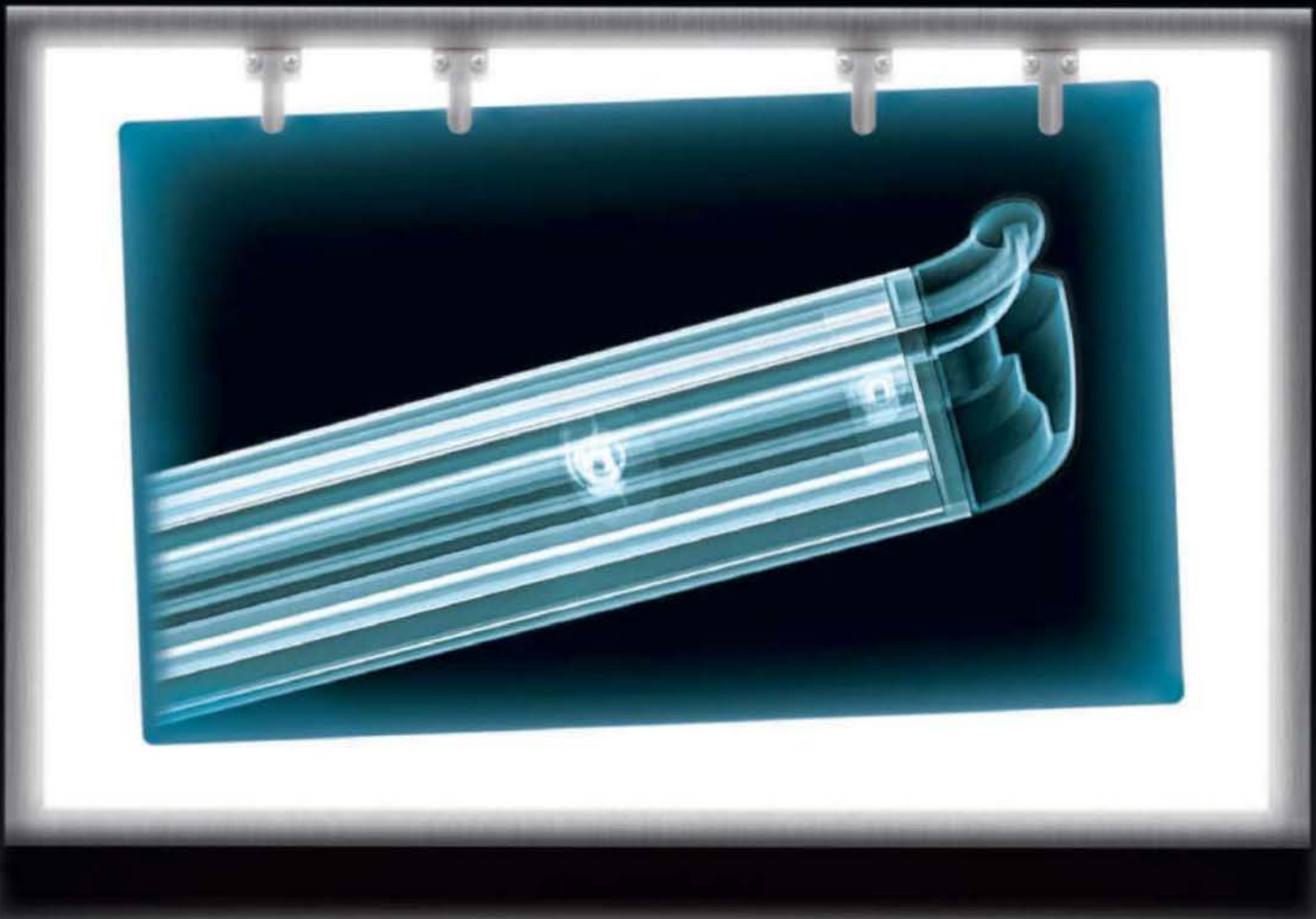


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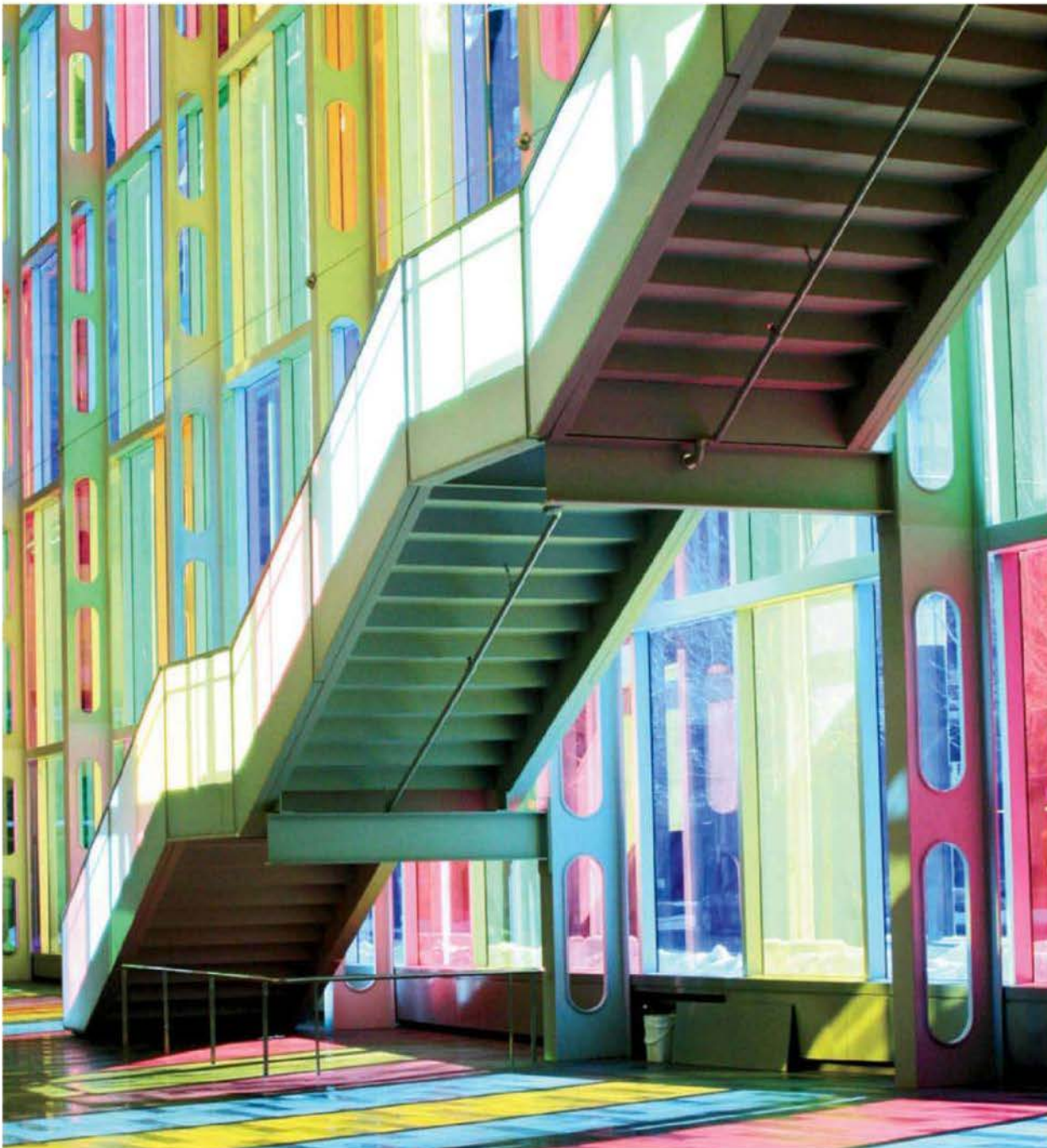
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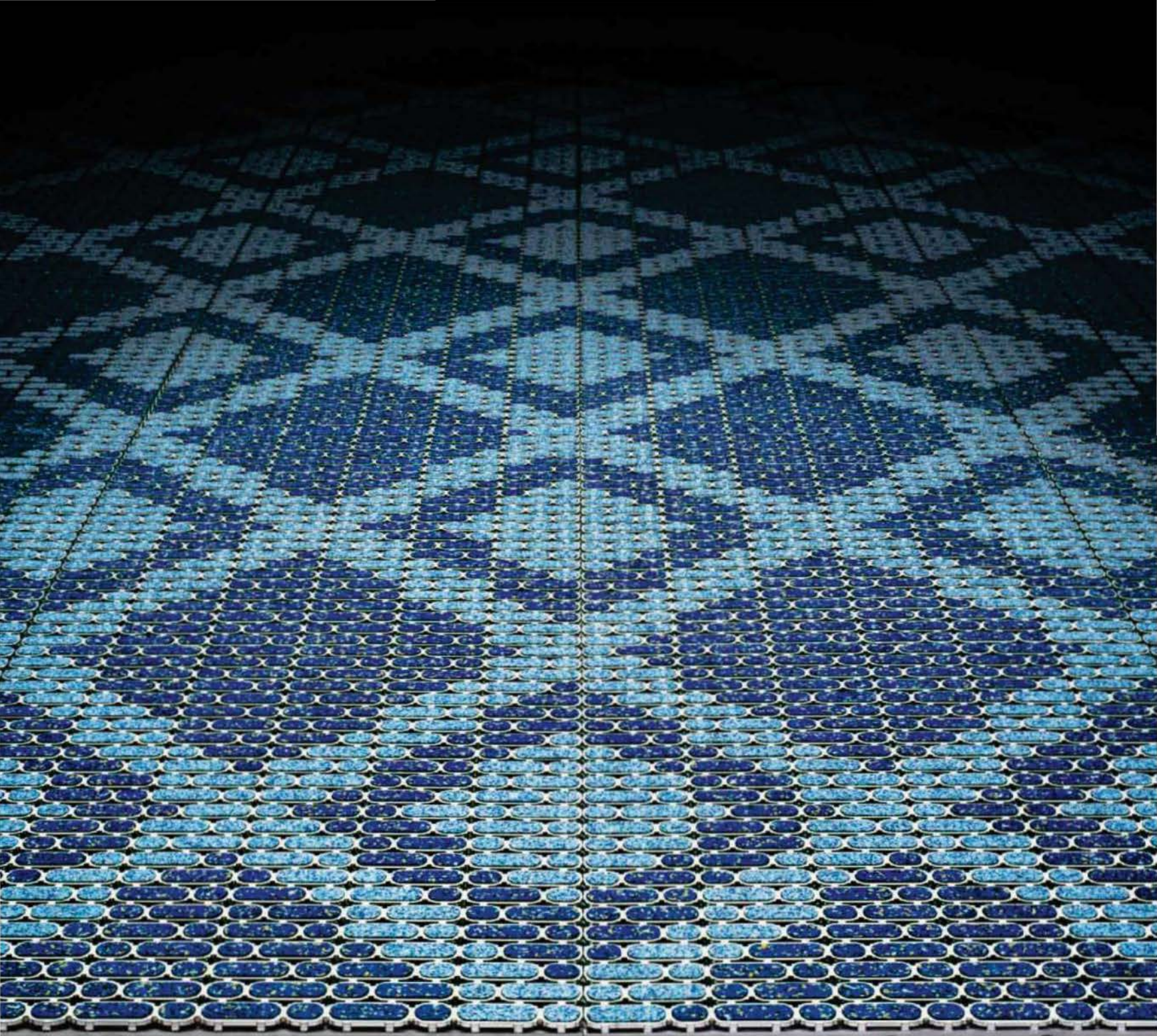
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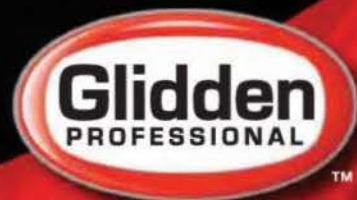
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Creating a Culture

The National Building Museum speaks for the building arts.

BY ROBERT IVY, FAIA

AS JIM PATE, THE EXECUTIVE director of New Orleans Area Habitat for Humanity, took center stage to accept an award, he articulated a serious dilemma his city had faced. New Orleans's musical heritage, an ineffable, irreplaceable treasure he described as the city's soul, resided in the hands of a few people – the long-time musicians who had lost their homes in Hurricane Katrina in 2005. In a city besieged with so many problems following the storm, a group of contemporary musicians and friends devised a plan: Providing safe, affordable housing would allow valued New Orleans musicians to stay.

On the evening of Tuesday, May 11, 2010, Pate stood in the spotlight before a large crowd on a dais in the great hall of the National Building Museum in Washington, D.C. The honor award he accepted, bestowed on the founders of New Orleans Habitat Musicians' Village (a group that includes Branford Marsalis, Harry Connick, Jr., and Ann Marie Wilkins, as well as Pate), came from the National Building Museum.

No one commented that night on the niceties of the architecture, no kudos about the subtleties of the planning. The resultant housing, simple structures with front porches slightly elevated above the flood plain, sported bright, multicolored facades in the Upper Ninth Ward. Instead, residents described how the new clustered grouping allowed friends to visit, to pick up an instrument, and to play together. Most importantly, no one had been forced to leave the city that had given jazz to the rest of the world. Then several of the musicians took to the stage in Washington and rocked the hall.

In highlighting the underlying cultural mission of Musicians' Village, as well as the other honorees that evening, including the architectural firm Perkins+Will and the U.S. Department of Energy Solar Decathlon, the museum spoke for all of us engaged in the building arts. Since 1980, when it was established by a Congressional act, the National Building Museum has grown into a major voice helping to advocate for and increase understanding and appreciation of the built environment.

Its awards programs, however, are only a small part of an organization that maintains a vibrant roster of offerings. The museum has focused on a special kind of building enterprise: Rather than concentrating on structures, the museum has worked on building a culture. Those of us enmeshed professionally in design – whether architects, interior designers, landscape architects, or engineers – and those of us who make projects (the craftsmen, contractors, or suppliers) rarely think of our industry in this way. We worry about our invoices, or the next request for proposals, or a completion date. Yet our actions result in changes that affect the whole world – its economy, its energy usage, its health and happiness, its worth.

Our actions, whether as citizens, owners, participants, users, or design and construction professionals, taken collectively, create the built environment. The National Building Museum – an institution that needs to be better known – recognizes the importance of what we do, stands back, examines the intentions and the results in toto, and exhibits them for all to see. At its best, it provides a forum for the dissemination of information, for education, and for debate, throwing a spotlight on what works and what doesn't. We need this platform.

A quick glance at its calendar of live programming gives an indication of the diversity of its offerings in addition to its educational programs and exhibitions: programs on alternative housing in post-disaster Mississippi, on architecture and diplomacy (think embassies), on innovative parks as components of urban revitalization, on American building codes and how they do or do not prepare for the next "Big One," and a discussion arising from the innovative exhibition currently on display, *House of Cars* – subtitled, *The Future of Parking*. On one evening, Benedetta Tagliabue will speak on her own work and that of her late husband and partner, Enric Miralles; on another day, the museum will tour Fort McHenry Visitor Center in Baltimore. And that's just part of June.

The institution is both blessed and cursed by its magnificent home. Few would deny the splendor of the structure, the former home of the U.S. Pension Bureau, designed by Montgomery C. Meigs and constructed from 1882–87. To look up between 75-foot-tall columns rivaling those of the ancient Temple of Jupiter in Baalbek (72 feet high) in a space measuring almost the length of a city block (316 by 116 feet) offers a rush unequal in all but a few other immense baskets of space, such as St. Peter's in Rome or St. Paul's in London.

All other places within the building must defer to that grandeur, which is perfect for grand moments. However, important exhibitions are relegated to secondary spaces on the perimeter. Despite the museum's sometimes brilliant programming (for example, certain shows on building materials, such as *Liquid Stone*, a 2004–6 exhibition on concrete – translucent, tactile, electrified – or *Big and Green*, held in 2003), curators must inevitably feel cramped, if not diminished, by low ceilings and narrow spaces in adjacent galleries.

Lectures and debates either take place in one half – usually, at one end – of the major space, where a shaft of sunlight can ruin a PowerPoint, or in an awkwardly sized auditorium space. Staff works in a crow's nest, high above the melee of screaming school children awaiting the start of their workshops and educational sessions below. Staff offices are remote, small, and uncomfortable. While the building as a whole serves as a reminder of what builders can do, it nevertheless must prove difficult to work in.

But this is quibbling. At a time when design has never been more important, when human-made interventions to the built environment are producing profound changes to the natural world, including energy usage and carbon emissions, when demographics insist that we are moving to cities throughout the world as populations increase, we know the profound implications of our actions. One institution, the National Building Museum, led by executive director Chase W. Rynd, understands the importance of developing a supportive culture for the built environment. We need it more than ever, and we need more institutions like it.

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LETTERS

Just the facts, ma'am

Thank you for Robert Ivy's March editorial, "Emerald City: Shattering the Myths of Sustainability," which addresses how sustainable solutions need to be critically analyzed in order to be effective. While I have yet to read David Owen's book, *Green Metropolis*, I completely agree with his assertion that "the truth should be derived from facts, not mere emotions." Whether applied to sustainability or any other field, this assertion is so patently obvious that it is unfortunate it even needs to be lauded as a unique idea.

Sustainability isn't about focusing on what makes people feel good; it's ultimately about reducing our demand on nonrenewable resources and relying on ecological goods and services without exceeding our carrying capacity, all of which are inherently scientific concepts.

I look forward to reading *Green*

Metropolis, a book written by an individual who understands that finding solutions for a sustainable built environment depends on verifiable facts and evidence; in other words, the scientific method.

Mark Bessoudo
Toronto

Aerodynamic Aqua

I was quite taken with your coverage of Studio Gang's new Aqua tower in Chicago [May 2010, page 60]. However, from my point of view (I am a fluid dynamics/turbulence specialist, and a member of the National Academy of Engineering), you left out the most interesting part. In coverage elsewhere (I no longer remember where), it was claimed that the balconies break up the shed vortices, eliminating the aerodynamic forcing that ordinarily requires active dynamic balancing. I thought this was a big step forward,

and that it raised questions that should be investigated experimentally. But there was not a word about it in your article, and I am curious to know why. John L. Lumley
Ithaca, New York

[In addressing this inquiry, *RECORD* consulted Tudor Van Hampton, Midwest Bureau Chief of our sister publication ENR, who has covered many of these points in his reports on Aqua.]

John Lumley is correct. The "roughness" of the Aqua building's profile helps to "confuse" the wind. However, this was not researched up front in the architect's design. Rather, it was studied and validated after the fact in wind-tunnel tests. In the end, the tower's structural engineer, Magnusson Klemencic Associates, did not need to take extreme or exotic measures to counteract sway.

Jeanne Gang (as Suzanne Stephens wrote in *RECORD*) focused on maximizing views and daylight in the units, and creating a unique sense of organic space. She suspected that Aqua's shape would cut down wind turbulence, but she didn't know for sure until the wind-tunnel tests were completed. It was a by-product of her graceful design.

Don't be totally fooled by Gang's innocence, though. She has an engineering sixth sense. Her father was a civil engineer, and she considered becoming an engineer before falling in love with architecture. Those instincts most certainly played a role. Even so, it is an interesting point that such an asymmetrical building profile can cut down on wind problems associated with tall structures. And it makes one wonder about the future of asymmetrical tall buildings, given that the builder was able to find an economical way to

performance



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put it all together. That of course is one practical sticking point with wild designs in tall buildings.

The article on the stunning new Aqua Building in Chicago mentions one Brazilian designer, Roberto Burle Marx, but neglects to credit the architect to whom Studio Gang owes the greatest debt: Oscar Niemeyer, whose 1954 Belo Horizonte high-rise apartment building serves as an almost eerie prototype of the new Chicago building.
*James McCown
Somerville, Mass.*

Suzanne Stephens replies: I paid the biggest compliment of all to Niemeyer by using his name as an adjective. And I even got it approved by our copy editor! It's in the second sentence of the article. I was sorry that space prevented my going into the similarities more extensively.

Suzanne Stephens claims that Chicago's architecture lacked pizzazz until Studio Gang contributed its "Niemeyeresque" skyscraper. For more than 100 years, the architecture of that city has proclaimed that architecture was not a frivolous activity but a serious art. I'm sorry, but Gang's building is nothing more than a dumb box with fancy balconies.
*James A. Gresham, FAIA
Tucson, Ariz.*

Hold that tweet

In response to the Practice Matters column, "To Tweet or Not to Tweet?" [April 2010, page 37]: I feel that Twitter, Facebook, and blogging are part of a growing problem facing not only architects but also society in general: information overload. Although these vehicles of innovative communication are easily accessible to all and can reach a wide audience,

the time drain they impose on their users far outweighs any benefits. I'll add Facebook, Twitter, and blogging to e-mailing as just another tool that gives the impression of saving time, but instead takes away time we architects could otherwise be using toward designing better buildings.
*Stefano Gagliano
Suffern, New York*

Dear diary

In his book reviews of *Counterpoint: Daniel Libeskind in Conversation with Paul Goldberger* and *Conversations with Frank Gehry* [February 2010, page 37], Robert Campbell writes, "Nobody keeps a diary anymore ... One wonders where future biographers and historians will go for their sources." While I think Campbell writes a great comparison of the two books, this initial statement seems to be extremely out of touch in an age

where individuals generate continuous streams of their own unique information via social networking alone. Taking into account the number of blogs (which arguably can be considered diaries, told with links to other sites and photos, videos, and text) and the interactive quality of systems such as Google Reader and Buzz, people generate and share more information than could ever be imagined.
*Sherry Aliberti
Brooklyn, New York*

Corrections

In the April issue's product section, we misstated the name of Atlas Block's new PCR Block [page 44], as well as the fact that it uses postindustrial waste, not postindustrial water, in all of its products.

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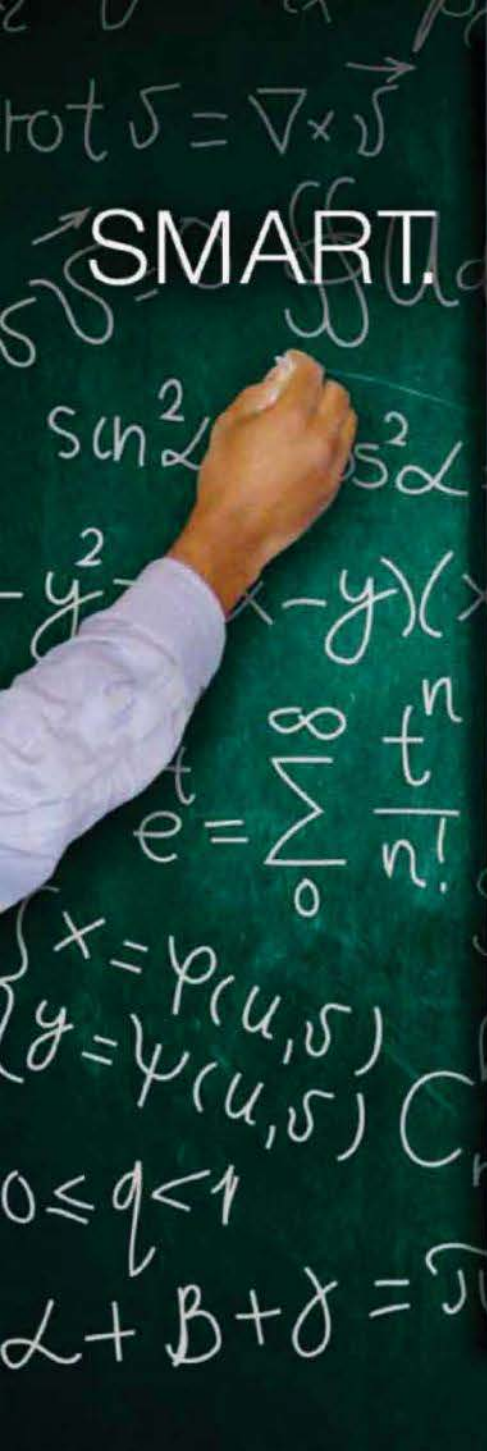
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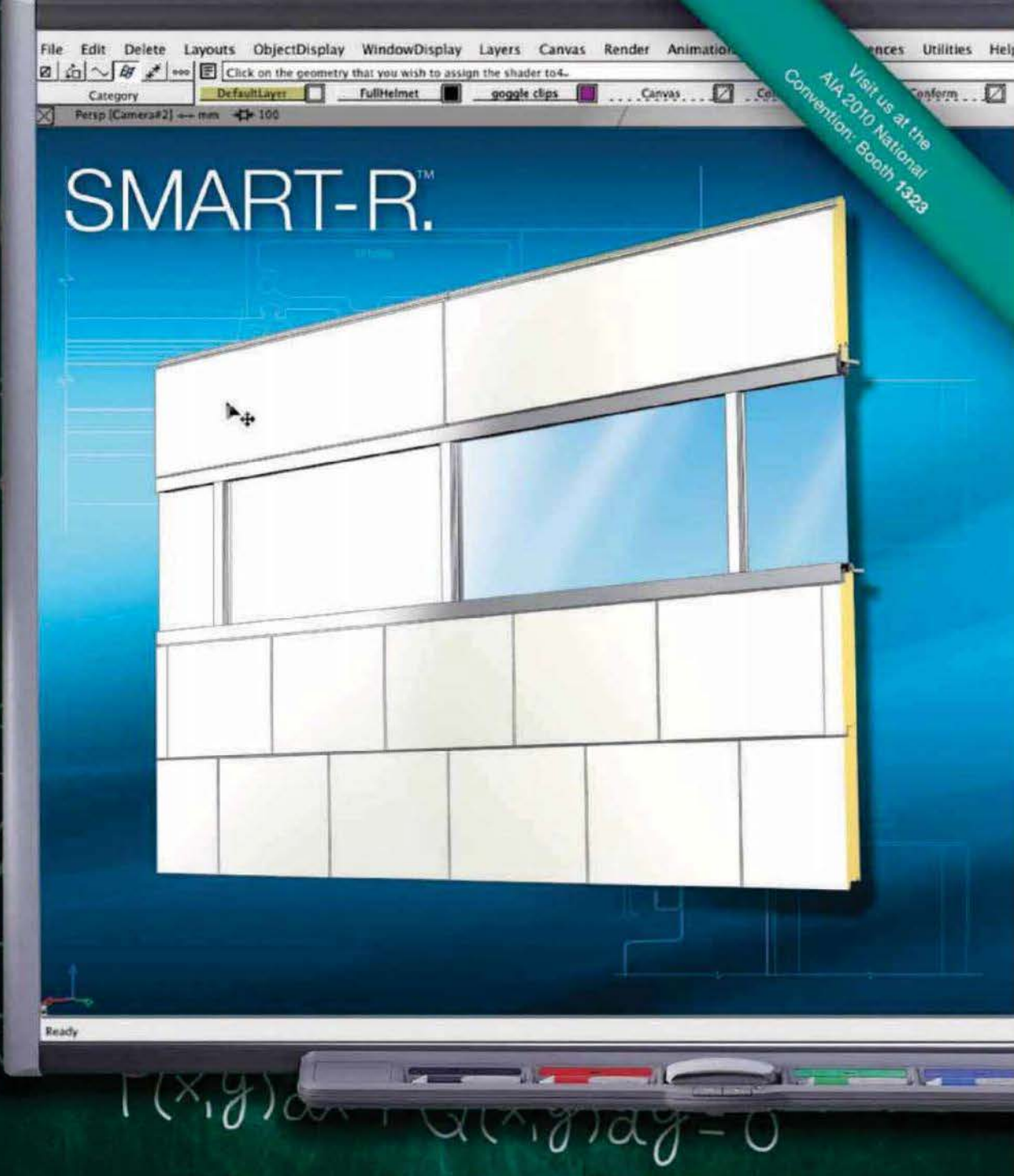
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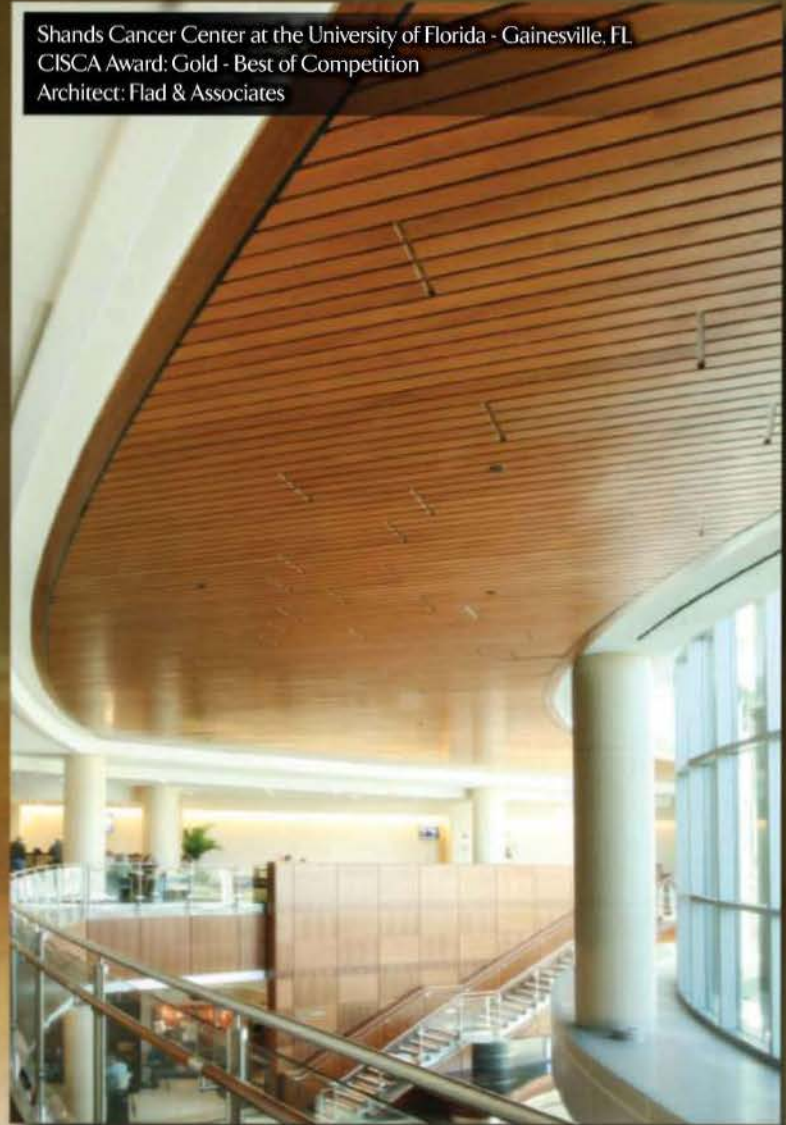
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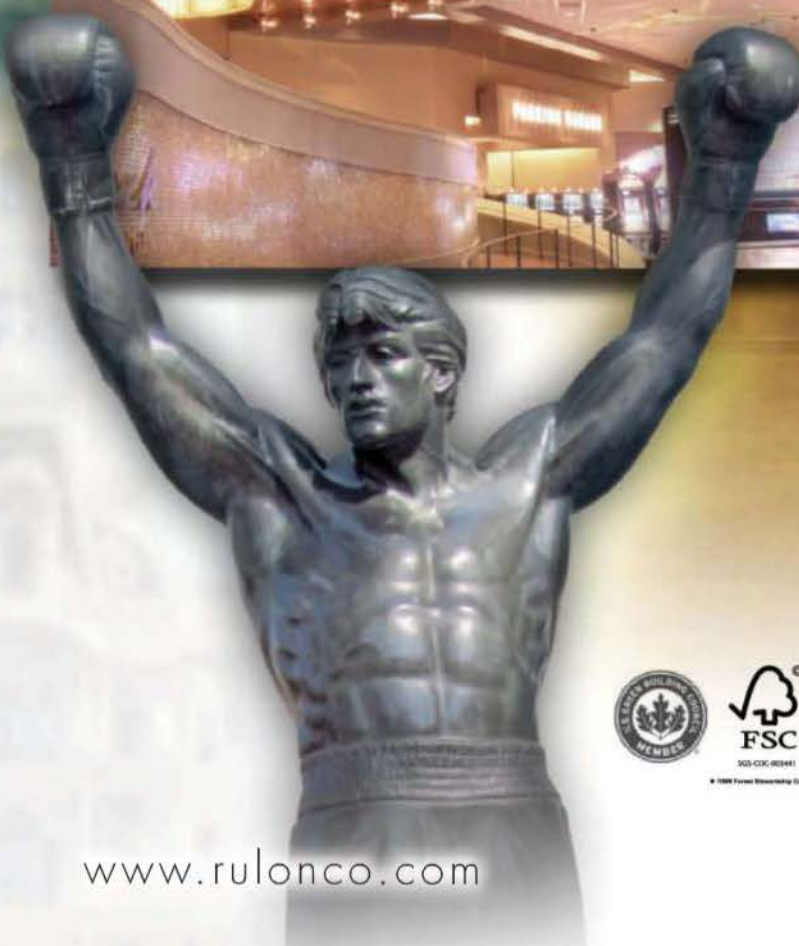
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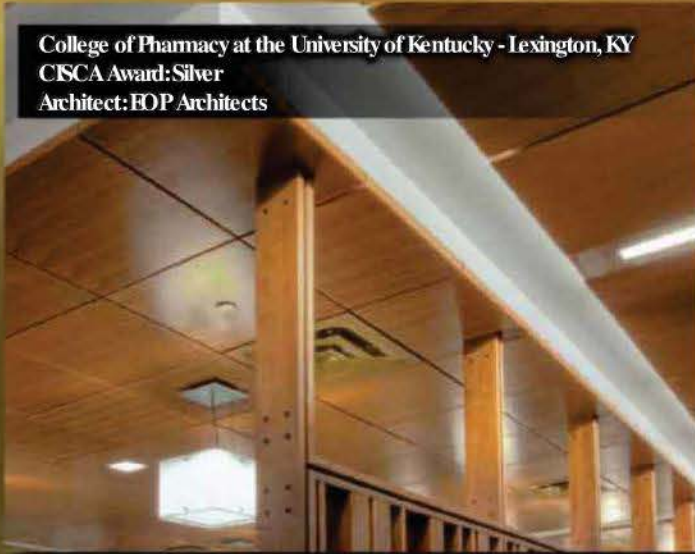
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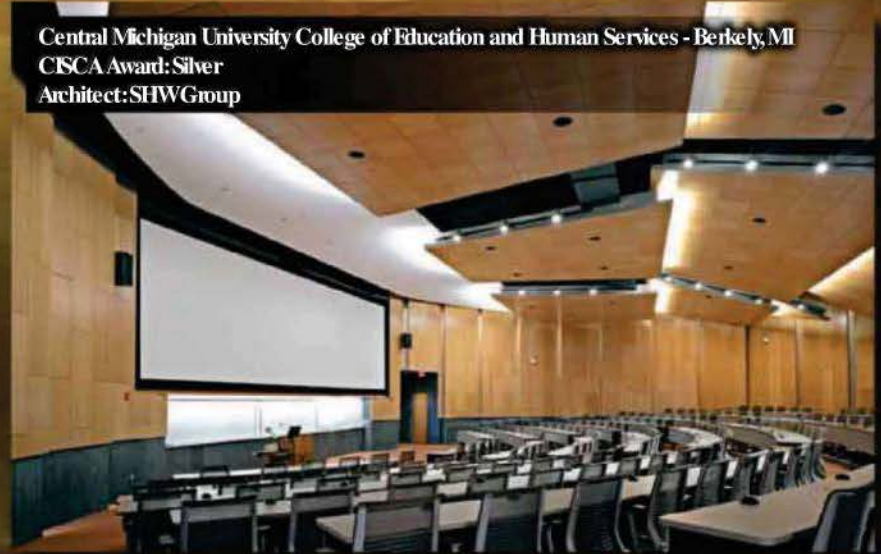
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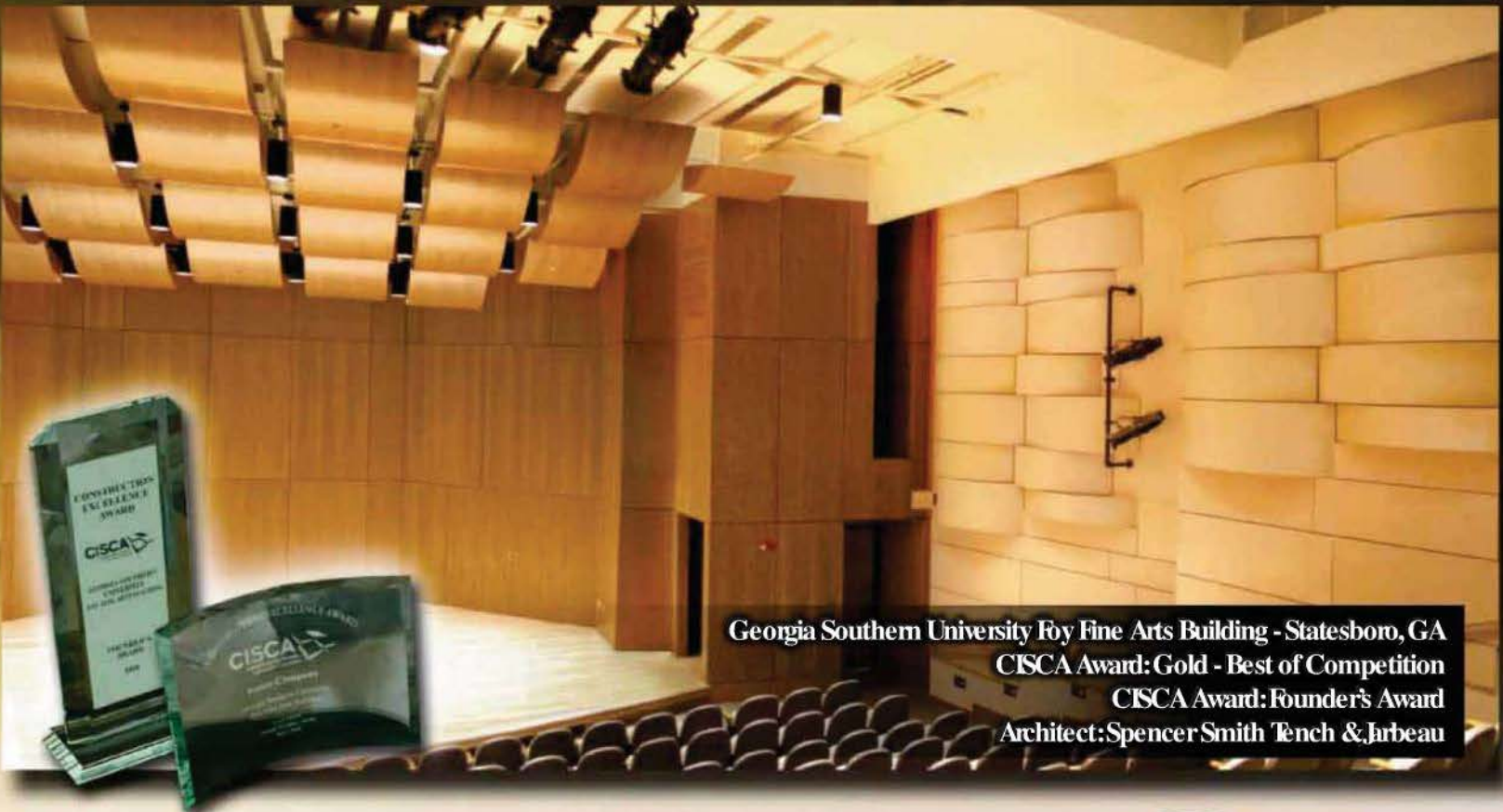


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SPECIAL REPORT: HAITI

BY JENNA M. MCKNIGHT

The 7.0-magnitude earthquake that struck Haiti on January 12 was one of the deadliest natural disasters in the past century. More than 230,000 people were killed, and a vast number of buildings were destroyed or left structurally unsound. Today, 1.5 million residents remain homeless.

In mid-April, I headed to Haiti with Tom Sawyer, a senior editor at our sister publication *Engineering News-Record*, to report on the destruction and to witness firsthand the early stages of the rebuilding effort. During our weeklong trip, we met with local and foreign architects and visited more than a dozen sites in Port-au-Prince and outlying areas. Here, we present a series of snapshots from our expedition, with expanded coverage online.

Rubble removal is a huge problem in Port-au-Prince. According to some reports, collapsed buildings generated up to 78 million cubic yards of debris, much of it still clogging the streets (right). We often saw men digging through the wreckage, looking for salvageable rebar and concrete. Indeed, Haitians do what they can to get by. It's not uncommon to see merchants selling produce alongside steamy mounds of garbage (above).





A good night's sleep is hard to come by. On April 20, we traveled to Bon Repos, or "good rest," a district in the northern half of Port-au-Prince. A rainstorm the prior evening had hit the area hard. The unpaved roads were flooded, as was the Centre D'hebergement de Crajadel camp (top), where flimsy tents made of sticks and bedsheets sat in a large pool of stagnant, brown water. The camp's leader, Lucien Simeon, says 400 families, or more than 1,000 people, were forced to relocate. Asked where they went, he gestured with his arms that they had simply dispersed.

Some may eventually end up at Corail-Cesselesse, a new camp on the outskirts of Port-au-Prince (above, left and right). Thousands of refugees are being moved to this desolate site, where white tents sprawl across an expansive swath of gravel-covered land. People bring whatever meager belongings they still possess and rely on donated food.

On April 21, we visited the camp with Architecture for Humanity's (AFH) Haiti team. "We came on a fact-finding mission, to see if we can be of some help," said Eric Cesal, AFH's regional program manager. He noted that Corail-Cesselesse is intended to house 35,000 residents.

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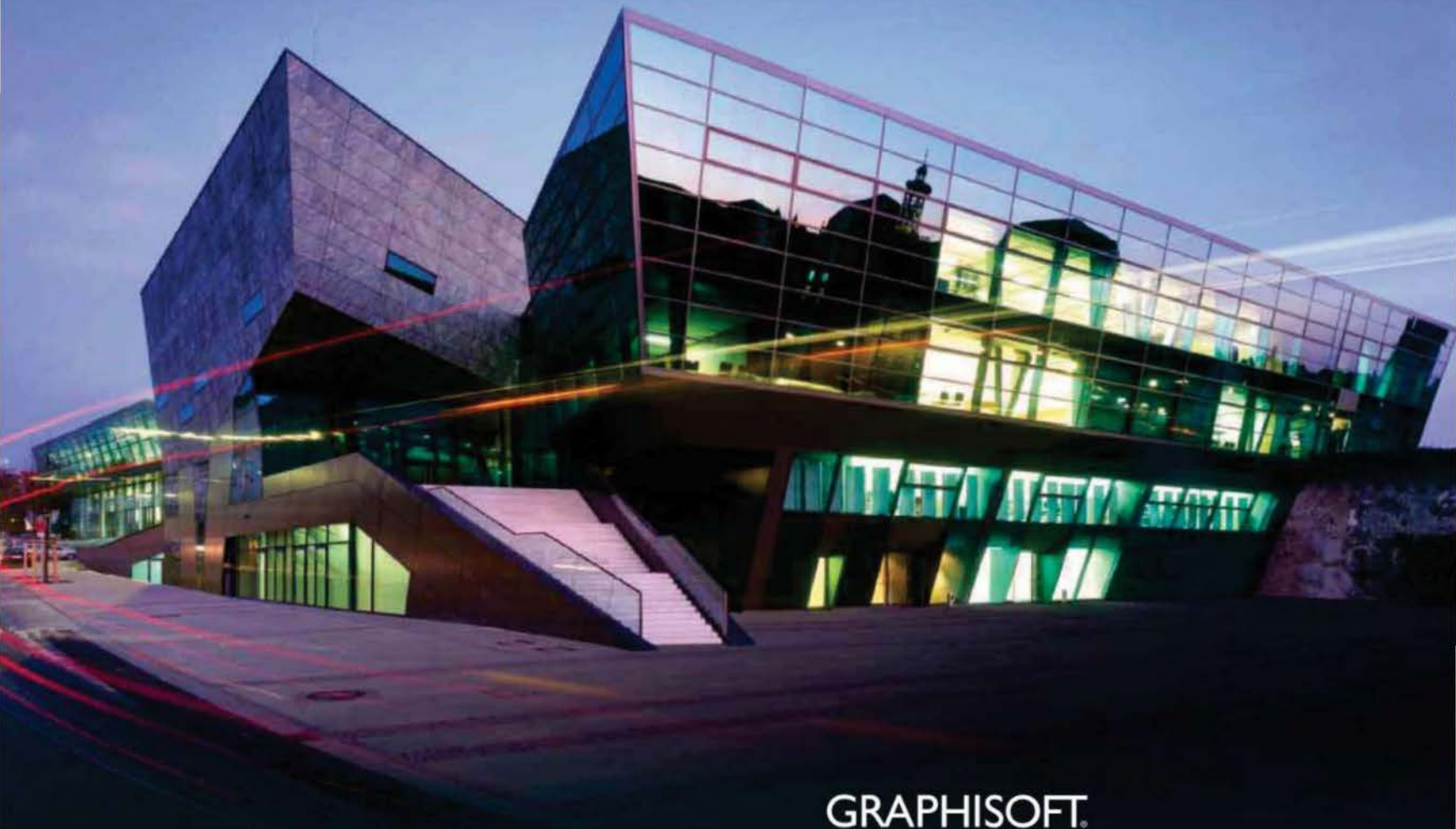
Transitional shelters are beginning to supplant emergency tents. In the towns of Cabaret and Léogâne, Habitat for Humanity plans to erect 1,000 temporary, upgradable dwellings. The structures—largely designed by volunteer Robert Busser, AIA, a Philadelphia architect who traveled to Haiti in April—have either wood or steel framing and are anchored to the ground with concrete-filled buckets. Eventually, the tarp cladding can be replaced with a sturdier material, such as plywood or bricks.

Many Haitians aren't waiting for foreign aid. One morning while driving through Port-au-Prince, we met Cesar Ernst, 35, who was constructing a shelter (bottom left) near his

destroyed home. His resources: cinder blocks, shreds of fabric, a tattered tarp, and wooden poles—a common building material in the city (center left). Once this makeshift residence is complete, it will accommodate 15 people.

While housing is a primary concern in quake-ravaged areas, there are other types of projects under way. John McAslan, a prominent U.K. architect who has worked in Haiti for several years, has been hired by Digicel, a mobile phone company, to restore the shuttered Iron Market (above). Erected in 1889, this once-bustling landmark sits in the heart of downtown Port-au-Prince. The goal is to get it up and running by the end of 2010.

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RECORD NEWS SPECIAL REPORT: HAITI



Architecture for Humanity was launched in 1999 and today has 63 chapters around the globe. In 2009, the nonprofit organization began working in Haiti; this past March, it opened a field office in Pétienville, a district in Port-au-Prince.

The office has three people on staff (above, from left): Schendy Kernizan, a design fellow from Philadelphia who was born in Haiti; Eric Cesal, a Washington, D.C., designer who holds master's degrees in architecture, construction management, and business administration; and Yves François, a New York architect who

returned to his native Haiti last year and now runs his own firm there, ECOFRA.

AFH focuses on long-term projects rather than emergency services. In Haiti, the organization aims to design and construct community venues, with an emphasis on schools. The January earthquake reportedly wiped out 4,000 educational facilities.

In April, the AFH team spent much of its time going on site visits, hunting for ideal locations to build. "It's a central part of the process," says Cesal. "There is no substitute for having boots on the ground."



On the Web

* **Slide show:** See additional images of Port-au-Prince (above), along with photos from our trip to the surrounding mountains.

* **Video series:** We visit a village near Léogâne, which was at the epicenter of the January quake; tour the Pétienville Golf Club camp, where 45,000 homeless people reside; spend a day with Architecture for Humanity at Corail-Cesselesse, a new tent city; and speak with Miami architect Andrés Duany about the prefab housing he hopes to put up in Haiti.

* **Interviews:** We chat with Yves François, a Haitian-American architect, about what it takes to run an architectural practice in Port-au-Prince.

* **News:** Read about Shigeru Ban's involvement in Haiti; Containers to Clinics, a group that is converting cargo containers into medical facilities; and Rural Haiti Project, a group founded by a Brooklyn architect.

* **Blogs:** Check out our live reports from Haiti, and keep abreast of new developments.

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CIRCLE 26



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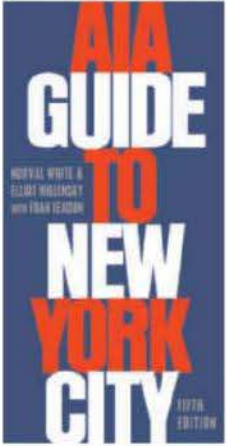
Building New Solutions

Legendary Book Gets Updated

ON JUNE 3, OXFORD UNIVERSITY Press is scheduled to release a fifth edition of the *AIA Guide to New York City*, the wryly written, block-by-block directory of buildings that has become an essential reference for architects, planners, and developers, as well as residents.

About half of the new 1,100-page book features content from earlier editions, most of which were written by the late architects Norval White and Elliot Willensky. A third editor, Fran Leadon, AIA, a teacher at the City University of New York, joined the effort this go-around, roaming the five boroughs over an 18-month period to research and photograph a good percentage of the book's 9,000 buildings. Many of his former students also contributed.

The guide was first printed in 1968, with updated versions released in 1978, 1988, and 2000. A key reason for refreshing the book now is that since its last printing, an epic construction boom has transformed New York, adding scores of office towers, condos, and parks. *C.J. Hughes*



Jack Warnecke, 91, Dies



JOHN CARL ("JACK") WARNECKE, FAIA, died of pancreatic cancer at his ranch in Healdsburg, California, on April 17. Warnecke was a tall, burly architect, known for his ebullient personality and his ability to win clients and friends. One of his best-known works was his redesign of the Lafayette Square area in Washington, D.C. [RECORD, April 1968, page 147]. This urban development near the White House included not only the preservation of historic houses, but also the construction of the National Courts Building (1967) and the New Executive Office Building (1969), whose redbrick

masses, oriel windows, and mansardesque roofs represented distinct attempts to be both Modern and contextual. Visit us online to read more. *Suzanne Stephens*

Pugh + Scarpa Helps Launch Affordable Housing Conference

IN JULY, MARYLAND-BASED Enterprise Community Partners, in collaboration with Pugh + Scarpa, will present the Affordable Housing Design Leadership Institute, a two-and-a-half-day conference that will address design challenges in affordable housing. The event will take place at the University of Minnesota's Minneapolis campus, where Lawrence Scarpa, FAIA, and seven invited architect members of a "Design Resource Team" will work with developers chosen through an RFP process. Most likely, NIMBYism will be a recurring theme. "Nobody wants affordable housing in their community, because they equate it to crime and problems," explains Scarpa. "But you can help people sell their projects by making them better community buildings." *David Sokol*

PHOTOGRAPHY: COURTESY MARGO WARNECKE MERCK (THIS PAGE, RIGHT); JEFF GOLDBERG/ESTO PHOTOGRAPHICS INC. (OPPOSITE)

WHAT IS ROOFING FOR

Winners of 2010 Housing Awards

THE AIA HAS ANNOUNCED THE 18 WINNERS of the 2010 Housing Awards. Now in its 10th year, the awards program recognizes exemplary residential design in four categories. Visit us online to view a slide show. *Aleksandr Bierig*

ONE/TWO-FAMILY CUSTOM HOUSING

Diamond Project, San Francisco,
Terry & Terry Architecture

Ferrous House, Milwaukee,
Johnsen Schmalig Architects

Port Townsend Residence,
Port Townsend, Washington,
Bohlin Cywinski Jackson

Dry Creek Outbuildings,
Woodside, California,
Bohlin Cywinski Jackson

Sky Ranch, Seattle,
The Miller | Hull Partnership

Spiral House, Old Greenwich,
Connecticut, Joeb Moore + Partners
Architects

Sheldon Gatehouse, Cle Elum,
Washington, Bohlin Cywinski Jackson

T42 House, Minneapolis,
VJAA

ONE/TWO-FAMILY PRODUCTION HOUSING

Cellophane House, New York City,
KieranTimberlake

14 Townhouses, Brooklyn, New York,
Rogers Marvel Architects

MULTIFAMILY LIVING

Gish Apartments, San Jose,
California, Office of Jerome King, FAIA

OneEleven Mixed-Use Development,
Baton Rouge, Louisiana,
Remson | Haley | Herpin Architects,
APAC



Formosa 1140, West Hollywood,
California, Lorcan O'Herlihy Architects

Safari Drive, Scottsdale, Arizona,
The Miller | Hull Partnership

The Waterworks at Chestnut Hill,
Chestnut Hill, Massachusetts,
Gund Partnership

SPECIAL HOUSING

Step Up on 5th, Santa Monica,
California, Pugh + Scarpa

The Housing Tower, Stockbridge,
Massachusetts, The Rose +
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**Swarthmore College Residence
Halls**, Swarthmore, Pennsylvania,
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ABOVE: **The Spiral House** by Joeb
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CIRCLE 27

McEntee Departs the Institute



CHRISTINE McENTEE, the AIA's executive vice president and C.E.O., is stepping down after four years of service. She is to become executive director of American Geophysical Union, a nonprofit organization with 50,000 members from more than 135 countries. McEntee's last day at the AIA is July 23, 2010. An AIA search committee will work with a recruiting firm to fill her post. *Charles Linn, FAIA*

Young Architects Honored

THE NINE RECIPIENTS of the 2010 AIA Young Architects Award will be recognized this month during the AIA's annual convention in Miami. The prize recognizes individuals who have demonstrated exceptional leadership and made significant contributions to the profession early in their careers. Architects who have been licensed for no more than 10 years, regardless of their age, are eligible. *Jenna M. McKnight*

- **David Burt**, principal at LS3P in Charleston, South Carolina
- **Kevin deFreitas**, principal of Kevin deFreitas Architects in San Diego, California
- **David Grissino**, senior urban designer at Goody Clancy in Boston

- **Christopher Kelley**, project architect and technical director at Gensler in Washington, D.C.
- **Brian Malarkey**, executive vice president at Kirksey EcoServices in Houston
- **Gregory Minott**, project architect at Elkus Manfredi Architects in Boston
- **Anthony Piermarini**, founding principal of Studio Luz Architects in Boston
- **Kristine Royal**, an architect in the process of establishing her own firm in Rhode Island
- **Tricia Stuth**, founding partner of Curb and assistant professor at the University of Tennessee

AIA Announces New Media Partner

IN MAY, THE AIA ANNOUNCED that Hanley Wood will be its new media partner, effective January 2011. The five-year agreement covers trade shows and periodicals. McGraw-Hill has served as the AIA's media partner for the past 13 years.

"Many AIA members are not aware that they have paid to receive ARCHITECTURAL RECORD as a benefit of their membership," says Robert Ivy, FAIA, editor in chief of

ARCHITECTURAL RECORD and vice president of McGraw-Hill Construction Media. "We will make it easy for members to continue to receive the publication in both print and digital forms in the future."

Ivy adds: "It has been an honor to serve the American Institute of Architects, and we will certainly continue to cover its activities and those of its members." *Charles Linn, FAIA*



Retainage Fees No Longer Required

FEDERAL CONTRACTING OFFICERS are no longer required to withhold 10 percent of fees for architectural and engineering services. The rule change culminates a four-year lobbying effort by the AIA and Paul Renker, principal of Renker Eich Parks Architects in St. Petersburg, Florida.

The new rule, published by the Federal Acquisition Regulation Council, classifies retainage as discretionary. If contracting officers choose to require retainage, it can be set at a rate below 10 percent. The new rule also clarifies that "any amounts retained should not be held over beyond the satisfactory completion of the instant contract." Previously, retainage could be held until construction completion.

The AIA says A/E firms were unfairly singled out under the previous rule, as 10 percent retainage was not required of contractors. *Bruce Buckley*

AIA Names Top 10 Green Projects

The AIA Committee on the Environment (COTE) has announced its 14th annual Top Ten Green Projects. Visit us online to view a slide show of the winners.

Alanna Malone

- **355 11th Street**, Aidlin Darling Design, San Francisco
- **Homer Science & Student Life Center**, Leddy Maytum Stacy Architects, Atherton, California
- **King Abdullah University of Science and Technology**, HOK, Thuwal, Saudi Arabia
- **Kroon Hall**, Hopkins Architects and Centerbrook Architects & Planners, New Haven
- **Manassas Park Elementary School + Pre-K**, VMDO Architects, Manassas Park, Virginia
- **Manitoba Hydro Place**, Smith Carter Architects and Engineers and Kuwabara Payne McKenna Blumberg Architects, Winnipeg, Canada



- **Omega Center for Sustainable Living** (above), BNIM Architects, Rhinebeck, New York
- **Special No. 9 House**, John C. Williams Architects and KieranTimberlake, New Orleans
- **Twelve West**, Zimmer Gunsul Frasca Architects, Portland, Oregon
- **Watsonville Water Resource Center**, WRNS Studio, Watsonville, California

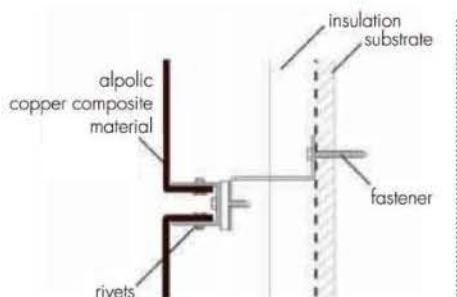
Architectural Billings

The billings index rose to 48.4 in April, up from 46.1 the prior month. The inquiries score was 59.6. "It appears that the design and construction industry may be nearing an actual recovery phase," says AIA Chief Economist Kermit Baker. April marked the highest score since January 2008, when the index hit 51.1. A score above 50 indicates an increase in billings.



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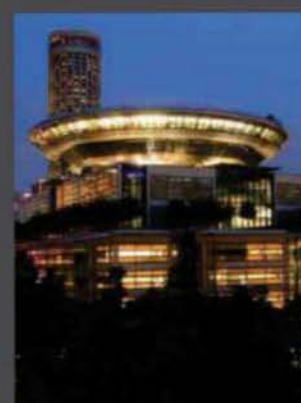
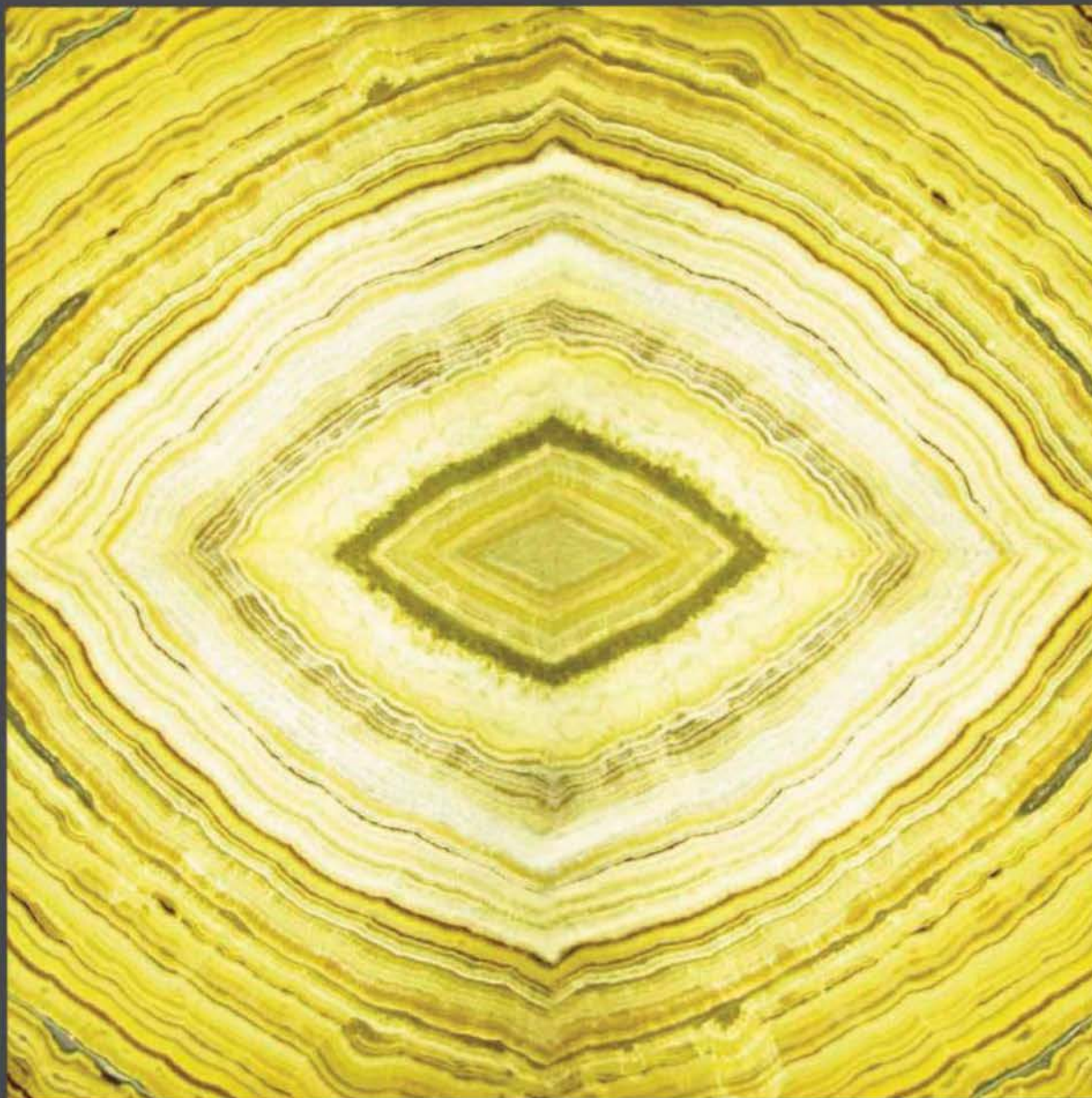


CIRCLE 28

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3. A Knoxville pool house weaves program into context.

design
constructWO



PRINCIPAL:
 Julie Ju-Youn Kim, AIA

LOCATION:
 Washington, D.C., and Detroit

FOUNDED: 2000

DESIGN STAFF: 3 to 4

WORK HISTORY:
 studioONE, Detroit, 1996–2003; Keyes Condon Florence, Washington, D.C., 1990–91; Skidmore, Owings & Merrill, Washington, D.C., 1989–90

EDUCATION:
 MIT, Cambridge, Mass., M.Arch., 1994; Wellesley College, Wellesley, Mass., B.A., 1989

KEY PROJECTS:
 Dentalium, Plymouth, Mich., 2008; traSHELTER, Detroit, 2004

KEY CURRENT PROJECTS:
 M-1 Rail Stations (with HOK/D.C.), Detroit, 2011; Virgil H. Carr Cultural Arts Center, Detroit, 2011

WEB SITE:
 constructwo.com

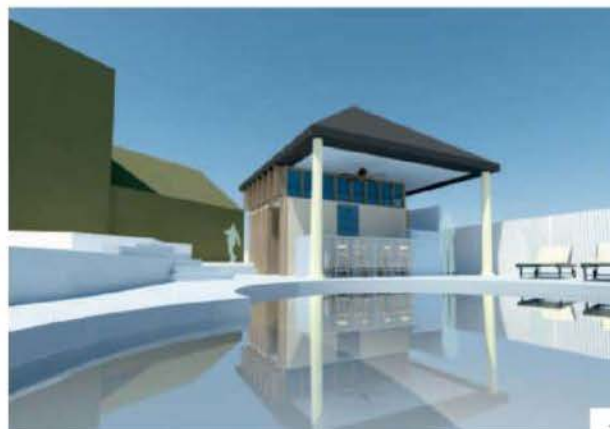
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ALTHOUGH JULIE JU-YOUN KIM, AIA, bases her 3-to-4-person firm, constructWO, in Washington, D.C., with a satellite office in Detroit, the answer she'll give if you ask where her office is located might be "wherever my laptop is." The Massachusetts Institute of Technology M.Arch. graduate's practice philosophy is to be nimble, facile, fluid, flexible, and continually moving forward. "I'm focused on process," she says, "and being involved in a range of projects that can't be boiled down to a concept, but have a continuing thread."

The current range of work on the boards proves her words: a collaboration with HOK/D.C. for a series of light-rail stations in Detroit with dynamic LED lighting systems integrated into translucent glass-panel skins; a cultural arts center in Detroit with theater, gallery, studio, and offices; and a pool house in Knoxville, Tennessee, that integrates context with program. Completed commissions include a dentist's office adaptive-reuse project that used multiple skins to bring light into a once-uninviting existing building, and a community center in Huntington Woods, Michigan. Each project has what Ju-Youn Kim calls "a shifting middle ground," yet holds fast to its "architectural truths." Take the Cultural Center, for example. For this project, which weaves itself through four floors of a historic building with a jazz club/cabaret, there's an edge that exists between historic/modern, exterior/interior – the shifting middle ground. "And yet," says Ju-Youn Kim, "the architectural truths exist in that we can be respectful of the history of the space, but our design isn't dictated by that." For this and every project, the architect develops a set of questions, then seeks

to redefine the problems based on the constraints – budget, program, size, and issues of sustainability. "You can have a building that works, but there are other questions that can drive the design," she notes.

Ju-Youn Kim is comfortable talking about who and what her firm is now; she should be, since this is not the first firm she has founded, though it is the first she runs single-handedly. In 1996, she, her husband (also an architect), and another partner founded the firm studioONE in Detroit, where she was living at the time. Ju-Youn Kim says the experience – one she sought "even when I was working for other firms [SOM, Keyes Condon Florence]" – was invaluable, but the time came in 2000 when



IMAGES: COURTESY CONSTRUCTWO

she saw the opportunity to branch out on her own professionally. She has never looked back. "My goals shifted," she says.

One of the goals that hasn't shifted is her desire to continue teaching, which she loves, and to be involved in the academic world of architecture. Her teaching appointments include jobs at the University of Detroit Mercy and the University of Maryland School of Architecture. "I love being engaged in the discussion," she says, "and the spirit of experimentation. I feel like the way I run my design studios is very

much how I'm running my firm. Framing the questions, and being process and project oriented. And always looking forward to the next design problem."

She would like to grow her firm to a team of seven, continue to collaborate, continue to focus on craftsmanship, and use technology to amplify what she does. "Small projects, done well," she says. "Cities are always evolving. They're always moving. I'd like what I design to be part of that – to provide new layers." *Ingrid Spencer*

work

Kansas to Cairo



PROJECT: Second Life-based architecture classes
LOCATION: University of Southern California, Los Angeles; Ain Shams University, Cairo, Egypt
DATE: 2010
LEADERS: David Denton, AIA; Amr Attia

LEFT: **USC students and instructors involved in the program.**

WITH THE WHIR OF HIS FAX machine, life changed for David Denton, AIA, three years ago. A message had come to the Marina del Rey, California-based architect from the Cairo design firm PUD Consultants, announcing its consideration of Denton as international partner to submit a planning proposal to the Egyptian government. PUD firm owner Amr Attia soon formalized the relationship with Denton while he was traveling stateside on an Eisenhower Fellowship, and the two studios have collaborated on several projects since then.

Just as Denton and Attia were embarking on designing the 130,000-square-meter mixed-use property Reflections, the American had learned about the virtual world Second Life. "It hit me like a thunderbolt," Denton says, still smitten by the discovery. He recalls asking Attia whether he would consider using Second Life as a place to continue developing Reflections when they couldn't work face-to-face.

After returning to Los Angeles from a five-week tutorial in Cairo, Denton's and PUD's avatars would meet for several hours daily and design in real time using Second Life's embedded tools, which PUD then regularly recorded and ultimately translated into working drawings. The team brought those documents to Reflections developer Mohamed Abou el Enein for final approval, but the client needed only a Second Life flythrough to be convinced of the design's quality. "He said he really understood the scheme in a way he had not understood [design] before," Denton says. Currently, Reflections is under construction in El Sheikh Zayed City.

Denton says he and Attia both feel immensely satisfied by Second Life, too, noting the speed with which design takes place in that medium, especially compared to the wire-frame software Denton had been using. The pair had considered

1. American and Egyptian students meeting in the virtual world in avatar form.
2. David Denton and Amr Attia's collaborative project, Reflections, modeled in Second Life, is currently under construction in El Sheikh Zayed City, Egypt.



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New Arrivals at the Reference Desk

The Oxford Companion to Architecture, edited by Patrick Goode. Oxford University Press, 2009, 1,083 pages, \$250.

The Atlas of American Architecture, by Tom Martinson. Rizzoli, 2009, 544 pages, \$85.

Among panoramic works encapsulating centuries' worth of achievement, these two publications might rank as the most charmingly idiosyncratic. Neither satisfies the publisher's claim of exhaustive treatment of two millennia of architecture, but both excel, in deliciously quirky and insightful ways, in presenting interesting perspectives on architecture that are strikingly American, in Martinson's case, and quite English, in Goode's.

The Oxford Companion to Architecture is a massive, two-volume cross between a dictionary and an encyclopedia, with contributions from 150 experts – largely U.S. and U.K. academics – and from editor Patrick Goode and consultant editors Stanford Anderson and Colin St. Wilson. By tapping some of the world's leading authorities on international vernacular architecture and lavishing attention on the social and technical aspects of architecture as well as the aesthetic, Goode and his cohorts have gone where no omnibus architectural reference has gone before. Though the work is organized alphabetically, a thematic contents list and astute cross-referencing make it a breeze to use.

Unfortunately, as a scholarly venture, the volumes are marred by pro-English and anti-Postmodern biases. The articles on Frank Gehry, Charles Moore, and Robert Venturi are flip insults and offer no salient new information, and the overview of Postmodernism is uninformative. Beneath these attacks there surfaces the claim that Modernism was an English invention! William Morris is elevated to Modernist messiah, and this romp of Anglophilia includes at least a dozen glowing articles about modern U.K. architects that American readers will think minor, such as Gothic church designer James Brooks and



neo-Palladian John Carr. The U.K. has far more entries in the thematic index than the U.S.

While the *Oxford Companion* also suffers from graphic poverty, Martinson's *Atlas* sparkles with over 1,100 color photographs, but at the cost of sparse textual analysis.

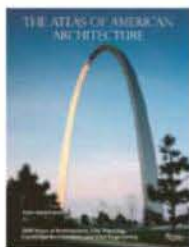
Martinson, though, possesses a knack for pithy

descriptions in a conversational tone somewhere between Vincent Scully and Garrison Keillor. Like Keillor, he looks at the world from a sweepingly Midwestern perspective, a refreshing change from surveys largely locked into coastal biases. So he champions relatively obscure Midwestern architects like Edwin M. Lundie of

Minnesota and invites readers into such unlikely buildings as Zaharako's Ice Cream Parlor in Columbus, Indiana, a sweet hodgepodge of rococo heartland vernacular.

Particularly valuable is Martinson's eye for uncharacteristic projects, such as George Howe's own fantasy-encrusted home, a sharp contrast to his Modernist masterpiece, Philadelphia's PSFS skyscraper. And instead of dismissing the value of Gehry's, Moore's, and Venturi's works, Martinson supports their importance with extensive commentary and photographic coverage. His genial and open-minded tone, supplemented by generous photographic documentation, leaves you to form your own conclusions, which is not true of Goode's straitlaced Brit chauvinism. The *Atlas's* only suggestion of academic stuffiness is its subtitle claiming a comprehensive survey of 2,000 years of architecture, city planning, landscape architecture, and civil engineering.

Martinson's book is one you can share with interns and clients; the Oxford set is first-rate as a research tome. *Norman Weinstein*



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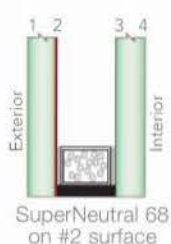
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CIRCLE 34



No Need to Reinvent the Wheel

We create ways of doing all kinds of things. Here's how some firms save the knowledge for future use.

BY B.J. NOVITSKI

What's the buzz about "knowledge management"? Simply put, it's the creation, organization, and distribution of a firm's collective information and, often, its wisdom. But that's where the simplicity ends. In professional-services firms, where

the company assets are primarily lodged in employees' brains and in the documents they create, this collective knowledge is vast and varied. It includes annotated detail libraries, correspondence archives, project image collections, material libraries, building-type programming expertise, storytelling about how a job is won, how-to's for assessment processes, and the loosely defined, wide-ranging wisdom that comes from years of experience as an architect.

By making such information explicit and searchable, a firm can elevate the skill levels of all employees and improve both its design quality and profitability. Effective management enables individuals to share insights, avoids reinventing the wheel, supports new-employee training, and keeps expertise in-house even when individuals leave the practice.

Although much of this management is done on computers, the challenge is no longer technical. Firms routinely maintain e-mail archives, intranets, wikis, blogs, and online databases. An arguably greater challenge is cultural: getting people to actively organize information and learn how to search for it. Christopher Parsons, founder and principal of the consulting firm Knowledge Architecture, describes the challenge as identifying people in a firm to act as writers, librarians,

and teachers – to create clear and compelling content, organize it, and impart it to the rest of the company. The goal of knowledge management, he says, is to enable a firm's principals to "leverage themselves." He explains: "That's why we hire people, to leverage ourselves, to bring in their expertise for a bigger collective impact as an organization. Knowledge management can

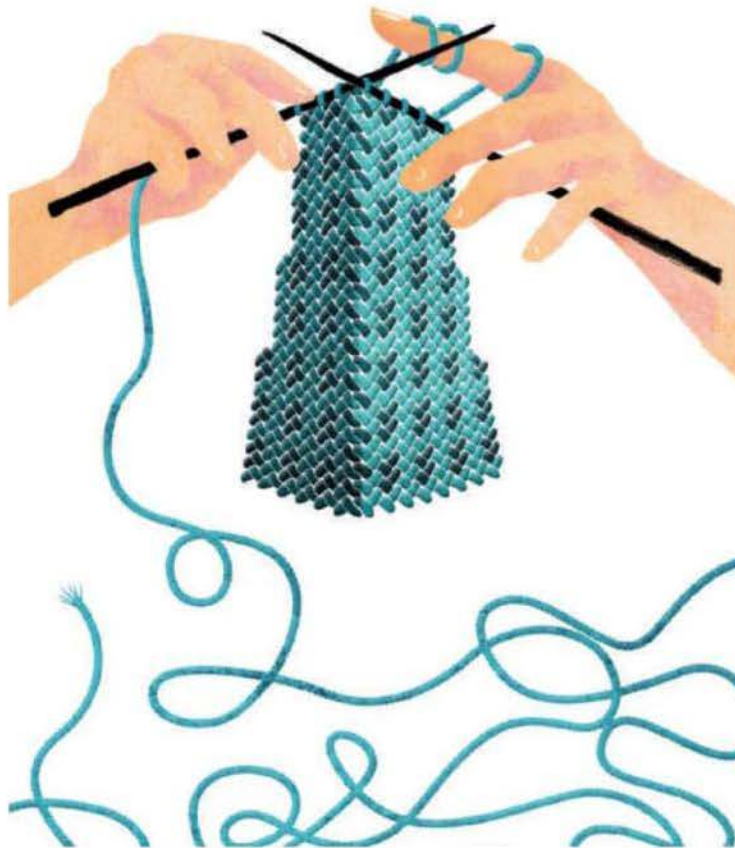
facilitate that process, but the root is the person who runs the company believing the way forward is to share experiences and get smarter."

Parsons talks about "knowledge assets," which a firm can develop to its advantage. "Say, for example, you're a housing firm and have done lots of feasibility studies," he says. "Your intellectual property is what you've learned having done these studies again and again. This can be systematically converted into a strong knowledge asset to be leveraged by the firm." This stands

in contrast to a tendency Parsons has observed of firms approaching every project as if it were their first. Instead, he recommends managing the asset by maintaining a database of lessons learned about best practices for delivering housing projects.

Ten years ago, many architects believed that in-house intranets would provide this information sharing. While valuable, those systems tended to be relatively static and top-down, with a centralized authority to create content. Since then, "social media" have come to maturity, and technically savvy architects have become familiar with blogs and other forms of bottom-up idea sharing.

Doris Pulsifer has been promoting knowledge management at SOM for years. She points out that "social networking" has been around for a long time – in the form of brown-bag lunches, conferences, and roundtables. But the relatively new Internet-based networking allows the shared knowledge to be more effectively captured, analyzed, stored, and redistributed. She says it's useful to distinguish between explicit knowledge, such as business practices, and tacit knowledge, such as creative design. While both are necessary in a successful firm, the former is repetitive and more easily quantified and automated, while the latter is elusive and less easy to communicate. To support a culture of leveraging tacit knowledge, she argues, a firm must develop a framework that includes a set of understood goals, procedures, and



PRACTICEMATTERS

measurement methods as well as technologies. The framework enables a firm to document its history, learn from it, and thereby improve its competitiveness. Interestingly, she says, the most useful kinds of captured knowledge do not originate in the IT department but among the architects and engineers of the firm.

As an example, she cites an initiative from SOM's San Francisco office. A design team developed Excel spreadsheets to analyze weather data. Then the IT team provided a more robust structure, and the resulting tool uses Google Maps to organize project information. She explains: "Designers can go to their project's location and see any weather files that are available. If no files are available for that area, they can extrapolate data from nearby locations. Using Google Maps, designers can also find the firm's other buildings in that area."

The information source is useful not only to those who know what they're looking for but also to others who are simply exploring. "The information encourages them to keep asking questions and maybe find a similar project," says Pulsifer.

Such new tools and social media are very encouraging, she says. "Today, collaboration is the factor that matters most. We used to see all this information as proprietary. Now we see that creativity is not guaranteed by locking up your knowledge, but quite the opposite."

Brad Horst, of Einhorn Yaffee Prescott Architecture & Engineering (EYP) has been promoting knowledge management in his firm, calling his approach the "Digital Project Story." EYP prides itself in its expertise-driven design, and the "story" is, in effect, a portal through which anyone in the firm can tap into that expertise. Horst is midway through a three-year

plan of developing a system for creating, capturing, and sharing information. Design teams are encouraged to work with Newforma for project information, Revit for design, Deltek Vision for financial data, and Axomic OpenAsset for an image database. As the teams adopt these applications, he's found, they come to embrace each one as useful in its own right.

In the meantime, with support from the consulting firm Knowledge Architecture, Horst is building digital connections between the applications. As he says: "To me the motivating factor is, first, to figure out how to capture one story, then to capture a second and compare them with each other. Then, as we introduce other kinds of comparative information, we're building expertise over time." For example, a practitioner will be able to do a simple search through a personnel directory to find out who the office expert is in a particular

area. When they narrow the list to one person, that expert's profile will show the projects they've worked on. The searcher then drills down to get more detailed information about that project, perhaps finding specifications for a particular component. "Ultimately," says Horst, "all this information will be linked so you can find it faster and form new understandings of our project history."

But the greatest challenge to knowledge management may be teams finding the time to adopt new ways of thinking despite the pressures of project work. The good news, though, is that such initiatives are not the sole province of large firms. "What it takes is an entrepreneurial spirit," Horst concludes, "looking for how to do things better." ■

B.J. Novitski writes frequently about practice and sustainability. She can be reached at bjn@efn.org.

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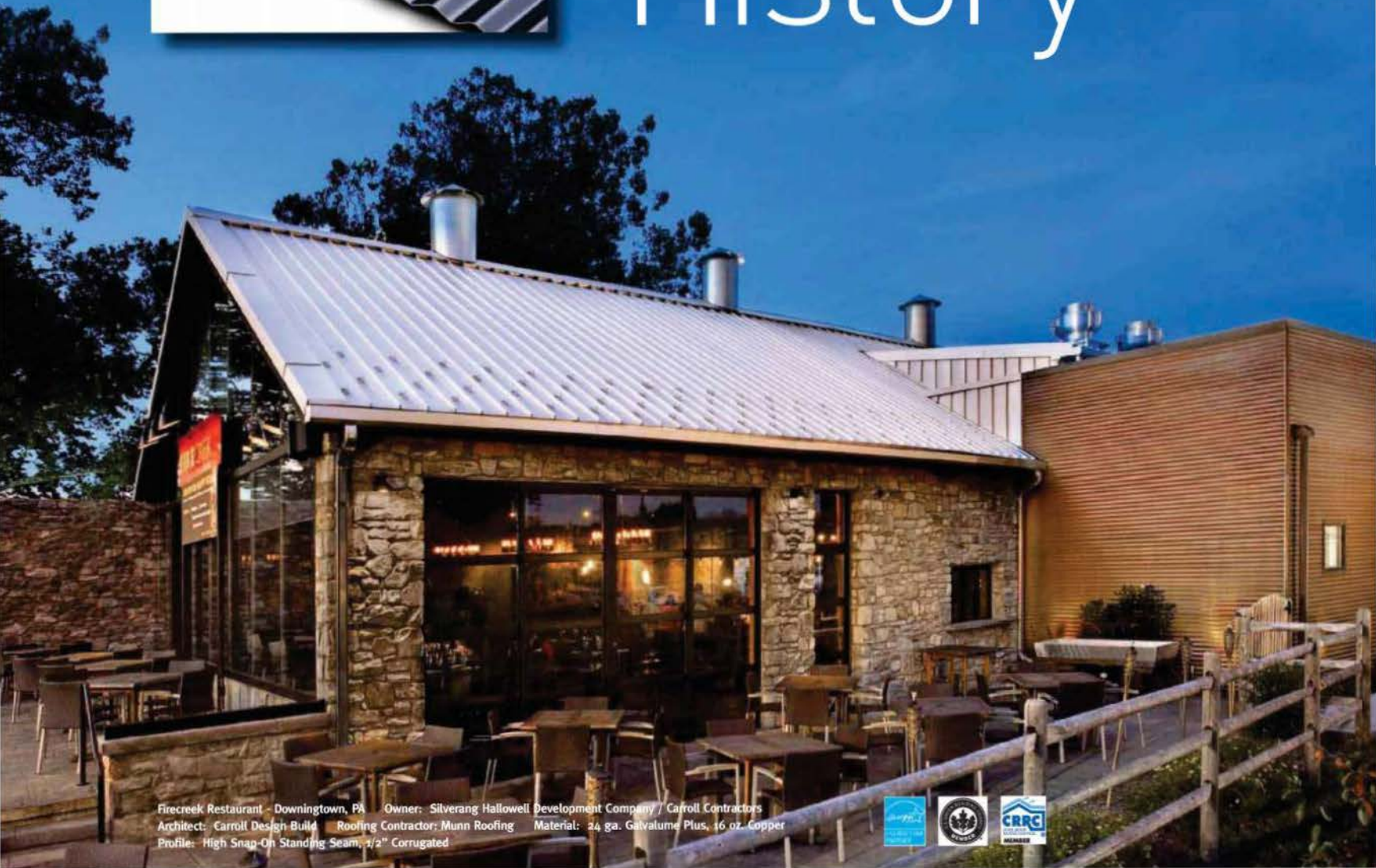
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A Clear Advantage

As a cost-effective alternative to window replacement, a new generation of window films offer myriad benefits.

BY JEN RENZI

DESPITE RECENT technological advancements in sun-protectant glazing, there are times when even high-performance glass needs an extra boost. To wit: a fashion boutique that Miami architect Rene Gonzalez designed for the new Herzog & de Meuron garage and retail building in South Beach. Gonzalez's Starphire-glass box projects from the garage's western edge, 70 feet above the ground, where it gets hammered by sunshine. Window film was the perfect solution for preserving both views and merchandise. "The challenge was sourcing a film as transparent as the glass, but that offered adequate protection," the architect explains. He specified Huper Optik's ultra-clear Select Acht film, which stops 99.9 percent of ultraviolet light, keeping garments from fading while significantly lowering the cooling load.

For many architects, window film is primarily a retrofit solution. "We consider it among a suite of strategies to improve energy efficiency in existing buildings," says Chris Garvin, AIA, an architect with Terrapin in New York. "But I find that historical precedent has biased many clients against window film. Older versions blocked too much visible light, which made spaces dark and gloomy. Many compensated for those conditions by using additional artificial lighting, which offset any energy savings from blocked sun."

Transparent motive

Luckily, the current generation of window films offers enhanced clarity and visible-light penetration while better mitigating heat and glare. Films that utilize metal nanoparticles to block the sun are among the most effective. "Measured in a billionth of a meter, nanoparticles are small enough to see



ABOVE: **Energy Film** makes privacy, view-control, and solar films that inhibit UV rays and solar gain.

LEFT: Among Solutia's window film offerings is **EnerLogic**, which cuts glare while preserving views.

through, but large enough to absorb wavelengths of energy from the sun," explains Thomas Hicks, president of Portland-based Energy Film. In addition to selling view-control films, the company markets an energy-saving product that boasts year-round benefits. Energy Film has been certified to block 97 percent of UV rays and 70 percent of thermal infrared light, thwarting heat gain in the summer and retaining warmth in the winter. The product affixes to glass via cohesion and atmospheric pressure rather than traditional adhesives; once attached, the film sticks indefinitely until removed, and leaves behind no residue. Such user-friendliness makes for a more forgiving installation. Energy Film, Portland, Ore. www.energy-film.com. **CIRCLE 200**

On the outside looking in

For many locations, the use of interior

window film is not logistically feasible. While film affixed to the facade is one alternative, exterior applications typically degrade faster in the elements. Solutia has solved that problem with its Vista exterior film. Engineered for use where interior application is impractical or not technically viable, the product rejects up to 83 percent of solar energy, the manufacturer claims. Enhanced durability comes courtesy of a nonstick, highly scratch-resistant hard coat that also renders windows easier to clean. Dirt and pollutants can be washed away with water. Solutia, St. Louis, Mo. www.solutia.com. **CIRCLE 201**

Safety first

Ease of maintenance was also an impetus behind 3M's new Prestige Ultra Safety & Security film. The transparent surface adheres to the window

to hold shattered glass in place in the event of impact. It also makes the glass harder to break in the first place – ideal for storm-prone locations and even street-level urban environments subject to vandalism. The metal-free film, which utilizes nanotechnology, has a reflectivity almost on par with glass, yet blocks 99.9 percent of UV rays to offer up to SPF 1000 protection. Those features could prove an enticement for designers who might not otherwise specify films in the first place. "We use films primarily for added UV protection beyond what high-performance windows alone can provide," says Eric Gartner, principal of SPG Architects in New York. "After so much time spent designing special finishes and choosing artwork, you want them to last forever." 3M, St. Paul, Minn. www.3m.com. **CIRCLE 202**



2 | PRODUCT **Pocket Window with H3 Technology**
 MANUFACTURER **Hurd**
 hurd.com

Hurd now offers its H3 technology as a pocket window for the replacement market. Offering high performance at a mid-range price, windows are both leak resistant and environmentally conscious. Units exceed Energy Star requirements and U.S. Department of Energy efficiency standards and can be specified with Low-E 366 glass offering a .29 U-factor. Tripartite vinyl frames feature .05" extruded-aluminum cladding and interiors lined in solid wood. Choose between nine species, including mahogany, pine, Lyptus, and Douglas fir. **CIRCLE 204**

3 | PRODUCT **Executive Screens**
 MANUFACTURER **Phantom Screens**
 phantomscreens.com

Phantom's motorized screens offer myriad advantages: insect protection, solar shading, enhanced ventilation, heat and glare reduction, reduced energy usage, and privacy. The retractable units disappear when not in use, receding into column recesses or ceiling cavities. Suitable for retrofit and new construction, Executive screens can be mounted to interiors or exteriors to accommodate oversize openings such as floor-to-ceiling fenestration. Choose among more than 30 meshes and numerous finish options, including custom color matching. **CIRCLE 205**



1 | PRODUCT **Majesta Double-Hung Window**
 MANUFACTURER **Kolbe Windows & Doors**
 kolbe-kolbe.com

Designed for residential and commercial spaces, Majesta double-hung, oversized windows marry traditional styling with energy efficiency. The made-to-order collection comes in sizes up to 6' x 12'; frame options include FSC-certified wood varieties as well as anodized- or painted-aluminum cladding. Choose between brass, rustic umber, or brushed nickel hardware. Energy-efficient glass and triple glazing can be specified, as can sashes with heavy-duty weather stripping. Coordinating single-hung, radius, and cottage-style windows are also available. **CIRCLE 203**



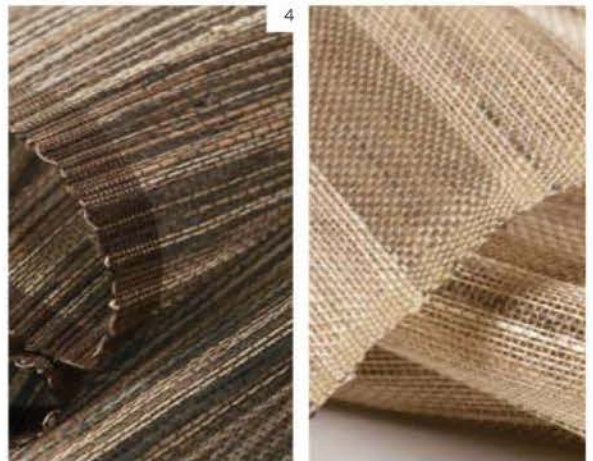
4 | PRODUCT **Dressage and Strata**
 MANUFACTURER **Conrad**
 conradshades.com

The company's latest shade collection includes six patterns handmade from sustainable natural fibers boasting inherent UV-resistance. Among the standouts are Dressage, a dense silken weave, and Strata, a shimmery striped sheer alternating tightly woven and open-textured fibers. Both can be specified in widths up to 150" and are available as a Roman fold shade with antique-brass cleats and side-operating cords and returns. For commercial installations, shades can be treated to a flame retardant meeting UBC Class I, NFPA Class A, and NPFA-701 requirements. **CIRCLE 206**



5 | PRODUCT **Mira Premium Picture Casement Window**
 MANUFACTURER **Ply Gem Windows**
 plygemwindows.com

Ply Gem expands its highly customizable Mira Premium Series to include both radius-operable and picture casement windows in four styles: extended eyebrow, quarter eyebrow, half round, and quarter half round. The residential line offers environmental benefits: Windows specified with Low-E glass and argon fills meet Energy Star thermal requirements. The wood frame and all sash parts are treated to prevent moisture and water damage, while the sturdy extruded-aluminum cladding – available in eight colors – resists dents and features a durable AAMA 2604 finish. Ply Gem's self-aligning mull system abets easy installation. **CIRCLE 207**





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1 | PRODUCT **Seek**
MANUFACTURER **Allsteel**
allsteeloffice.com

Allsteel's new mobile seating was conceived with multitasking venues such as training rooms and cafés in mind. Although its sleek frame and pivoting, spring-operated backrest stand out in a crowd, Seek does a marvelous job of hiding, too. When not in use, the lightweight chairs can be nested or stacked vertically within a minimal footprint and without the need for a separate cart; chairs lock together via the casters and notches in the armrests. Available with a mesh or polymer back, with casters or glides. **CIRCLE 208**

2 | PRODUCT **Bionictile and Lifewall**
MANUFACTURER **Ceracasa**
ceracasa.com

Unveiled to much acclaim at Cevisama 2009, Bionictile air-purifying porcelain is now available in the U.S. The tile's innovative titanium-dioxide glaze neutralizes nitrogen oxide, the pollutant that causes acid rain. Now the Spanish maker unveils Lifewall, a companion system developed in conjunction with Emilio Llobat of Maqla Architects and Azahar Energy. The 3.3'-square tiles support drip-watered vegetation that converts carbon dioxide into oxygen via photosynthesis, further enhancing air quality. **CIRCLE 209**



4 | PRODUCT **Extreme Performance Rubber Doors**
MANUFACTURER **TNR Industrial Doors**
cornelliron.com

Canadian manufacturer TNR's high-speed, high-performance rubber roll-up doors are designed for the most demanding contexts, from transport, mining, and industrial buildings to sites subject to extreme weather conditions. Closures are made of SBR, a durable synthetic rubber, reinforced with a core weave to withstand vehicular impact. The company's newest model, Extreme EPR-20, is a springless cycle-duty design ideal for high-turnover applications and minimal-headroom conditions such as underground parking garages; doors come in heights as low as 18". Customizable in sizes up to 47' wide or 45' high, TNR's complete product line is now available stateside thanks to a new distribution agreement with Cornell Iron Works. **CIRCLE 211**



3 | PRODUCT **Currents**
MANUFACTURER **Lori Weitzner**
loriweitzner.com

In her latest collection of handmade wall coverings, Lori Weitzner creates dynamic weaves from ecoconscious materials. The overlapping waves of Currents, for instance, are crafted from pressed paper pulp derived from renewable mulberry and salago fibers. The Class A fire-rated product is ideal for residential and commercial wall coverings, window treatments, and room dividers. The material can even be layered between glass to form tabletops and partitions. Sold in 4'-x-8' sheets. **CIRCLE 210**



5 | PRODUCT **Klassikduo Oval Wide**
MANUFACTURER **Kaldewei**
kaldewei.us

Designed by venerable Italian firm Sottsass Associati, the generously proportioned Klassikduo Oval Wide tub has a broad, flat rim that lends a sharp look and a practical touch: The level surround doubles as a shelf for bath products and accessories – a boon for a freestanding unit. Suited to commercial and residential spaces, the tub is crafted from 3.5-mm-thick steel enamel, a material that is nonporous, antibacterial, highly durable, and also fully recyclable. At 70" x 31 1/2", it's also big enough for two, with a central drain to offer a comfortable side-by-side soak. **CIRCLE 212**



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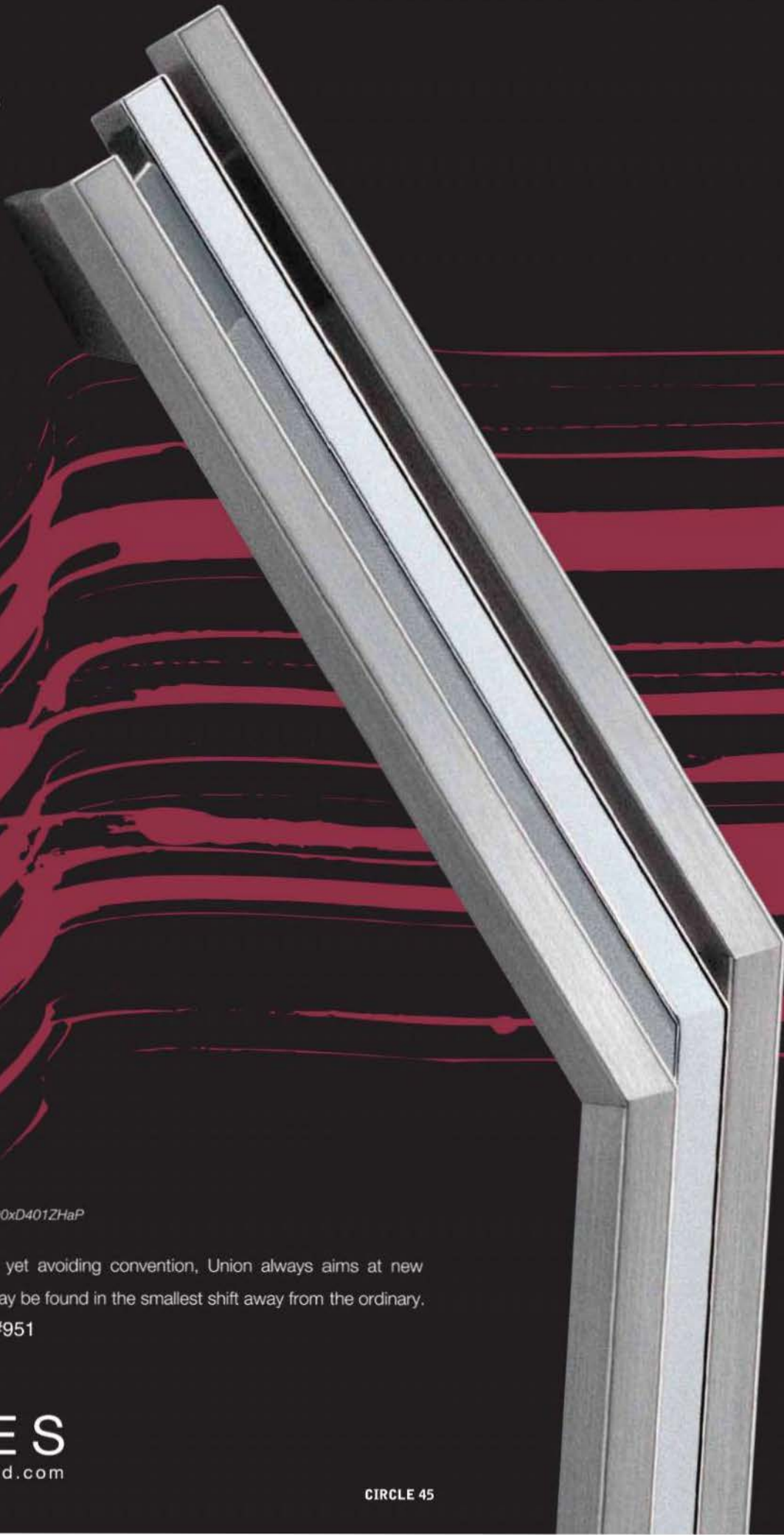


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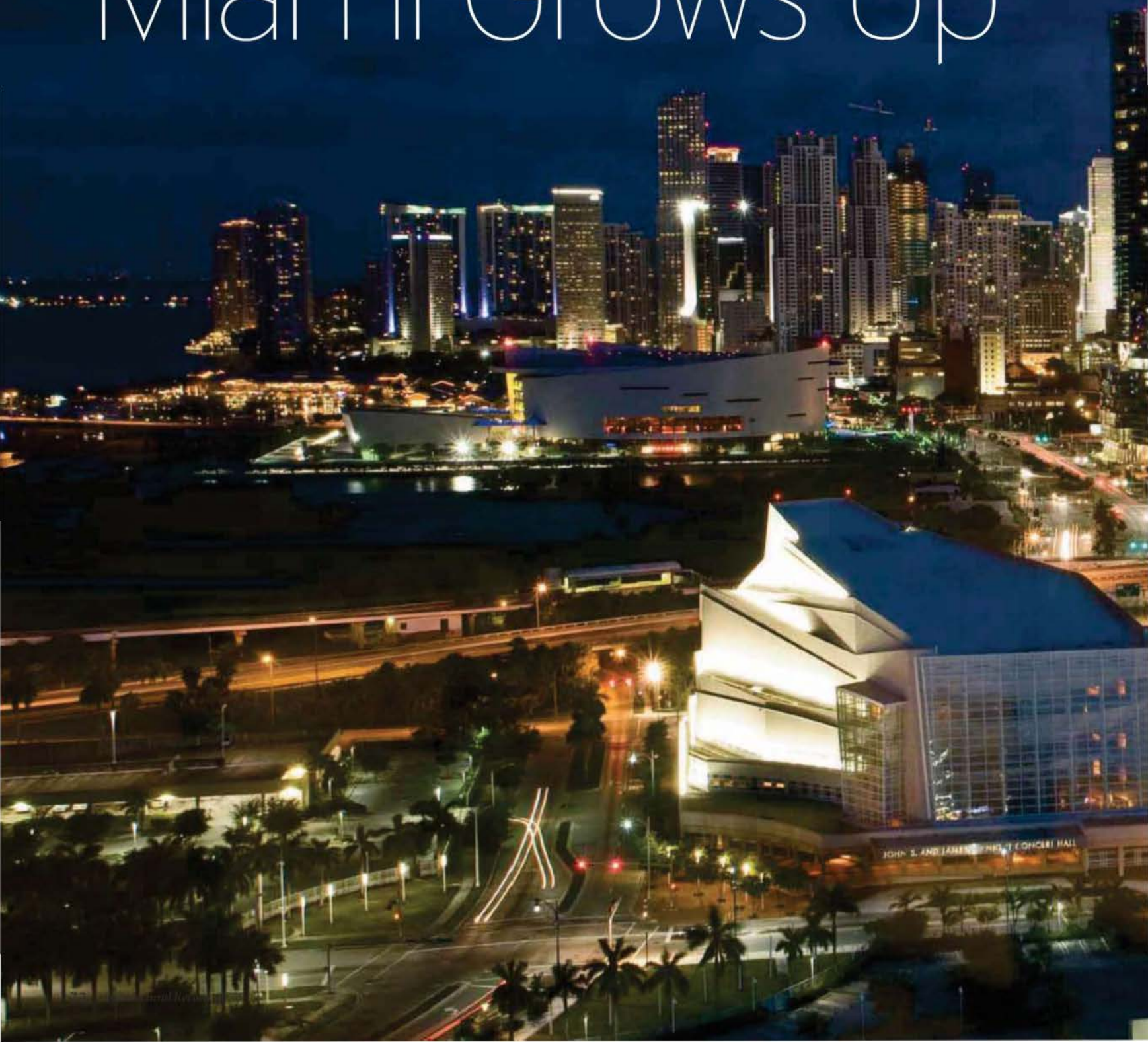
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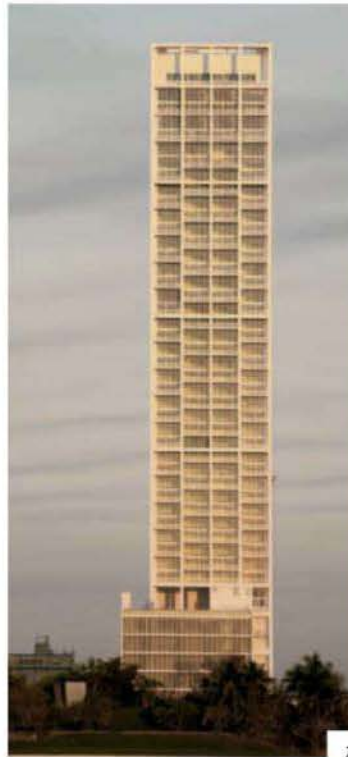
Although it hasn't lost its fun-loving and sometimes vulgar ways, the city is becoming more urbane.

BY ALLAN SHULMAN

Miami Grows Up

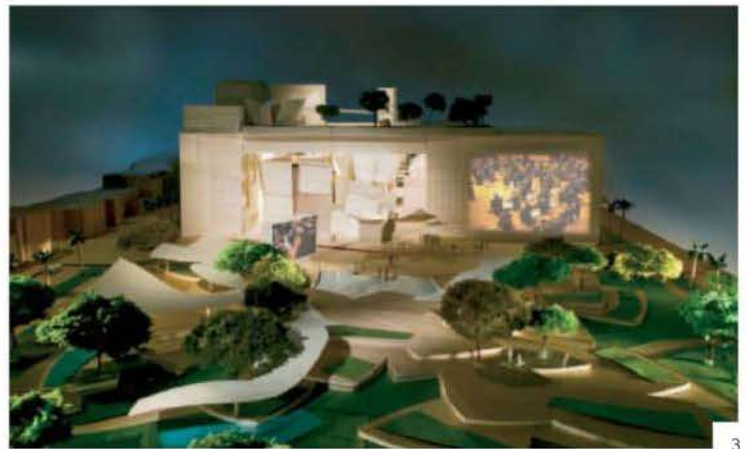






PRIOR SPREAD: The city's skyline with Pelli Clarke Pelli's performing arts center in the foreground.

1. Banco Espirito Santo building by KPF with SB Architects and Swanke Hayden Connell.
2. Oppenheim Architecture + Design's 10 Museum Park.
3. Rendering of Frank Gehry's New World Symphony, which is scheduled to open its first phase later this year.
4. The Icon Brickell/Viceroy Hotel complex by Arquitectonica.
5. Aqua, a development on Allison Island planned by Duany Plater-Zyberk & Company.
6. The Wilkie D. Ferguson, Jr., U.S. Federal Courthouse by Arquitectonica with HOK.
7. Rendering of Herzog & de Meuron's design for the Miami Art Museum's new home.



MIAMI HOSTED NATIONAL conventions of the American Institute of Architects in 1946 and 1963, years that neatly bracketed the city's remarkable postwar development. The 1963 convention, dedicated to "A Quest for Quality in Architecture," is remembered locally for the caustic treatment of Miami's iconoclast Modernist Morris Lapidus and his Americana Hotel in Bal Harbour, site of the gathering.

During the opening session, panelists Robert Anshon, Sir Basil Spence, George McCue, and Edward Hall pummeled the hotel (and much of Miami by extension), with Anshon finally calling it "incompetent, uncomfortable, and a monument to vulgarity." Lapidus responded with courage, conjuring the value of human comfort, emotional satisfaction, and a sense of joy, asking, "... and isn't that part of 'quality of architecture' also?"

The collision of vulgarity and genuineness, joy and relevance, continues in this subtropical city. In 2010, Miami is once again hosting the AIA. As in the past, the city's endemic boom-and-bust economy has produced a remarkable stratum of growth and redefinition for conventioners to digest. This time, Miami is more populous, more culturally diverse, and more urban. The



5

pan-American identity nurtured for decades by city leaders has become reality, and this global metropolis with a large transnational population challenges the conventional categorizations of a North American city. At the same time, metropolitan Miami is more contained, having reached its geographic growth limits. It is redefining itself now socially, culturally, and physically within its current boundaries. In the process, the city and its designers are pulling meaning from, and renegotiating the visions of, the earthly paradise and hectic growth that have characterized its modern history. Its eastern corridor, including Miami Beach and

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6

the City of Miami, is the most visible terrain of this transformation: Here, the city is rebuilding, renovating, and experimenting with new types of infill architecture, while growing more vertical and more layered.

Metropolitan ambition

Miami's skylines, probably the most iconographic facet of the city's identity, have grown considerably in recent years. False barometers of urbanity, they are nevertheless an important reflection of metropolitan ambition, seemingly programmed into the city's DNA (early skyscrapers already lined both sides of Biscayne Bay in the 1920s, only three decades after Miami's birth). Towers can be an obtrusive reflection of contemporary real estate dynamics, while prepackaging the Miami way of life: pools, spa, tennis courts, and aroma gardens. These days, architects are doing a better job fitting high-rises into their contexts – mixing uses and carefully hiding large garages or mitigating their impact on surrounding streets.

Miami's multiple skylines are best viewed from a car crossing the Biscayne Bay causeways or speeding along I-95. The panorama includes palisades of apartment towers along the waterfronts; alternative urban districts such as Coconut Grove, Coral Gables, Miami Beach, and Aventura; high-rise centers along the Metrorail corridor and near the Jackson Memorial Hospital campus; and tall



7



1. **The Rainforest Garden Lounge in the Design District by Enea Garden Design.**
2. **The Cisneros Foundation's Cifo collection in a warehouse renovated by Rene Gonzales.**

buildings lining the city's supergrid of commercial arteries. These growing urban centers manifest Miami's polyodal structure. At the expense of a dominant center, the city has always cultivated many cores with origins as separate villages or suburban town ventures. Downtown is the most important hub in this urban structure. Once mainly a business district, downtown now boasts new high-rises creating a residential base for center-city workers and transnational nomads.

As a result, residential, rather than commercial, architecture now competes for prominence on the skyline. At 50 Biscayne Boulevard, for instance, Sieger-Suarez contrasts 54 stories of powerfully expressed floor plates with colorful exterior glass planes echoing the playful geometries of Roberto Burle-Marx's 1970s sidewalk paving design. This graphic approach contrasts with Fullerton-Diaz's nearby Everglades-by-the-Bay, where dual, classically tapered skyscrapers (49 stories each) hover over an expansive mixed-use pedestal.

Just to the north, Arquitectonica – the Miami design office that has gone global but still plays an outsize role here – designed the 57-story Marina Blue and 67-story Marquis. The firm's inventive form making, bold use of color, and typological innovation are finding new, postmillennial expression along the bayfront. Next to Marina Blue, Oppenheim Architecture + Design's 10 Museum Park, comparatively modest at only 50 stories tall, capitalizes on a clear expression of its structural skeleton with five 10-story divisions and staggered balconies producing a refined rhythm and texture.

South of downtown, large-scale development during the past four decades has jumped the Miami River and migrated south into the waterfront estates along Brickell Avenue. This well-landscaped corridor, with urban/suburban streetscapes redolent of Wilshire Boulevard in Los Angeles, is beginning to develop and function as a neighborhood, bolstered by several new grocery stores and assorted shopping and dining areas. Among the thicket of towers, several new landmarks merge offices, residences, and hotels. The sleek 70-story Four Seasons tower (Miami's tallest), designed by Gary Edward Handel with Bermello Ajamil, anchors the district. The Banco Espirito Santo Building/Conrad Miami Hotel, by KPF with SB Architects and Swanke Hayden Connell, has a western facade that acts as a billboard, its glass walls

inflected to create a parabolic arch symbolizing Miami's status as a gateway to Latin America. At the north end of Brickell, the mega-complex Icon Brickell/Viceroy Hotel represents the apotheosis of Miami's recent boom. Designed by Arquitectonica, it groups three deftly splayed towers, at least 50 stories each, over a landscaped skydeck perched almost 160 feet above the street. Whether the high-rise Brickell district, where abundant plazas, landscaping, and parking decks confront the pedestrian, can truly function as a neighborhood remains to be seen, but it seems to have achieved at least the critical mass necessary for a robust urban district.

Miami's urban core offers few opportunities to comprehensively plan and build new districts. But Midtown – a 56-acre development in Edgewater, replacing a rail yard – provided an interesting exception. The mixed-use project, principally planned by Zyscovich Architects, encompasses about 15 new urban blocks. Its plan incorporates the street grid of surrounding neighborhoods, and provides tree-lined avenues with broad sidewalks, as well as a new central park. Midtown's blocks are sized to permit garages to be mostly wrapped in habitable uses rising along the street facade.

A laboratory of infill architecture

In the neighborhoods behind the towers, however, an even more radical transformation is under way: Miami's founding idea, *creatio ex nihilo*, is being flipped upside down. Here, renovations and rebuilding are creating an increasingly complex mix of compound uses and competing meanings. Made rich by these sedimentary layers, the city is an emerging palimpsest. The phenomenon is most evident in the South Beach district of Miami Beach, where cyclical rhythms of development characteristic of 20th-century America have already formed a layered urban environment. Since the area (now the Miami Beach Architectural District) was placed on the National Register of Historic Places in 1979, an even more complex urban culture has evolved, combining new infill development, restoration, and adaptive-use projects.

In Miami Beach, the raw material for creative retrofits naturally involves resort hotels, whose role has always been paramount in this beachfront city, as commercial architecture but also as civic spaces and landmarks. The area's extraordinary and now-historic assemblage of small and medium-size lodgings provides the perfect raw material for an unfolding explosion of boutique hotel development. Most hotels are now renovated, some subtly and others more consequentially, creating an eclectic and vibrant scene. The Hotel Victor on Ocean Drive, a prominent Art Deco tower redeveloped and expanded with discrete new wings by Perkins & Will in 2003 demonstrates the additive principle

Amy Lau
Interior Designer



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In recent years, development in Miami has focused more on building density than on expanding sprawl. As a result, areas such as Miami Beach and downtown have seen large amounts of growth.



at work in many of these renovations. The nearly completed Soho Beach House on Collins Avenue, designed by my own firm, Shulman + Associates, combines a prewar Modern hotel with its contemporary alter ego, a slender glass tower wrapped in traylike balconies and metal brise-soleils. Boutique hotels have newly infiltrated the residential condominiums along Miami Beach's western flank. The Mondrian South Beach, with theatrical interiors on the theme of "Sleeping Beauty's Castle," was forged in 2009 by Marcel Wanders and Fullerton Diaz within the body of a 1960s-era trifoil apartment tower.

On Lincoln Road, where Lapidus transformed Miami Beach's most elegant shopping street into a pedestrian mall in 1960, the resulting civic-cultural-commercial blend has recently yielded some remarkable designs. At the road's west end, the 1111 building, a remarkable parking structure (or perhaps "sculpture") by Herzog & de Meuron (see page 134), teeters like a house of cards. By bracketing plentiful open space between concrete plates, the architects departed from Miami's established convention of stucco-planned volumes while referencing the more radical and tropicalizing practice of atmospheric transparency that thrived here in the 1950s and '60s. In front, the designers refigured the street space as an extension of the pedestrian mall; its urban savanna of tall canopy trees and intricate marble pavements by Raymond Jungles – whose eponymous environments are symbolic of native ecosystems more than touristic preconceptions – create yet another variant of civic space in Miami.

The transformation of Lincoln Road into a cultural attraction took off in the 1980s, when young institutions like ArtCenter South Florida, the Miami City Ballet, and the New World Symphony made productive use of its discarded movie theaters and commercial buildings. Today, these institutions have matured. The New World Symphony is completing sophisticated new quarters just behind Lincoln Road in a restrained structure by Gehry Partners. The symphony's quiet white structure seems designed to support the surrounding context: The east facade of the building is a virtual proscenium fronting Lincoln Park, a newly created 2.5-acre amenity currently being designed by the Dutch

firm West 8. Generous glass walls on two sides of the structure reveal a more animated interior landscape.

Urban planning visions often remain on the drawing board in Miami, but an ambitious plan to transform the Collins Park district of Miami Beach into an urban arts campus has been largely realized. The district centers on a revitalized Collins Park, once encumbered by a sprawling Modern library, and now reopened to the Atlantic Ocean along its original axis. At one end

of the park is the Bass Museum of Art, whose restored quarry-key-stone facades are complemented (discretely, on the back side) by the colorful, platonic volumes of Arata Isozaki and Associates' 2001 expansion. The new Miami Beach Regional Library by Robert A.M. Stern Associates and the Miami City Ballet by Arquitectonica, as well as a new W hotel by Nichols Brosch Sandoval and Costas Kondylis, line the north side of the park. The Modern classical portico and abstracted decorative courses of Stern's library contrast with Arquitectonica's freehand gestures, a repartee that highlights the creative dissonances in Miami's building traditions.

An equally notable urban intervention occurred farther up the beach on Allison Island where developer Craig Robins built Aqua, a residential community. Miami Beach has often served as an incubator of new housing types, and Aqua continues this tradition with Modernist town

houses and mid-rise towers that infill the former site of a hospital while stepping gently between the single-family homes and towers that bracket the island. The houses (by Walter Chatham, Duany Plater-Zyberk, Hariri and Hariri, and others) and towers (by Chatham, Allison Spear, and Alexander Gorlin) are tightly knit together by Duany Plater-Zyberk's master plan. With its compact villagelike plan and peripheral walkways adorned with civic art, the development stands as an innovative and more urban rework of the old private island community formula.

Across the bay in downtown Miami, new facilities are similarly redefining the urban core as a civic and cultural space. A new federal courthouse, by Arquitectonica with HOK, acts as the centerpiece of an evolving district that combines judicial buildings with the downtown campus of Miami-Dade College. Completing the axis of an already established pedestrian way (NE 4th Street), the shiplike courthouse sits in Maya Lin's undulating garden called *Flutter*. The rippling green landscape provides an interesting relief to the surrounding urban topography, while the courthouse above telegraphs a civic presence through its unconventional massing and the elaborate play of its glass window walls.

The bayfront is another frontier of civic transformation. Just north of downtown, Cooper, Robertson's plans to convert Bicentennial Park (once the Port of Miami) into Museum Park are already spurring development in neighboring Park West. The plans include a new Miami Art Museum (MAM) by Herzog & de Meuron and a Science Museum by Grimshaw Architects. The MAM building will package a series of discrete galleries underneath an umbrella roof of metal brise-soleils. Meanwhile, the Cisneros Foundation has established its Cifo collection in a warehouse renovated by Rene Gonzales and prominently fronted with a mosaic tile mural [RECORD, July 2007, page 77]. Not quite a trompe-l'oeil, the mural simulates an abstraction of a bamboo jungle, yet another reference to an ideal tropical landscape in this city of botanical opportunity.

In the Design District, public initiative and entrepreneurial development have produced a series of recent retrofits and additions exploring new types of space making, urban connectivity, and programming. (continued on page 212)

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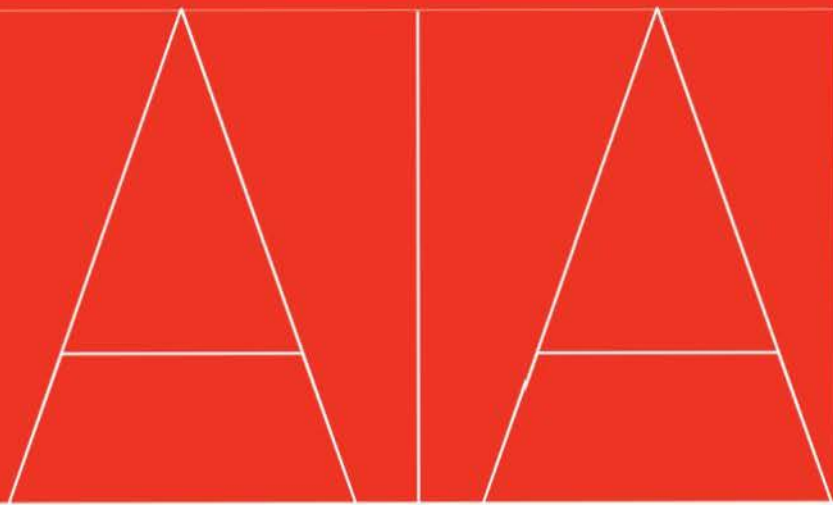
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Debbie Wieneke, Habitat for Humanity of Benton County

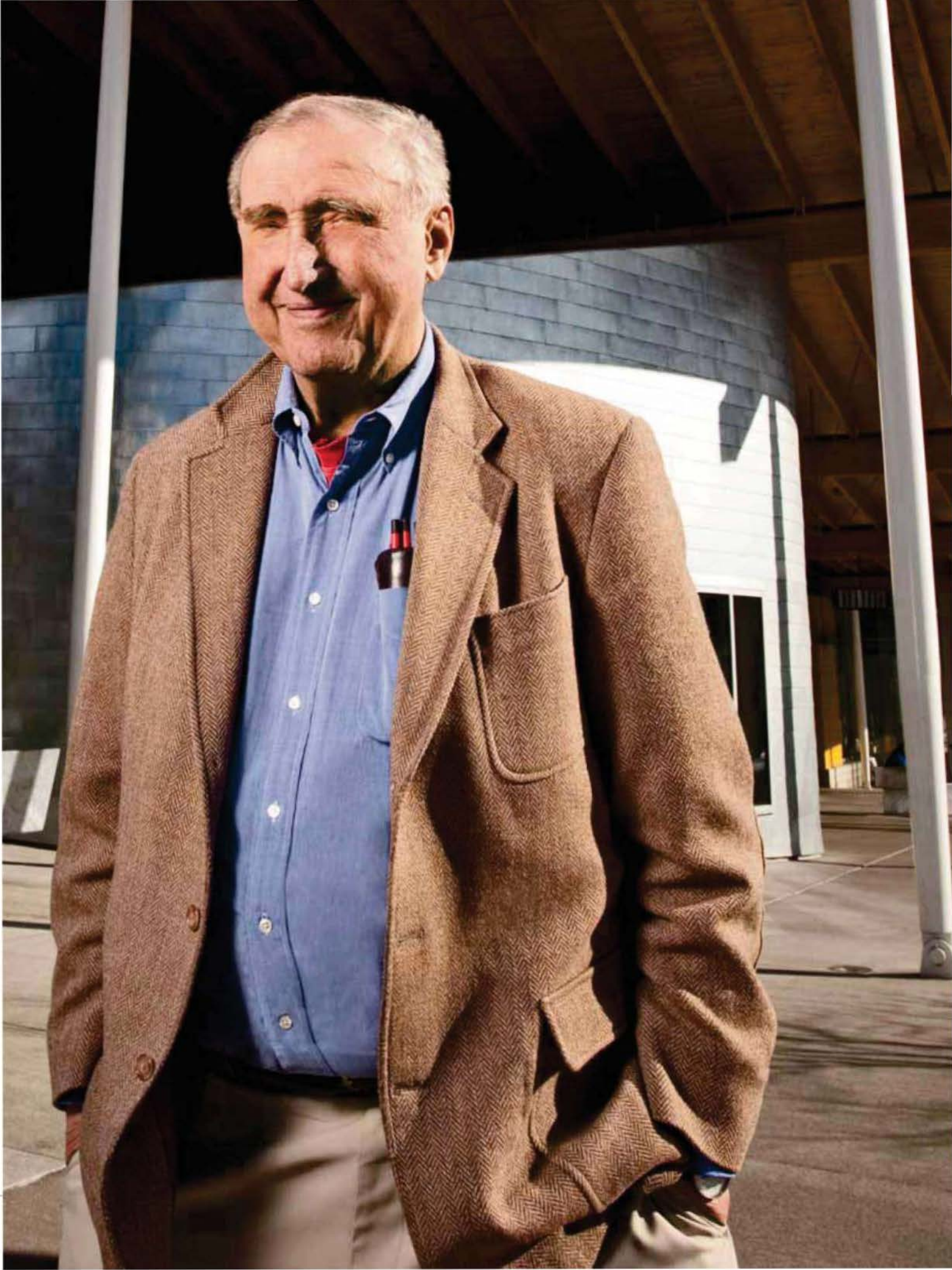
EACH YEAR, the AIA Honor Awards provide a rough outline of architectural culture in the U.S. Though not conceived as a larger statement, the projects invariably serve to sketch an American sensibility. Lacking the adventurous clients of Europe or the gargantuan budgets of the Middle East or China, American architecture often finds itself in limited situations that demand resourcefulness, often achieving unexpected results.

The AIA Gold Medalist, Peter Bohlin, FAIA, of the firm Bohlin Cywinski Jackson (1994 AIA Firm of the Year Award winner), represents a clear-eyed, humanist Modernism, with a rigorous approach to environmental sustainability. Bohlin's Gold Medal also returns the award to the U.S., after being given for the past two years to architects from abroad (Renzo Piano in 2008 and Glenn Murcutt in 2009). Pugh + Scarpa, this year's Firm of the Year Award winner, displays similar traits as Bohlin, albeit inflected with an occasionally irreverent, Californian sensibility. The award is an acknowledgment of work that consistently engages social problems and the public realm with a light and clever hand, and it joins a long list of prior accolades, not least the firm's 14 previous AIA Honor Awards. Pugh + Scarpa's Step Up on 5th was also among the 28 Honor Awards this year, selected from over 700 submissions.

Those projects exemplify a range of the best design work from around the country and around the world. A restoration in hurricane-ravaged Mississippi, a creative renovation of a concert hall in New York City, and an adaptive reuse of industrial dock buildings in Philadelphia, now a campus of offices, all reflect the continued need to reimagine and revitalize existing structures everywhere. Other projects – fashion boutiques and new restaurants, master plans and institutional buildings – provide a wide sampling of the accomplished work happening today. Each project displays a thoughtful, unique response, indicating that the best architectural solution is never the rule, but the notable exception. *Aleksandr Bierig*

GOLD MEDAL

2010 HONOR AWARDS



Peter Bohlin

Unlike recent Gold Medalists, Peter Bohlin is not a lone prodigy; his contribution is inseparable from the firm he founded 45 years ago. His work lacks grandiosity, favoring instead a light touch, a Modernism mellowed by emotion. From the start, his designs have flowed from the circumstances of each project and his attempts to be environmentally responsible. **BY ANDREA OPPENHEIMER DEAN**

PETER Q. BOHLIN, FAIA, DESCRIBES HIMSELF as a “soft Modernist,” explaining, “I favor a more humane and emotionally nuanced Modernism, but without sacrificing intellectual rigor.” James Timberlake, FAIA, told the AIA board of directors in support of Bohlin’s Gold Medal candidacy, “His is not the work of grandiose egotism, or of vanity, but an ethically intelligent architecture of constructive logic that springs from the nature of circumstance.”

Unlike other recent Gold Medalists – Murcutt, Piano, Barnes, Predock, Calatrava, Mockbee, Ando, Graves – often regarded as lone prodigies, Bohlin’s contribution is inextricably linked with that of his practice, Bohlin Cywinski Jackson (BCJ), winner of the 1994 AIA Firm Award. With offices in Wilkes-Barre, Pennsylvania; Philadelphia; Pittsburgh; San Francisco; and Seattle, the 175-person practice has won more than 420 design awards for projects ranging from private houses to urban libraries, commercial buildings, and civic centers. Bohlin, 72, is identified as design principal on more than half of the firm’s projects and tends, more than his four partners or the firm’s seven principals, to “be a nomad,” as he puts it, traveling from office to office, as needed. “But it’s not a dictatorship,” he insists. “We work in a collegial manner, by persuasion, enabling each other, driving each other, and getting better insights because of our interactions.”

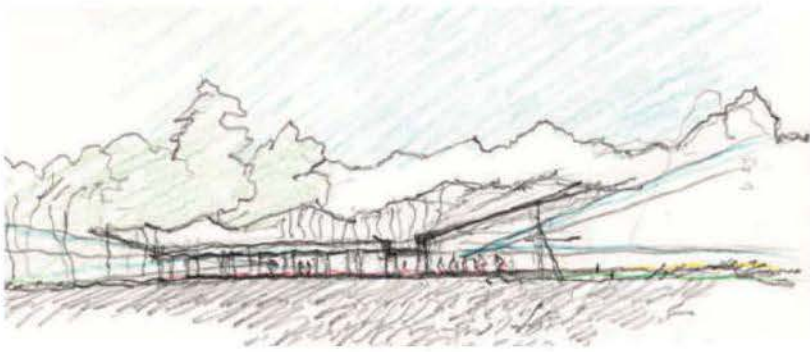
With each project, Bohlin says, BCJ seeks to “broaden the means,” convinced that hybrids, satisfying two or more requirements, trump one-note solutions; that designs benefit from addressing perceived impediments; and that working

at small and large scales at the same time is good for both types of buildings. For Bohlin, intuition is as important as intellect and, regardless of the commission, “the challenge is always the same,” he says, “to succeed in sensing what is unique and appropriate to each specific place, and understanding how people will live or work there. Then you have to realize those needs in a way that fascinates, inspires, and works.”

Bohlin’s search for a Modernism that “gets at the fundamentals,” as he says, began while he was a student at Rensselaer Polytechnic Institute, where he developed a Lou Kahn–like attitude toward materials. At Cranbrook, where he studied from 1959 to ‘61, Bohlin was deeply influenced by Eero Saarinen’s quest to amplify Modernism. In 1965, with a newly minted license and not yet 30, he launched his practice in Wilkes-Barre with Richard Powell, who served as managing partner. The firm would undergo several name changes before becoming BCJ in 1991.

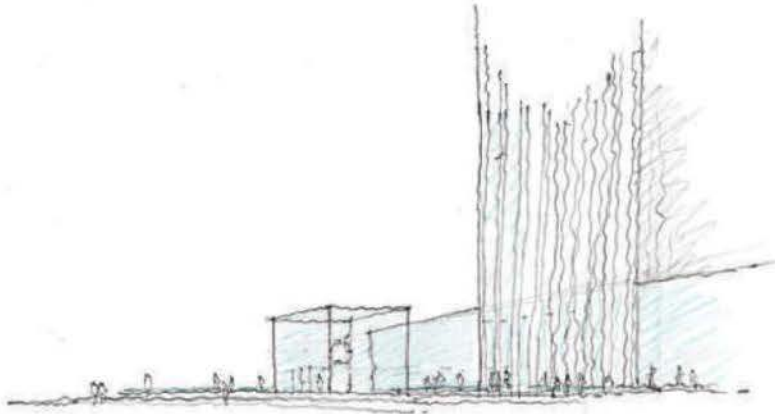
From the start, Bohlin viewed sustainable design as not only the right thing to do but also as an opportunity

PHOTOGRAPHY: © BRIAN SMALE



1. Bohlin's sketch for the Grand Teton Discovery and Visitor Center shows circulation and the roof opening to mountain views.

2. Bohlin's early conceptual drawing for Apple Fifth Avenue envisions the 32-foot glass cube that acts both as entrance and symbol for the store.



to make richer, more persuasive architecture. His 1976 Forest House for his parents, in West Cornwall, Connecticut – a narrow, green-stained wood structure that hovers on piers above the forest floor – exemplifies this. “If the house were removed, the site would be left completely intact, an extremely sensitive approach to its intrusion upon nature,” Timberlake pointed out to the AIA directors.

The Forest House exhibits other characteristics that would make later appearances in BCJ's mature work. There is the emphasis on “getting from here to there,” says Bohlin. Often meandering and marked by surprises, circulation is, for him and his team, as important as form in revealing the essence of a place. At Forest House, the approach twists toward a light-filled interior. There is an attempt to make an emotive place with simple means. And there is a convincing sense that the design is almost inevitable. “I was thinking of Joe DiMaggio and Ted Williams, who made it all look easy; that's a goal of ours,” Bohlin explains.

Bohlin expanded his sustainable-design bona fides at the Shelly Ridge Girl Scout Center (1982) in eastern Pennsylvania, where he worked closely with colleague Frank Grauman – now a partner. At a time when energy-efficient buildings tended to look strictly utilitarian, Bohlin tried to make Shelly Ridge fun. It is a simple timber-framed structure with brick infill that incorporates daylighting schemes and employs an uncharacteristically thin south-facing Trombe wall to collect and distribute solar heat.

In the late 1980s, a client asked Bohlin to design a house in upstate New York in the manner of the 19th-century great Adirondack camps. Instead of deeming the commission as

unworthy of a Modernist architect, Bohlin accepted the challenge and created the Adirondack Retreat using the great camps vocabulary of timbers and boulders to broaden his design lexicon. Later, in 1996, Bohlin completed the Ledge House in Maryland's Catoctin Mountains, where he abandoned rustic forms but employed boulders for the foundation and timbers for the superstructure.

Bohlin applied some of the same language to his Environmental Education Center (2005) in Dingmans Ferry, Pennsylvania (a 2008 AIA Top Ten Green Project and a 2009 Green Good Design winner), and the Grand Teton Discovery and Visitor Center (2007) in Wyoming. Both projects are precisely sited wood-and-stone structures that “articulate the true nature of materials,” writes Tom Kundig, FAIA, in *Bohlin Cywinski Jackson: The Nature of Circumstance* (Rizzoli 2010). The centers are “of nature – not in it, above it, or instead of it,” Timberlake told the AIA trustees.

In the late 1990s, just as Bohlin and his partners were becoming concerned about being typecast as “very good wood-and-stone architects,” BCJ won two public commissions in Seattle. The firm had opened an office in the city in 1997 when working, in a joint venture with Cutler Anderson Architects, on Bill and Melinda Gates's 65,000-square-foot compound in Bellevue, Washington. At Seattle's City Hall (2003) and the Ballard Library and Neighborhood Service Center (2005), Bohlin and his team concerned themselves with “how people discover and move through a building, how places are revealed, how people interact and touch things, and with a Modernism that carries more emotion,” Bohlin says. Transparent walls at City Hall, a LEED Gold building, allude to the concept of government openness and transform the lobby into an indoor town square. “Seattle has never seen such a grand and elegant expression of civic life in a built form,” wrote Mark Hinshaw in *Landscape Architecture* magazine. With the Ballard Library (another 2009 Green Good Design winner), which expresses the nautical history of its neighborhood, the architects stepped the building back from the street and extended a broad roof over the sidewalk, creating a front porch where people can gather.

Bohlin and BCJ evaded typecasting yet again with their five retail outlets for Apple Inc. Manhattan's Apple Fifth Avenue store (2006) is a mesmerizing precision-edged glass cube free of structural steel that marries technology and art, much as Apple Inc. does with its product lines. From the glazed entrance pavilion, which fronts the visually pedestrian General Motors building, a glass stair that spirals around a transparent elevator tube lures customers down to an open sales floor. The project poignantly demonstrates how Bohlin searches for the “inevitable solution that coordinates and magnifies all the conflicting voices of program, place, materials, and poetry,” in the words of James Cutler, FAIA.

Bohlin and his partners have been preparing for the future of their practice by, among other things, appointing three new principals over the past three years. “I don't want to dominate or impose my will,” Bohlin says. “I don't have a vision for the future. It's up to [our successors]. Setting a good example and searching is a good idea, and I want to make sure we're open-minded, brilliant, and see the nuance in things.” ■



Forest House

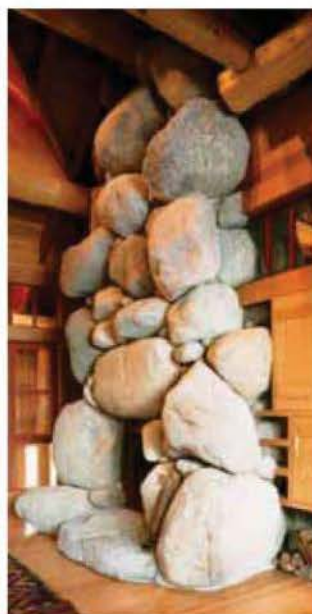
1976 | WEST CORNWALL, CONNECTICUT

BOHLIN DESIGNED THIS NARROW, green-stained wood house as a retreat for his parents. At the junction of a dark evergreen forest and a deciduous woodland, the building springs from a log-loading platform and floats over the forest floor. Carving around an existing boulder, explains Bohlin, the house demonstrates the value of accommodation and of “doing this and that rather than just one thing.” The architect says the house is “all about moving from dark to light” and points to its circulation, which originates on the shaded edge and ends in a tall, illuminated space. Bohlin’s light touch continues inside, where pale gray walls contrast with red-painted mullions that frame leafy views.

Shelly Ridge Girl Scout Center

1982 | MIQUON, PENNSYLVANIA

DESIGNED AND BUILT under a federal nonresidential passive-solar demonstration program, the Girl Scout Center derives about half its heating, lighting, and hot water from solar energy. The deceptively simple design features a south-facing solar wall, an unusually thin Trombe wall supported by timber framing and brick infill. The Trombe wall facilitates quick warming on chilly mornings and distributes heat during afternoon and early evening hours when the building is in use. A concrete floor and semicircular brick wall also capture solar heat. Bohlin says that most passive-solar buildings of the time were visual one-liners. “We wanted to make this a place children could learn from – and one that was fun.”



Adirondack Retreat

1992 | UPSTATE NEW YORK

THE CLIENT ASKED for a vacation home in the tradition of the great Adirondack camps, a request that Bohlin saw as an opportunity to enrich his Modern design vocabulary. The building steps down a steep slope at the edge of a mountain lake, adopting the design idiom of the Alpine tradition and melding man-made and natural elements. The slightly angled main entrance on the upper level inclines toward the visitor and is topped by a gable of stout logs. The entry leads through thick cedar columns to a massive granite fireplace, which rises through the structure and dominates the central living spaces, which are illuminated by high clerestories.



Ledge House

1996 | CATOCTIN MOUNTAINS, MARYLAND

SITED ON A MOUNTAINSIDE CLEARING with stone ledges, Ledge House overlooks a valley. It employs the Adirondack Retreat's material palette but represents a conceptual shift. The architects used boulders for the foundation and fireplace and logs for the entry vestibule and superstructure, and arranged timber-and-stone shed-roof pavilions in a horseshoe pattern wrapping a rock-lined entry court. The log entrance facade has a number of openings for viewing out, recalling the "gun-port" windows of the Civil War log forts that once dotted Maryland's mountainsides. Inside, timber columns and beams, industrial metal strapping, and exposed wood joists reinforce the fortlike quality.

Seattle City Hall

2003 | SEATTLE

AIMING FOR LEED SILVER, BCJ earned Gold for its Seattle City Hall. The firm's strategies included a range of shading schemes, light shelves to distribute daylight inside, and a green roof. The city posited three requirements: City Hall had to be open and welcoming, environmentally respectful, and last 100 years. Outer walls of glass carry daylight into interiors and express the ideal of open government, while the lobby serves as a town square. The building, which glows at night, has become a civic focus for the downtown area.



Ballard Library and Neighborhood Service Center

2005 | SEATTLE

LOCAL RESIDENTS PUSHED an aggressive environmental agenda and participated in selecting BCJ for this neighborhood center. In appearance, the library is at once Modern and respectful of the Ballard community's maritime tradition. A dramatically sweeping roof supported by laminated wood beams extends beyond the exterior walls, defining the building. Both inside and out, white steel columns, tapered at each end, resemble ships' masts.



Grand Teton Discovery and Visitor Center

2007 | MOOSE, WYOMING

THE ARCHITECTS SUCCESSFULLY LOBBIED to separate the building and parking lot for this project, arguing that people need a short walk to decompress from the stresses of the road. BCJ designed the center to enhance, rather than compete with, the mountain views. As visitors follow a winding path from the lot, however, the Tetons temporarily disappear behind an undulating roofline that echoes the natural topography beyond. A courtyard formed by the building's arms funnels visitors to a low entry that opens to the primary interior space with a soaring ceiling and a nearly 30-foot-high glass curtain wall facing the breathtaking views.



Environmental Education Center

2005 | DINGMANS FERRY, PENNSYLVANIA

BCJ DESIGNED THE ENVIRONMENTAL EDUCATION CENTER to reflect the commitment to environmental stewardship of its sponsors, the Pocono Environmental Education Center and the National Park Service. The building, which is used for meetings, lectures, and educational purposes, distills BCJ's approach to nature-center design. It employs basic shed massing, a broad overhanging roof, a shingled facade made of recycled tires, natural

materials, passive solar heating, natural ventilation, and daylighting strategies. The design is layered: Before entering an opening in the dark north wall, visitors traverse a forest, cross a wetland, and pass through service spaces. The entry leads into a bright, daylit central room, which is warmed by the sun, cooled by prevailing breezes, and open to views of the forest to the south.

Apple Stores

2003-7 | NEW YORK CITY

APPLE HAS COMMISSIONED BCJ to design several stores, among them the flagship Apple Fifth Avenue (right) and Apple Upper West Side (below). Apple Fifth Avenue, the company's busiest store, is a precision-engineered transparent cube. Mullion-free glass walls rise 32 feet to meet an all-glass roof with an almost invisible joint. The roof, of fritted insulating-glass panels on thin metal purlins, seamlessly incorporates lighting, sprinklers, and security systems. A spiral glass staircase effectively draws shoppers from the cube down to the store. Blonde maple floors, blocky wood display tables, and modular ceilings create a recognizable image for the brand. For their latest store on the Upper West Side, the architects carried over some of the same language, creating a grand, glassed-in main floor with a glass spiral staircase leading to more products below ground.





Lightbox

2011 | POINT ROBERTS, WASHINGTON

THIS HOUSE AND STUDIO for an architectural photographer sits on a densely forested spit of land extending south of the Canadian border and west of Washington's coastline. To reduce the 1,200-foot structure's footprint and its impact on the landscape, BCJ arranged it on three levels and raised it on piers. The architects are also using prefabricated building elements to prevent the damage caused by on-site construction. To build in the most economical fashion, they are spacing stock dimensional lumber 5 feet on center, accommodating 5-by-8-foot window modules. The cladding combines solid fiber cement, translucent polycarbonate, and clear glass in ways that maximize lighting schemes.



Newport Beach Civic Center

2012 | NEWPORT BEACH, CALIFORNIA

BCJ PARTNERED with Arup and Peter Walker and Partners in this competition-winning design for a building and landscape symbolizing the community of Newport Beach. The project consists of a new City Hall and a parking

structure screened by a plant-covered wall, an expanded library, and a public park. To create the new park, the team restructured the narrow 17-acre site, restoring wetlands. City Hall's overhanging roof, patterned like ocean swells, screens north-facing clerestories that will bring diffused daylight into each two-level bay. The council chamber will "fly" a shimmering fabric

"sail," created by a scrim of Teflon-coated mesh over a steel frame. The designers situated the chamber and interior public space near City Hall's main entry. Light-filled, flexible work areas will be built from a standard kit of parts, and cantilevered decks along the east facade, overlooking the community and its shoreline, will provide additional outdoor meeting space.

Peace Arch

2010 | BLAINE, WASHINGTON

THE REDEVELOPMENT of this busy West Coast port features a long, narrow border-crossing structure paralleling the U.S.-Canadian boundary and an existing treeline. To create a design that represents democ-

racy but is secure, BCJ has unobtrusively integrated security measures into the design. The 37-by-784-foot, two-story building floats on piers over the landscape, and slotted openings, admitting vehicular and pedestrian

traffic, visually connect the two countries. Inside, a light-filled lobby leads to a court and to a park whose focus is the Peace Arch Monument. The compound, a GSA Design Excellence project, will qualify for LEED Gold.





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DITZINGEN, GERMANY | BARKOW LEIBINGER

JUST OUTSIDE STUTTGART, Germany, this pavilion provides café and event space for workers at the campus of Trumpf, an international power tools, laser fabrication, and metal manufacturing concern. The space has seating for 700 employees, so that the 2,000 workers eat lunch in three shifts. The glass-enclosed building is shaded by a cantilevered, complex roof structure, developed with engineer Werner Sobek. The span is divided into nine large, triangular fields traced by a steel frame. The larger frame is filled with a cellular pattern of custom wooden glulam construction, enabled by the “mass customization” of CNC-routing and other digital fabrication techniques. Each of the cells was designed as an acoustic panel, skylight, or artificial light, according to performance requirements.



Beauvoir

BILOXI, MISSISSIPPI | ALBERT & ASSOCIATES

BUILT ORIGINALLY IN 1852, this genteel mansion in Mississippi was home to a series of owners, including the onetime president of the Confederate States, Jefferson Davis. After his death, the Sons of Confederate Veterans took ownership of the house, which the organization holds until this day. Named a National Historic Landmark in 1973, the building underwent a series of renovations and restorations over the years leading up to Hurricane Katrina, which practically destroyed the house. In 2005, using both donations and funds from FEMA, Albert & Associates set about returning Beauvoir to its past glory. After an extended exploration and research, a number of buried details from the house's past were uncovered, such as the expert faux grain finish on doors, and the trompe l'oeil paintings on many of the ceilings. Other improvements, including a stronger structural base and HVAC and electrical work with minimal visual effects, bring the structure up to date.





Camino Nuevo High School

LOS ANGELES | DALY GENIK

LOS ANGELES'S SILVER LAKE neighborhood is the location for this innovative charter high school for 500 students. Challenged with a site between the Hollywood Freeway and a network of dense urban streets, the design for this 30,000-square-foot structure split the program into two pieces. They meet at the narrow end of the site, creating a zone of outdoor communal space in the middle. Classrooms are set along a single-loaded corridor, providing ample light from both sides and direct visual access to the central court. A colorful facade of corrugated metal protects the building from the freeway. The wall provides acoustic dampening and gives a strong visual presence to the institution in its sometimes chaotic surroundings.

[RECORD, July 2007, page 130]





Alice Tully Hall

NEW YORK CITY | DILLER SCOFIDIO + RENFRO AND FXFOWLE

IN A RADICAL RETHINKING of Pietro Belluschi's 1969 Brutalist home for the Juilliard School and Alice Tully Hall, the New York City-based team of Diller Scofidio + Renfro and FXFowle stripped the previously forbidding concrete box, designing a new glass facade and entrance by reconfiguring the east end, before renovating the building's main concert hall. The new building features a luminous glass lobby with a large café and box office, with views out toward Broadway; it also allows views from the street into dance rehearsal spaces above. Its centerpiece, Alice Tully Hall, was stripped and reclad in a thin veneer of moabi wood, giving the interior both visual and acoustic richness. The project is one part of a larger, ongoing renovation of the Lincoln Center arts complex.

[RECORD, June 2009, page 62]



TKTS Booth and Father Duffy Square

NEW YORK CITY | PERKINS EASTMAN,
CHOI ROIPIHA, AND PKSB ARCHITECTS

TIMES SQUARE IN NEW YORK CITY is not known for its thoughtful architecture. Yet, this modest project at its center provides a useful and clever urban intervention among the exuberant chaos that surrounds it. In a 2001 competition promoted by the Theatre Development Fund and sponsored by the Van Alen Institute for a new discount-ticket box office, Australian firm Choi Ropiha proposed building a grandstand from which one could take in the human spectacle around. As subsequently realized by Perkins Eastman and PKSB, the TKTS Booth was transformed into a vital public space when its roof was turned into a set of luminous glass stairs. Structural engineers Dewhurst McFarlane and Partners developed it into an innovative structure, the largest load-bearing glass building in the world. The final result is a crystalline, wedge-shaped volume that stands out like an oasis amid the surrounding bustle.

[RECORD, January 2009, page 42]



Step Up on 5th

SANTA MONICA, CALIFORNIA |
PUGH + SCARPA

IN DOWNTOWN SANTA MONICA, this new building provides support and rehabilitation services for the local homeless and mentally disabled population, as well as 46 affordable residential studio units. Ground-floor retail and below-grade parking complete the mixed-use structure. Pugh + Scarpa, the 2010 AIA Firm of the Year, based in Santa Monica, focused on making the inexpensive building energy efficient, employing both passive, low-tech strategies – sunlight orientation, natural ventilation, and strategic use of screens – as well as more integral elements, such as low-flow plumbing appliances and sustainable building materials. In all, the building exceeds California's stringent Title 24 energy measures by 30 percent.





Urban Outfitters Corporate Campus

PHILADELPHIA | MEYER, SCHERER & ROCKCASTLE

URBAN OUTFITTERS, known for its stores full of eclectic bric-a-brac and hipster clothing, followed the company's ethos in selecting a set of five abandoned buildings in the decommissioned Philadelphia Navy Yard for their corporate headquarters. The transformation of the structures into viable office space – 285,000 square feet for about 600 employees – maintained the buildings' rough details of weathered brick, spotty paint cover, and occasionally rusty steel beams. The impressive scale of the former industrial buildings provides employees with ample light, flexible office plans, and communal space.

[RECORD, November 2009, page 70]



Macallen Building

BOSTON | OFFICE dA AND BURT HILL

CONSERVATIVE SOUTH BOSTON was an unexpected site for the first LEED Gold residential building in New England. But enterprising developer Tim Pappas, along with Boston-based Office dA and Burt Hill Architects, decided to write their own rules for this distinctively shaped tower: Due to different zoning envelopes at either end, the building slopes from 11 stories at one end down to just six stories at the other. The architects, along with landscape architect Landworks Studio, treated the roof as an active surface, designing a series of private apartment terraces, along with a larger communal terrace off the building's north facade. And, due to assiduous environmental planning, the 144-unit building consumes 30 percent less energy and 600,000 fewer gallons of water per year than a comparably sized conventional building.



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Austin E. Knowlton School of Architecture

COLUMBUS, OHIO | MACK SCOGIN
MERRILL ELAM ARCHITECTS

ON THE WESTERN EDGE of campus at Ohio State University, this 176,000-square-foot structure sits near the football stadium, business school, and laboratory buildings. The long, sectionally complex building attempts to engage its surroundings by “enclosing, defining, and confronting the spaces and existing buildings of this larger site,” according to the architects. The interior of the building is organized around a vertical circulation path, leading toward a glazed volume holding the school’s 30,000-volume library. Along the way, students pass by faculty offices and have views back down to their studios.

[RECORD, May 2005, page 202]



Outpost

CENTRAL IDAHO | OLSON KUNDIG ARCHITECTS

DESIGNED FOR AN ARTIST AND DESIGNER, this house in rural Idaho uses rectilinear forms and simple materials to create an elegant, spare composition. Worked on haltingly over a protracted, 10-year development period as the owner negotiated with zoning boards, both at her previous home and the new one, the design was pared down further and further until only essential elements remained. Built to withstand the

extreme changes in temperature in this harsh region, the house’s steel frame, concrete-block exterior, and interior exposed wooden joists all portray the design’s toughness and show the means of construction in their roughest form. Eleven-foot-high walls extend out from the house to create a long garden, where the client has planted rosebushes, grapevines, and fruit trees.



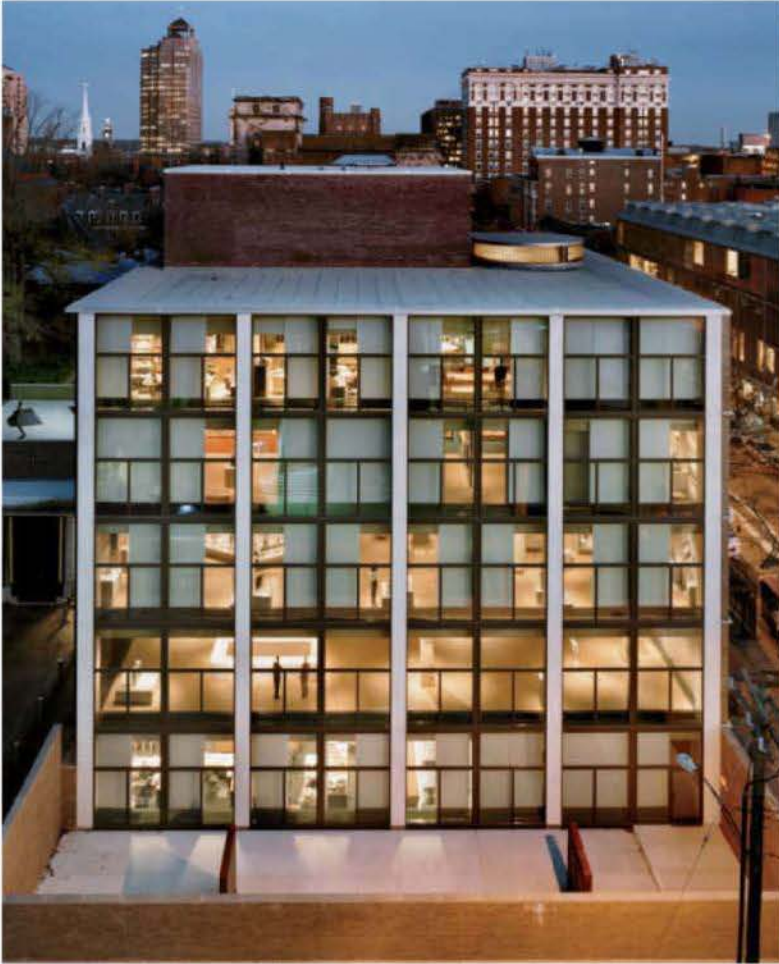
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Yale University Art Gallery

NEW HAVEN | POLSHEK PARTNERSHIP

COMPLETED IN 1953, the Yale University Art Gallery was Louis Kahn's first major public commission. Although it received the 1979 AIA 25 Year Award, it has undergone alterations and reorganizations throughout its life. Partition walls had revised Kahn's open plan, the exterior sculpture court was roofed over to create additional gallery space, and several of the building's technical innovations – particularly its two glass-curtain-wall facades – began to fail. With its recent renovation, Polshek Partnership has brought the museum's technical standards up to date, while reasserting Kahn's vision.

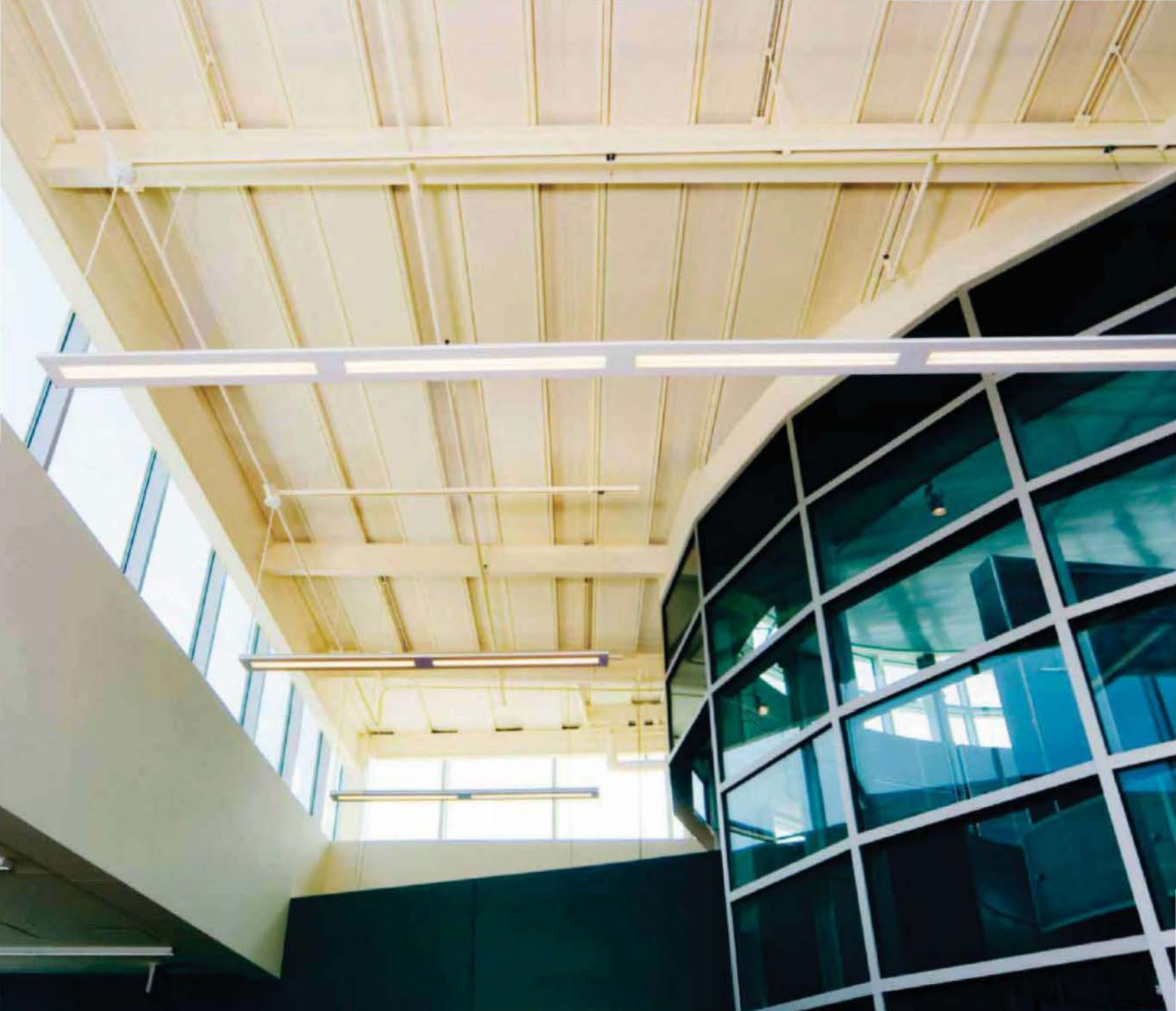
[RECORD, June 2007, page 144]

Serta Center

HOFFMAN ESTATES,
ILLINOIS | EPSTEIN/
METTER STUDIO

SET ON A LARGE, 20-ACRE parcel on the edge of wetlands, this new office and research building attempts to sit lightly on the landscape. Along those lines, the plan incorporated natural prairie landscaping, drainage bioswales, and pervious paving. The 90,000-square-foot steel-and-glass building is set in two parts, an office wing and a research and development wing, joined in the middle by the communal lunchroom, showrooms, and an auditorium. Throughout the structure, spaces are designed around daylighting and natural ventilation, emphasizing the building's connection to the surrounding environment.





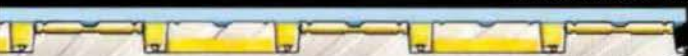
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Brochstein Pavilion

HOUSTON | THOMAS PHIFER
AND PARTNERS

THIS 6,000-SQUARE-FOOT square pavilion on the campus of Rice University is essentially a single room that holds a café. But, as noted in *RECORD* [March 2009], its architecture goes beyond its modest intentions, following “a Classical model without resorting to historicist pastiche. It is a temple, albeit one that evokes a Texan, or Southern, vernacular.” The building features a canopy of white louvers that create an expansive porch around the structure. The interior is a classic Modernist open plan, with the coffee kiosk in the middle, and a lounge placed behind the building’s service core. Rice University president David Leebron describes the pavilion as “a place to exchange ideas and be inspired by your surroundings.”

[*RECORD*, March 2009, page 84]

Skirkanich Hall

PHILADELPHIA | TOD WILLIAMS
BILLIE TSIEN ARCHITECTS

AT THE UNIVERSITY OF PENNSYLVANIA, Tod Williams Billie Tsien Architects has created an elegant new home for the school’s bioengineering department. The facility provides 58,425 square feet (with another 12,000 square feet of renovated space in adjacent buildings) for the department’s 380 undergraduate and 180 graduate students. Thirteen labs within the new building – each designated “wet,” or using physical experimentation – defined the program. The architects’ characteristic material experimentation and sectional variation are present in the building’s entry court and central circulation core, providing a series of cascading levels and gardens that spiral around and outside the ground-floor entry.

[*RECORD*, December 2007, page 128]



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Craftsteak

NEW YORK CITY | BENTEL & BENTEL ARCHITECTS

NEXT TO NEW YORK'S High Line, a space for restaurateur and celebrity chef Tom Colicchio (host of the TV cooking competition *Top Chef*) translates the client's penchant for straightforward ingredients into architectural form. The two-floor, 8,000-square-foot layout holds 225 seats, a 2,000-bottle wine storage, and a 3,000-square-foot kitchen, all within an existing hundred-year-old bakery building. Employing a spare but warm material palette – a glass-and-steel enclosure for the wine cellar, leather banquettes, and walnut tables – all surfaces are unfinished, with the intent that the materials will begin to gracefully show their use. In early 2010, the space was reused to hold Colicchio's new venture, Colicchio & Sons.





PHOTOGRAPHY: © EDWARD HUEBER/ARCHPHOTO (OPPOSITE); PAUL WARCHOL (THIS PAGE)



Vera Wang Boutique

NEW YORK CITY | GABELLINI SHEPPARD ASSOCIATES

NEW YORK'S SOHO neighborhood has no shortage of fashionable boutiques, but even in this rarefied community, a new, 2,000-square-foot storefront for the eminent fashion designer Vera Wang sets itself apart with its extreme refinement. Gabellini Sheppard's design was conceived in three parts: a street-front entrance; a main collection space; and a smaller, more

intimate display area with changing rooms. Materials throughout are either painted white or fitted with translucent acrylic, and various display panels and configurations can be rearranged or completely removed for events. Hidden LEDs allow employees to modulate lighting according to mood and function, providing a series of ambient effects for this flexible space.



Exeter Schools Multipurpose Space

EXETER, MISSOURI | DAKE WELLS ARCHITECTURE

A SMALL SCHOOL in a Missouri town came to the Springfield, Missouri-based Dake Wells with a proposition. The school needed a practice gym, auditorium, and cafeteria and had about \$2 million to spend. The architects quickly set upon convincing the clients that all three could be served in a single space. Important to the project was the mitigation of normally terrible gymnasium acoustics. Dake Wells designed a wood “wrapper” that focuses and absorbs sound – reverberation time is about 0.9 seconds, or about the same as a small theater. Strategically placed skylights and clerestory windows incised in the wooden wrapper allow the room to be lighted naturally, while avoiding problems of glare.



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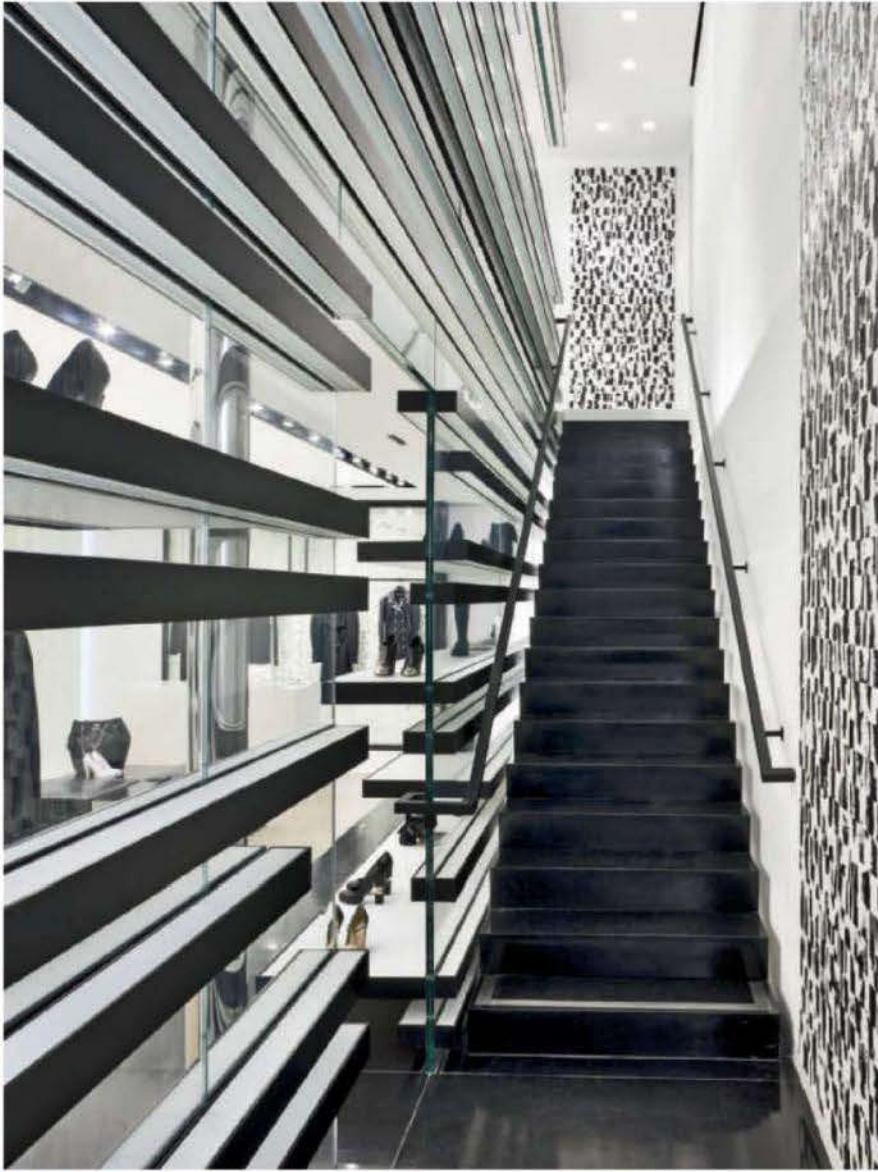
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Chanel Robertson Boulevard

LOS ANGELES | PETER MARINO
ARCHITECT

THE SPARE AESTHETIC of an art gallery was the inspiration for this store on Los Angeles's fashionable Robertson Boulevard. After stripping an existing structure to its basic frame, Peter Marino, FAIA, reoriented the building around a series of three zones, each separated by a short flight of stairs. The first, extending from the dramatic street entrance, is a striking 16-foot-high space with polished black-and-white surfaces. A set of stairs brings shoppers up to a transitional zone adjacent to the structure's courtyard, which has four preserved fern pine trees that filter light softly into the building. Finally, the top level is a lower, more intimate space, where products are displayed on white glass shelves.





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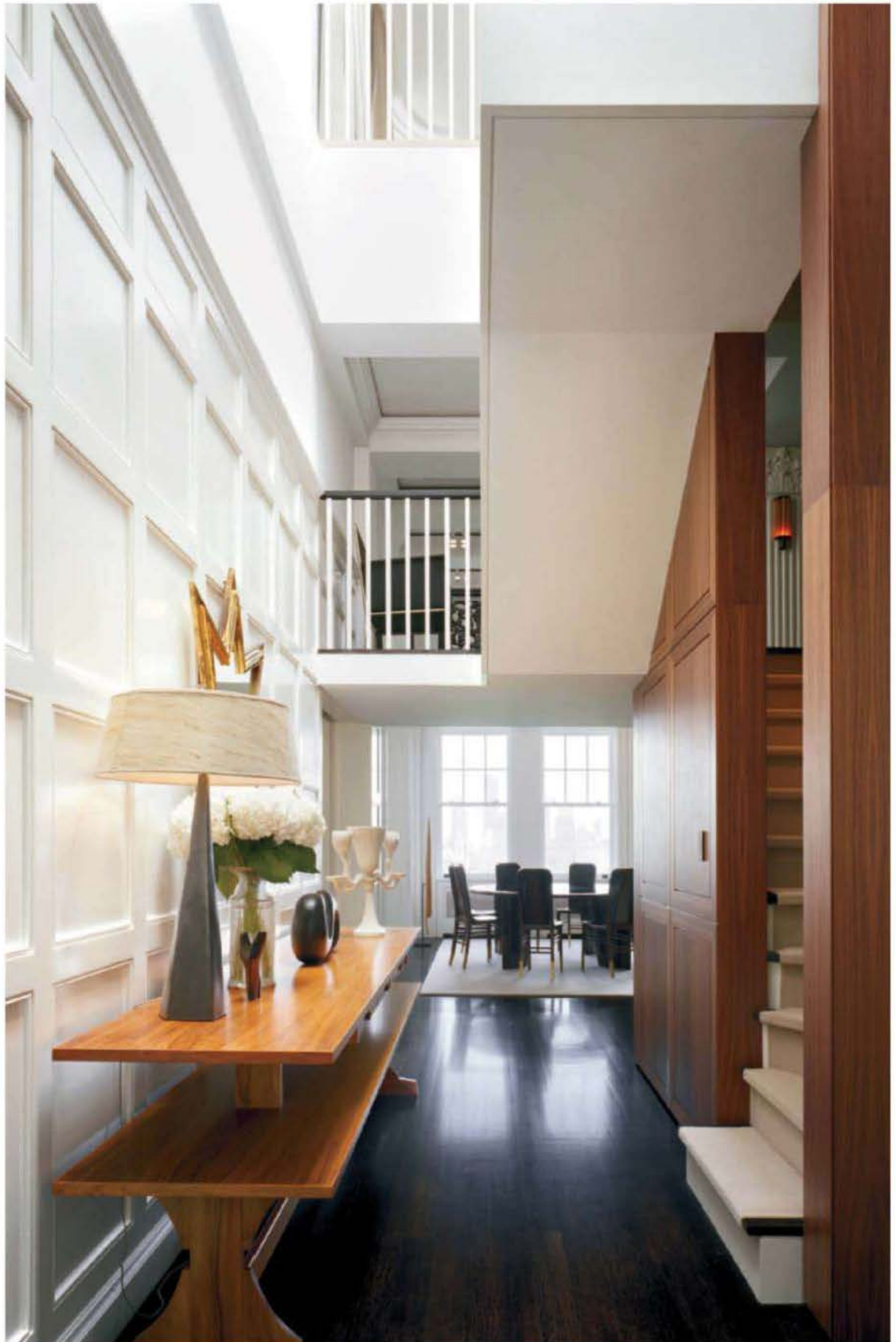


Central Park West Residence

NEW YORK CITY | SHELTON, MINDEL & ASSOCIATES

A PHILANTHROPIST

in New York City approached the architects with the enviable canvas of two penthouses atop a circa-1920 Beaux-Arts building facing Central Park. Coming from different owners, the two units were furnished and ornamented in very different fashion, requiring the architects to create a unified vision for the large, 8,000-square-foot combined unit while keeping elements of its historic character. Their three-level solution deftly separates the “public” and “private” functions of the penthouse, which also houses a think tank for the philanthropist’s operations. Two entry rotundas at either end of the space reorganize the entry sequence, with a main vertical circulation axis that moves in and out of a three-story walnut enclosure. Historic details throughout were restored when appropriate, giving the apartment a mixture of new and old elements.



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OMAHA | RANDY BROWN ARCHITECTS

OMAHA-BASED DATA, a leading provider of mailing list and marketing data, came to Randy Brown Architects, also based in Omaha, with a blank slate of 5,000 square feet of bare office space and a limited budget. The designers decided to focus their efforts on a few distinctive elements to represent the company's work and organize the space. A glass conference room is etched with numbers representing the company's stock-in-trade, while galvanized-metal shed panels refer to the Midwestern roots of the operation. A sculptural, folded, cut-and-bent ceiling and wall surface, painted bright green, brings energy to the composition. The design lends a distinctive quality to the work environment, and all for the incredibly low budget of about \$28 per square foot.



Cathedral of Christ the Light

OAKLAND | SOM

FOLLOWING A NUMBER of accolades (including a 2009 AIA Honor Award for Architecture), this Catholic cathedral is honored for its interior design, which includes a 1,350-seat sanctuary, side chapels (right), a mausoleum, and health and legal clinics. Most spectacular is the cathedral's Omega window, which stands behind the church altar, using a surface of perforated aluminum screens to re-create a 12th-century image of Jesus from Chartres Cathedral in France. SOM's design extends to much smaller details, such as wall scrims made from Douglas fir, and the custom doors to the sanctuary, featuring a serpentine, spiraling door pull based on the Fibonacci sequence.

[RECORD, January 2009, page 86]



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Greenwich South Strategic Framework

NEW YORK CITY | ARCHITECTURE RESEARCH OFFICE

AFTER THE ALLIANCE FOR DOWNTOWN NEW YORK approached Manhattan-based Architecture Research Office (ARO) to propose a plan for the Greenwich South district – a 41-acre parcel of land at Manhattan's southwest edge – the firm decided that instead of a conventional master plan, it would create a “strategic framework”: “an adaptable matrix of principles, objectives, and opportunities for the neighborhood and the city.” ARO also collaborated with other New York firms (including Work AC; see rendering below) to give a diversity and breadth of approach to the project. The team settled on five principles that will guide the future growth of the district, among them “Encourage an Intense Mix of Uses,” “Build for Density, Design for People,” and the creation of “Reasons to Come, Reasons to Stay.”



Ryerson University

TORONTO | KUWABARA PAYNE MCKENNA
BLUMBERG ARCHITECTS

DOWNTOWN TORONTO'S Ryerson University turned to Toronto-based Kuwabara Payne McKenna Blumberg Architects (KPMB) to develop a plan for its 20-acre campus. Having expanded rapidly in recent years, the university took this opportunity to reevaluate its place within a vibrant and changing city fabric. KPMB arrived at three broad goals for Ryerson's further growth: increasing density, improving pedestrian access, and promoting good design. The plan doesn't dictate how future development will take place, but rather attempts to create guidelines for growth. When opportunities to expand arise, the plan provides a framework that emphasizes the university's commitment to sustainable building and public green space.



IMAGES: © COURTESY ARCHITECTURE RESEARCH OFFICE (TOP LEFT);
WORK AC (TOP RIGHT); KPMB ARCHITECTS (BOTTOM RIGHT)



Beth Carroll
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Savannah East Riverfront Extension

SAVANNAH | SOTTILE & SOTTILE

A SWATH OF FORMERLY INDUSTRIAL land provided the canvas for this study into the extension of a historic urban fabric. Sottile & Sottile developed its plan over five years, working with the city, community members, property owners, and development interests. The final plan clearly delineates public functions while allowing some room for interpretation from private interests. Additionally, a series of public streets, squares, and parks are placed to engender civic character and cohesive community attributes. Several aspects of the proposed plan are currently under construction, including infrastructural additions, green space, and an extension of the city's river walk.



MacArthur Park District

LITTLE ROCK | CONWAY+SCHULTE ARCHITECTS

A SMALL PARK is the subject for a thoughtful reconsideration of a neighborhood's public and infrastructural assets. The architects' research revealed that the park once held as many as 75 residential structures along its edge, a testament to the community-making potential of public green space. After the 1960s, however, major highway construction had cut off the park from its surroundings, transforming it into a derelict, mostly abandoned place. Conway+Schulte has proposed a series of infrastructural and planning interventions, aimed at invigorating the area with denser residential stock and mixed-use program. Additionally, the plan sees MacArthur Park not as an island, but as an anchor of a network of parks that connect surrounding neighborhoods.





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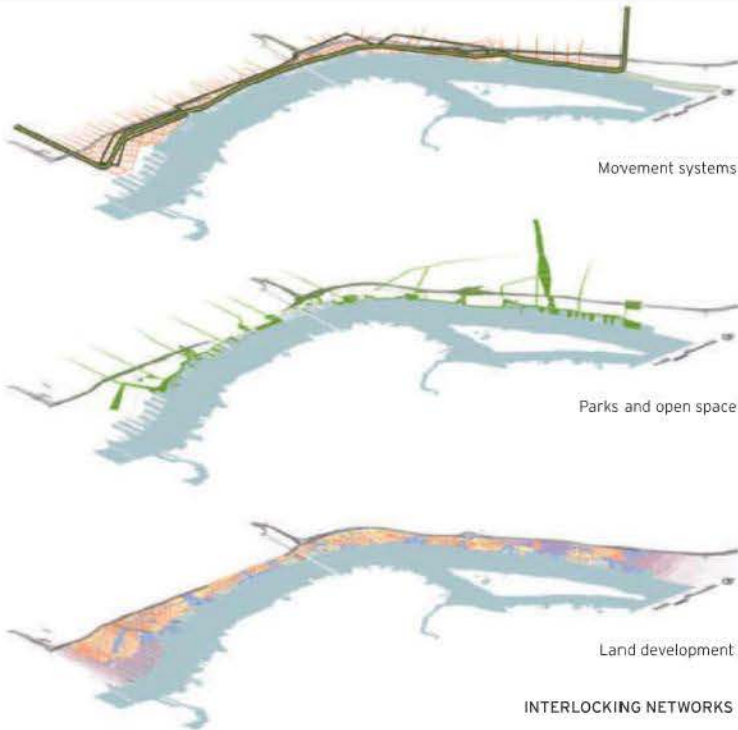
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A Civic Vision for the Central Delaware River

PHILADELPHIA | WALLACE ROBERTS & TODD

TWO PREVALENT PROBLEM SITES are addressed by a plan for Philadelphia's riverfront: a formerly industrial parcel, and land severed from the city by 1960s interstate construction. The jury lauded Wallace Roberts & Todd's project not only on its own merits, but for the possibility that this solution could be applied in other cities, noting that the plan is "just one example that addresses an urban problem found nationwide." The proposal attempts to create a "new model for sustainable growth rooted in the historic pattern of the settlement," via extending a framework of streets and public transit. In addition, it proposes a network of parks and open green space, as well as the encouragement of mixed land use.





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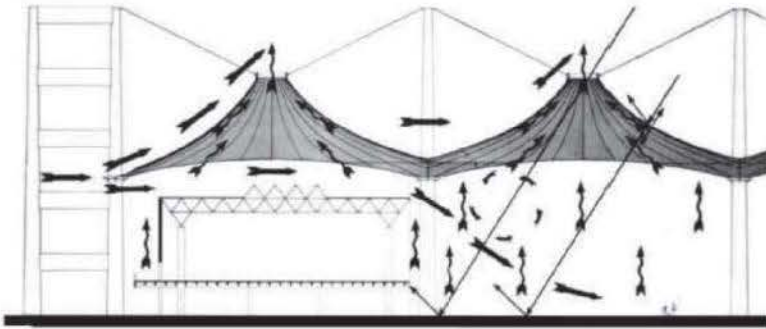
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Hajj Terminal

JEDDAH, SAUDI ARABIA | SKIDMORE, OWINGS & MERRILL

IN THE MID-1970S, Gordon Wildermuth was a young partner at Skidmore, Owings & Merrill, working in Saudi Arabia to build the Hajj Terminal at the King Abdul Aziz International Airport. Today, when he describes that “incredibly stressful time,” the conversation soon turns to the communications infrastructure that existed then. “At the time, a telephone in Jeddah was worth about \$15,000. There was no fax at first, though we eventually got one later that was about the size of your mother’s kitchen range in the 1950s. There was no e-mail, of course. When you placed a call, you had no idea when it would go through. You might place a call at 5 o’clock in the afternoon there, and it would come through at 3 o’clock in the morning in the States.”

It was Wildermuth’s job to orchestrate 600 people working in three separate offices (New York, Chicago, Jeddah) on this project of immense size and labyrinthine complexity: an airport terminal that would only be used once a year, during the six-week hajj pilgrimage, but that would be the busiest in the world during that time. The project came to SOM through a stroke of geographic luck: SOM’s Washington, D.C., office was close to the Airways Engineering Corporation, which had been retained by the Saudi government to design a terminal for the hajj. That project was started in the 1960s, with Edward Durell Stone as a consultant, but had been put on hold for several years following the 1967 Six Day War. By 1974, Stone had died, and Airways contacted SOM to collaborate on the revived project, which included a large master plan for commercial and military hangars, housing for staff, a hospital, a mosque, administrative buildings, and other infrastructural concerns.

Among those buildings, the Hajj Terminal stands out on this large desert plot of land, about 45 miles from Mecca. Wildermuth and his team were able to spend a significant amount of time



1 2

in Saudi Arabia, observing the mass movement of people during the six-week hajj. There are approximately 1.5 billion Muslims in the world today, and every one who is able to is required to make the pilgrimage at least once in his or her lifetime. With the advent of jet travel, pilgrims – or hajjis – had vastly increased in number: from around 50,000 arriving by air in the 1960s to 500,000 in 1975 (in recent years, the number of registered foreign pilgrims arriving for the hajj has averaged more than 1.5 million).

After the 1976 approval of Wildermuth’s master plan, design began on the Hajj Terminal in 1977, led by Gordon Bunshaft and structural engineer Fazlur Kahn. Finished in 1981, it received an AIA National Award and the Aga Khan Award in 1983. John Zils, a structural engineer at SOM who worked alongside Kahn, recalls, “The

initial thinking was that this was going to be an enclosed building, but it became clear that a traditional, air-conditioned, high-tech building was not the appropriate solution.” The process led them to explore an open-air structure, with roofs made of long-span Teflon-coated fiberglass, a material that had been used before, but never at this scale. The 210 white tents allow diffuse light into the terminal while reflecting heat away from the building, and their shape – conical with an oculus at the top – created a significant chimney effect that keeps temperatures down without heavy energy use. When the desert reaches 130 degrees Fahrenheit, the tent stays at around 80.

The organization of the terminal interior also reflected SOM’s long engagement with the project. Hajjis traveling to Mecca often trade and exchange goods on the way, so a market, or



souk, was planned into the building. The architects also provided ample space for hajjis to perform ablutions and change into ritual garments for their trip, as well as to accommodate the long waiting times that sometimes occur when processing so many passengers: About 100 acres are covered underneath the tents, enough to house at least 80,000 people.

At the same time, this cultural and environmental sensitivity was bolstered by a peculiarly American brand of confidence. "We had a great team," recalls Wildermuth. "As managing partner, I was fortunate enough to work with a group of people with whom I felt I could go anywhere in the world and solve any problem." The 25 Year Award is a testament to this boldness, which, combined with a long engagement with the Saudis, produced a meaningful, cross-cultural exchange. *Aleksandr Bierig*



1,2. The scale of the massive, 100-acre terminal is indicated by the size of the aircraft in relation to the building. The fiberglass cones are 110 feet high at their peak and are supported through a system of interconnected steel tension cables. The tapered steel pylons are each 150 feet high.

3. The interior of the structure is characterized by a series of long, open-plan spaces, with customs and administration near the edges.

Cherokee Lofts

HOLLYWOOD, CALIFORNIA | 2009

THE FIRST LEED GOLD-CERTIFIED building in Hollywood, this five-story mixed-use project consists of 12 condominiums, 2,800 square feet of retail space, parking, and a rooftop deck and green roof. Some of the lofts include 17-foot-high ceilings with mezzanines that open to lushly landscaped courtyards, while others are two-stories high and include home recording studios, reflecting the music history of the site.



PHOTOGRAPHY: © TARA WUJCIK (THIS PAGE); LUKE WOODEN (OPPOSITE, TOP TWO); LAWRENCE SCARPA (OPPOSITE, BOTTOM)



Pugh + Scarpa Architects

Known for community service, environmental stewardship, and inventive craft, materials, and forms, this is a firm whose time has come. **BY JANE F. KOLLEENY**

"COOL" BEST DESCRIBES THIS year's AIA Firm of the Year, Pugh + Scarpa Architects. It speaks to the casual, unpretentious character of its work, which masks the refinement underlying what appears so easygoing. It also refers to the Pop Art, experimental dimension of its designs. One of the firm's best-known projects, the Solar Umbrella, exemplifies these traits. Home to married partners Lawrence Scarpa, FAIA, and Angela Brooks, AIA, this small renovation in an unremarkable Venice, California, neighborhood brings a 650-square-foot stucco bungalow from the 1920s to life. The architects built a two-story addition topped by a lightweight canopy composed of solar panels. The new structure sits weightlessly on top of a delicate base of tilt-up concrete; inside, funky contemporary furnishings occupy the airy space. A true indoor/outdoor house in the California Modernist style, the Solar Umbrella epitomizes cool – in its livable design sensibility, high-performance envelope, and maximizing of the limited opportunities of the site. This tiny project was the darling of the design press when it was completed in 2005. It was also the first project in history to receive an AIA National Honor Award, an AIA's COTE Top Ten Award, and an AIA Housing Award.

Back in 1984, when Gwynne Pugh (now FAIA) started the practice in his garage, he accepted almost any work that came his way. Since those humble beginnings, Pugh + Scarpa Architects has been supplying its particular brand of inspired but understated work to Southern California. Scarpa joined the firm in 1988, and in 1991 helped turn it into Pugh + Scarpa in a former creamery. The practice evolved from those early days to designing work spaces for a series of small companies in existing industrial contexts.

The firm flexed its creative muscle with these



FROM THE TOP: **Lawrence Scarpa, FAIA, Gwynne Pugh, FAIA, Angela Brooks, AIA – the three partners of Pugh + Scarpa Architects.**

projects, developing a quintessentially L.A. approach to adaptive reuse, applying inventive facades to plain exteriors, and enlivening bland interiors with whimsical found objects and recycled materials. Examples include the AIA National Award Winner Reactor Films (1998) – where the architects renovated a 1930s masonry building in Santa Monica, using a shipping container for a conference room – and Bergamot Station (1999), a former water-heating factory in the city turned into a destination art gallery, lofts, shops, and creative offices, all wrapped with an innovative facade, a trademark of the firm. Bergamot Station is where the team's own modest-size practice occupies a chaotic and casual studio (to get a taste, read "A Day at Pugh + Scarpa" at pugh-scarpa.com).

Brooks joined the firm in 1999, completing the partnership triad. Unlike some firms whose principals break off into silolike studios, Pugh + Scarpa's partners usually work in tandem. Scarpa explains: "I design 99 percent of the projects. Gwynne has good cost and construction instincts with his engineering background. He is the sounding board for my sometimes impractical ideas. Angie is the master builder. She really knows how to get our projects built."

Founding partner Pugh, born in Cardiff, Wales, is both a civil engineer and an architect. Very involved in the local California community, he serves on the Santa Monica Planning Commission, the California Redevelopment Association on Sustainability and Green Redevelopment, and as a peer-review consultant to the cities of San Diego, Long Beach, Carson, and Los Angeles.

Scarpa wanted to be an architect for as long as he can remember. Of humble immigrant Italian roots, he received his architecture degrees in Florida, then spent two years working in New York with Paul Rudolph, who shared a similar background. "Paul Rudolph grew up as a working class kid in Alabama. He made it by himself from sheer will, determination, and talent. I have a somewhat similar working-class background. [Rudolph] opened my eyes to a whole new and unfamiliar way of thinking about architecture; for the first time, I began to understand how to actually go about designing a building," Scarpa explained.

Brooks received a bachelor's degree in Design in Architecture from the University of Florida and an M.Arch. from SCI-Arc in L.A. She joined Pugh + Scarpa as a principal, bringing strong operational skills and design aptitude to the job. She serves on the advisory board of Solar Santa Monica and works as a peer reviewer for Global Green and the USGBC. She was recently elected to the board of the local AIA.

Each of the three principals brings unique skills to bear on a practice built on community engagement, sustainable design, and imaginative materials and forms. Brooks became interested in low-income housing shortly after graduation. "I worked on a huge single-family house. When I realized I could put the footprint of the house I was renting inside the 'hers'

Colorado Court

2002 | SANTA MONICA,
CALIFORNIA

DESIGNED IN COLLABORATION with San Francisco-based Kodama Diseño Architects, Colorado Court established a new benchmark for sustainable and affordable housing design excellence in America. It was the first residence in the country to achieve LEED Gold rating and to provide 100 percent of the building's electricity with on-site renewable energy. Vivid blue PV panels are mounted vertically on the stucco facade, ornamenting the building while also supplying most of the peak-load electricity it demands.



Jigsaw

2005 | LOS ANGELES

IN THE DESIGN of this film-editing studio, the architects strove to combine the small, dark environments required with stimulating, well-lit work spaces. Editing studios and offices are contained in two curvilinear boxes that hover over a reflecting pool. The bow trusses of the ceiling and the brick walls of the existing 1940s warehouse have been left exposed. Luminous panels filled with ping-pong balls and acrylic beads near the lobby allow daylight in, which bathes the open volumes with diffused light.





Solar Umbrella

2005 | VENICE, CALIFORNIA

PERHAPS THE BEST KNOWN of the firm's projects – and the winner of multiple awards – the Solar Umbrella was inspired by Paul Rudolph's Umbrella House of 1953. Home to Scarpa, Brooks, and their son, the residence features a canopy of PV panels that envelops the building, providing 100 percent of its electricity. Other green strategies include solar hydronic heating panels, a storm-water-retention system, and an airy, open design, with environmentally sound materials used throughout the interior.



Reactor Films

1998 | SANTA MONICA, CALIFORNIA

REUSING AN EXISTING 1930S Art Deco masonry building, the architects created a distinctive office environment for the client, a production studio for TV commercials and music videos. The interior spaces revolve around a centrally located conference room, composed of a used ocean-shipping container purchased from the Long Beach shipping yard and deconstructed to reveal rich textures and a series of interlocking surfaces. The areas adjacent to this centerpiece remain open and spacious, a discrete backdrop to the conference area.



closet, I knew that was not what I wanted to spend my professional life doing – I wanted to help a lot more people.” That became a realization in 2002, when the firm completed the widely lauded Colorado Court, a low-income housing project in Santa Monica. Garnering nine design awards, the project was the first LEED Gold–certified residential project in the country, providing 44 single-occupancy residences and utilizing vivid blue photovoltaic panels on its street facades.

While the firm has a deep commitment to sustainability, its partners feel mixed about counting LEED points. “[LEED] is one of the few places where green-washing is significantly reduced and where the measures of accomplishment have value,” comments Pugh. “But the competition it fosters to hit a mark and be given bragging rights is both encouraging and at the same time specious. If this is what it takes to get clients and architects to [design sustainably], then so be it.” This balanced view of LEED results from the architects’ shared feeling that green design is “as essential and intrinsic as a structure is to holding a building up,” continues Pugh.

A more recent housing project called Step-Up on 5th, of 2009 – a 2010 AIA Honor Award winner (see page 95 and *GreenSource*, January 2010, page 62) – provides residences and services for the formerly homeless while undertaking numerous sustainable-design imperatives. Featuring an exterior skin of metal screens that presents a graceful face to the street and mitigates temperature shifts, this five-story building takes a humanistic approach to design: “We developed the layout of the units and courtyards in direct response to our concern that the tenants feel protected within the building,” explains Brooks.

While most of its work has been in the Los Angeles area, the firm has expanded beyond this geographic base. Design for the Laumeier Fine Arts Center in St. Louis has been completed; and in downtown Raleigh, the Contemporary Art Museum will begin construction soon.

It is not easy to pigeonhole Pugh + Scarpa; the firm’s buildings are always dynamic, always colorful, always green, and always fit seamlessly into their context. Even its most inventive designs are decisively rooted in function and performance. Pugh describes his firm’s work as “a judicious balance of all the elements of architecture and the environment, both physical and social.”

Since its founding, Pugh + Scarpa has won close to a hundred design awards and can now call itself the AIA Firm of the Year. But its partners don’t waste time counting plaques on the wall; indeed, they rarely look back – “I’m on to other ideas,” says Scarpa. ■



Bergamot Station

1999 | SANTA MONICA, CALIFORNIA

THIS INTERNATIONALLY KNOWN arts center includes a complex of industrial warehouses, which contain production facilities, galleries, artist lofts, and the architects’ own offices. In their design, the architects maintained coherence with the character of the existing buildings, while they also innovated. Corrugated metal, steel, and glass blend with the context, while cold-rolled steel and translucent lexan panels are inventive notes. The building’s two textured, geometric facades complement their respective settings – street front and courtyard.

Laumeier Fine Arts Center

IN DESIGN | ST. LOUIS

PUGH + SCARPA HAS DESIGNED a 15,000-square-foot building to be built on the grounds of the Laumeier Sculpture Park, an 105-acre rolling landscape scattered with outdoor art. The new facility is designed to complement an existing early-20th-century estate house, which currently houses galleries, a gift shop, and offices. The new, two-story concrete-and-masonry structure will provide space for exhibition galleries, special event areas, a library, administrative offices, collections storage, and a reception area. Designed to be set into a hill and clad in a perforated skin, it will allow for year-round educational programming and expanded exhibition opportunities.





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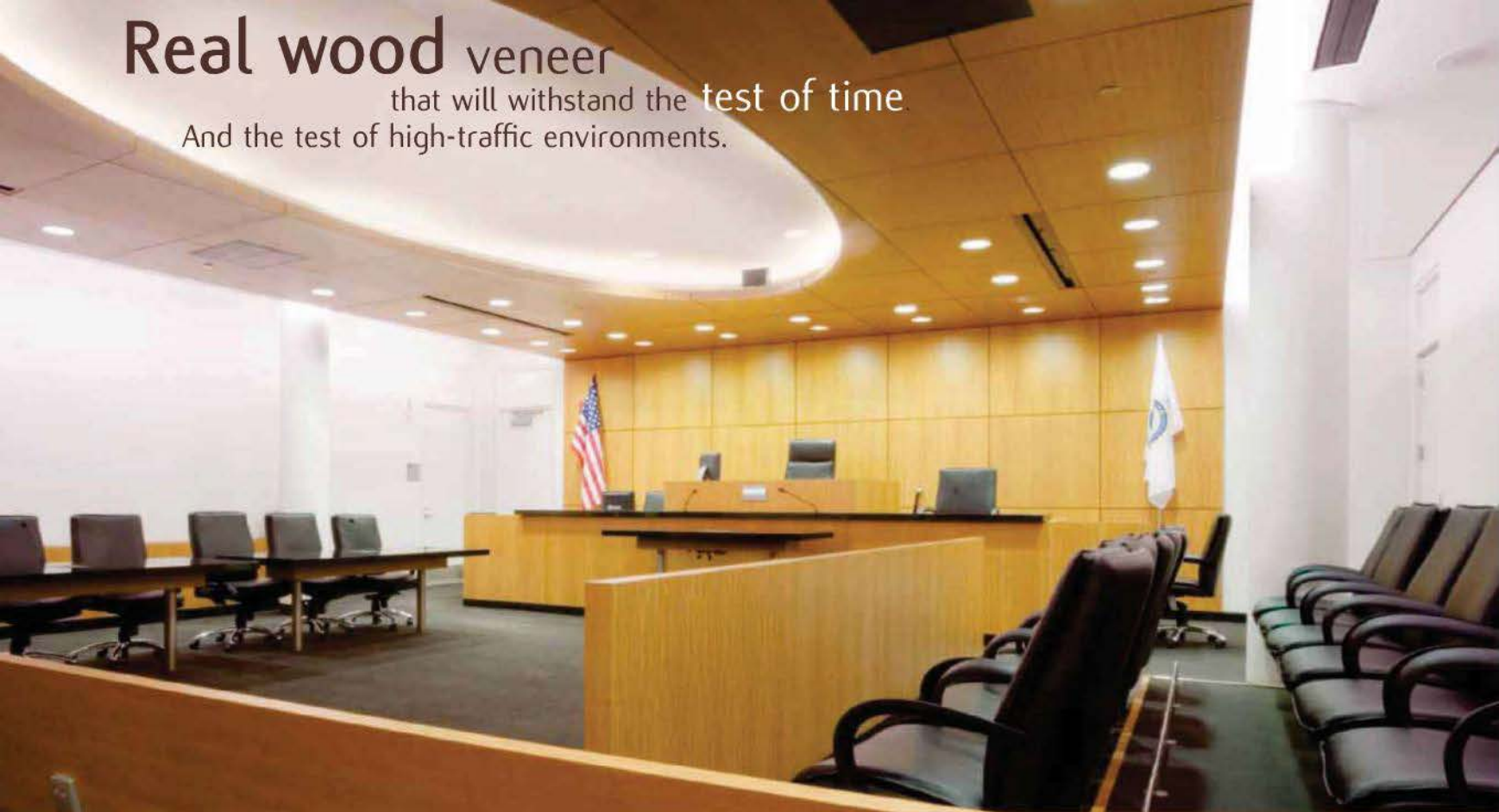
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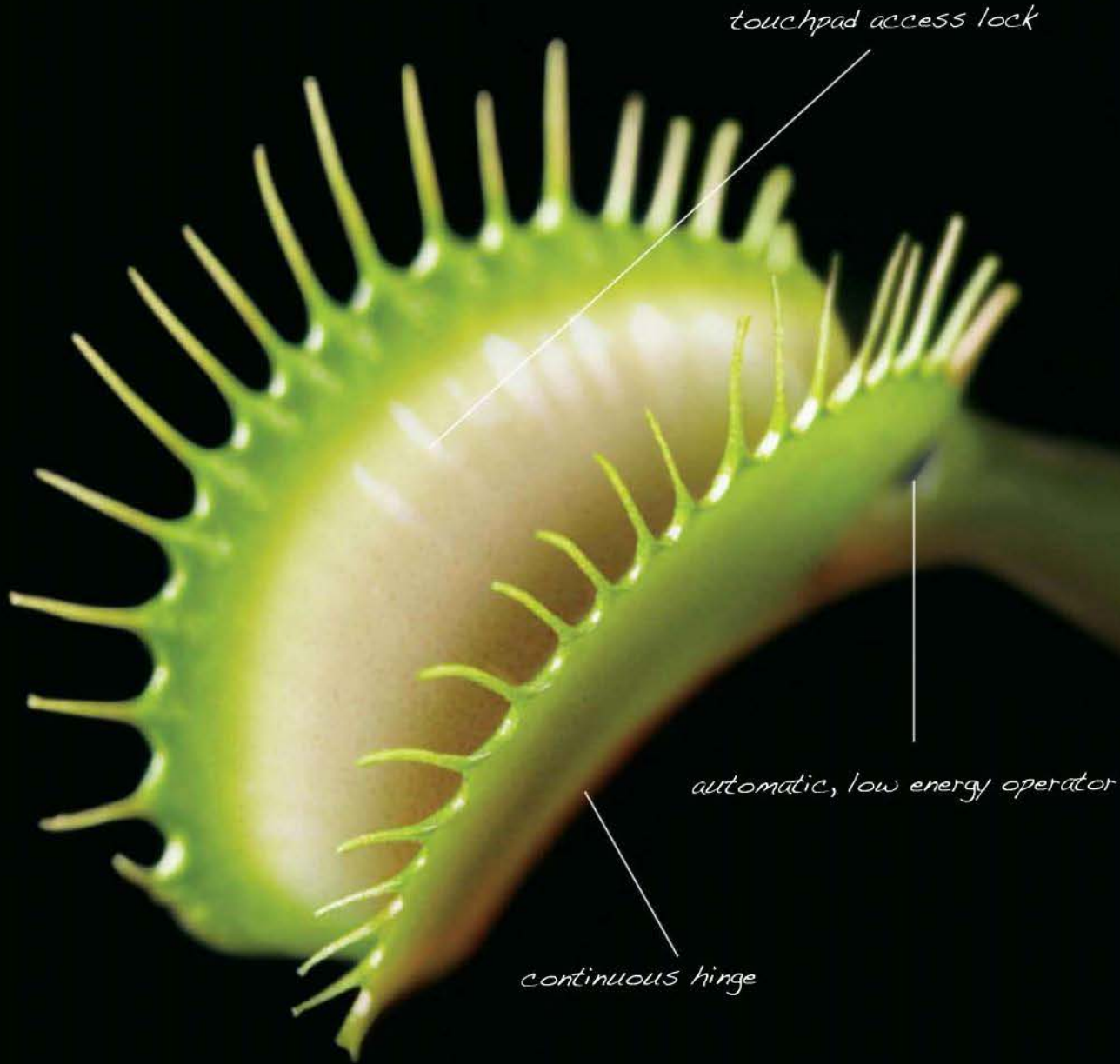
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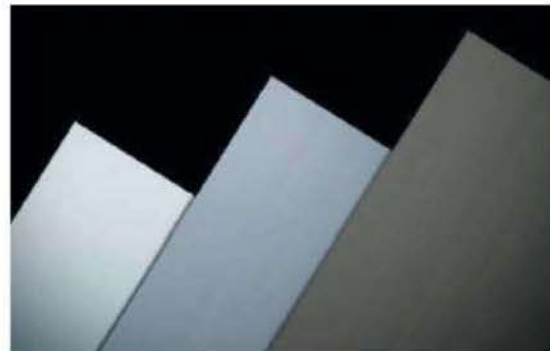
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House of Cars

Herzog & de Meuron strips down in Miami Beach with a revealing new parking garage.

BY BETH BROOME

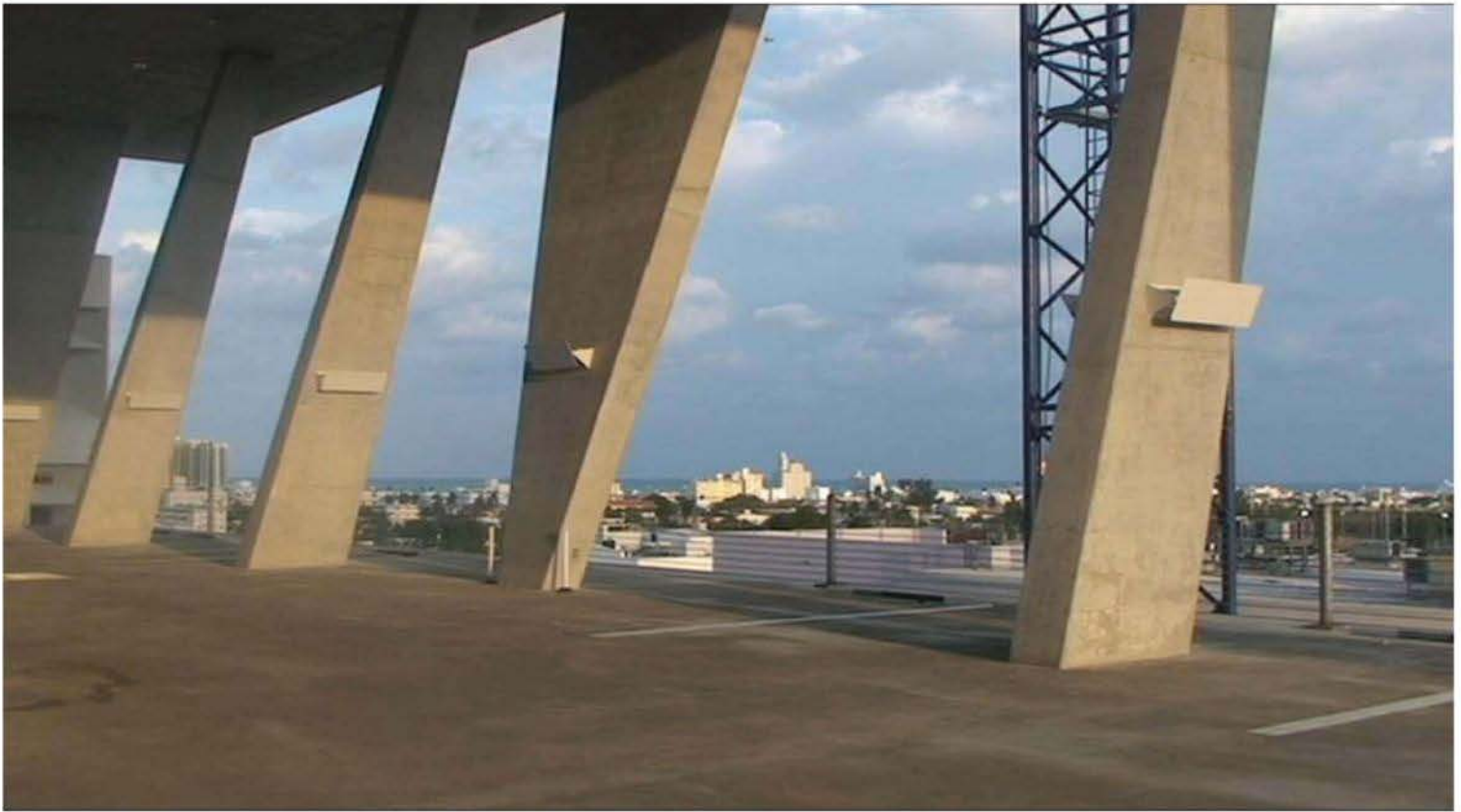
IN THE PANTHEON OF BUILDING TYPES, the parking garage lurks somewhere in the vicinity of prisons and toll plazas. So a project in Miami's South Beach consisting of a drive-through bank and office building renovation with a new parking garage as its crown jewel hardly seems a likely commission for Pritzker Prize-winning architects to take on. But when developer Robert Wennett approached Swiss firm Herzog & de Meuron with this three-part program for 1111 Lincoln Road, the architects (who are also designing the new Miami Art Museum) saw possibility in addressing the urbanistic significance of the site, the climate, and the mix

of uses. Plus, with an individual client—who collects art—they identified a ripe opportunity for experimentation and another chance to flip a stereotype on its head.

Over the years, Miami Beach's Lincoln Road has undergone many transitions. Once considered the Fifth Avenue of the South, it suffered a decline in the 1950s, was rehabilitated as a promenade by Morris Lapidus, weathered more adversity through the 1980s, and re-emerged in the 1990s as a tourist destination of mid-market retail and street cafés. In 2005, when Wennett purchased the 1960s SunTrust Bank building and the

The client wanted to create a civic building "about art, commerce, and culture." The result imparts an energized calm. Standing on the slab's edge, looking out as the wind gusts through, you feel as if you have arrived, and yet, at the same time, sense that you are just getting started.





ABOVE: Tour 1111 Lincoln Road with commentary from Miami designers Andrés Duany and Allan Shulman.

adjacent parking lot at the entrance to the promenade facing the Regal Cinema, he hoped to revive the strip—a vehicular block abutting a bleak stretch of Alton Road—to its former glory and make it worthy of its position as the gateway to the city.

Approaching this “package deal” project as one of urban redevelopment, the team worked with the city and landscape architect Raymond Jungles to extend Lincoln Road by pedestrianising the block. Because a new home was required for SunTrust before work on 1111 Lincoln Road could begin, Herzog & de Meuron designed a boxy, white two-story drive-through bank building on Alton Road with four apartments above. They then renovated the original building, removing the first two floors and replacing them with storefronts, with upper-level offices for creative businesses. Finally, the team added the 300-space car park, technically considered an extension of the SunTrust building. In step with other visionary architects who had tackled garages before, such as Frank Lloyd Wright, Louis I. Kahn, and Paul Rudolph, the team had higher aspirations for the building type.

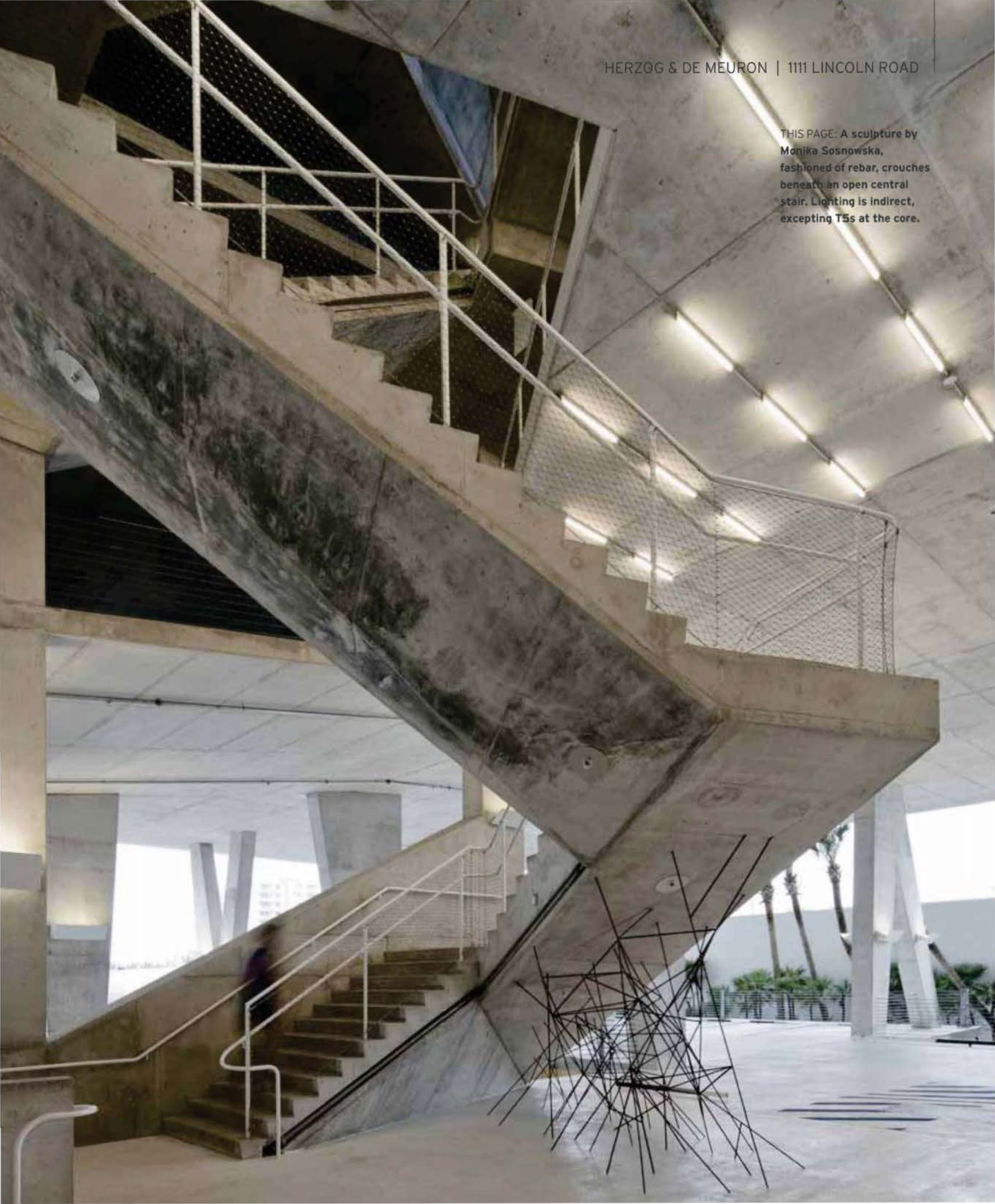
A robust house of cards, 1111 Lincoln Road is a composition of cast-in-place concrete slabs that function as floor plates, columns, and ramps winding through the compressions and expansions in heights of the six parking levels, which range from 8 to 34 feet. The building is anchored by ground-floor retail and topped by a restau-

rant and Wennett’s penthouse (both still under construction). A canopy above the retail spaces continues across the existing building to the new one, marrying the two structures that are otherwise linked only by bridges at each level. To carry life up off the street, the team wedged a boutique between the garage’s decks. And the soaring seventh-floor parking level does double-duty as an event space, hosting fashion shows, parties, and concerts.

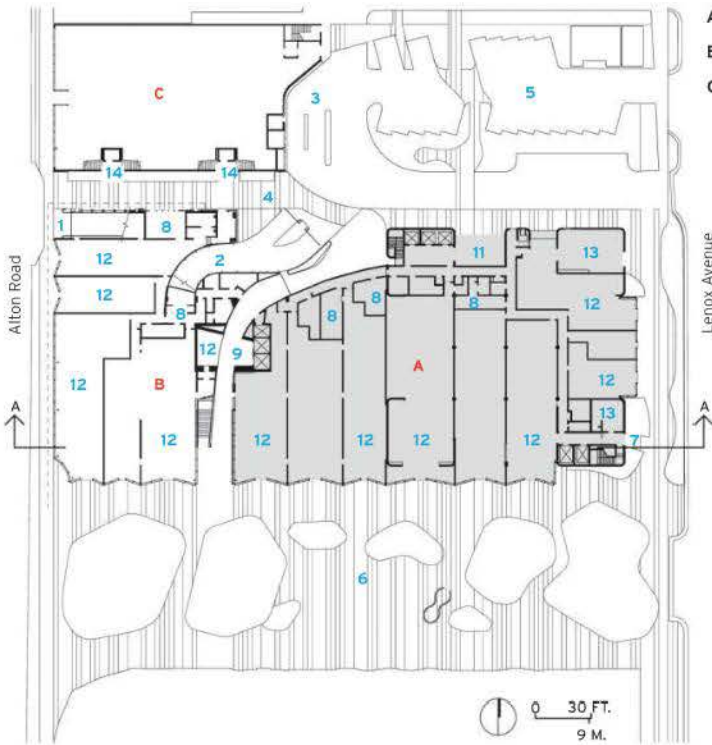
Fancy footwork around constraints had impressive results. Zoning allowed a building height of 75 feet and the floor area ratio (FAR) provision enabled a program area of approximately one floor of enclosed space and six floors of parking (because parking does not count toward FAR, adding this amenity enabled the team to greatly expand the mass). The team argued that the height restriction would result in a building lacking adequate presence for its prominent location, and in relation to the 142-foot-high SunTrust building. Their proposal called for 50 additional vertical feet, while maintaining the FAR. By stretching the height of three of the parking floors, the team was able to increase the building’s visual impact (helping to attract high-end retailers, such as Taschen and Inkanta, geared toward “curating” rather just pedaling merchandise), activate the car park by facilitating flexible use, and optimize the penthouse’s siting.

While the building may appear whimsical, its sculp-

THIS PAGE: A sculpture by Monika Sosnowska, fashioned of rebar, crouches beneath an open central stair. Lighting is indirect, excepting T5s at the core.

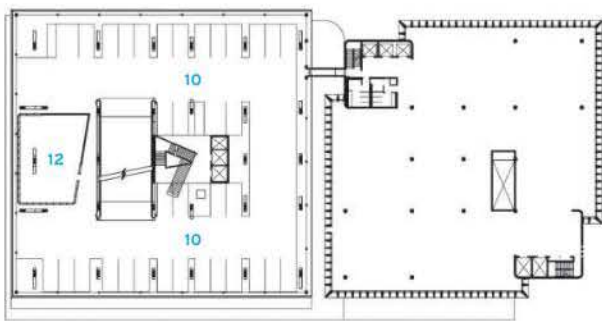


DRAWINGS

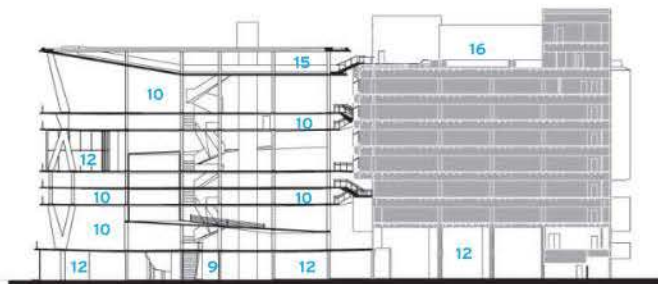


- A Existing Building
- B New Car Park Building
- C New Bank Building

GROUND FLOOR



FIFTH FLOOR



SECTION A-A

- 1 Car park entrance
- 2 Car park exit
- 3 Bank drive-through
- 4 Alley
- 5 Bank parking
- 6 Lincoln Road Promenade and public plaza
- 7 Rooftop restaurant entrance
- 8 Retail service
- 9 Passage and elevator/stairwell parking access
- 10 Garage parking
- 11 Office building lobby
- 12 Retail
- 13 Mechanical
- 14 Access to second-floor residences
- 15 Penthouse roof garden
- 16 Penthouse pool





3

tural expression is the product of structural logic, say the architects. Their decision to vary the parking slabs both horizontally and vertically resulted in triangulated columns that lean out to buttress the cantilevers and split to accommodate ramps and long spans. In a nod to the building type's humble pedigree, the team used class B concrete, so pockmarks and imperfections abound. But in the interest of differentiating the garage from its brethren, they employed an open stair and indirect lighting. And to keep lines clean, they used frameless elevators, limited exposed piping and lighting, and embedded the sprinkler system, lending the space the restrained ruggedness of a well-groomed five o' clock shadow.

While in some ways otherworldly, the building is very much of Miami. Inspired by Lapidus's Tropical Modern canopies, fountains, and pavilions on the promenade below, the architects also nod to the local vernacular with the use of concrete and overhangs. Dispensing with exterior walls eliminates the need for air-conditioning and limits electrical lighting requirements, resulting in significant energy savings. It also lends the building a gravity-defying flamboyance and affords expansive views and an awe-inspiring feeling of connection to the city and the elements.

The team has made a contribution to Miami Beach by providing a valuable amenity and creating a landmark and a vibrant public space that transcends shopping. In doing so, they have also pulled off quite the coup by lifting an apartment above the fray on a fantastic pedestal. But most of all, they are helping break the mold for the lowly parking garage, lifting it up out of its gloomy limbo into the light and air. ■

PHOTOGRAPHY: © IWAN BAAH (1); ROLAND HALBE (2,3)

Project: 1111 Lincoln Road, Miami Beach, Florida

Architect: Herzog & de Meuron – Jacques Herzog, Pierre de Meuron, Christine Binswanger, partners; Mark Loughnan, Charles Stone, Karl Blette, Jason Frantzen, Christopher Haas, Nils Sanderson, project architects

Architect of record: Charles H. Benson

Landscape design: Raymond Jungles

SOURCES

Concrete: MC Velar

Glazing/storefront system: Glasswall

Custom lamp shades, stair rails, and mesh: Modern Metal Specialists

Elevators: Schindler and Retro Elevator

1. The top parking level converts to event space and opens to views of the city, ocean, and bay.

2. Vertigo-inducing connections link the garage and the existing building.

3. Varying parking slabs result in shifting floor plates and allow the building to breathe. A glass boutique occupies the fifth floor.

Light Box

Rick Mather's Ashmolean expansion brings a museum's remarkable collection into the light.

BY CHARLES LINN, FAIA

NOT LONG AGO, THE ASHMOLEAN MUSEUM in Oxford, England, was like many of the objects it houses: an antique earthenware vessel, astonishing for what it was in its day, but not something that worked well for everyday use in modern times.

THIS SPREAD: Charles Robert Cockerell's Ashmolean Museum in Oxford, England, is a Grade 1-listed building. One of the historic review board's requirements was that the expansion would not be seen from the street, the vantage point from which this photograph was taken.

The Ashmolean was founded in 1677, when Elias Ashmole, a wealthy Englishman and avid accumulator, donated his collections to Oxford University. These included the "cabinet of curiosities," stuffed animals and ethnographic relics acquired by John Tradescant and his son, John the Younger, 17th-century naturalists and gardeners who endeavored to gather and preserve "all knowledge." The original Ashmolean (now housing Oxford's Museum of the History of Science) was the first building in Europe constructed specifically as a public museum.

Over the next 200 years, the Ashmolean shifted away from the natural sciences and amassed an impres-





LC ME
TH IV LEA



1. Visitors enter the addition through a pair of arches, on axis with the museum's monumental entrance.

2. A series of staircases on one side of the atrium allows visitors to enjoy daylight as they walk from one floor to another.

OPPOSITE: In this photograph, five of the addition's six floors are visible. Bridges span the double-height basement and second-floor galleries.

sive collection of art and cultural artifacts. In 1845, the museum moved into a Neoclassical building designed by Charles Robert Cockerell. The great south-facing expanse of the building gave it a palatial appearance, but in fact it was just one bay deep and only contained a total of 22,000 square feet of exhibition space on three floors. In the 1890s, a lot to the north was acquired, and though the site is hemmed in by buildings on three sides, the museum gained another 28,000 square feet by constructing a series of glass-roofed, cast-iron industrial sheds there.

During the ensuing 150 years, the Ashmolean's collection grew further, in part through the finds of Oxford archaeologists such as Sir Arthur Evans, but the museum was so small, only a fraction of the art could be displayed. It also lacked climate-controlled space to show textiles, a

back-of-house area, and even a loading dock.

In 1999, Rick Mather Architects was hired to do a master plan, including an evaluation of the collections and extensive historic research on the building. Principal Rick Mather, a native of Oregon, came to London in the 1960s to study urban design at the Architecture Association and decided to stay. His firm has been responsible for a number of museum and cultural projects, including significant restoration work and an addition for the Sir John Soane-designed Dulwich Picture Gallery, in Dulwich, London.

The master plan yielded vital documentation for the Listed Building Consent application, an arduous process required for the alteration of historic buildings in the U.K. Although the resulting Listed Building Consent permitted the demolition of the sheds, it also "made it a condition



PHOTOGRAPHY

PHOTOGRAPHY

OPPOSITE: The galleries are no more than a few steps from the six-story atrium. This double-height gallery is crossed by a bridge at the third-floor level.

that you could not see the new building from the street,” says Ashmolean’s director Christopher Brown. This limited the height of the addition. “What Rick Mather had to do was work within a sort of box of space.”

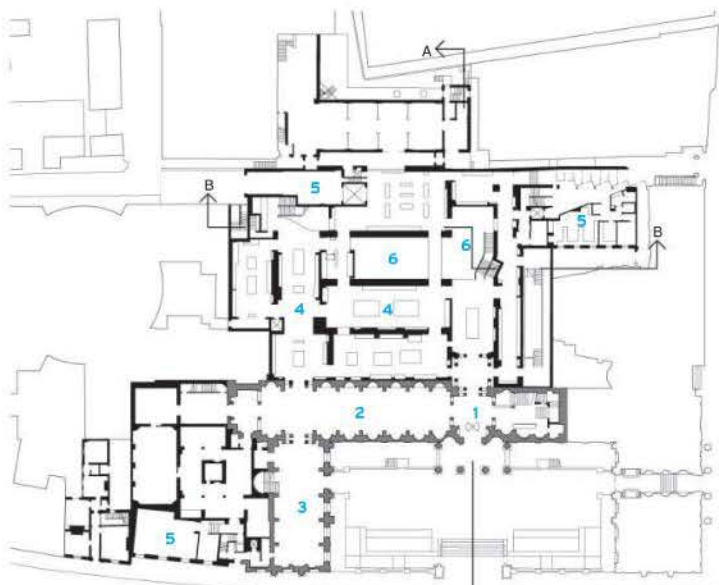
Brown comments, “Oxford has a taste for pastiche, and I wanted a building of 2009.” But he also had a requirement that created a spatial puzzle for the architects. Characteristically, museums organize their collections by department (Greek, Roman, and so on), but this kind of design isolates collections, making it difficult to form connections between them. Brown wanted diverse objects to be displayed according to their cultural associations and time period, showing how they relate to each other visually so that “they communicated with each other.” When visitors moved through the galleries, they would be able to piece together the story of how different cultures influenced each other by observing the art.

The resulting expansion is a deft insertion of a new concrete-framed building into the void that remained when the sheds were taken down. The position of the basement, first, and second floors of the original building set the heights of the basement, first, and third floors

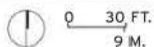
of the new portion (see section, below). The spaces are organized around a central atrium that is on axis with Cockerell’s double-height entry. On one side of this atrium, a series of beautifully crafted staircases allows patrons to move from one level to the next. Bridges located on the first and third levels span double-height galleries on the ground and second floors. No gallery is more than a few steps away from the atrium, and many look into it as well, enabling daylight to be an orientation device. “Without it, it would be like you were looking at art in the basement of a battleship,” says Mather. Sound transmitted throughout the building by this core helps give the interior a lively atmosphere, avoiding the hushed austerity typical of older museums.

Mather’s design does an extraordinary job of organizing the Ashmolean’s collection rationally, helped considerably by the firm’s extensive analysis of it during the master-planning phase. It effectively doubles the available exhibition space. Now there are 39 galleries, and 35 of them display the permanent collection. The addition does not intersect with Cockerell’s galleries too often. This helps avoid the experience common to many

DRAWINGS

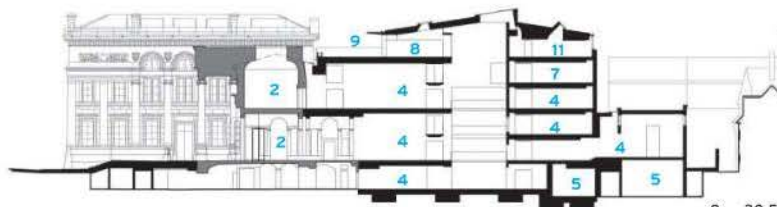


FIRST FLOOR

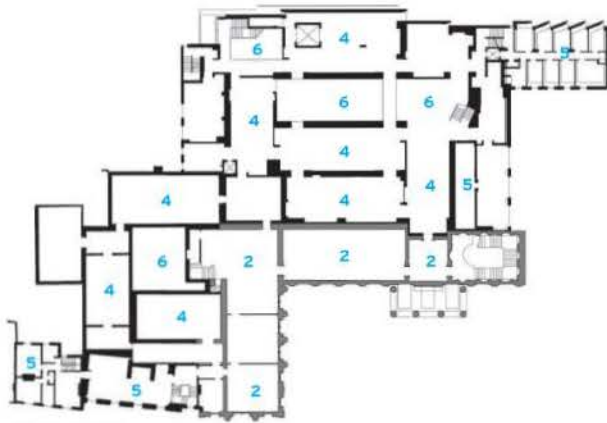


SECOND FLOOR

- | | |
|---------------------------------|--------------------------------|
| 1 Lobby | 7 Temporary exhibitions |
| 2 Existing exhibition space | 8 Restaurant |
| 3 Gift shop | 9 Terrace |
| 4 New exhibition space | 10 Offices and conference room |
| 5 Restricted area/back of house | 11 Conservation studios |
| 6 Atrium | 12 Mechanical |



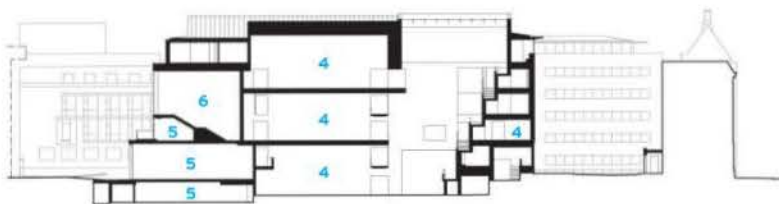
SECTION A-A



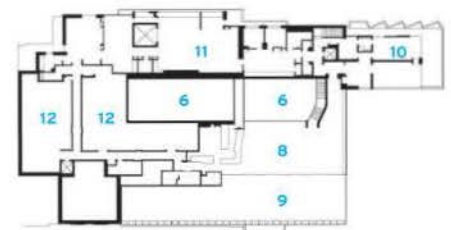
THIRD FLOOR



FOURTH FLOOR



SECTION B-B



FIFTH FLOOR

1. Some of the galleries in the renovated portion of the old building maintain their original flavor.
 2. The proximity of the galleries to the atrium enables daylight to orient visitors through the interior.
- OPPOSITE: A glass wall floods a second monumental staircase with daylight. It is decorated with busts of the Ashmolean's directors (known as "keepers" until recently), bedecked in togas.



expansions, where visitors are forced to time-travel much too frequently between rooms with herringbone parquet floors and big base moldings, and others with floors and ceilings of ice-white Sheetrock. Here, the galleries that have been renovated in the old building have maintained their original Victorian flair.

Two things fortunately missing from this addition are air-conditioning grilles and drafty air. Spaces are conditioned using displacement ventilation: Air is circulated through concealed slots at the tops and bottoms of walls at such low velocities that it cannot be felt. Brown finally has his properly conditioned textile galleries (and a loading dock). "It is hard to adapt a 19th-century building to modern museum practice," he says, "but we have caught up now." ■

Project: Ashmolean Museum Expansion

Architect: Rick Mather Architects – Rick Mather, principal; Stuart Cade, associate partner

Consultants: Dewhurst Macfarlane & Partners (structural); Atelier Ten (mechanical/electrical); Kevan Shaw Lighting Design

Contractor: BAM Construct UK

SOURCES

Entrances: Record UK; Blasi UK

Skylights: MGA

Metal doors: Accent Hansen

Zinc roofing: NMD

Lighting: Mike Stoane Lighting; Concord; Zumtobel

Lighting controls: Andromeda



PHOTOGRAPHY



Inside Out

Fumihiko Maki skillfully combines sectional complexity and transparency to create a fitting new home for MIT's Media Lab.

BY JOANN GONCHAR, AIA



PHOTOGRAPHY: © ANTON GRASSL/ESTO, EXCEPT AS NOTED; ANDY RYAN (THIS PAGE)

OPPOSITE: The Media Lab's sectional configuration and generous use of glass provide diagonal and horizontal views through the building.
THIS PAGE: Though much of the building has a distinctive veil of pipe-louver screens, passersby are still able to see the activity inside, especially at night.

IN THE WORLD OF ARCHITECTURE, it isn't unusual for projects to fall victim to shifting priorities or changing financial circumstances and subsequently stall or be shelved indefinitely. When, and if, such schemes are resurrected and built, they sometimes seem dated or irrelevant. But for the new Media Lab building at the Massachusetts Institute of Technology, realized more than a decade after architect Fumihiko Maki was given the commission, the long hiatus between design and construction has not made the project—which has an unusual degree of sectional complexity—any less appealing.

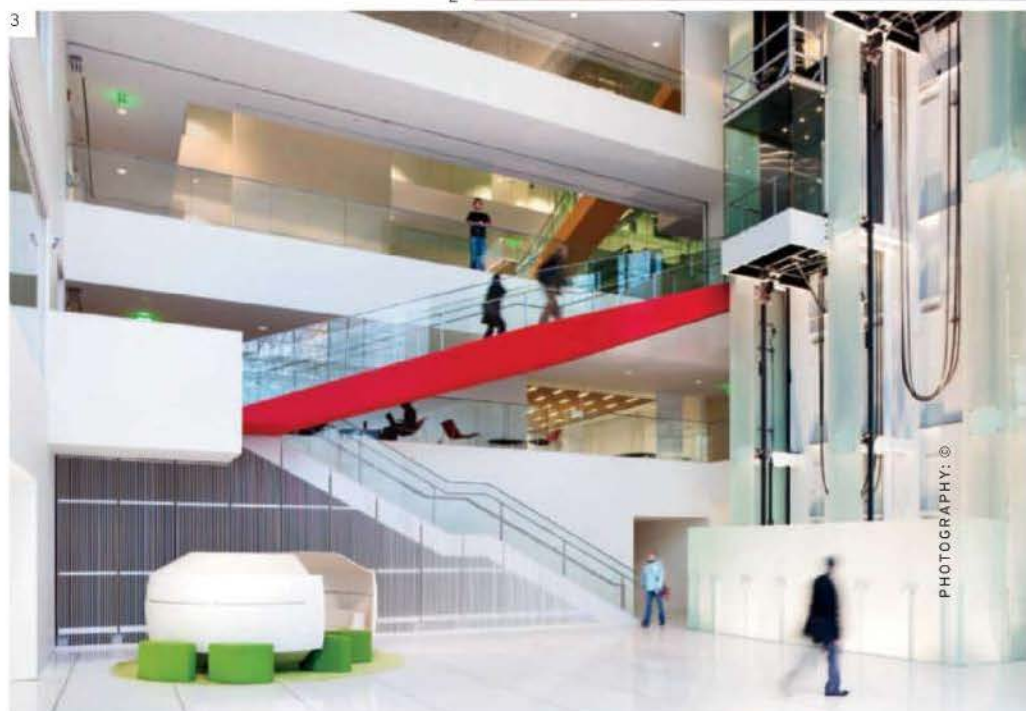
Maki's firm, with Boston-based Leers Weinzapfel Associates as architect of record, was hired in the late 1990s, when the digital revolution was in full swing. The university wanted to expand the Media Lab, responsible for several inventions for wireless networks, field sensing, and Web browsers, into a new structure connected to its original home on the Cambridge campus: the I.M. Pei–designed Wiesner Building, completed in 1985.

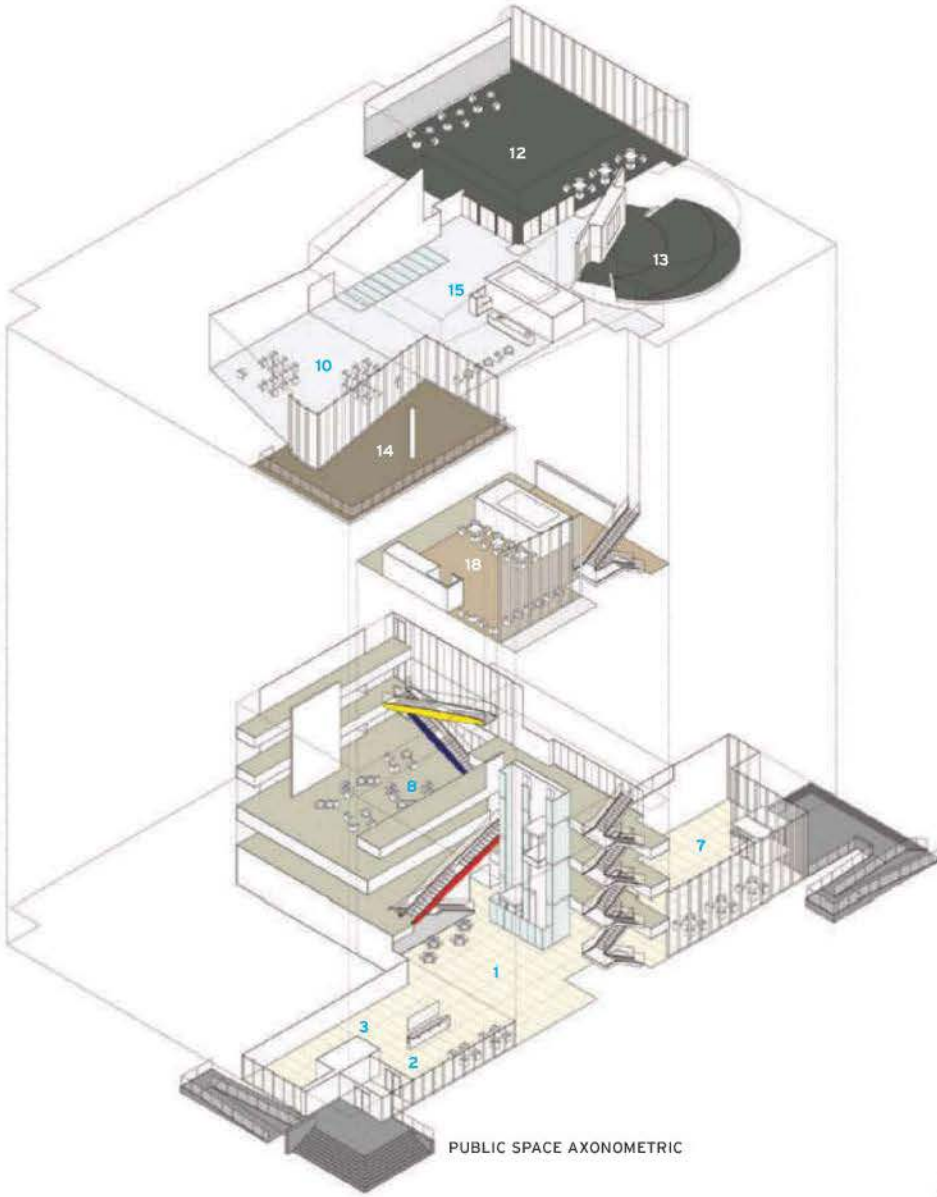
But when corporate donations dried up in the wake of the dot-com bust, the university mothballed the completed working drawings. Then, three years ago, after MIT secured new funding sources and the architects scaled back the project with changes that included eliminating basement research space, contractors broke ground. The \$90 million, 163,000-square-foot building opened in March.

The program called for a facility about one-and-a-half times larger than Wiesner to house the Media Lab and facilities for a range of art, design, and technology-related programs in the School of Architecture and Planning (of which the Media Lab is a part), but on a plot about 25 percent smaller than that of the lab's existing home. Gary Kamemoto, a Maki and Associates director, jokes that the university chose the Tokyo-based firm since it was accustomed to designing buildings for tight urban sites in Japan. But MIT's goals were larger than squeezing as much program as possible into a compact package. From the Pritzker Prize–winning Maki, whose designs are known for their clarity and attention to detail, the Media Lab hoped for a structure that would promote visual and social connectivity, both among its research groups and with the outside world. The Media Lab wanted a building that would support its cross-disciplinary work, which runs the gamut from digitally

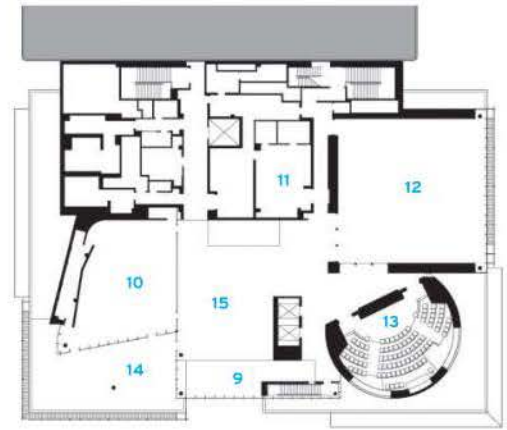


1. Maki deploys several cladding strategies to identify different interior uses on the elevations.
2. The building's lobby doubles as a gallery.
3. Occupants and guests can ascend from the lower atrium in glass-enclosed elevators or by way of boldly painted and subtly sculpted staircases.

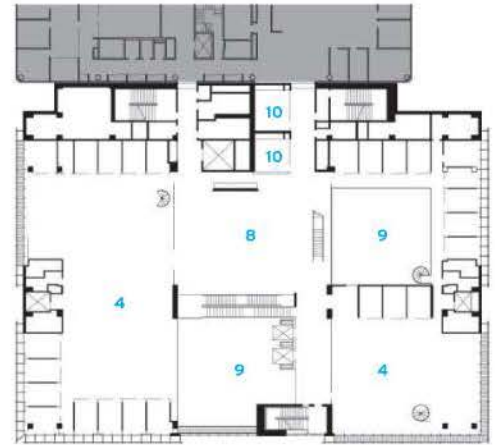




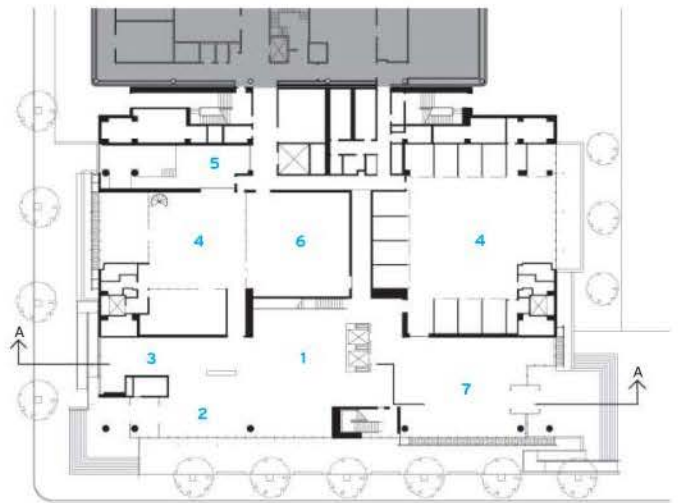
PUBLIC SPACE AXONOMETRIC



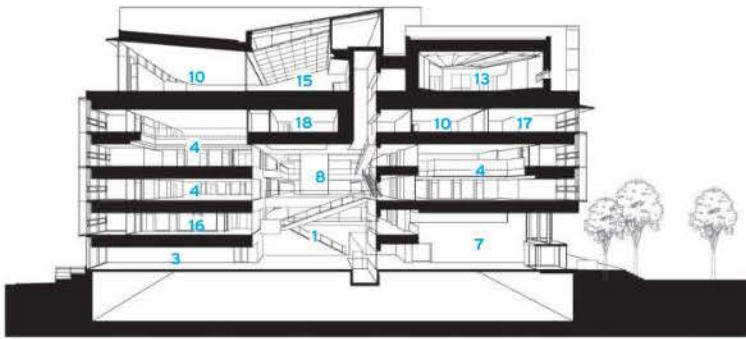
SIXTH FLOOR



THIRD FLOOR



GROUND FLOOR



SECTION A-A

0 10 FT.
3 M.

- | | | |
|-----------------------|-----------------------|--------------------|
| 1 Lower atrium | 7 East lobby/gallery | 13 Lecture hall |
| 2 West Lobby | 8 Upper atrium | 14 Terrace |
| 3 Gallery | 9 Void | 15 Reception space |
| 4 Research laboratory | 10 Conference room | 16 Administration |
| 5 Loading dock | 11 Kitchen | 17 Lounge |
| 6 Machine shop | 12 Multipurpose space | 18 Café |

PHOTOGRAPHY: © ANDY RYAN (2)



1 3

1. The stair stringers swell at the center and taper where they meet floor slabs. The shape, derived from their moment diagrams, conceals intermediary landings.
2. Bridgelike walkways define circulation through the interconnected atria.
- 3.,4. Each lab space has at least one exterior exposure and a double-height work space surrounded by mezzanine-level offices.

controlled prosthetics to folding electric vehicles to devices that help the autistic communicate.

Maki's response was to create a deceptively straightforward plan diagram. Within the building's steel-framed structural grid, which resembles a tic-tac-toe board, research laboratories flank a central atrium. But the three-dimensional reality is much more complex. The laboratories, seven in total, are double height and vertically offset from each other. The atrium is not a single space, but a set of two interlocking voids that span five of the building's six levels. This Rubik's Cube-like assembly, along with generous interior glazing, creates unexpected horizontal and diagonal sight lines.

In an inversion of the typical organization of aca-

demical research buildings, the Media Lab has those facilities that will be used regularly by the wider university community on the top floors, including a café, a 100-seat amphitheater-shaped auditorium, a multipurpose hall, and a skylit space for receptions. This configuration makes the most of the site, just a block from the Charles River, and the building's potential to capture views of the water and the Boston skyline.

The spatial arrangement also draws visitors, as well as regular occupants, through the entire building. Some will arrive from the north, through Wiesner, to which the new structure is connected on several floors. But most will enter at either the southwest or the southeast corners, and traverse a light-filled lobby that doubles as a



2



4

gallery. To reach the upper-level public spaces, they can then ascend in glass-enclosed elevators or travel through the interconnected atria by way of bridgelike walkways and a series of stairs boldly painted and subtly sculpted to punctuate the otherwise Minimalist space.

The circulation route from the entry lobby to the top floor takes lab users and guests past the atelierlike workshops, which vary from 5,000 to 8,500 square feet but share the same basic configuration. Each has an open area, roughly 40 foot square and about 21 feet tall, surrounded by mezzanine-level glass-fronted faculty offices. All the research spaces have at least one exterior exposure, entirely glazed, in addition to the glass partitions between the labs and the adjoining social spaces.

Down to the Details

IF ANY ONE ELEMENT can be said to define the elevations of Fumihiko Maki's recently opened Media Lab building at MIT, it would be the screens that veil the almost completely glazed atelierlike workshops. The shading devices (5) were the design team's response to local energy codes limiting the facade area to no more than 50 percent glass. And, as is characteristic of Maki's projects, these required components are exactly detailed. "The screens were essential, but they [had to] have a certain dignity," the architect explains.

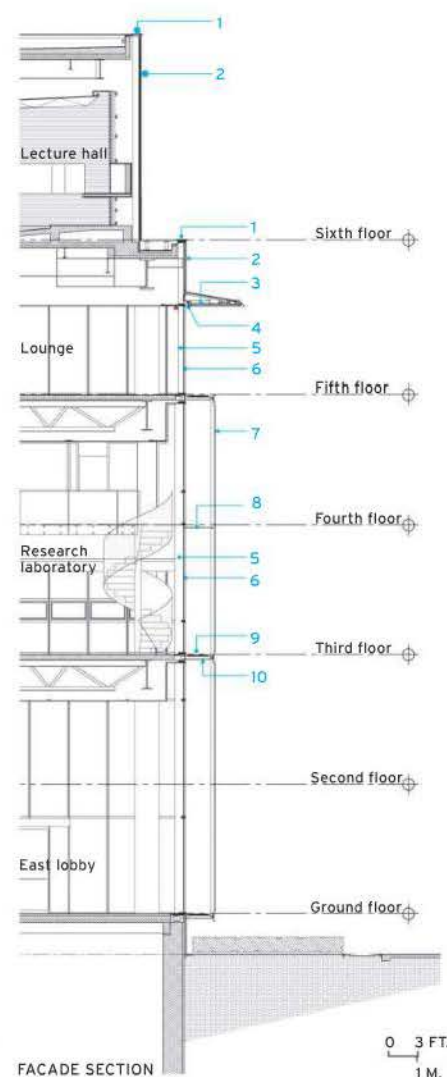
The shading system, designed in collaboration with curtain-wall suppliers YKK and Cupples (now part of Enclos), is made up of 3/4-inch-diameter extruded-aluminum pipe louvers, spaced 1 1/2 inches on center. The louvers arrived at the site preassembled in 4-foot-wide, 26-foot-6-inch-tall panels, allowing quick installation — each face of the building required about three days, according to Gary Kamemoto, a director of Maki and Associates.

One of the more challenging aspects of the system's design was finding logical points in the structure on which to attach the panels, says Kamemoto. "Because of the double-height spaces, we didn't have structure where we wanted it." The team resolved the problem by hanging the panels from the floor slabs with galvanized-steel outriggers that in turn support a 3-foot-wide maintenance catwalk. Intermediary Y-shaped stainless-steel struts help transfer wind loads to extra-deep reinforced mullions.

In addition to the louvers, the Media Lab had two other primary enclosure systems: the glazed curtain wall and a corrugated aluminum panel for areas requiring complete opacity. The combination of the three created a variety of cladding conditions, all of which were explored in two full-scale mock-ups built before the Media Lab was constructed. The first, a 30-foot-tall and 25-foot-wide portion of facade, was erected at a third-party laboratory in Florida, where its vulnerability to water and air infiltration, and its deflection, lateral drift, and vertical displacement were assessed. The second, an approximately 10-foot cube, was built on an MIT parking lot to help contractors better understand how the facade system would be installed on the actual building. This mock-up included conditions such as one element overlapping another, corner pieces, and termination components. The small structure "captured every single detail," says Kamemoto. J.G.

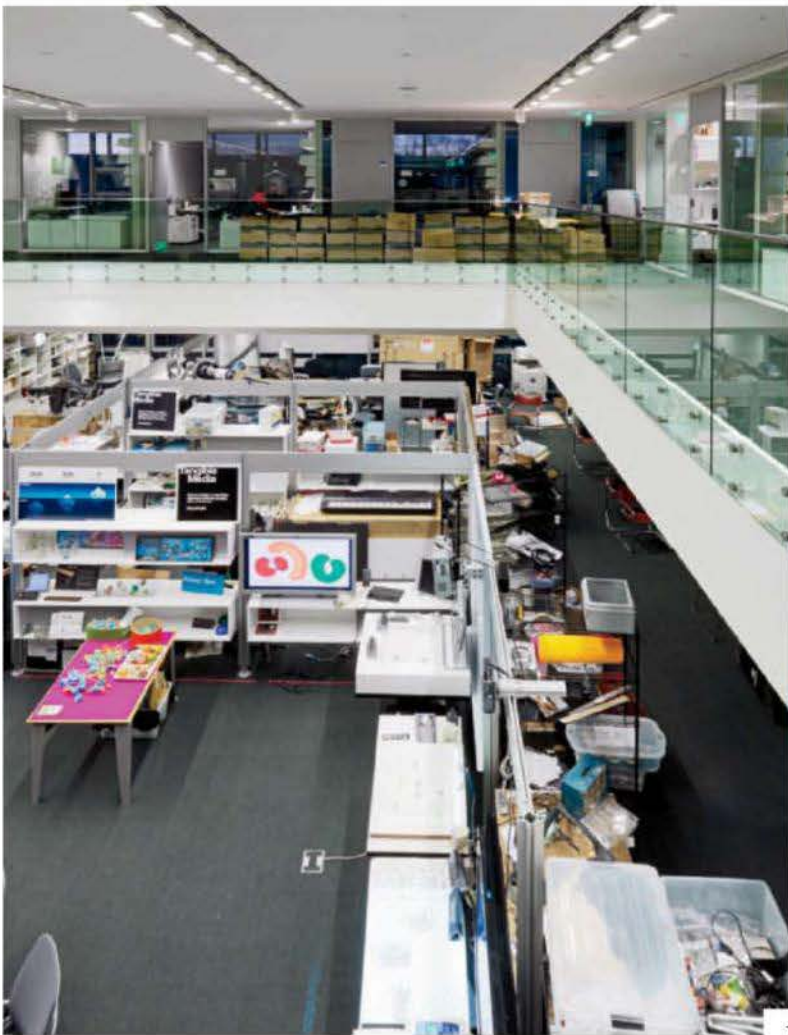


5



FAÇADE SECTION

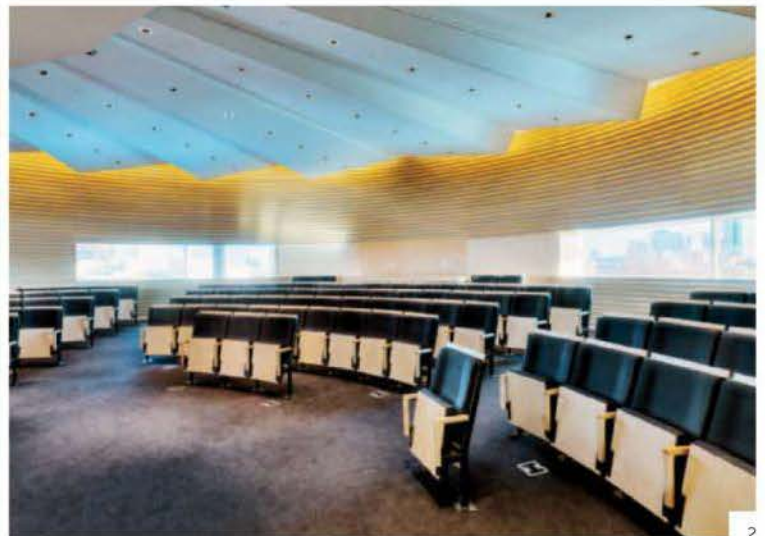
- | | |
|-----------------------------|-------------------------------|
| 1 Aluminum coping | 6 Glazing |
| 2 Corrugated-aluminum panel | 7 Aluminum pipe louver |
| 3 Aluminum soffit | 8 Stainless-steel strut |
| 4 Maintenance rail | 9 Aluminum grating |
| 5 Mullion | 10 Galvanized-steel outrigger |



1. The open layout of the atelierlike research spaces provides plenty of room for the research groups' messy vitality.

2,3. The sixth floor contains several spaces that will be used by the wider MIT community, including an amphitheater-shaped lecture hall and a conference room. A rooftop terrace commands views of the Charles River and the Boston skyline.

OPPOSITE: With sectional manipulation and glazing, Maki has created a visual connection between a fifth-floor café and the rooftop terrace.



Precisely detailed screens of aluminum pipe louvers help designers comply with local energy codes that limit facade area to no more than 50 percent glass. The elements, which shade insulated low-E glazing, mitigate heat gain. They also allow occupants to see the surroundings while providing passersby with views of the activity within, especially at night.

The portions of the facade enclosing more public programmatic elements are also almost entirely glazed, but Maki has given those areas a different treatment. They are clad in low-iron glass with a fine ceramic frit.

The two basic glazing systems, along with extruded-aluminum cladding for areas that required opacity, identify different interior uses while endowing the elevations with an elegant restraint. The only overtly expressive exterior elements can be found at the crown, where Maki has enclosed the lecture hall in an aluminum-clad cylinder and has gently curved the edge of a sloped roof and extended it to shelter a top-floor terrace.

The Media Lab project has the level of refinement and thoughtful planning that is Maki's hallmark. But

it is not delicate or fragile. Instead, it exudes an alluring but quiet strength that holds its own amid its occupants' creative clutter. "It is not a precious building," says Frank Moss, the Media Lab's director. "It does invite us to come and live in it." ■

Project: Media Lab Complex, Cambridge, Massachusetts

Architect: Maki and Associates – Fumihiko Maki, principal; Gary Kamemoto, director in charge

Architect of record: Leers Weinzapfel Associates

Engineers: Weidlinger Associates, SDG–Structural Design Group (structural); Cosentini Associates (m/e/p); Green International (civil)

SOURCES

Glass curtain wall: McMullen

Aluminum panels and pipe louvers: Doralco

Glass: Saint Gobain; Technical Glass Products; Pilkington; Oldcastle BuildingEnvelope; Viracon

Awning windows: Shuco

Entrances: Oldcastle BuildingEnvelope



Graded on a Curve

SANAA's much-anticipated Rolex Learning Center calls into question long-standing views about architecture.

BY JOSEPHINE MINUTILLO

WHAT MAKES A GREAT BUILDING? The ancients seemed to think it had something to do with proportion and symmetry. That belief pretty much persisted through to the last century, when some of the most memorable buildings were the ones that broke completely with those Classical tenets.

Fast forward to a new decade of a new century, and the completion of SANAA's otherworldly Rolex Learning Center. These days, any number of things can make a building great. Some point to the use of groundbreaking technologies and materials to create jaw-dropping forms. Others will argue for a building's green attributes. And if you agree with a certain oft-quoted Modern master, it's all in the details.





The curving, elevated forms of SANAA's Rolex Learning Center in Lausanne, Switzerland, defy traditional ideas about building.



1. Seen from the northeast, the one-story structure is the new center of EPFL's small campus.
2. The larger patios serve as entrances where their sloping forms touch the ground.
3. The south facade is the most complex structurally. A pair of hills corresponds to the auditorium and the largest patio.

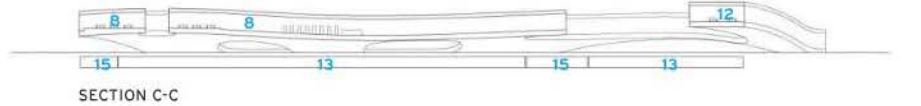
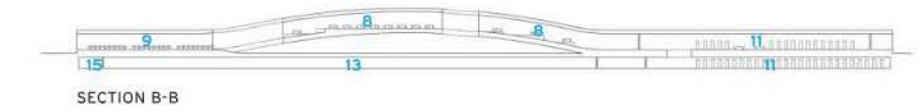
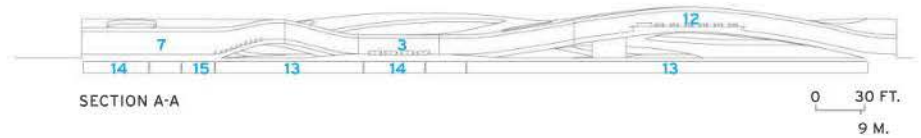
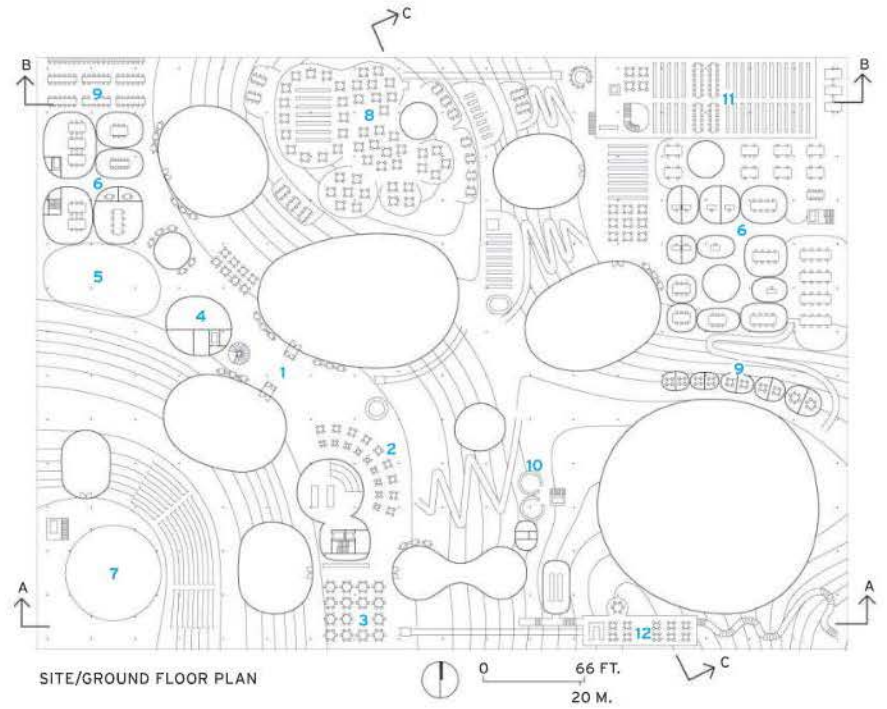
Back to Rolex. On the heels of the Pritzker Prize, awarded to SANAA partners Kazuyo Sejima and Ryue Nishizawa last month, it seems almost blasphemous to imply that the enigmatic firm's latest building is anything but great. And much of what has already been written about the low, undulating structure heralds it as a masterpiece—despite some very obvious flaws. Is it structurally and spatially innovative? Most definitely. Is it sustainably built? Arguably. Is it impeccably finished? Not by a long shot.

Envisioned as a hub for the prestigious École Polytechnique Fédérale de Lausanne's (EPFL) small campus of mostly nondescript buildings in Lausanne, Switzerland, the new Learning Center houses a library, student work spaces, offices, a restaurant, and a café spread out

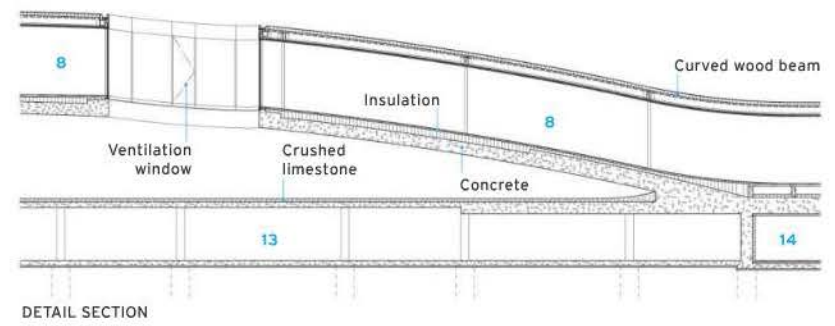
over 215,000 square feet on one open, rolling level. A basement level contains parking and additional stacks.

It's hard to resist likening the structure to a thick-cut slice of Swiss cheese, its rectangular form punctuated by a dozen or so variously-sized holes, or patios, as the architects call them. The patios bring daylight to all areas of the building, and the larger ones serve as entrances where their sloping forms touch the ground. To access them, visitors walk past the impenetrable glass facades and slip beneath one of the building's peaks. It's an unorthodox, but strangely evocative procession that also exposes the glossy underside of the rippled floor slab's concrete.

The concrete—in some areas almost 3 feet thick—was poured over a precise formwork of sloping geometries created from 1,400 individual molds. The complex



- | | | | |
|-----------------|---------------------|-----------------------------|---------------|
| 1 Main entrance | 5 Bookshop | 9 Work area | 12 Restaurant |
| 2 Café | 6 Offices | 10 Ancient books collection | 13 Parking |
| 3 Food court | 7 Multipurpose hall | 11 Research collection | 14 Storage |
| 4 Bank | 8 Library | | 15 Mechanical |



PHOTOGRAPHY: © CHRISTIAN RICHTERS (1)

curvatures are supported by 11 highly reinforced arches, with spans as great as 280 feet. Prestressing in the slab over the basement provides added support, though the curving form around the largest patio in the building's southeast corner required a structural wall and column.

A steel-and-wood roof billows in response to the concrete waves for a consistent 11-foot ceiling height (except in the taller multipurpose hall). Between floor and ceiling—the former blanketed by a mousy gray carpet, the latter a stark white sound-absorbing surface—is a remarkable space that's a hybrid of built and natural environment that takes its cues from the nearby Alps, visible from inside. The building, a flowing landscape, is unencumbered by walls, allowing views across its interior and through the patios; overhead is a continuous plane.

1. The overhead plane curves in harmony with the sloping floor. Sunshading louvers are located along the south, east, and west facades, and inside the patios. The sensor-controlled louvers descend automatically. The beanbaglike chairs SANAA developed with IDEE are used extensively by students.
2. Terraces provide flat surfaces for tables in the library, seen here, and restaurant. The library contains more than 500,000 volumes.
3. Glass-enclosed work areas, referred to as “bubbles,” allow students private space for group study and debate.
4. Enclosed circular spaces act as research and administrative offices.

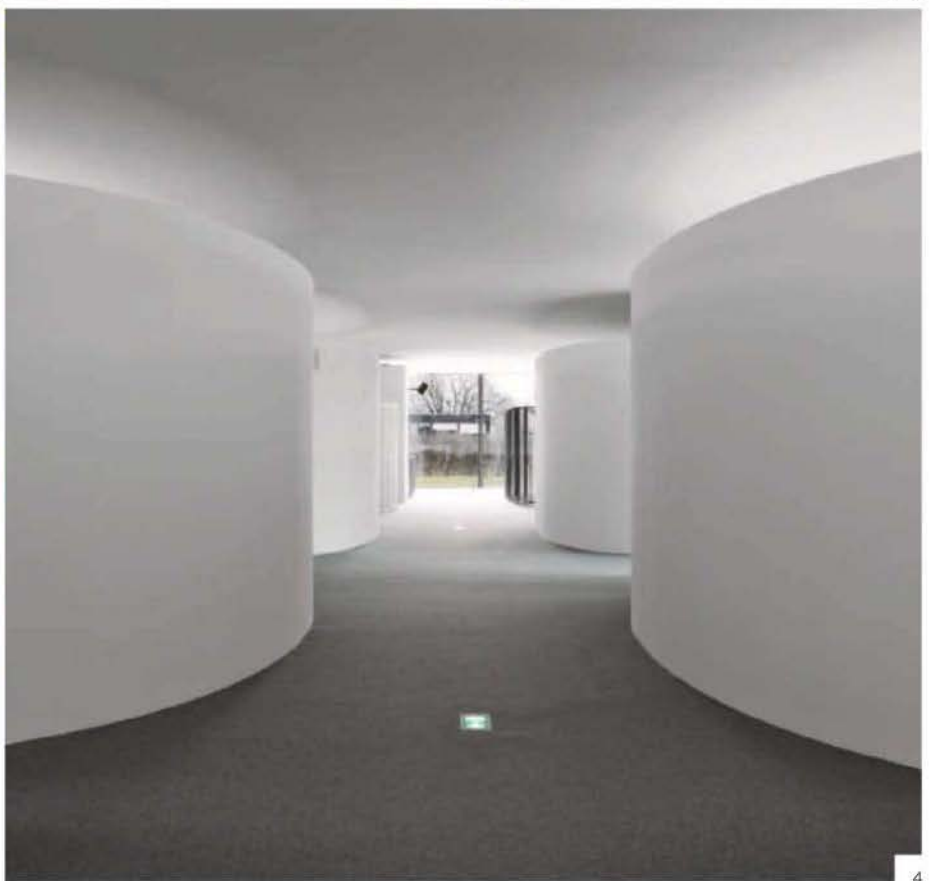


Herein lies the building’s greatest strength. The experience of meandering through the space is magical, and one that challenges traditional notions of movement through man-made constructions as strictly vertical or horizontal. But this singular experience is also the source, somewhat counterintuitively, of the building’s main drawbacks. The single-story, sloping structure is not the exemplar of accessible design one might expect it to be. To use hiking terms—which the promenade through this building brings to mind—some of the hills might be classified as moderate to expert. So while it may be free of doors and walls, the building is chock full of ramps and elevators, both inclined and vertical.

The lack of partitions gives way to alternate methods of separating functions, some better than others (the cage surrounding the bookshop comes to mind as a less than desirable alternative). Tables in both the library and restaurant are raised on terraces and encircled by the same

bulky railings that line the ramps. Circular “cubicles” enclose offices, creating awkward residual spaces between closely positioned cubicles, and between the covered tops of the cubicles and the ceiling. The sloping terrain itself is supposed to act as a divider, but since this is not abundantly clear, some areas are roped off. One large area behind the auditorium is just too steep to serve any purpose at all. Apparently, the efficient floor plan is so last century.

A series of student work spaces, referred to as “bubbles,” use glass to create privacy. Unfortunately, it’s not the precisely curved glass of SANAA’s Glass Pavilion at the Toledo Museum of Art in Ohio [RECORD, January 2007, page 78] or the swirling acrylic of its Derek Lam Shop in New York City [RECORD, September 2009, page 78]. Cost constraints dictated that the bubbles be fitted with less expensive, less transparent, straight panels—a surprise, given the list of donors who funded the \$100 million project, led by the Learning Center’s illustrious namesake.





ABOVE: Located in the southwest corner of the building, the multipurpose hall, or auditorium, takes advantage of the structure's sloping floor to position its 600 seats. While the rest of the building maintains a consistent 11-foot ceiling height, the ceiling in this space, called the Rolex Forum, reaches a 16-foot height. The Alps are visible in the distance.

OPPOSITE: The roof runs parallel to the waves of the concrete floor slab below. Laser-cut wood beams, each unique, form the curving portions of the roof.

Cost-cutting measures are evident throughout the building, most noticeably in all the off-the-shelf components that draw attention in a structure that is anything but. Skylights, for instance, were necessary to keep the building naturally ventilated and help it achieve Switzerland's strict Minergie label for energy efficiency—despite all the concrete. Yet the standard bubble type used here, glaringly visible from the ground, flagrantly disrupts the flowing overhead plane both inside and out.

Most visitors to the building, including a very curious public, are able to look past these flaws. Students from the EPFL and a nearby university have completely embraced it, consistently filling the libraries and work spaces and creating ad hoc study areas by variously arranging the beanbaglike chairs that dot the floor.

The Learning Center is obviously an inspiring place for its users, but that in itself cannot make the building great, and it is far from SANAA's best. The firm's ambitious design was scaled back almost from the start, leaving the architects to make one concession after another.

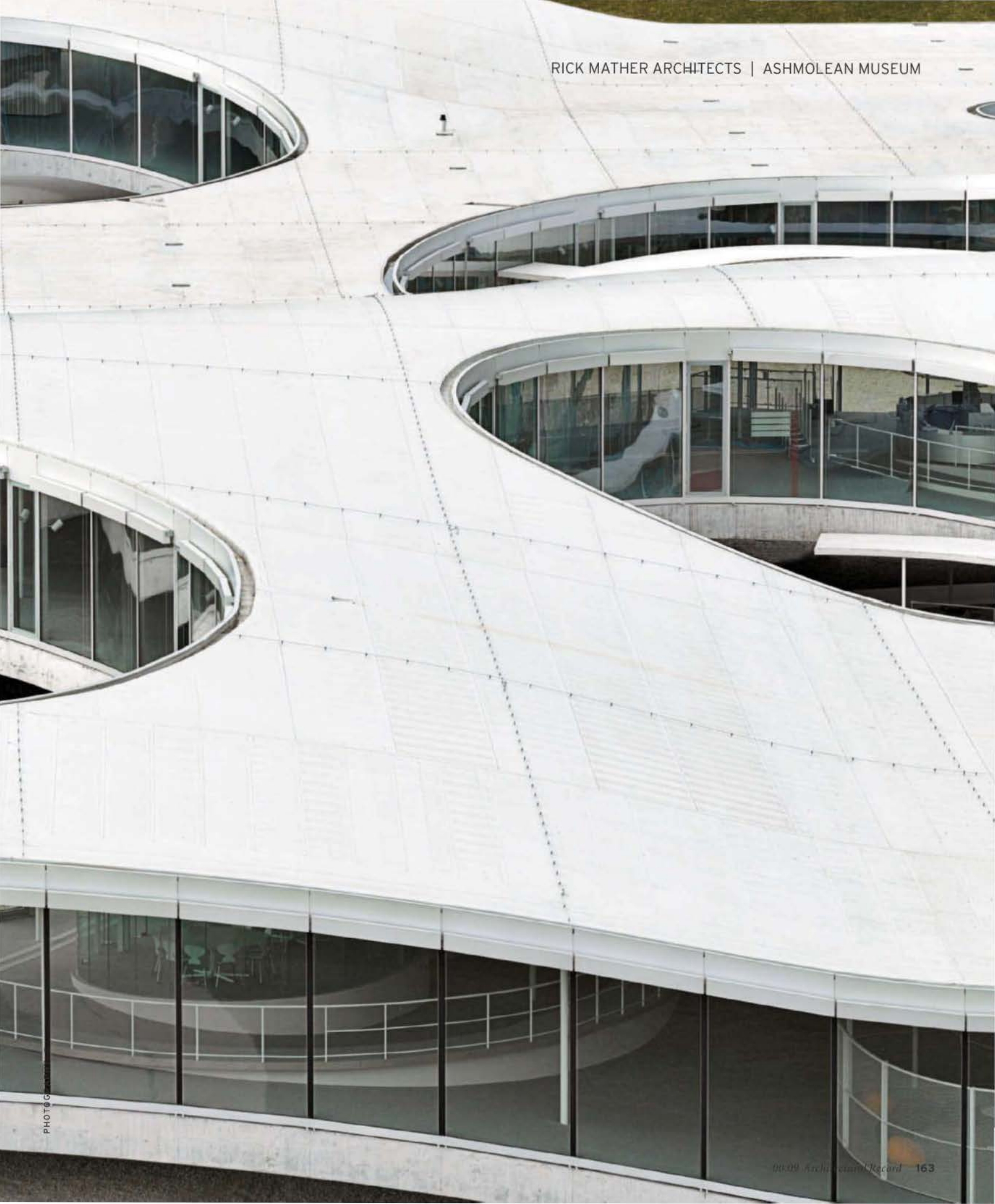
Which leaves us with the perennial question: Is building a worthwhile pursuit when it may be impossible to reconcile the purity of a concept with the realities of construction and limitations of budget? As long as we want to have great buildings in the future, the answer to that is yes. ■

Project: Rolex Learning Center, Lausanne, Switzerland
Architect: Sejima and Nishizawa and Associates (SANAA) – Kazuyo Sejima, Ryue Nishizawa, principals; Yumiko Yamada, project manager
Architect of record: Architram SA
Structural engineers: SAPS/Sasaki and Partners;

Bollinger + Grohmann GmbH – Agnes Weilandt, project manager; Walther Mory Maier AG
General contractor: Losinger Construction SA

SOURCES

Roofing: Sika Sarnafil
Lighting: Zumtobel
Acoustic ceiling: Baswa
Library shelves: Unifor



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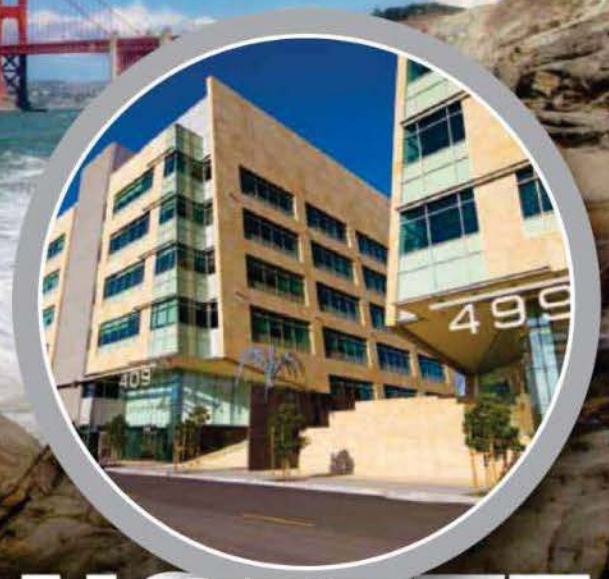
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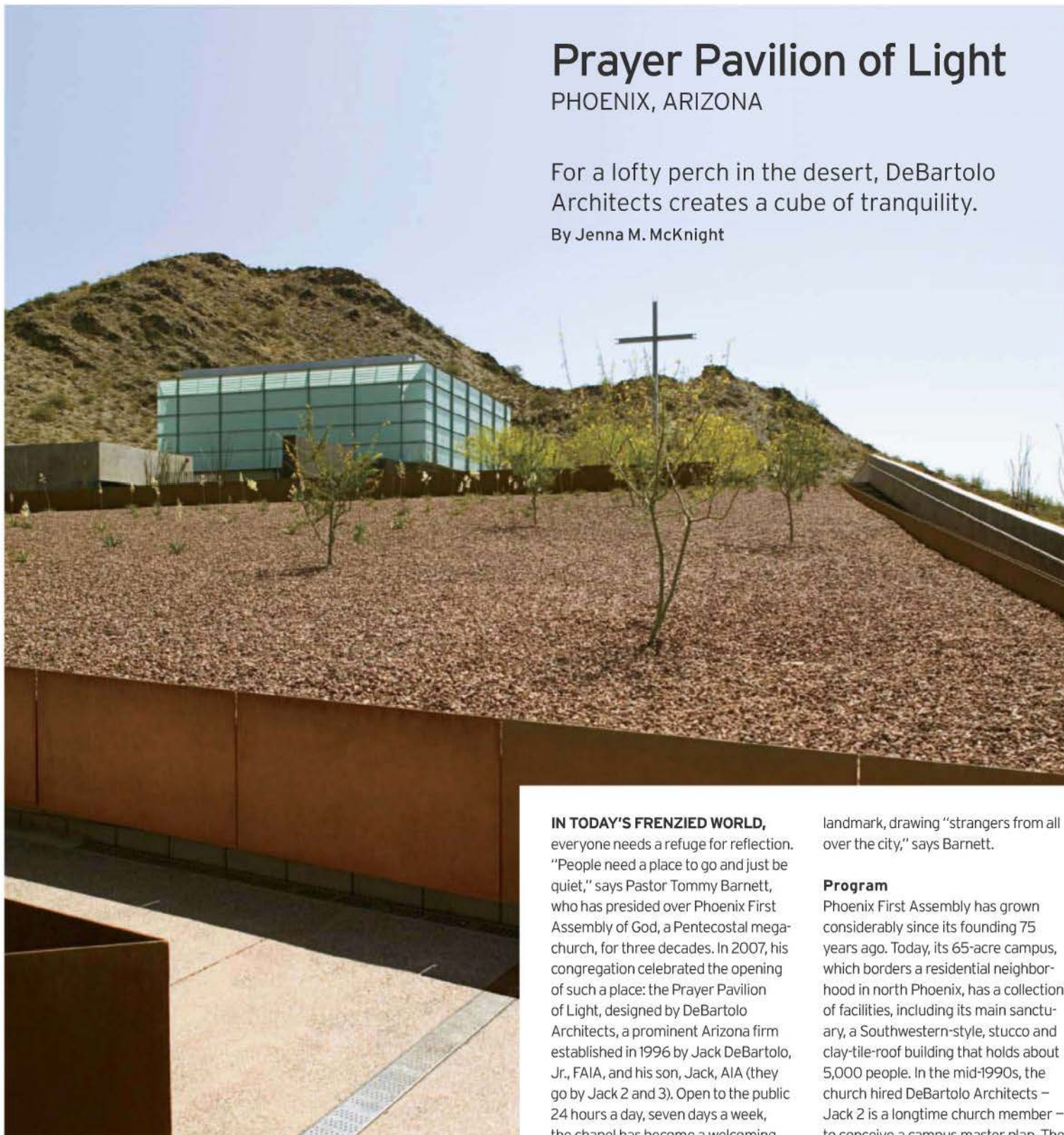
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Prayer Pavilion of Light

PHOENIX, ARIZONA

For a lofty perch in the desert, DeBartolo Architects creates a cube of tranquility.

By Jenna M. McKnight



PHOTOGRAPHY: © BILL TIMMERMAN, EXCEPT AS NOTED

IN TODAY'S FRENZIED WORLD, everyone needs a refuge for reflection. "People need a place to go and just be quiet," says Pastor Tommy Barnett, who has presided over Phoenix First Assembly of God, a Pentecostal megachurch, for three decades. In 2007, his congregation celebrated the opening of such a place: the Prayer Pavilion of Light, designed by DeBartolo Architects, a prominent Arizona firm established in 1996 by Jack DeBartolo, Jr., FAIA, and his son, Jack, AIA (they go by Jack 2 and 3). Open to the public 24 hours a day, seven days a week, the chapel has become a welcoming

landmark, drawing "strangers from all over the city," says Barnett.

Program

Phoenix First Assembly has grown considerably since its founding 75 years ago. Today, its 65-acre campus, which borders a residential neighborhood in north Phoenix, has a collection of facilities, including its main sanctuary, a Southwestern-style, stucco and clay-tile-roof building that holds about 5,000 people. In the mid-1990s, the church hired DeBartolo Architects — Jack 2 is a longtime church member — to conceive a campus master plan. The

firm was then commissioned to design a series of modern buildings: an early childhood education center (completed in 2000), a youth pavilion (2002), and a children's pavilion (2004).

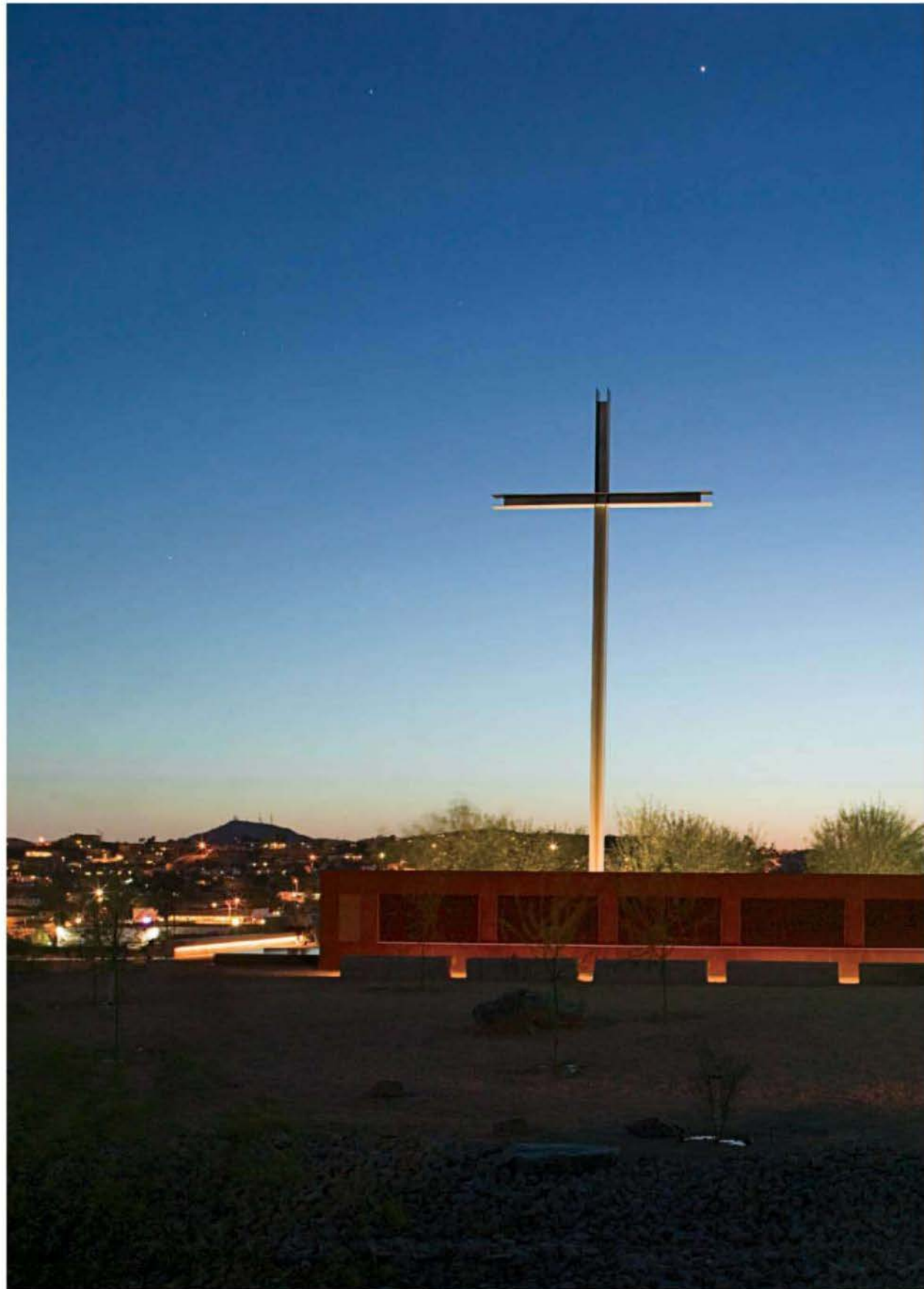
In 2003, the firm was charged with creating the final piece of the master plan: a prayer chapel. Its atmosphere needed to be conducive to meditation and appropriate for events such as funerals and weddings. It was to be constructed on the highest point on campus, a 3-acre parcel flanking Stoney Mountain.

Solution

The client wanted a highly visible "place of light" that offered city views. In response, the architects perched a 2,500-square-foot glass box bordered by courtyards on the elevated site. Envisioned as a "lantern on a hill," the cube glows brightly at night and can be seen from miles away.

One of the architects' primary goals was to isolate the chapel, to make it a truly serene environment. And so, the visitor experience begins at the base of the hill, where one enters a zigzagging path that gradually ascends 28 feet to the pavilion. Tall, weathered steel plates line the paved walkway, creating a tunnel effect. "It's a threshold of sorts that brings you from the ordinary to the extraordinary," says Jack 2. At its pinnacle, the path deposits visitors into a landscaped plaza overlooking Phoenix. "To us, the whole experience is about coming up to the site and starting to engage the architecture," says Jack 3. This south-facing courtyard, which features a black, 70-foot-long reflection pool and towering steel cross, gracefully merges with the glass-clad chapel.

From the beginning, the DeBartolos knew they wanted to use ample glazing. "But how do you design a glass building in the desert? For us, that was a massive challenge," says Jack 3. After exploring various shading strategies (such as steel mesh) and finding them aesthetically insufficient, they conceived a double facade that protects the interior from the scorching desert sun. The inner enclosure, supported by Vierendeel trusses, is triple-glazed. The outer facade, which cantilevers





The ethereal envelope is supported by Vierendeel trusses that sit on a pinwheel of four black concrete walls. On the south side of the chapel, a 50-foot-tall steel cross emerges from a reflecting pool.

Westchester Reform Temple

SCARSDALE, NEW YORK

Rogers Marvel Architects brings a strong sense of identity to a new synagogue within an existing temple complex.

By Suzanne Stephens

Architect: Rogers Marvel Architects – Rob Rogers, FAIA, Jonathan Marvel, AIA, principals; Alissa Bucher, AIA, project architect; Josh Kaplan, Chris Dameron, Gary Machicek, Lisa So, Minh Tran, Ben Regnier, Mary Ann Holiday, Elena Brescia, Haily Tweedie, designers

Client: Westchester Reform Temple

Engineers: Langan Engineering (civil); Robert Silman Associates (structural); Collado Engineering (m/e/p)

Consultants: Dirtworks (landscape); Jaffe Holden (acoustical); Jim Conti Lighting Design (lighting); Buro Happold (sustainability); Henshell Buccellato (envelope); Harley Swedler (special designs); James Hofrichter (owner's representative)

Size: 50,000 square feet (entire); 17,000 square feet (new)

Cost: \$12 million (construction)

Completion date: September 2009 (first phase)

SOURCES

Brick: Endicott Brick

Metal-and-glass curtain wall, windows, entrances: Oldcastle BuildingEnvelope

Bent glass: Fox Fire

Wood: Kaswell Flooring Systems (endgrain); South Everson Lumber (cedar woodwork)

WHILE THE SYMBOLIC program for a synagogue is distinct, as an iconic structure it lacks the identifiable architectural typology of, say, a Gothic-style cathedral or a domed mosque. Since the first Diaspora of the Jews in the 7th century B.C., Jewish synagogues have responded to the particulars of places and living situations of migrating congregants, as Henry and Daniel Stolzman note in *Synagogue Architecture in America, Faith, Spirit, and Identity* (2004).

For that reason, architects have often been free to experiment with this building type, arriving at contemporaneous solutions that achieve a sense of identity within a particular context. Yet when the New York firm of Rogers Marvel Architects won the commission to execute the master plan and to design a new sanctuary for the Westchester Reform Temple campus in Scarsdale, New York, it was faced with a hodgepodge of religious structures.

The amorphous agglomeration resulted from growth and modification by previous architects, beginning with Marcel Breuer, who designed a sanctuary in 1959, followed by Percival Goodman's expansion in 1964, plus a separate structure, the Center for Jewish Life, which Peter Gisolfi added to a historic house in 1998. What's more, the complex's 9-acre site occupies a residential section of this New York City suburb, whose inhabitants were very touchy about institutional growth.

The principals, Rob Rogers, FAIA, and Jonathan Marvel, AIA, had not designed a synagogue

before. They got on the Request for Qualifications list through the most reliable of devices, word of mouth, stemming from a house they designed some years back in Wyoming. Moreover, they are not Jewish. But Rabbi Richard Jacobs and the congregation found the architects took the time to listen and did not seem to be wedded to preconceived ideas about the architecture: "We wanted a place of meaning that embodied core values of the community," says Jacobs.

Program

The congregation had outgrown the old sanctuary, the Breuer-designed space, which had been subsumed by Goodman's expansion. In its new master plan, Rogers Marvel called for converting it into a 14,000-square-foot religious school and study center, now under construction.

In addition to the renovated spaces, there would be a new, 17,000-square-foot structure for the sanctuary that could expand from 400 seats to 600 for special occasions and 1,250 during the High Holy Days. During most of the year, this extra space would function as a social hall, with a kitchen attached.

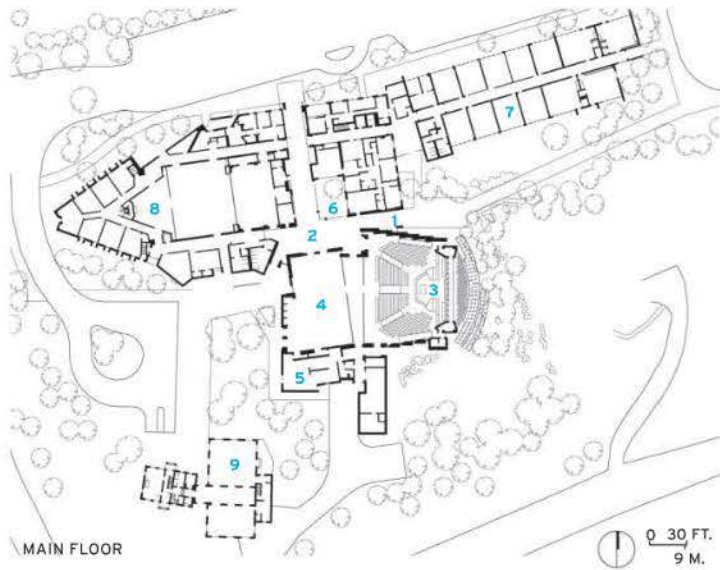
While the congregation needed flexibility in such accommodations, it didn't want to sacrifice the feeling of spiritual contemplation for those sitting in the add-on spaces during the special holidays or celebrations. Balance was key in inspiring the sense of intimacy and community, without losing the impression of grandeur.



In terms of the effect of the entire 50,000-square-foot complex on the residential neighborhood, the architects needed to improve pedestrian circulation and parking for the synagogue while providing landscaped areas that would make the campus more cohesive, yet less obtrusive, in its surroundings.

Solution

Rogers and Marvel designed the new building to push out from the south side of the existing structures so that the sanctuary faces east, as is traditionally prescribed. The hall is wider than it is deep so the congregants, as project architect Alissa Bucher explains, enter on a diagonal axis from the lobby without having to approach it from the social spaces at the rear. Inside the sanctuary itself, the architects placed the ark



- 1 Entrance to sanctuary
- 2 Lobby (new)
- 3 Sanctuary (new)
- 4 Social space (new)
- 5 Kitchen (new)
- 6 Memorial Garden (new)
- 7 Childhood Center
- 8 Religious school and study center (under renovation)
- 9 Center for Jewish Life



1. The entrance lobby abuts the north wall of the sanctuary.

2. Bent, L-shaped glass louvers on the east reflect

colors from the garden.
BELOW: Cedar and iron-spot brick clads the staggered bays of the sanctuary.







LEFT: The bimah and ark in the sanctuary face east. The ark, made of olive ash, seems to float within the louvered glass wall

that overlooks the garden beyond. Seven bays refer to the seven days of the week and are articulated by cedar panels and skylights.

ABOVE: An open-air memorial garden, enclosed by bronze-and-glass screens, is located in one corner of the lobby.

containing the Torahs and the bimah (the elevated platform where the service is performed) on axis with the diagonal entrance.

Steel trusses with 90-foot spans form seven bays in the main hall. These seven “bands” refer to the seven days of the week, with the final one containing the space of the bimah. When the room is opened up at the rear, a total of 12 bays appear, signifying the twelve Tribes of Israel.

An interplay of cedar and white plaster elements define the sanctuary’s walls and ceiling. Glazed vertical strips define the bays in the upper portion of the north elevation and the lower portion of the south, while skylights softly illuminate the interior during the day. The articulation of north and south walls, where the angled cedar panels are pulled out from the perimeter, acoustically enhances the space, and provides a dramatic background for inscriptions. Behind the bimah, the olive ash ark seems to float in the expansive glass-louvered walls (but is actually suspended from aluminum fins, anchored to the steel framework).

The louvered glass faces east to a landscaped garden but is shielded from it by an outer wall of low-E glass panels in an aluminum curtain-wall system. In spite of the double wall, separated by a 5-foot-wide service passage, ample daylight can be admitted and bounced off the L-shaped louvers. The architects were careful to surface undersides with mirrored chrome and coat the top sides with a blue paint to reflect the colors of the garden and sky while cutting the glare into the hall.

Commentary

The sanctuary achieves a timeless, monumental quality, yet offers an intimate and comfortable ambience. A Modern aesthetic extends throughout, and the palette of handsome natural materials and colors adds to the hushed allure of the space. Since the project is not complete with regard to other parts of the temple, it is hard to say whether the ensemble as a whole will produce the coherence that the team desires. This first phase – especially the sanctuary with its distinctive architectural solution – represents an auspicious beginning. ■

Sunpu Church

SHIZUOKA, JAPAN

Balancing enclosure and exposure, this Presbyterian church by Taira Nishizawa is both awe-inspiring and intimate.

By Naomi R. Pollock, AIA

AN ELDERLY CONGREGATION

housed in an aged building, the Sunpu Church was in need of revitalization. Having been through many incarnations since it was founded in the 1890s, the Presbyterian congregation occupied a rental property in a quiet neighborhood in Shizuoka, a city of 700,000, 112 miles west of Tokyo. Hoping that a centrally placed building on church-owned land would not only save money but also attract new members, the group interviewed several designers and appointed the Tokyo architect Taira Nishizawa to the job.

Program

Nishizawa's first task was to find a suitable site. Located at the intersection of a narrow, residential road and a broad thoroughfare lined with low-scale offices, shops, and apartment buildings, the prominent corner plot he recommended was a definite improvement over the church's current home. The only catch was the commuter train line running down the middle of the commercial strip. While the church might benefit from the increased visibility among the young workers and students who ride the rails daily, the noise generated by the train cars whipping past every few minutes posed obvious problems.

But this condition did not stop the client from closing the deal or the architect from moving ahead to the project's programming phase. In addition to the chapel with seating for the entire congregation (the Sunpu Church has roughly 100 members but only 40 weekly worshippers), the client requested an



adjacent, soundproof room where parents and small children could participate in services without disturbing them. The congregation also needed a kitchen, meeting room, and other support areas, plus a study and a three-bedroom apartment for the minister.

Solution

To distinguish the chapel from the rest of the church, Nishizawa divided the project into two distinct but connected volumes. Inspired by the scale and geometry of the commercial buildings, a cube contains the sanctuary. Echoing the neighboring houses, a pitched roof block holds the minister's apartment above and parking plus the other programmatic pieces below. While the residence has a separate door on the building's back side, the church welcomes worshippers with a diagonal entrance

ABOVE: Adorned with a grapevine motif, a gated entrance welcomes worshippers.

OPPOSITE: A light-filled box, the sanctuary is encased in wood.

at the intersection of the two streets. From there, a low, shadowy vestibule leads to the chapel: a 33-foot-square, light-filled space with a soaring, 30-foot-high ceiling.

Nishizawa achieved this dramatic result entirely with timber. "Wood is an organic material that allows you to control the transition between inside and out," explains the architect. Practicing what he preaches, the architect encased the sanctuary in a 30-inch-thick windowless wall whose multiple layers of insulation, soundproofing, and structure delicately modulate the flow of sound, both external

Architect: Taira Nishizawa

Client: Sunpu Church

Engineers: Kanebako Structure Engineering; Kankyou Engineering (mechanical)

Consultants: Bonnori Lighting Design; Karasawa Acoustic Design; Maki Kaneko (entrance gate); Sugiyama Koumuten (general contractor)

Size: 2,339 square feet

Cost: 74,000,000 yen (about \$782,000)

Completion date: May 2008

SOURCES

Glazing: Tostem

Lights: Panasonic; Endo

Furnishings: Inoue Industries (construction)





and internal, and light from above. "I wanted to realize a space where people could read or listen to the Bible unimpeded by artificial light or microphones," says Nishizawa.

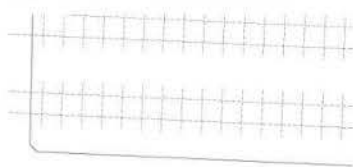
In contrast to the rough-hewn, vertical strips of unfinished red cedar cladding the whole building, horizontal, planed, pine louvers line the chapel's inner face. As the wall ascends, these lateral bands become progressively thinner, the interstitial gaps wider, and the entire surface dematerializes, revealing the trusslike columns illuminated from above. The gradation from solid to void culminates at the ceiling, where evenly spaced, 0.63-inch-wide, diagonal wood bars mask 4-foot-deep roof trusses but admit muted light from seven skylights on top.

Integral to the architecture, the ever-changing play of light and shadow enlivens the sanctuary and takes the place of applied adornment or religious imagery. "Protestants concentrate on the Bible, not on icons," explains the architect, who rendered the altar and baptismal basin as plain, wooden boxes. And function drove the clean design of the chairs – they had to be compact and stackable but include a sliding shelf for prayer books. The only suggestion of iconography is the delicate, stainless-steel cross crowning the grapevine-patterned gate at the building's entrance.

Commentary

Located at a typical street crossing in a regional city in the heart of Japan, the Sunpu Church embodies spirituality in a place where one might not expect it. Though the clanging trains and other sounds of the city are never completely out of earshot, daylight is a constant presence that forges a symbolic bond between heaven and earth – the essence of ecclesiastical space. Both intimate and awe-inspiring, Nishizawa's building is a remarkable balance of modesty and monumentality. ■

Based in Tokyo, Naomi R. Pollock is ARCHITECTURAL RECORD's special international correspondent.



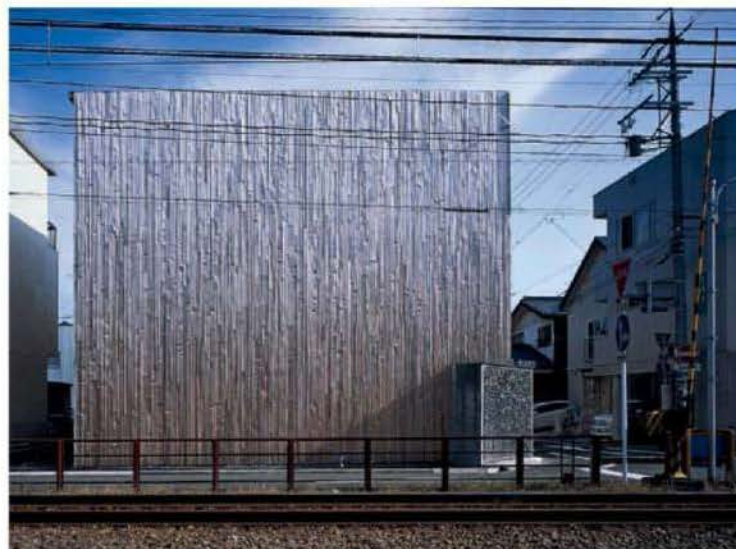
- 1 Entrance
- 2 Vestibule
- 3 Sanctuary
- 4 Meeting Room
- 5 Parent-child room
- 6 Parking
- 7 Kitchen
- 8 Minister's study

ABOVE: Lining one wall, a low-ceilinged vestibule leads to the sanctuary.

BELOW: View of the red cedar exterior from the train tracks.



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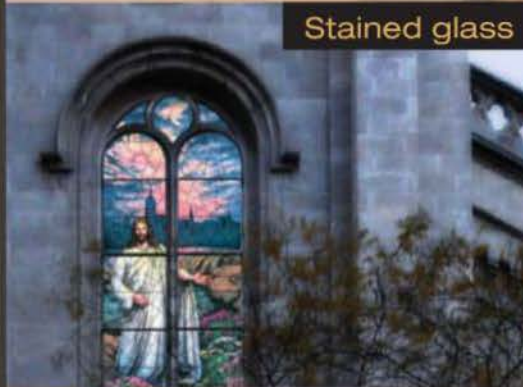
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Left Picture: Sponsor Award Winner, EMPAC / Grimshaw Architects
Right Picture: Citation Award Winner, Hudson-Panos House / Swatt Architects

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Reviving “Almost Nothing”

A multidisciplinary team of consultants tackles the tricky restoration of a pair of iconic Chicago towers.

By Joann Gonchar, AIA



FEW ARCHITECTS ARE as closely linked with their aphorisms as Ludwig Mies van der Rohe. Any student of design, as well as many members of the general public, will readily associate him with phrases like “less is more” or “God is in the details.” The mottoes are so memorable, at least in part, because they vividly capture the essence of his buildings. And of all his work, no project represents the rationalist, “almost nothing” aesthetic embodied in his quips quite as well as the set of 26-story apartment towers he designed for Chicago’s Gold Coast: 860 and 880 Lake Shore Drive.

Mies’s primary goal for the twin buildings was to express the logic of the towers’ structural skeletons on their facades. The supporting columns and spandrels provide the key organizing elements, with the elevations further subdivided by vertical mullions and then infilled with floor-to-ceiling windows. The buildings sit on a triangular plot of land, with their rectangular, three-by-five bay footprints facing each other at right angles.

The glass-enclosed lobbies are pulled away from the perimeter columns, making the buildings appear to almost float on a shared travertine, plinthlike plaza.

Completed in 1951, the buildings were Mies’s first realization of his vision for a glass-and-steel skyscraper. The pair, along with a handful of other midcentury projects, including Pietro Belluschi’s Equitable Life Assurance Building (1947), in Portland, Oregon, and Skidmore, Owings & Merrill’s Lever House (1952), in New York City, would become the prototype for postwar high-rise development around the world.

The Lake Shore buildings have long been recognized as icons of Modernism. They were placed on the National Register in 1980 and designated Chicago Landmarks 16 years later. However, this status did not make either 860 or 880 immune to the not-so-unusual effects of exposure to the elements: After more than half a century of freezing and thawing, wind and rain, surface corrosion was readily visible on the towers’ gridded facades. At their base, the lobbies’ storefront system was badly deteriorated, pavers were cracking and spalling with water seeping into the below-grade garage, and rusted exterior lighting fixtures left the plaza underilluminated.

To return the buildings to their former pristine Minimalism, in 2007 the owners, the 860-880 Condominium Association, tapped a multidisciplinary team of Chicago-based consultants headed by Krueck & Sexton Architects. The firm is primarily known for its own sleek designs, rather than preservation work, but had earlier completed the restoration of Mies’s S.R. Crown Hall (1956) at the Illinois Institute of Technology [ARCHITECTURAL RECORD, January 2006, page 148]. At Lake Shore Drive, as with Crown Hall, the challenge was to

ABOVE: The Lake Shore Drive facades express the logic of the towers’ structural frames.

RIGHT: I-beams welded to the mullions emphasize the buildings’ gridlike elevations.



Continuing Education

Use the

following learning objectives to focus your study while reading this month’s ARCHITECTURAL RECORD/AIA Continuing Education article. To earn one AIA learning unit, including one hour of health, safety, and welfare (HSW) credit, turn to page 193 and follow the instructions. Other opportunities to receive AIA/CES credit begin on page 195.

Learning Objectives

- 1 Describe the challenges inherent in restoring a Modernist building.
- 2 Discuss how codes, budgets, and maintenance issues complicate restoration of a Modernist building.
- 3 Explain how the restored buildings at 860-880 Lake Shore Drive differ from the originals.
- 4 Explain how the 860-880 restoration team preserved the original design intent.





1



2

1,2. As part of the renovation, the facades were repainted, restoring their graphite-black crispness. But before recoating, their surfaces seemed chalky.

3. The restored storefront system incorporates cladding installed during an earlier renovation.



3



PLAZA LEVEL PLAN

0 50 FT.
15 M.

1 860 Lake Shore Drive

2 880 Lake Shore Drive

improve performance, but in way that respected Mies's stark aesthetic. The fundamental issue, says Krueck & Sexton principal Mark Sexton, FAIA, "was making a historic landmark better while preserving the original design intent."

Coating conundrum

Work on the approximately two-year-long project

started with forensic consultants from Wiss Janney Elstner (WJE) thoroughly documenting the condition of the towers' coatings. They found chalking, corrosion along the edges of the steel mullions, and isolated areas of blistering and craters. The problem was in part due to so-called "mill scale" – a layer of oxide that forms on rolled steel or iron during the production process. Typically, this substance is removed as part of normal surface preparation to improve adhesion, but at 860-880, workers applied the original coatings with the mill scale still intact, explains Arne Johnson, a WJE principal. "These were the first exposed steel frames in Chicago," he says. "Everyone was still learning."

With the understanding that the towers had been repainted as recently as the late 1980s, the owners and the restoration team considered sandblasting to remove the mill scale, the original lead-based paint, and subsequent layers in their entirety. But after analysis showed that the existing coatings could support one more layer, they opted for a different approach that entailed more localized surface treatment, including removal of corrosion to bare metal and spot priming. After this work was done, contractors applied a water-based topcoat to the whole of both towers, restoring their graphite-black crispness.

Eventually, the towers will have to be entirely stripped and painted, but the restoration team

contends that this more extensive work could be deferred to coincide with the need to replace sealants around window frames. "The sealant still has additional service life," says Ken Itle, WJE's lead architect for the 860-880 project. "Both [should] be done together," he says.

Plinth problem

Their repainting strategy allowed team members to preserve much of the project's \$8.5 billion budget for restoration work at the base of the towers, where they considered the needs more pressing. Here, water would pond and pool on the surface of the plaza whenever it rained, and would then saturate the structure below and its reinforcing material, and cause pavers to crack. Freeze-thaw cycles and deicing materials accelerated the whole process, and by the time Krueck & Sexton was hired, the plaza had undergone at least three previous renovation campaigns. These earlier efforts involved removing the stone pavers, refinishing and reinstalling them, and supplementing them with new material. The end result was a mismatched checkerboard effect that compromised the purity of Mies's almost totally flat travertine plane, or what Sexton likes to refer to as the plaza's "plinthness."

For Sexton and the rest of the consultants, restoring the plaza was not just a matter of finding the right travertine or detailing the joints

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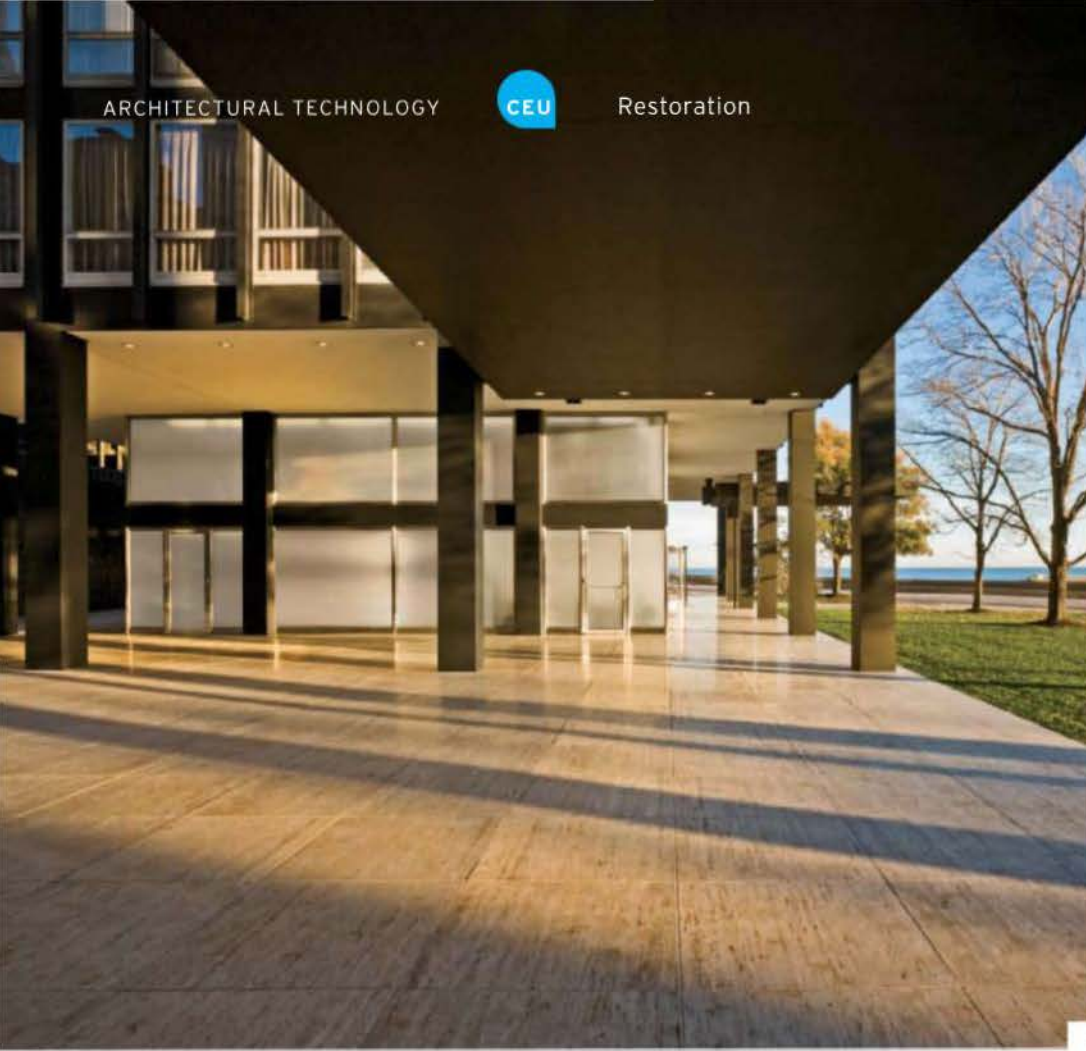
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3

between pavers – which were naturally very important, requiring trips to a quarry in Tivoli, Italy, and the examination of samples and mock-ups. Proper restoration meant correcting the underlying problem – the plaza’s inadequate drainage.

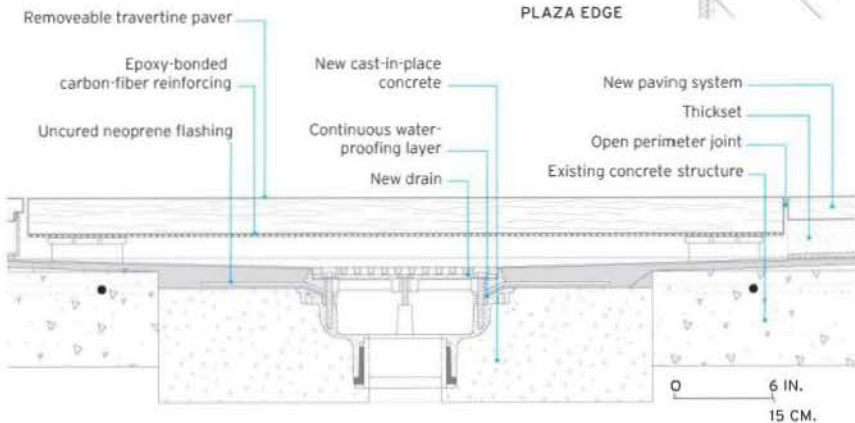
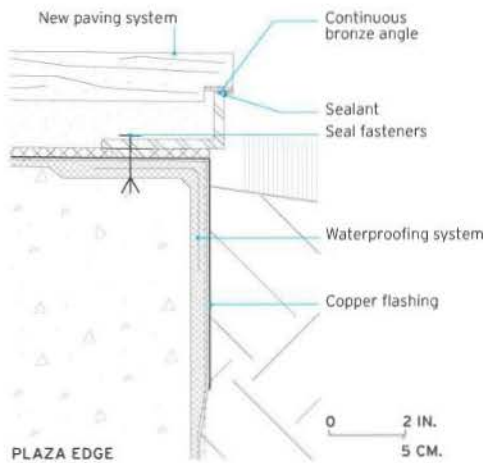
Although the problem was easy to identify, the fix was less straightforward. In order to make the plaza shed water, contractors would need to introduce a slope to its surface, and they would need to do so while preserving the impression that buildings sit on a perfectly even and level field of travertine. The solution was to incorporate nearly imperceptible ridges and valleys into the plaza surface. These are much shallower than would be installed in a new construction project, but still effective. The only indication that the plaza is no longer flat is the absence of puddles after it rains, says Bruce Vance, AIA, senior project manager for the restoration’s general contractor, Bulley Andrews.

The sloped stone sits on top of an unbonded setting bed and a continuous drainage mat over a waterproof membrane. Underneath this assembly is an extensively repaired and reconstructed structural slab, which is also sloped to help channel the water. To the one existing exposed plaza drain, workers added 15 more concealed below removable pavers.

The plaza’s poor drainage also wreaked havoc on the storefront that encloses the lobbies, which suffered from both direct water infiltration and condensation build-up. The problem was



2



1. The newly restored plaza incorporates a subtle slope to aid drainage, though it looks like a perfectly flat plinth.

2. An extensively repaired slab is below the new plaza.

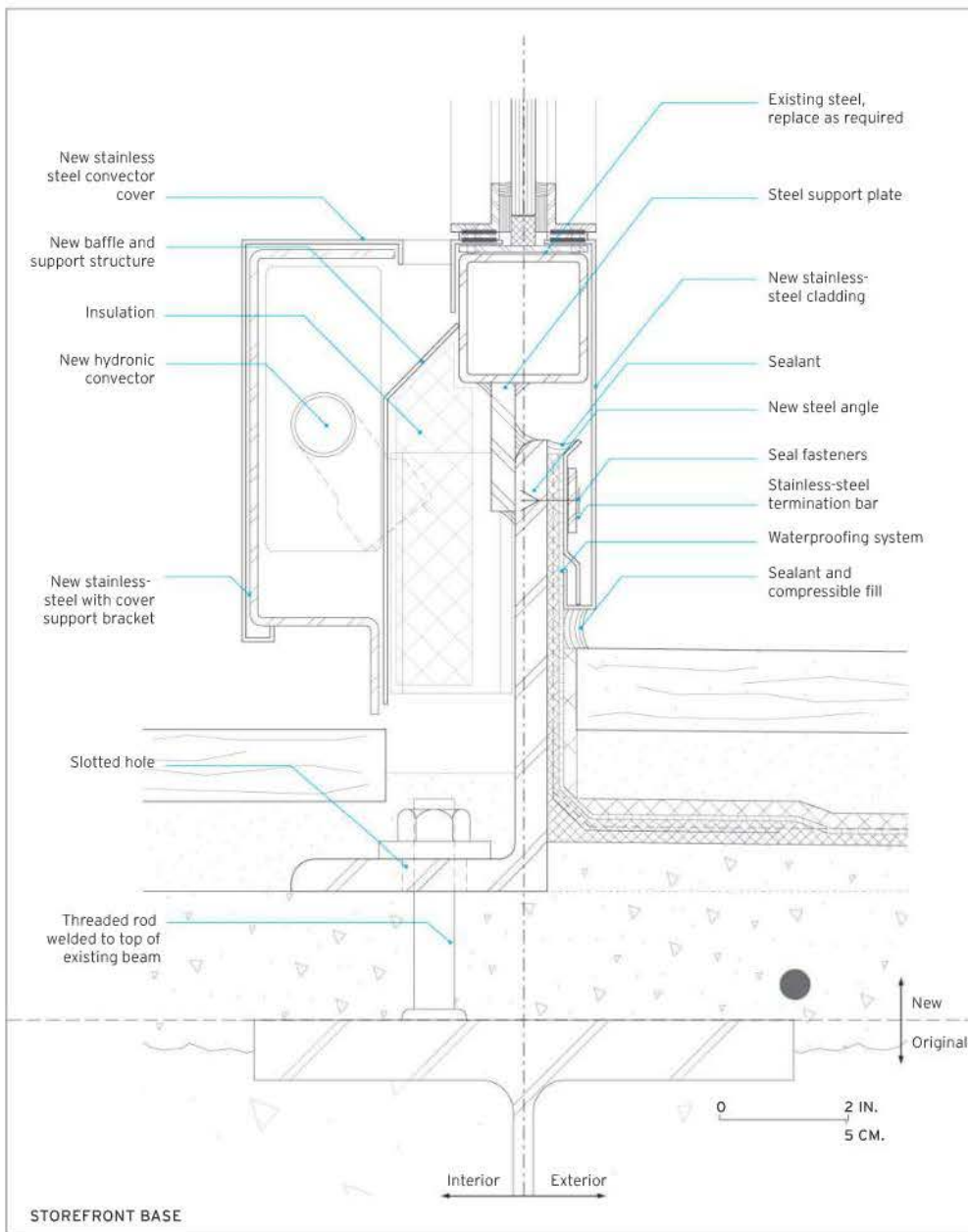
3. Water no longer pools on the travertine surface, as it did before reconstruction.

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The plaza's poor drainage caused deterioration of the lobby storefront, especially at the base.

tured surface proved vulnerable to staining and scratching and was replaced during the Holabird & Root renovation with laminated glass containing a PVB (polyvinyl butyral) interlayer. The substitution eliminated the staining and scratching problems and satisfied new codes requiring safety glass in such installations. It also simulated the effect of the sandblasted glass, but subtly changed the character of the storefront. "Laminated glass is more translucent and less transparent than sandblasted glass," explains Sexton.

Luckily, glass technology has advanced considerably in recent decades, allowing Sexton and the team to find a solution that would respond to code and maintenance requirements and be historically accurate. They specified clear glass that was both sandblasted and tempered (a combination not yet available at the time of the earlier renovation). And to prevent marking of the glass, they included a clear epoxy coating on the textured face.

Recapturing that glow

Changing out the laminated glass for glazing more sympathetic to Mies's design intent had one unanticipated consequence: The designers and residents noticed that light emanating from ceiling fixtures just inside the storefront seemed no longer to softly backlight the sandblasted panels as it once had. Instead, the light source – fluorescent lamps inside asymmetrical linear reflectors – was now annoyingly discernible from the plaza.

The reflectors had been created specifically for 860-880 by architectural lighting pioneer Richard Kelly as part of a complete exterior and lobby illumination scheme. Kelly had designed the fixtures around T12 lamps, which in the course of normal maintenance were swapped for the smaller diameter T6s. Although the different-size

exacerbated by the negative pressurization of the buildings' interiors, causing the enclosure system to suck in air and water with it when it rained.

Retrofitting the mechanical systems to alter the buildings' pressurization was not in the project's scope, so the consultants tackled the water-infiltration problem by replacing the bottom foot of the storefront, where the deterioration was most severe. Above the base, they opted to keep the existing system mostly intact. The team preserved much of its steel-tube structure, which was believed to be original fabric. And because of budget concerns, they also retained the storefront's stainless-steel cladding, even though it had been installed by Holabird & Root as part of a 1980s renovation in place of Mies's aluminum cladding. "We could not replace the

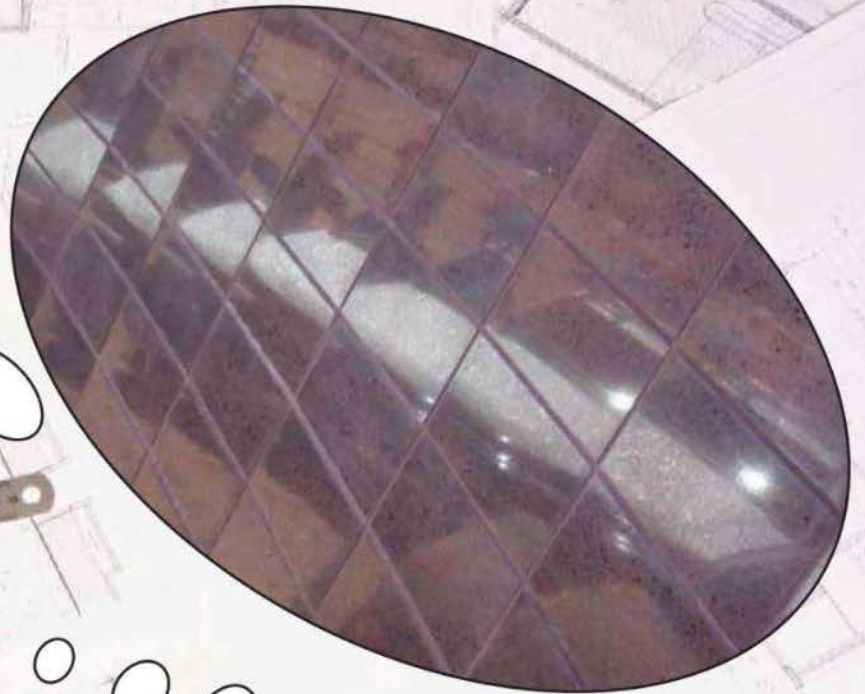
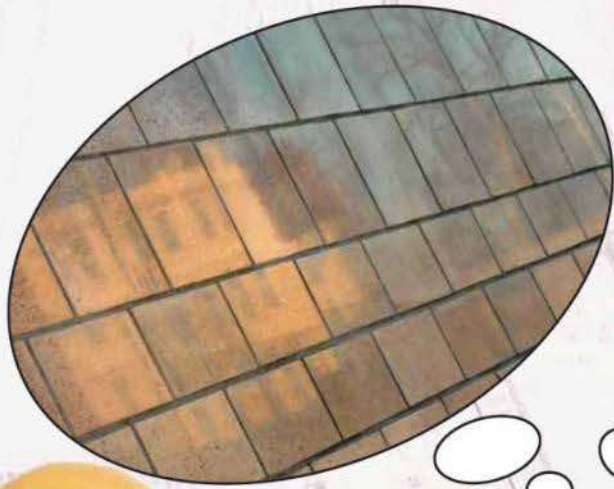
whole system," explains Gunny Harboe, FAIA, the project's preservation consultant. "We had to work with what was there."

Although the storefront reconstruction efforts were concentrated at its base, the work should greatly improve the enclosure's long-term performance. The retrofit made proper termination of the plaza's new waterproofing system possible. It also allowed designers to raise the exterior pavers 1½ inches relative to the lobby floor and create the desired water-shedding slope.

As part of the storefront work, the project team also replaced the glazing at the lobby's back-of-house spaces. In the original, Mies had installed glass sandblasted on the inside face, much as he would later do at Crown Hall, to hide the activity within from view. However, the porous and tex-

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Back-of-house areas are once again concealed by panels of sandblasted glass, as they were when the buildings were completed in 1951.

lamps produced the same amount of light, the narrower ones were more intense at the source, with an uneven distribution, explains Jim Baney, a partner at Schuler Shook, the restoration project's lighting consultant. The less historically accurate laminated glass had camouflaged this effect, but the more transparent sandblasted glass could not. The solution was to simply replace the lamps with T12s.

The project team also examined the plaza lighting as part of the restoration project. Kelly illuminated the area with downlights at the edge of the buildings' exterior soffits. His concept was "to make the travertine glow," says Baney.

But over the years, the fixtures, which had no lenses and thus were completely open to the elements, had rusted beyond repair. In addition, the original 300-watt R40 lamps had a very limited life span, necessitating their frequent replacement. Building staff had long ago substituted lower-maintenance, self-ballasted fluorescents. The end result was that the downlights were producing less than 25 percent of their original design output.

Baney and his team found a replacement fixture sympathetic to the architecture that could be installed from below into the existing

soffit and offered protection from water penetration. The new downlights each house a 39-watt 3000K ceramic metal halide lamp with an operating life almost 12 times as long as the original incandescent lamps. The new lighting has a warmth and lumen output that approximates Kelly's design but consumes only a fraction of the energy, according to Baney. The goal, he says, "was to interpret the design using today's available technology."

Naturally, historic buildings, especially those as significant – and deceptively simple – as Mies's Lake Shore Drive towers, can benefit from the deployment of the latest technology. But sensitive restoration is much more complex. Reinvigorating older structures requires delicately balancing the desire for historical accuracy with a host of sometimes conflicting demands, including programmatic needs, code requirements, and tight budgets. In fact, suggests Sexton, restoration work is not all that different from designing a building from scratch. "It involves many of the same constraints." ■

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610EDIT

- 1 All of the following were prototypes for postwar high-rise development except which?
 - A 860-880 Lake Shore Drive
 - B Lever House
 - C S.R. Crown Hall
 - D The Equitable Building
- 2 Which of the following is an aphorism attributed to Ludwig Mies van der Rohe?
 - A Less is a bore
 - B Less is more
 - C Form follows function
 - D The house is a machine for living in
- 3 The scope of the recently completed work at 860-880 included all except which?
 - A a mechanical system retrofit
 - B plaza reconstruction
 - C an exterior lighting restoration
 - D replacement of the storefront base
- 4 Which of the following facade work was part of the recently completed restoration at 860-880?
 - A removal of all existing paint from building frames
 - B replacement of sealant around windows
 - C localized treatment of deteriorated steel
 - D painting of both buildings with an alkyd coating
- 5 Which of the following is an accurate statement regarding mill scale?
 - A it is a layer of oxide that forms on rolled steel during the production process
 - B it is typically removed from steel as part of normal preparation for painting
 - C the scale remains intact on the 860-880 building frames
 - D all of the above
- 6 Which of the following regarding the newly restored plaza at 860-880 is false?
 - A it contains concealed drains below removable pavers
 - B it is a perfectly even and level field of travertine
 - C its structural slab has been extensively reconstructed
 - D its waterproofing system includes a continuous drainage mat
- 7 How did the 860-880 restoration team tackle the storefront water-infiltration problem?
 - A they positively pressurized the lobbies
 - B they negatively pressurized the lobbies
 - C they lowered the plaza elevation at the storefront by 1½ inches relative to the lobby floors
 - D none of the above
- 8 Why was the storefront glazing at back-of-house areas replaced during the 1980s renovation?
 - A it prevented passersby from seeing in
 - B it was vulnerable to staining and scratching
 - C it could not be properly backlit at night
 - D it contributed to solar gain
- 9 In order to reproduce the effect of the original sandblasted glass, Krueck & Sexton specified which?
 - A glass with a ceramic frit
 - B glass with a PVB interlayer
 - C the same glass Mies selected
 - D glass that has been tempered, sandblasted, and coated with clear epoxy
- 10 The new exterior soffit light fixtures house which kind of lamps?
 - A ceramic metal halide
 - B incandescent
 - C self-ballasted fluorescent
 - D high-pressure sodium

Program title

"Reviving 'Almost Nothing,'" ARCHITECTURAL RECORD, 06/10, page 184.

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Form Follows Fun: Design Options in Modern Ceiling and Wall Systems

Tessellated ceilings and walls take advantage of new technologies; metal and wood panels can be almost any shape, size, or finish.

Provided by Ceilings Plus

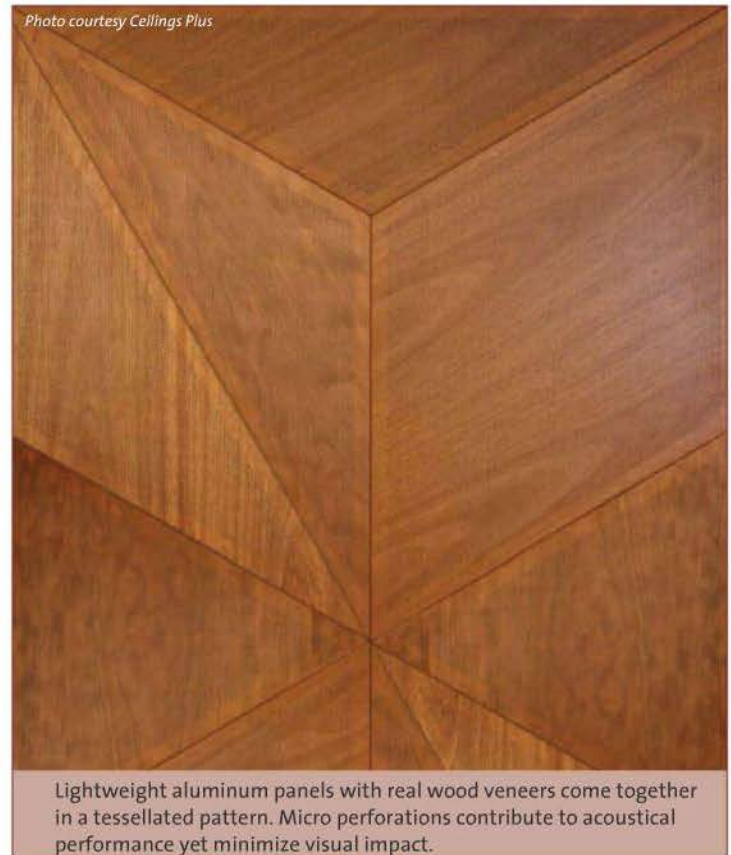
By Nancy Mercolino and Michael Chusid, RA, FCSI

We appear to be in a new architectural era. The revolution was almost bloodless, but it was, nonetheless, a revolution. The tools of design have changed, from the sliding parallel rule to intelligent software so versatile that it is almost a direct extension of the imagination. The technology for manufacturing architectural products has kept pace, enabling the fabrication of forms and patterns that, until recently, would have been unthinkable and prohibitively expensive. Designers of the new era enjoy unprecedented freedom to explore, play, and design from the heart.

This change is nowhere more apparent than in ceiling and wall design. It is marked, among other things, by a renaissance in tessellation, an architectural tradition with ancient roots and still-unexplored potential. The tyranny of the rectangular grid has been broken. The third dimension has been breached. Moreover, elaborate and imaginative design in wood is no longer the exclusive privilege of high-budget projects. Walls and ceilings once again are surfaces for expression as well as function.

This course will explore the new design freedoms in ceilings and walls, with particular emphasis on tessellation, the use of wood and metal, and the interplay of shapes, textures, perforation patterns, and the seamless flow from digital design to computer-controlled fabrication.

In many people's minds, the concept of tessellation is inextricably linked with the work of M.C. Escher, and certainly that famous Dutch graphic artist dramatically demonstrated the visual and emotional power this type of pattern. (He was, in fact,



Lightweight aluminum panels with real wood veneers come together in a tessellated pattern. Micro perforations contribute to acoustical performance yet minimize visual impact.

CONTINUING EDUCATION

Use the learning objectives below to focus your study as you read **Form Follows Fun: Design Options in Modern Ceiling and Wall Systems**. To earn one AIA/CES Learning Unit, including one hour of health safety welfare credit and sustainable design, answer the questions on page 199, then follow the reporting instructions or go to ce.architecturalrecord.com and follow the reporting instructions.

Learning Objectives

After reading this article, you should be able to:

- Explain the use of tessellations in ceiling and wall design.
- Describe the impact of contemporary design and panel-fabricating technologies on architectural options.
- Differentiate between traditional and modern wood panel systems.
- Define the role of ceiling and wall panel systems in acoustical control and noise reduction.

inspired by tessellated designs found in architecture, specifically the elaborate tile work of the 14th century Moorish castle, The Alhambra, near Granada, Spain.) Tessellation may be defined as “completely covering a surface with a repeated shape or grouping of shapes,” or from another point of view, “dividing a surface into polygons (i.e. multi-sided shapes).” The term comes from the Latin “tessellare,” meaning “to pave with tiles.” In other words, a tessellated surface can be thought of as covered with tile-like panels.

Tessellations are an ancient design tradition, having been used as decorative architectural motifs since antiquity. They have been featured in flooring designs and architectural ornament throughout the ages. In many eras, they also graced walls and ceilings. The Roman Basilica Nova, begun in 308 AD, with its towering groined and barrel vaults, tessellated in concrete octagonal coffers, is a stunning example.

During the twentieth century, the use of tessellation in walls and ceilings waned. It was due in part to the emergence of suspended ceilings: complex shapes executed in carved or



Designed by JMZ Architects and Planners, P.C.
Photo courtesy Ceilings Plus

Faceted ceiling, rising above the Tompkins Community College in Dryden, NY, repeats polygonal form of structural cross bracing. BIM-compatible fabrication was used to form the folds in the metal panels.

cast materials were too heavy to hang efficiently on the walls or ceilings of modern structures. But to an even greater degree, it was a result of the aesthetic of the age. In every epoch, architectural motifs have related to the design and fabrication technologies in use. In the Industrial Age, the production line became the shape giver of modern architecture. Ribbons of material — whether glass, ceramic, metal, wood, or mineral fiberboard — moved down the line to cut-off mechanisms that produced rectangular sheets or panels. These right-angled building components were compatible with the drafting tools epitomizing the era — the sliding parallel rule and right-angled triangle.

With BIM-driven fabrication, every panel can be a different shape.

While there are some non-orthogonal examples, such as Frank Lloyd Wright's experiments with hexagonal modules in his Usonian houses and Buckminster Fuller's geodesic and Dymaxion projects, rectangles were the dominant planning module of the architectural era now drawing to a close. The rectitude of rectilinearity was boldly proclaimed during the post-World War II era by legions of great steel-and-glass boxes with gridded facades that sprang up on expensive real estate in most of the cities of the Western world. Ceilings still bear glaring evidence of this trend in the nearly ubiquitous use of the 24 x 48-in. lay-in grid system.

New technologies have brought dreaming back into architecture by redefining what is practical to build. Computer-aided design (CAD) and building information modeling (BIM) require only a modicum of additional computing power to define curved and tessellated shapes instead of orthogonal shapes. Innovative designers can now write algorithms based on building-program requirements — such as access to sunlight or audience sightlines — and then use computational analysis to suggest “generative designs” not constrained by historical building forms.

Fabrication is done by machines that *don't care* if they make the same shape repeatedly, or a different shape on every panel. BIM information is linked to computer-numerically controlled (CNC) metal-forming equipment, so ceiling systems composed of digitally created shapes are made with little or no cost increase over standardized shapes. The BIM/CNC connection has effectively erased the distinction between standard and custom fabrication and ushered in the era of “mass customization.” This capability extends to fabricating perforations as well as panel shapes and sizes. With BIM-driven fabrication, every panel can be a different shape.

The minimal weight of light gage metal panels overcomes the earlier problems of suspending heavy materials. Aluminum ceiling panel systems made of .040-inch thick sheet can weigh, including support system, as little as one half the load of a mineral-fiber panel system. Moreover, wood panels can now be made by laminating ultra-thin wood veneers to sheet aluminum instead of wood-product cores. This gives wood ceilings and walls

all the options in shaping and forming that apply to metal panels, and improves their performance affordably. (See sidebar, “The New Wood” on p. 197.)

The result is that patterns based on triangles, pentagons, trapezoids, and other polygons have become economically feasible alternatives to the square and rectangular grids. The designer can create patterns with shapes, with curvatures, with perforation patterns, with varying planes, and with combinations of these variables. The wide range of tessellations is now within reach.

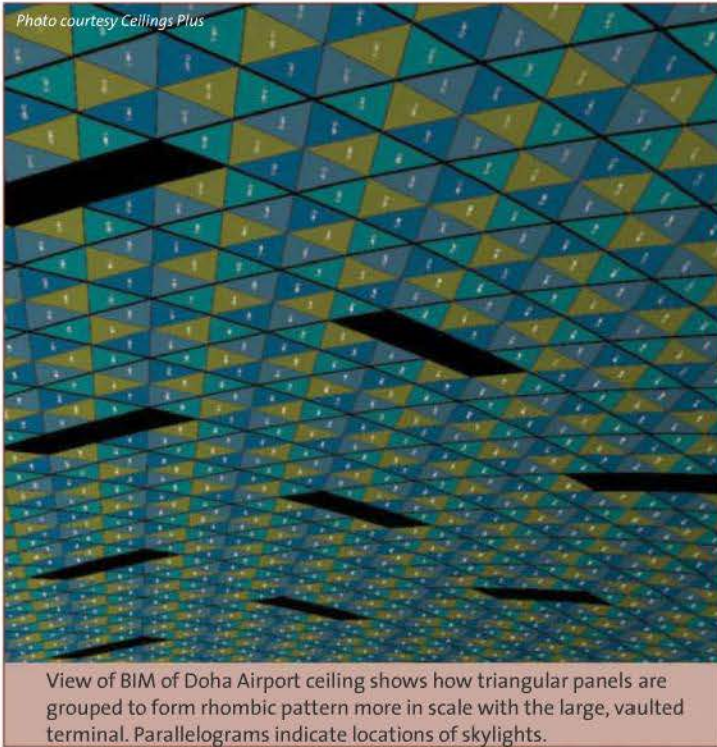
A TESSELLATION CASE STUDY — THE NEW DOHA INTERNATIONAL AIRPORT

The New Doha International Airport in Qatar, designed by HOK, San Francisco, demonstrates the architectural potential of tessellations. The main concourse has a wide-span, undulating ceiling vault. Its ceiling is assembled of triangular panels with edges as long as 4 ft. To better match the large scale of the concourse, the



Photo courtesy Ceilings Plus

Mock-ups can help visualize tessellated designs and refine details. This mock-up for the New Doha International Airport indicates the large scale of the triangular aluminum panels and rhombic reveals.

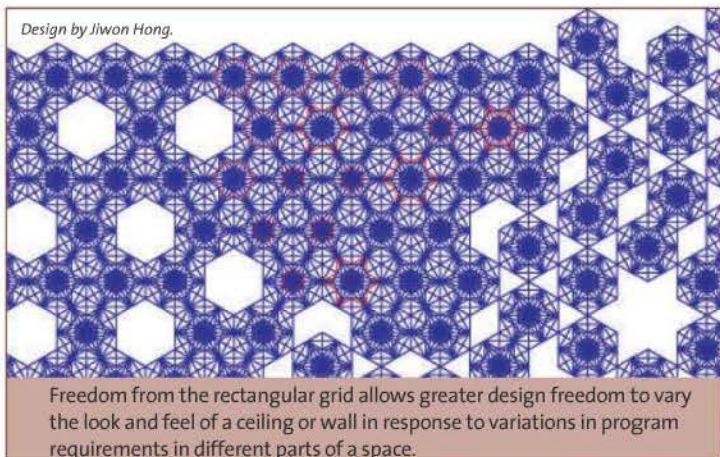


View of BIM of Doha Airport ceiling shows how triangular panels are grouped to form rhombic pattern more in scale with the large, vaulted terminal. Parallelograms indicate locations of skylights.

triangles are overlain with a rhombic pattern created by using wider joint spacing around clusters of eight triangular panels. A third visual element introduces rhythm by placing trapezoidal openings beneath skylights that allow filtered light to cast dappled shadows onto the floor below. The light weight of aluminum panels was important to the design, both because of the overall load on the long spans of the ceiling, and for access above the ceiling. The panels are also perforated for noise reduction, required because of the widespread use of hard, sound-reflective surfaces in the building.

THE POWER OF POLYGONS

The building blocks of tessellations are multi-sided shapes called polygons. In “regular polygons” such as equilateral triangles, squares, pentagons, hexagons, and octagons, all the edges are the same length, and all the angles between adjacent edges are



Freedom from the rectangular grid allows greater design freedom to vary the look and feel of a ceiling or wall in response to variations in program requirements in different parts of a space.

equal. There are three “regular” tessellations that can fill a surface with just a single type of regular polygon — equilateral triangles, squares, and hexagons.

There are also eight “semi-regular” tessellations in which two or more types of regular polygons can be arranged so the configuration of polygons meeting at each vertex is the same. Further, there are 20 “demi-regular” tessellations that are more complex, yet can be formed from regular polygons.

Many of these tessellations can be altered by elongation or skewing. For example, a tessellation of regular hexagons can be deformed by changing the length of one set of parallel edges, while a pattern of squares can be skewed to create a field of rhombi.

Beyond these are the tessellations composed of “irregular” polygons including non-equilateral triangles, quadrilaterals

The New Wood

Traditional wood ceilings use architectural veneers over cores of particle board, plywood, solid lumber, or fiberboard. The difficulties entailed in fabricating these materials have imposed severe practical limitations on design.

The new generation of wood ceilings use the same real-wood veneers laminated to sheet aluminum. This innovation is made possible by new adhesives and by substrate treatments that modify the molecular texture of aluminum sheet to improve adhesion. As a result, wood ceilings can now be made using the same automated fabrication techniques as metal ceilings, and enjoy the same range of options.

Wood veneers offer a wide range of appearances. Wood installations can be specified with plain sliced or rotary, quarter, or rift cut veneers. Leaves of veneer from these different cuts can be book, slip, or random matched, making possible many looks such as symmetrical patterns or stepping effects.

(Note: Discussion of wood continues at ce.architecturalrecord.com)

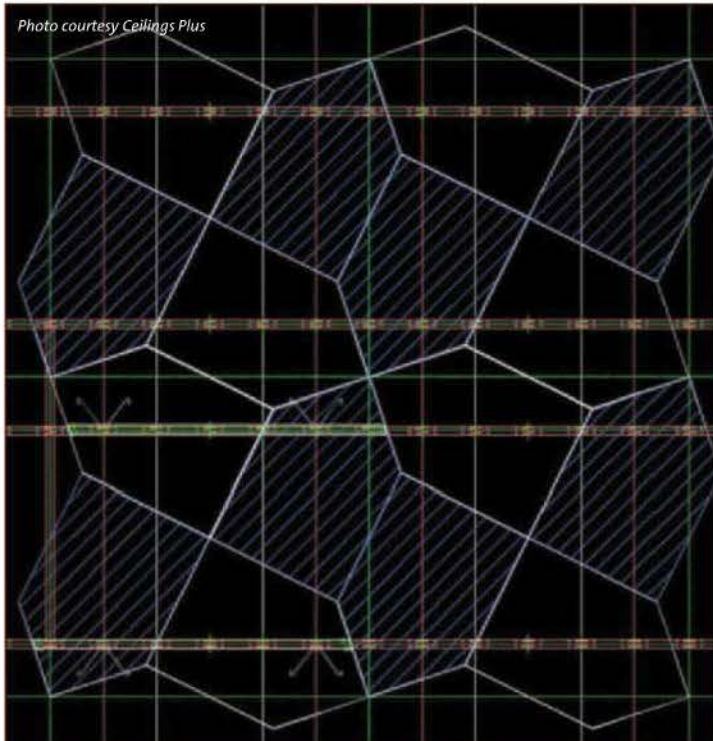


Wood wall and ceiling panels at Pitzer College, Claremont, CA auditorium are lightweight and perforated to provide acoustical control.

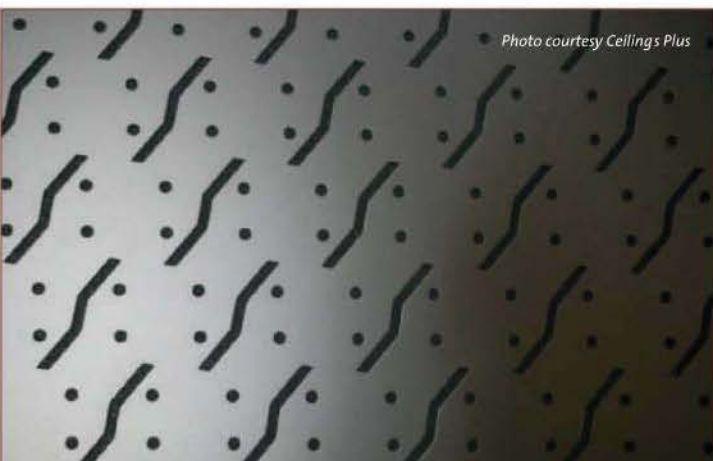
(e.g. rhombi and trapezoids), and polygons with edge lengths that are not uniform. (Note: Discussion of polygons continues at ce.architecturalrecord.com)

ADVANCED DESIGN OPTIONS

Once a basic tessellation pattern has been determined, it can be embellished in a number of ways. For example, edges of adjacent panels can be of different heights so panel faces lay in different planes. To create even more pronounced facets, the faces of the panels themselves can also contain folds.



Simplifying installation of this tessellated ceiling, clusters of four pentagons are factory-assembled. Torsion springs attach panels to parallel support members.



Customized perforation patterns can form tessellated patterns and add visual texture to this curved panel.



Designed by Gensler, San Francisco
Photo courtesy Ceilings Plus
Panels are curved in both the X and Y axes to create a gently curving wall in the Westfield Galleria, Roseville, CA.

The surface appearance of each panel offers another variable. Varying metal textures can be used to differentiate adjacent panels of the same material. Different wood species can be combined. Controlling wood grain orientation can also emphasize tessellation patterns. And of course, differing materials can be juxtaposed or even joined into a single panel.

POLYHEDRONS & CURVES

Ceilings and walls can enter the third dimension. Curved panels no longer require the expense of separately fabricating and attaching curved angles to stiffen the edges, or the complications of finishing the panels after assembly. Now, prefinished panels with integrally-formed returns can be shaped into concave, convex, or compound curves, with all of the design options and performance properties available for flat panels.

Flat panels can be folded to occupy two or more planes. Flat elements can also be assembled into polyhedral panels. Rotation of polygons creates another set of design opportunities. For example, the wall shown in the photo from the Museum of Modern Art in Lodz, Poland (see online photo gallery) is composed of a single polyhedral form — the k-dron, a geometric shape discovered by architect Janusz Kapusta. Rotating adjacent panels allows a single square module to be assembled into combinations that capture light and shadow in endless ways and can be used to diffuse sound reflections.

Continues at ce.architecturalrecord.com.

See Quiz on the Next Page

or

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Program title: "Form Follows Fun: Design Options in Modern Ceiling and Wall Systems" (06/10, page 195). AIA/CES Credit: This article will earn you one AIA/CES LU hour of health, safety, and welfare/sustainable design (HSW/SD) credit. (Valid for credit through June 2012). **Directions:** Refer to the Learning Objectives for this program. Select one answer for each question in the exam and fill in the box by the appropriate letter. A minimum score of 80% is required to earn credit. **To take this test online and avoid handling charge, go to ce.architecturalrecord.com**

1. **The word "tessellation" can best be defined as:**
 - a. twisting or deforming a surface.
 - b. completely covering a surface with a repeated shape or grouping of shapes.
 - c. fringing or tasseling the edge of a surface.
 - d. partially covering a surface with polygons.
2. **A surface can be tessellated:**
 - a. with one shape of regular polygons.
 - b. with combinations of regular polygons.
 - c. with irregular shapes.
 - d. all of the above
3. **Tessellated ceiling panels:**
 - a. must all lie in the same plane in order to be properly suspended.
 - b. must all lie in the same plane for aesthetic reasons.
 - c. can lie in different planes and have different shapes and finishes.
 - d. can lie in different planes if they all have identical finish.
4. **Using computer-controlled fabrication equipment, making uniquely shaped panels is:**
 - a. essentially no different than making standardized shapes.
 - b. much more time-consuming than making standard panels.
 - c. much more expensive than making standard panels.
 - d. much more time consuming and expensive than making standard panels.
5. **Modern design tools make it easier to design:**
 - a. curved shapes.
 - b. tessellated shapes.
 - c. three dimensional shapes.
 - d. all of the above
6. **In modern wood ceiling and wall panels, the wood veneers are:**
 - a. ultra thin.
 - b. at least 1/4 inch thick.
 - c. at least 1/2 inch thick.
 - d. not used, only solid wood panels.
7. **Modern lightweight wood ceilings are made by adhering wood to:**
 - a. wood particleboard.
 - b. solid, less expensive wood.
 - c. sheet aluminum.
 - d. sheet steel.
8. **The primary function of holes in an acoustical ceiling is:**
 - a. for ventilation.
 - b. to let sound pass through the ceiling panel into acoustic insulation or into the area above.
 - c. to cut down on light reflections from the ceiling.
 - d. to lighten the dead load of the panels.
9. **In a modern metal-core ceiling or wall panel, perforations:**
 - a. may be virtually any shape including custom shapes.
 - b. must be round.
 - c. must be round or obround.
 - d. must be square.
10. **With the precision of computer-controlled perforation, ceiling panels can have enough open area to:**
 - a. create luminous ceilings.
 - b. install fire extinguishers above the ceiling.
 - c. allow air supply or return.
 - d. all of the above

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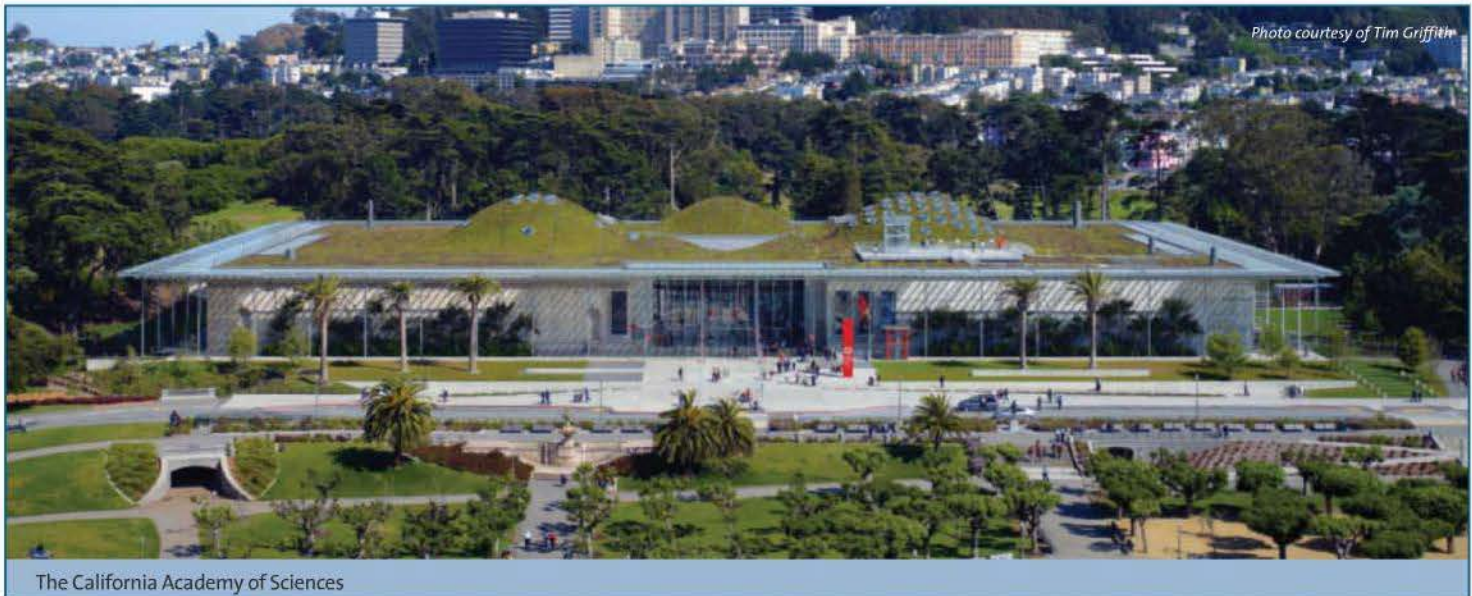
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Specifying Building Insulation for Sustainable Design, Energy Savings, and Acoustic Control

Selecting the best insulation choice from a growing number of highly sustainable products and systems



Provided by Bonded Logic Inc.

By Peter J. Arsenault, FAIA, NCARB, LEED-AP

Forty years ago, a green building was understood to refer to its paint color and energy efficiency meant turning down the thermostat. In that era, building insulation was a generic concept without a lot of differentiation beyond products for high temperature applications like steam piping wrapping compared to products for general building applications in wall

and roof cavities. But we all know times have changed. Today, building owners, energy codes, green rating systems, and our own definition of good design now require new and renovated buildings to perform at high levels of reduced energy usage, positive indoor air quality, and responsible material choices. Accordingly, the building insulation industry has responded with many new or improved products that have variously met these 21st century performance criteria including products that are now being manufactured from recycled materials such as newspaper and cotton denim. Architects who understand the principles of effective insulation and who can evaluate the properties between different insulation products will then design buildings that perform better, last longer, and truly deserve the title of a green or sustainable building.

CONTINUING EDUCATION



Use the learning objectives below to focus your study as you read **Specifying Building Insulation for Sustainable Design, Energy Savings, and Acoustic Control**. To earn one AIA/CES Learning Unit, including one hour of health safety welfare credit and sustainable design, answer the questions on page 205, then follow the reporting instructions or go to ce.architecturalrecord.com and follow the reporting instructions.

Learning Objectives

After reading this article, you should be able to:

- Differentiate between traditional and emerging insulation materials, trends, and uses.
- Examine and recognize the different ways that insulation addresses energy losses in a building envelope.
- Compare and contrast the acoustic properties of insulation against its energy saving properties.
- Analyze and assess multiple other qualities of insulation that can contribute to green and sustainable building design.

BUILDING INSULATION BACKGROUND AND OVERVIEW

Before central heating and cooling were standard fare in American buildings, thermal control of spaces was more an art than a science. Wood burning fireplaces, operable windows, and tall ceilings were the norm rather than addressing the thermal characteristics of the walls, roofs, and floors. If it was cold, more wood was burned. If it was warm, more windows were opened. Even when central furnaces were installed that burned coal, gas, or oil, these fuels were considered cheap and burning more on cold days was still the typical response. Insulation was primarily a material for protecting people

or combustible materials from high temperatures. Slowly, however, stick frame and cavity wall construction techniques started using roof and wall insulation to improve some thermal comfort in various parts of the country.

Similarly, controlling sound transfer in buildings wasn't much of an issue when households were separated by open space or commercial buildings were made of solid masonry and concrete. As occupancy densities, uses, and construction techniques changed the need arose for isolating sounds from adjacent spaces and uses. Insulation emerged again as a way to reduce sound transmission in hollow partitions and stud framed wall assemblies. Since sound energy and heat energy are found to flow very similarly, insulation has traditionally been, and continues to be, one of the best ways to control the transfer of both heat and sound into or out of buildings.



In addition to the basic thermal and acoustic properties of these materials, however, other factors have always been important in identifying suitable product choices. Building codes for example have always required that materials have predictable fire ratings. Yet most traditional insulation is combustible giving rise to the need for added treatments to achieve the needed and acceptable fire resistance. Similarly, some insulation materials were found to harbor mold or mildew if they became wet requiring other treatment along with installation care and attention to avoid this unwanted condition. Along with these important characteristics, insulation also needed to be appealing to building owners, designers, and buildings, but not to unwanted pests that might eat or live in the warmth of an insulating material. Deterrents to rodents, insects, and other pests became increasingly important whenever materials surrounding the insulation could be compromised or invaded.

Even with all of these different demands and requirements, insulation has traditionally been regarded as a fairly straightforward building material that is simple to install, relatively low priced, and capable of quick paybacks in energy savings or other benefits. While these features remain true today, a number of other trends and practices have emerged during the last 30 years that directly affect the way architects specify and contractors install insulation products. The lessons learned along the way have included the disappearance from the market of certain problematic products for various reasons, such as:

- Some spray type insulation was found to “out gas” or emit fumes long after the installation making occupants sick or worse.
- Insulation with asbestos containing materials had great thermal properties, but health risk issues that are all too well known.
- Insulation board used outside of the cavity wall and finished with synthetic stucco, when installed improperly, was found to cause significant moisture and water penetration problems, particularly in warm climates.

Other issues emerged along the way indicating a need for special attention in determining how insulation fit into the larger design of the building:

- Air barriers and vapor retarders became important but often controversial responses to some of the increased uses of building insulation since different conditions and different products would dictate different choices for these related materials.
- Overall indoor air quality became increasingly important particularly under the assumption that “tighter” buildings couldn't “breathe” allowing indoor air pollutant levels to rise.
- Global issues of embedded energy in building products suggested that insulation manufacturing was consuming more energy than it was saving in some cases.
- While manufacturer's test data was reliable for freshly manufactured insulation, performance was found to diminish over time in some products.
- Similarly, test data was based on properly installed insulation whereas actual field installations were found to vary, sometimes significantly, giving rise to a concern over quality control of the completed construction.

All of the issues and information described above have led to an increasingly mature and sophisticated building insulation industry with new products that have been updated, improved, and tested to eliminate some of the problems and address the current needs of buildings. However, it is important that architects, designers and contractors are using current and complete information when making decisions about insulation or they risk not only being out of date, but creating poorly performing buildings.

Insulation has traditionally been regarded as a fairly straightforward building material that is simple to install, relatively low priced, and capable of quick paybacks in energy savings.

SPECIFYING GREEN OR SUSTAINABLE BUILDING INSULATION MATERIALS

Beyond the commonly thought of energy transfer and acoustical design properties, all insulation materials have other notable properties that can contribute to or detract from the overall green or sustainable nature of a particular building. Once potential insulating materials are identified for use, they need to be assessed using the following checklist for green characteristics:

- **Optimizing energy performance.** Many green and sustainable designs start with this primary goal and strive for high performance through strong building envelope designs. Do your potential insulation materials address all methods of heat transfer appropriately? If so, are the tested or rated conditions similar enough to the design conditions such that accurate estimates of energy performance can be determined? These points are discussed in greater detail in the next section.
- **Sound control in interior environments.** Increasingly, green building designs are addressing this part of interior environments, particularly in school designs. Does the insulation material under consideration achieve the desired NRC and STC ratings when used in the dividing assemblies as designed?



- **Selecting materials with recycled content.** Insulation does not need to be manufactured from virgin materials. In fact some excellent products boast significant recycled content for the primary material as well as the added materials that form binders, treatments, etc. Does the insulation have significant percentages of both pre-consumer (manufacturing) and post-consumer content?
- **Reducing construction waste.** Insulation that is easy to work with and can be readily cut and fit into the building should produce less waste. Further, if there is waste, can it be recycled instead of discarded?
- **Selecting regional materials.** This item is obviously location dependent, but can the insulation contribute to regional material content in the building?
- **Reducing embedded energy in materials.** Many building product manufacturers that are serious about their own green processes will assess and identify how their product compares to others in terms of the energy used or the environmental impact of the manufacturing and delivery process. Does the insulation demonstrate favorable results in this area?
- **Selecting rapidly renewable materials.** Insulation can be made from a variety of raw materials, some of which are made from rapidly renewable sources like cellulose or cotton fiber, while others are from non-renewable sources like petroleum based foam plastic. Does the insulation come from a rapidly renewable material source?

Levi Strauss Building, San Francisco, CA

When Levi Strauss, the international clothing company, decided to embark on a renovation of their US headquarters building in San Francisco, they sought to meet multiple green performance criteria that also reflected their corporate image. More than a building project, the renovation of the US headquarters reflects the company's values and commitments. According to the company, "We believe that commercial success and corporate citizenship are closely linked. This principle is embedded in our 156-year experience and continues to anchor how we operate today. For us, corporate citizenship includes a strong belief that we can help shape society through civic engagement and community involvement, responsible labor and workplace practices, philanthropy, ethical conduct, environmental stewardship and transparency. Our "profits through principles" business approach manifests itself in how we develop our business strategies and policies and make everyday decisions."

Based on the above, the architects found it easy to consider recycled cotton batt insulation for this project since much of the insulating material comes from both pre- and post-consumer denim — a mainstay of Levi Strauss. Matthew P. Greer of Anderson Architects in New York City worked on the project and put it this way: "We were asked to create a place for Levi Strauss & Co. that spoke the language of their brand. Good materials, rugged quality, long lasting and sustainable lifecycles are part of what makes Levi's who and what they are. Reusing denim in the walls closes the loop in a real way. Recycled denim insulation is a perfect fit for Levi Strauss & Co. The product has great insulating qualities and puts old jeans to good use."

David Church, General Manager of the company that manufactured the insulation used, observed that "choosing a product that combines sustainability and performance involves an educated decision. Recycled cotton insulation products have solved these challenges for architects who are searching for insulation products with high recycled content, that meet strict IAQ standards, and perform well both acoustically and thermally."

Green and sustainable design that is completely thought through from all sides make this renovation a particularly compelling example of making excellent design decisions consistent with core client principles.



Levi Strauss & Co. US Headquarters Building in San Francisco, CA

Photos courtesy of Bonded Logic Inc.



Insulation has greater resistance to conductive heat losses compared to other building materials.

- **Indoor air quality contributions.** Some insulation materials are better than others at avoiding indoor air quality problems. Since the material is used around the entire envelope, selection based on this criterion can make a considerable difference. Can the manufacturer show that the material contains no harmful irritants or chemicals that can pose concerns about respiratory health including no volatile organic compounds (VOC)?
- **Providing thermal comfort.** A fundamental expectation from an insulated space is that it will provide the appropriate level of thermal comfort to occupants by controlling temperature swings and eliminating drafts in some cases. Does the insulation application help insure thermal comfort?
- **Innovation.** Some insulation products are prone to being used innovatively and can elevate the green building design beyond the typical. Does the insulation under consideration allow such innovation to improve performance?

This holistic approach to specifying insulation will help architects design buildings that truly perform better, are more predictable, and meet the fuller definition of green design.

This holistic approach to specifying insulation will help eliminate products that do not meet the full criteria of green or sustainable building design while allowing those that do to stand out. More importantly, it should help architects design and specify buildings that truly perform better, are more predictable, and meet the fuller definition of green design.

BUILDING INSULATION FOR ENERGY CONSERVATION

Energy use reductions and improved thermal comfort in buildings have been the driving factors behind most of the latest advances in insulation products. Most of these advances have come from a better understanding of how heat energy moves or flows into or out of a building under various climate and temperature conditions. Fundamentally, it is the laws of physics that govern the four fundamental ways that heat energy moves — conduction, convection, radiation, and heat transfer through a change of state. In order for insulation to be effective, then, it must appropriately address one or more of these four heat flow processes. Designers need to understand these heat flow characteristics and how insulation affects them in order to accurately calculate or model the energy efficiency of a building design and determine the predicted energy use or overall building performance. Next we will elaborate upon these four heat flow methods.

Continues at ce.architecturalrecord.com.

Peter J. Arsenault, FAIA, NCARB, LEED-AP is an architect and green building consultant based in Upstate New York focused on sustainable design and practice solutions nationwide. He can be reached at www.linkedin.com/in/pjaarch

See Quiz on the Next Page

or

Take the Quiz Free Online

To receive AIA/CES credit, you are required to read the entire article and pass the test. Go to ce.architecturalrecord.com for complete text and to take the test. The quiz questions below include information from this online reading.

Program title: "Specifying Building Insulation for Sustainable Design, Energy Savings, and Acoustic Control" (06/10, page 201). AIA/CES Credit: This article will earn you one AIA/CES LU hour of health, safety, and welfare/sustainable design (HSW/SD) credit. (Valid for credit through June 2012). **Directions:** Refer to the Learning Objectives for this program. Select one answer for each question in the exam and fill in the box by the appropriate letter. A minimum score of 80% is required to earn credit. **To take this test online and avoid handling charge, go to ce.architecturalrecord.com**

1. **Insulation has traditionally been one of the best ways to control:**
 - a. mold and mildew in buildings.
 - b. pests like rodents and vermin.
 - c. the transfer of both heat and sound into or out of buildings.
 - d. fire spread in walls.
2. **Recent insulation problems overcome by some products include:**
 - a. contributing to better indoor air quality.
 - b. reducing embedded energy in the manufactured products.
 - c. accounting for diminishing performance after manufacture.
 - d. All of the above
3. **Properly selected insulation products can always contribute to all of the following green building criteria EXCEPT:**
 - a. rapidly renewable materials.
 - b. recycled materials.
 - c. regional materials.
 - d. innovation.
4. **Energy flow through conductive heat transfer always flows:**
 - a. from the warm side to the cool side, regardless of direction.
 - b. from lower levels to higher levels.
 - c. from inside to outside.
 - d. from a building material to air.
5. **The relationship between R values and U values is:**
 - a. one is used for heating, the other for cooling.
 - b. they are reciprocal measurements of the same thing.
 - c. they are mathematically unrelated.
 - d. one is an engineering calculation and the other a marketing term.
6. **One of the most common places to find unwanted convective heat transfer is:**
 - a. in wall and roof cavities.
 - b. in natural ventilation systems.
 - c. in chimneys.
 - d. in solidly filled, high density insulated walls.
7. **Energy flow through radiant heat transfer can be stopped by using a reflective material such as foil installed tightly against other adjacent building materials.**
 - a. True
 - b. False
8. **Acoustical performance of wall assemblies with an STC rating will:**
 - a. always be the same in all installations.
 - b. indicate how much structure borne sound is transmitted.
 - c. vary based on actual field conditions.
 - d. work the same with any manufactured products.
9. **Materials that have a rated NRC have been tested to determine the amount of sound absorption they achieve.**
 - a. True
 - b. False
10. **Selecting and specifying a particular insulation as part of an overall green building design strategy can:**
 - a. provide more fee opportunities for architects.
 - b. help manage client expectations.
 - c. solve communication problems with the contractor.
 - d. be an example of making excellent design decisions consistent with core client principles.

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Material resources used: This article addresses issues concerning health and safety and sustainable design.

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Hajj Terminal, King Abdul Aziz International Airport, Jeddah, Saudi Arabia; 2010 AIA National Twenty-Five Year Award recipient; architect: Skidmore, Owings & Merrill LLP; photo: © Jay Langlois/Owens Corning Fiberglas



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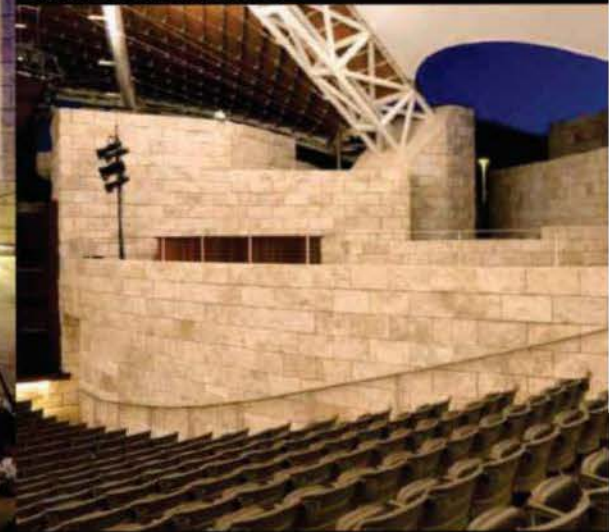
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DATES & EVENTS

New and Upcoming Exhibitions

Immuring

Los Angeles

June 4–July 18, 2010

This new exhibition by Hong Kong-based architecture firm davidclovers, invigorates the relationship between architectural graphic and architectural mass through the reexamination of fresco in a contemporary context. The jump-off point for this installation is the design of a 2,500-square-foot speculative home for Hometta, Inc. At the Southern California Institute of Architecture. For more information, visit www.sciarc.edu.

1:1 – Architects Build Small Spaces

London

June 15–August 30, 2010

The Victoria and Albert Museum (V&A) is commissioning a group of international architects to build a series of structures throughout the museum that will respond to the theme of the "retreat." One of the central aims of the exhibition is to move away from explaining architecture through drawings and models and instead allow the visitor to experience the architecture itself. For more information on the exhibition, visit www.vam.ac.uk.

Common Boston Week 2010: Where We Connect

Boston

June 17–27, 2010

A collaboration of emerging architects and design professionals, Common Boston is an annual festival celebrating the places that make neighborhoods inspiring, equitable, and sustainable. This year's theme is "where we connect," featuring more than 40 open-building tours, exhibits, and events throughout Boston. At several locations. For more information, visit www.commonboston.org.

Katsura: Picturing Modernism in Japanese Architecture – Photographs by Ishimoto Yasuhiro

Houston

Opening June 20, 2010

Photographer Ishimoto Yasuhiro is widely acknowledged as one of the most influential figures in the development of postwar Japanese photography. For the first time, 70 of the photos he took in the period spanning 1953–54 of the legendary 17th-century Imperial Villa of Katsura, in Kyoto, will be displayed at the Museum of Fine Arts. For more information on the exhibition, visit www.mfah.org.

Ongoing Exhibitions

Paul Philippe Cret and the Architecture of Dialogue

Washington, D.C.

Through July 3, 2010

An exhibition devoted to the Organization of American States (OAS) Headquarters Building in Washington, D.C., celebrates its 100th anniversary. Paul Philippe Cret's collection of original plans and drawings will be on display along with archival material and photographs. The show is curated by architectural historian Tom Mellins and designed by Pure + Applied, with H2L2 Architects and Planners. For more information, visit www.museum.oas.org.

A Century of Design: The U.S. Commission of Fine Arts, 1910 to 2010

Washington, D.C.

Through July 18, 2010

Held at the National Building Museum, this exhibition explores how the U.S. Commission of Fine Arts has shaped Washington, D.C., from memorials that commemorate our history and define our national identity to the public parks and projects that enhance the city and help make it a desirable place to live, work, and play. For more information on the exhibition, visit www.nbm.org.

Rising Currents: Projects for New York's Waterfront

New York City

Through August 2010

This major project brings together four teams of architects, engineers, and landscape designers to address and create infrastructure solutions to make New York City more resilient in response to rising water levels and to protect ecosystems. The future of New York's waterfronts has been identified as one of the most urgent challenges the nation's largest city faces, with the anticipated rise in sea levels due to climate change. At the Museum of Modern Art. For more information, visit www.moma.org.

National Design Triennial: Why Design Now?

New York City

Through January 9, 2011

Held at the Cooper-Hewitt, National Design Museum, this exhibition provides a sample of contemporary innovation, looking at what progressive designers, engineers, entrepreneurs, and citizens are doing in diverse fields and at different scales around the world. For more information on the exhibition, visit www.cooperhewitt.org.

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DATES & EVENTS

Lectures, Conferences, and Symposia

International Urban Design Conference – Designs on Our Future

Canberra, Australia

August 30–September 1, 2010

Registration is now open for this conference that will focus on Australia's burgeoning population – projected to increase by 60 percent in the next 40 years – and what impact this will have on its existing cities. The conference will also examine how new cities are conceived and existing ones are adapted, redesigned, and managed. At the National Convention Centre. For more information, visit www.urbandesignaustralia.com.au.

Annual Landscape Architecture Convention

Washington, D.C.

September 10–13, 2010

The largest annual gathering of landscape architecture professionals in the world, this event at the Washington, D.C., Convention Center will focus on the theme "Earth Air Water Fire DESIGN." Attendees may choose from more than 125 education sessions to earn up to 21 professional development hours. More than 400 product manufacturers and service providers will be featured in the attendant EXPO trade show. Visit www.asla.org.

Competitions

The ARCHITECTURAL RECORD Cocktail Napkin Sketch Contest

Submission deadline: June 21, 2010

All you need is a 5-inch-square cocktail napkin and a pen to show that the art of drawing quickly by hand is still alive.

Sketches on a cocktail napkin that explain or work out a concept will be judged by RECORD editors, and the winner published in the August 2010 issue. No digital entries please. For more information, visit architecturalrecord.com/call4entries.

Western Red Cedar Architectural Design Awards

Deadline: July 30, 2010

The Western Red Cedar Architectural Design Awards recognize innovative design using Western Red Cedar. Winners will be chosen by a panel of architects, and the results announced at the Greenbuild Expo in Chicago. For more information, visit www.construction.com/community/WRCLA/default.asp.

E-mail information two months in advance to recordevents@mcgraw-hill.com. For more listings, visit architecturalrecord.com/news/events.

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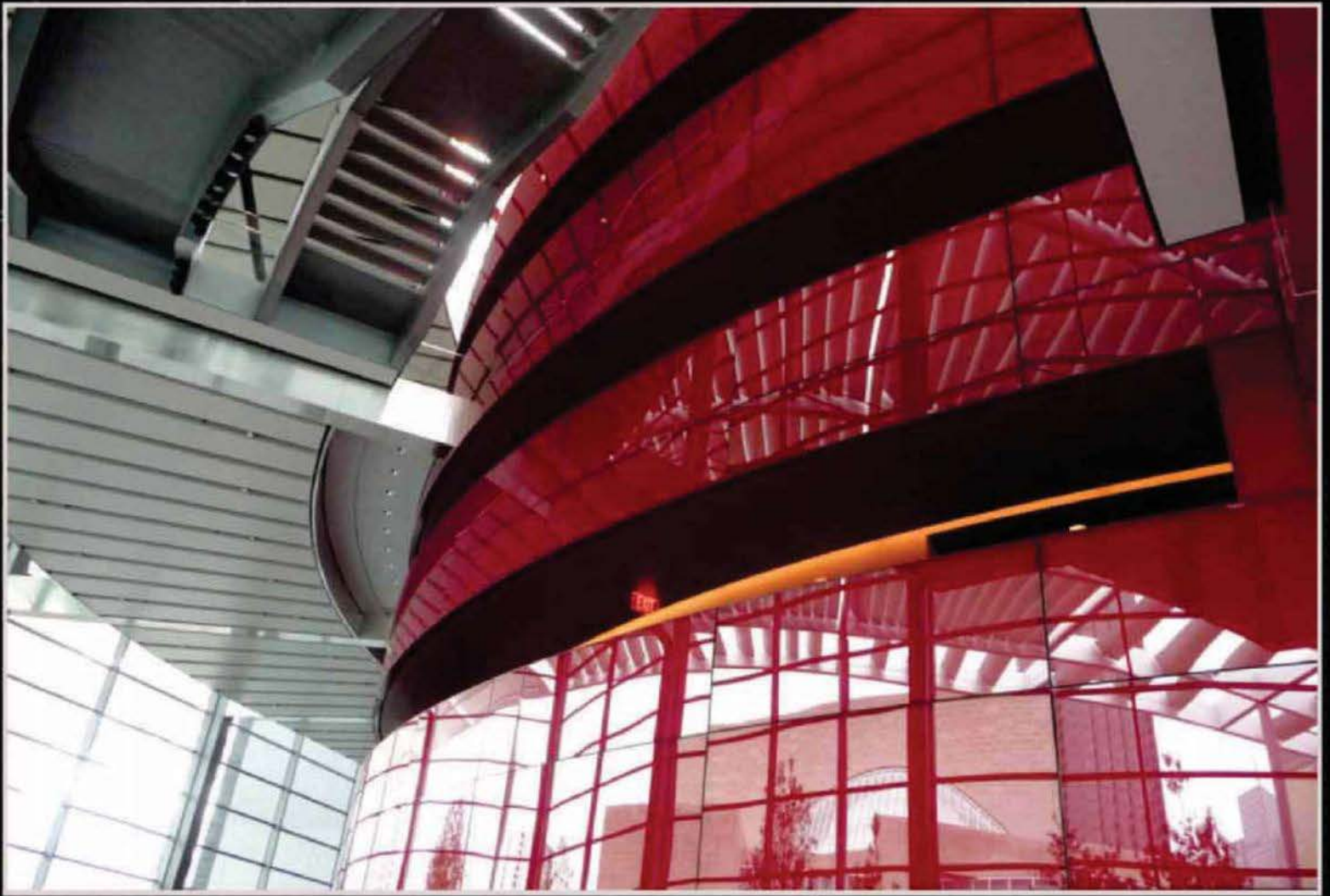
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Bridge Basics is sponsored by the Government of the District of Columbia, Office of the Deputy Mayor for Planning and Economic Development in Washington, D.C., and by the Turner Construction Company in Philadelphia. The program was developed with support from the Construction Industry Round Table.

Green Community Teaching Kits are sponsored by the Government of the District of Columbia, Office of the Deputy Mayor for Planning and Economic Development.



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(continued from page 78) Design and Architecture High School, installed in a disused shopping mall, anchors the east end of the district. In an emblematic transformation, the mall's parking lot is now the school's courtyard, bounded by an undulating metal barrier by designer Marc Newsom. At the foot of the nearby Moore Building, Enea Garden Design transformed another former parking lot into the Rainforest Garden Lounge. Once an installation and now a permanent fixture, it combines clusters of bamboo, pools of water, and groups

of furniture below a trellis of cables and movable canvas panels and, like Cifo, taps the perennial local theme of constructed symbolic nature.

Community building

Increasing doses of civic discourse are helping to transform Miami's eastern flank. Following South Beach's model of ground-up community activism, a robust commitment to historic preservation, and a rigorous design-review process, newer historic districts like the John S. Collins Waterfront

District and the Morris Lapidus/Mid 20th Century Historic District are shaping strong identities for themselves. In fact, Miami Beach now has no fewer than three National Register historic districts and at least 11 local historic districts.

The revitalization of commercial arteries like Biscayne Boulevard in the newly minted Upper East Side of Miami illustrates how the process continues on the mainland. This corridor of motels and small commercial buildings, constructed in the 1950s and '60s to greet passing tourists and more recently having served as flophouses, has acquired a new identity. Indeed, these structures act as key elements in the new MiMo (Miami Modern) Biscayne Historic District, celebrating the area's Google, automobile-centric past while anticipating a new pedestrian-based future. Motel lobbies are finding new life as neighborhood restaurants, while their parking lots are reused as dining areas, car washes, and farmer's markets. The reemergent street life in this area, especially at night, promotes a sociability and civic engagement once unthinkable on such a commercial strip.

Some neighborhoods are evolving toward a clearer physical expression of their distinctive ethnic/cultural identity. Calle Ocho in Little Havana, once an unremarkable commercial artery, is now adorned with monuments, parks, and new cultural institutions reflective of the Cuban diaspora. Along NE 2nd Avenue in Little Haiti, a subtle redevelopment of commercial storefronts accompanied by the renovation of Charles Harrison Pawley's Haitian Marketplace and the construction of the Little Haiti Cultural Center, both by Zyscovich Architects, have activated a part of that street.

The resurgence of neighborhoods has been notably supported by planning efforts, many led by Miami's New Urbanists. This year, the city inaugurated Miami 21, a new form-based zoning code developed by Duany Plater-Zyberk. That firm, along with Dover, Kohl & Partners and Jaime Correa & Associates, have developed countless master plans for neighborhoods utilizing a charrette process that encourages community involvement. A new polyglot, polynodal city seems to be emerging, forming the basis for Miami's new identity.

Lapidus's chronically underappreciated Americana Hotel, the site of the last AIA convention, was demolished in 2007. Miami, home base for the architect's sybaritic architectural values, is still accused of vulgarities and eccentricities. Yet beyond the fashion and titillation of Miami as a "magic city," architects and planners are now focusing on reweaving the urban fabric to function better as a real place. As it consolidates and coheres, this Postmodern metropolis is confronting its built-in contradictions. And isn't this reckoning part of what Lapidus called its "quality of architecture?" ■

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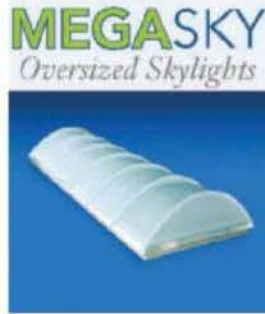
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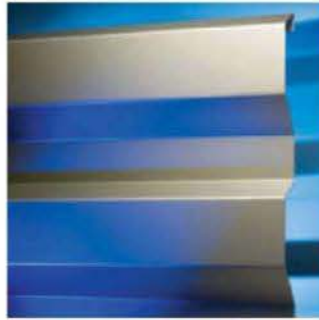
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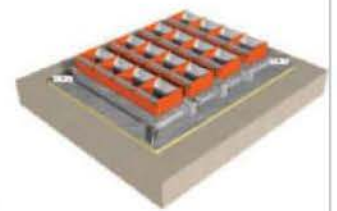
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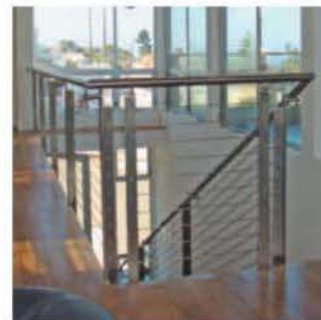
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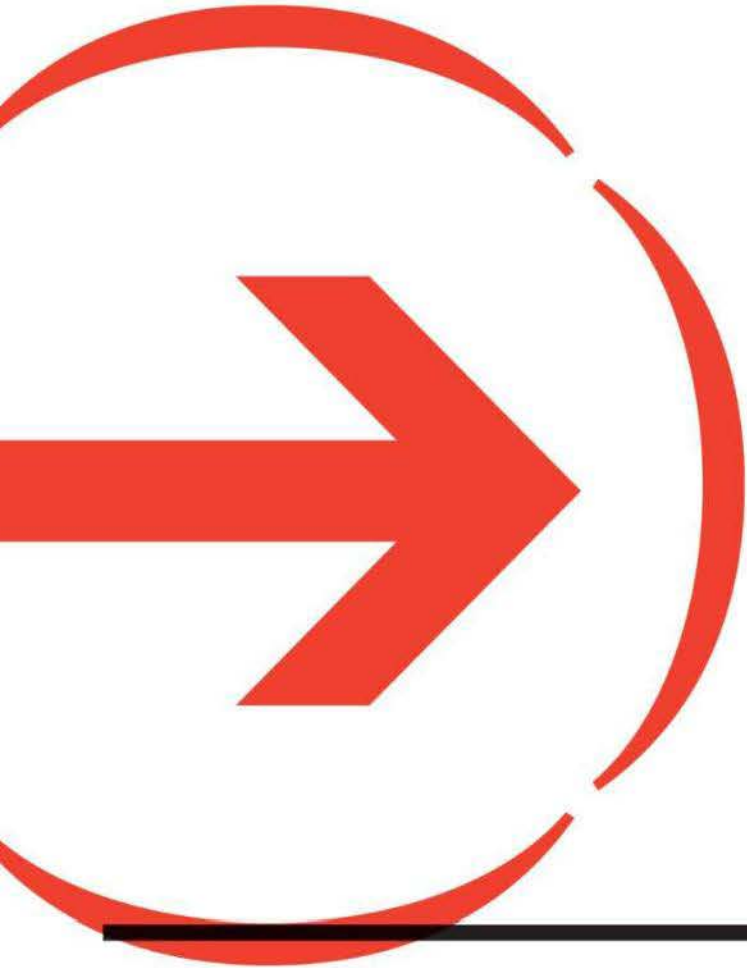
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PROJECT La Roche-sur-Yon
Footbridge

LOCATION La Roche-sur-Yon,
France

DESIGNERS Bernard Tschumi
Architects and Hugh Dutton
Associates

REGIONAL IDENTITY and historic tradition are often powerful drivers for the design of any project – or at least they should be. So when a rusty, Gustave Eiffel–inspired footbridge needed to be replaced in La Roche-sur-Yon, France, hometown of the late engineer Robert Le Ricolais, it’s no surprise that the designers looked to Le Ricolais, who was known for his work with spatial three-dimensional structures.

With plans for an extended high-speed rail through La Roche-sur-Yon, the town brought in New York–based Bernard Tschumi Architects and Paris-based Hugh

Dutton Associates to revamp an old 1890s pedestrian bridge that spanned the tracks. “The railway actually cuts the old city center from the new section, so the bridge is more than just a footbridge, it’s a connection,” Tschumi explains.

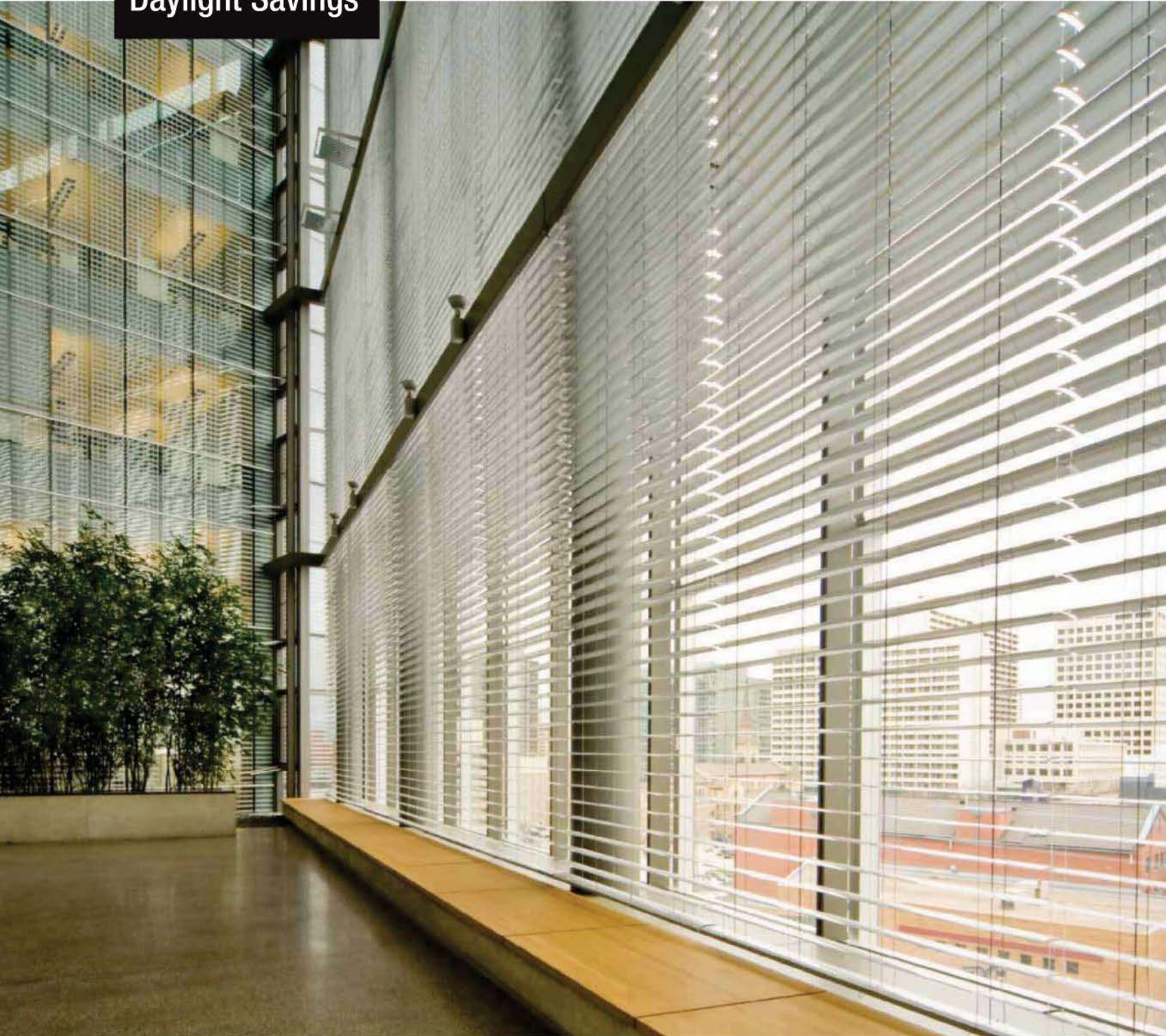
This correlation between the past and the present proved to be a crucial theme; Tschumi credits the ideas of Le Ricolais and Eiffel as important to the new design. The team took the traditional diagonal mesh pattern used on the old bridge and applied it to a tubular form. “We decided that rather than a static bridge, we wanted to express the

structured forces,” says Tschumi. “The form is really an expression of the tensions.”

The resulting 220-foot-long steel footbridge is composed of circular diaphragms, compressed diagonals, and tensile rods. Protective fencing on the lower portion allows for natural ventilation, while a clear polycarbonate canopy provides shelter from weather conditions.

Tschumi chose the bright red hue so the bridge would stand out. “It’s a form of notation for the town, linking the old and the new – like a dash on paper connecting two ideas,” he concludes. *Alanna Malone*

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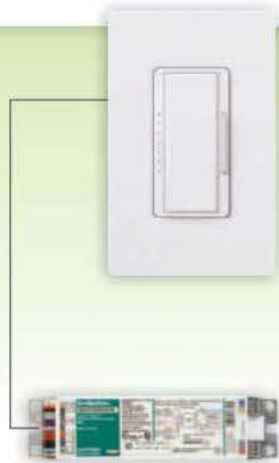
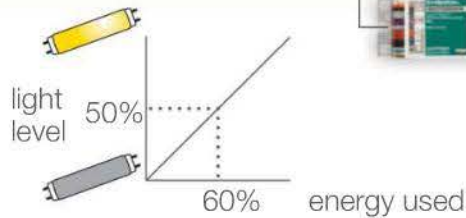
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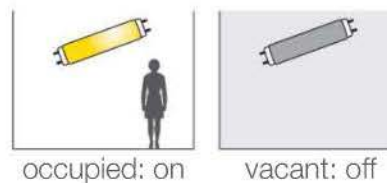
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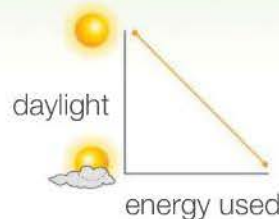
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