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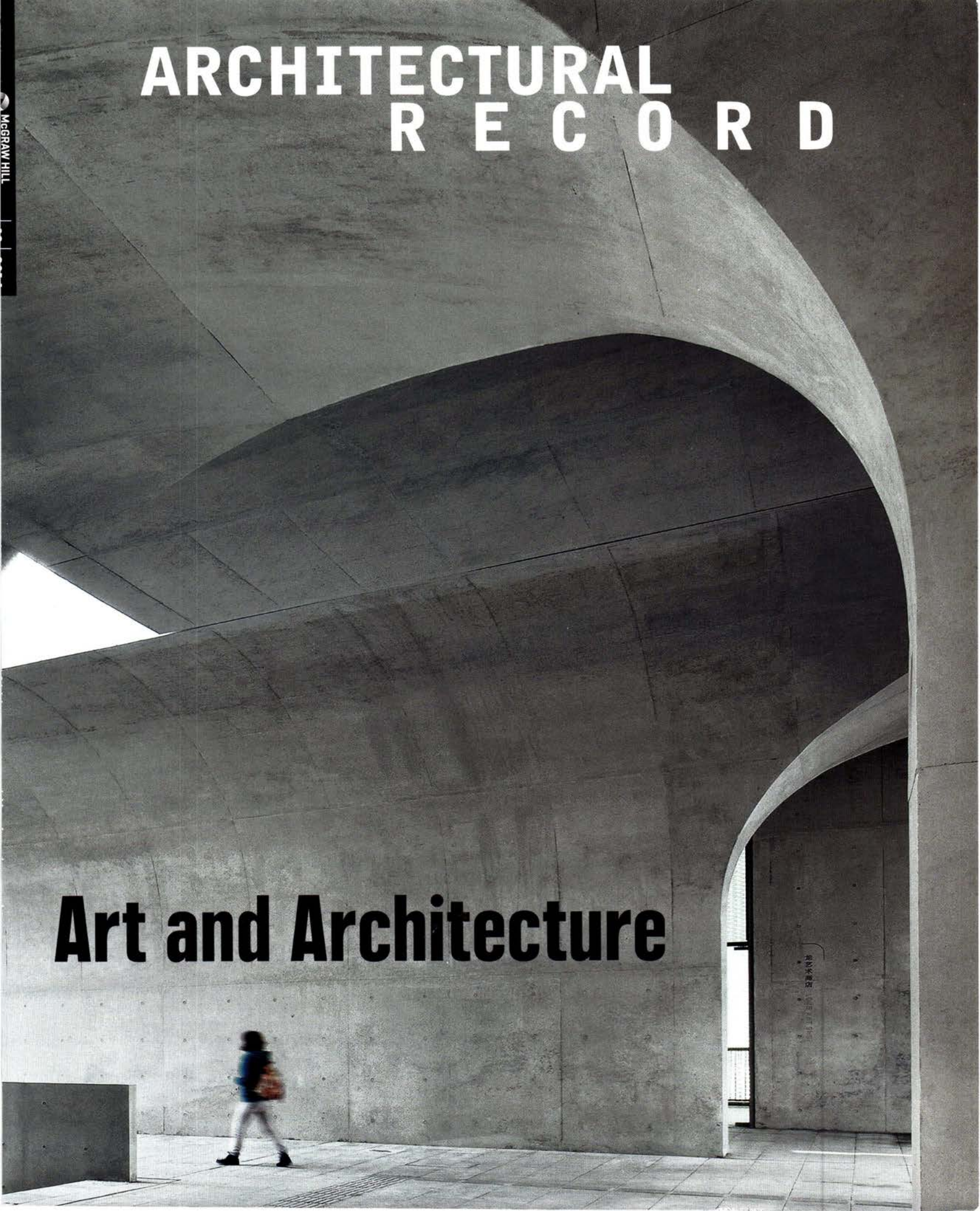

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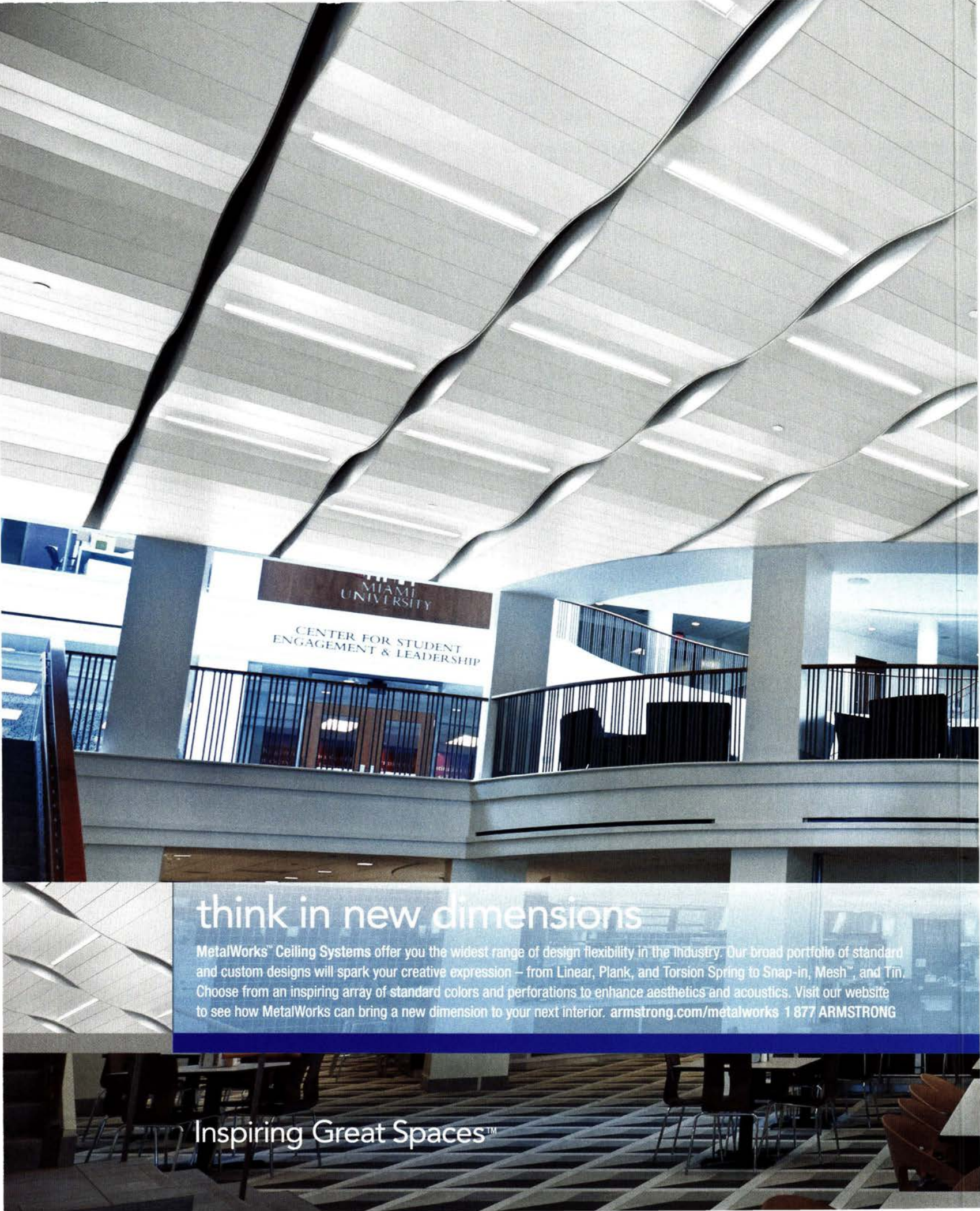

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The Thoughtfully Designed Kitchen Contest Winners

GRAND PRIZE WINNER

Conceal the Pantry

Rebecca Breffeilh, *FreemanWhite*

Tip: Pantries have long been a fundamental component of the American household. Just because a pantry is necessary, however, doesn't mean it needs to be visible. Integrating the entrance of the pantry into a row of cabinets is a great way to conceal the entrance and keep the kitchen unified. One large door with a false toe-kick and false cabinet doors can be made to look like several separate cabinets — anyone looking at your kitchen would never guess otherwise.

FIRST PRIZE WINNER

Small Kitchen Blues

Erik Becker, *PLATFORM*

Tip: Slot windows under upper cabinets allow storage space to double in a very small kitchen, while still allowing daylight in and connection to outdoors, while maintaining privacy in the tight urban neighborhood, controlling the view in. A skylight helps mitigate a low ceiling, bringing in even more natural light and "raising" the ceiling plane to make it feel larger. Light colored upper cabinet faces and counter tops add to the airiness of the space.

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NEW TWIST

The new ideas that poured into Lower Manhattan's rebuilding resulted in a stronger infrastructure—and some architectural gems. A key piece in the undertaking is **Pelli Clarke Pelli**'s new **Pavilion** at **Brookfield Place**, a public space serving the 35,000 commuters who use the PATH system daily. Because the system's track network runs underneath, the pavilion's soaring roof and hanging glass curtain wall could only be supported at two points. **Thornton Tomasetti** met the challenge with a pair of 54-foot-tall "basket" columns, each gathering its loads in an expressive weave of lightweight, brightly painted twisting steel tubing that spirals down to plaza level in an ever-tightening array. It is innovative design, with a twist.

Architect: Pelli Clarke Pelli Architects
Structural Engineer: Thornton Tomasetti
Photograph: Tex Jernigan

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INSIDE OUT

Want to know what goes on at the **New School**? Passersby need only glance at the institution's new **University Center** in Greenwich Village to understand that progressive design education happens here. The building by **Skidmore, Owings & Merrill** expresses the school's interdisciplinary approach through a brass-shingled facade crisscrossed by a series of glass-enclosed stairways that highlight a vivid tableau of students circulating within. The unique system encourages collaboration—and a new dialogue between campus and community that is sure to be conversation for decades to come.

Architect: Skidmore, Owings & Merrill
Photograph: Tex Jernigan

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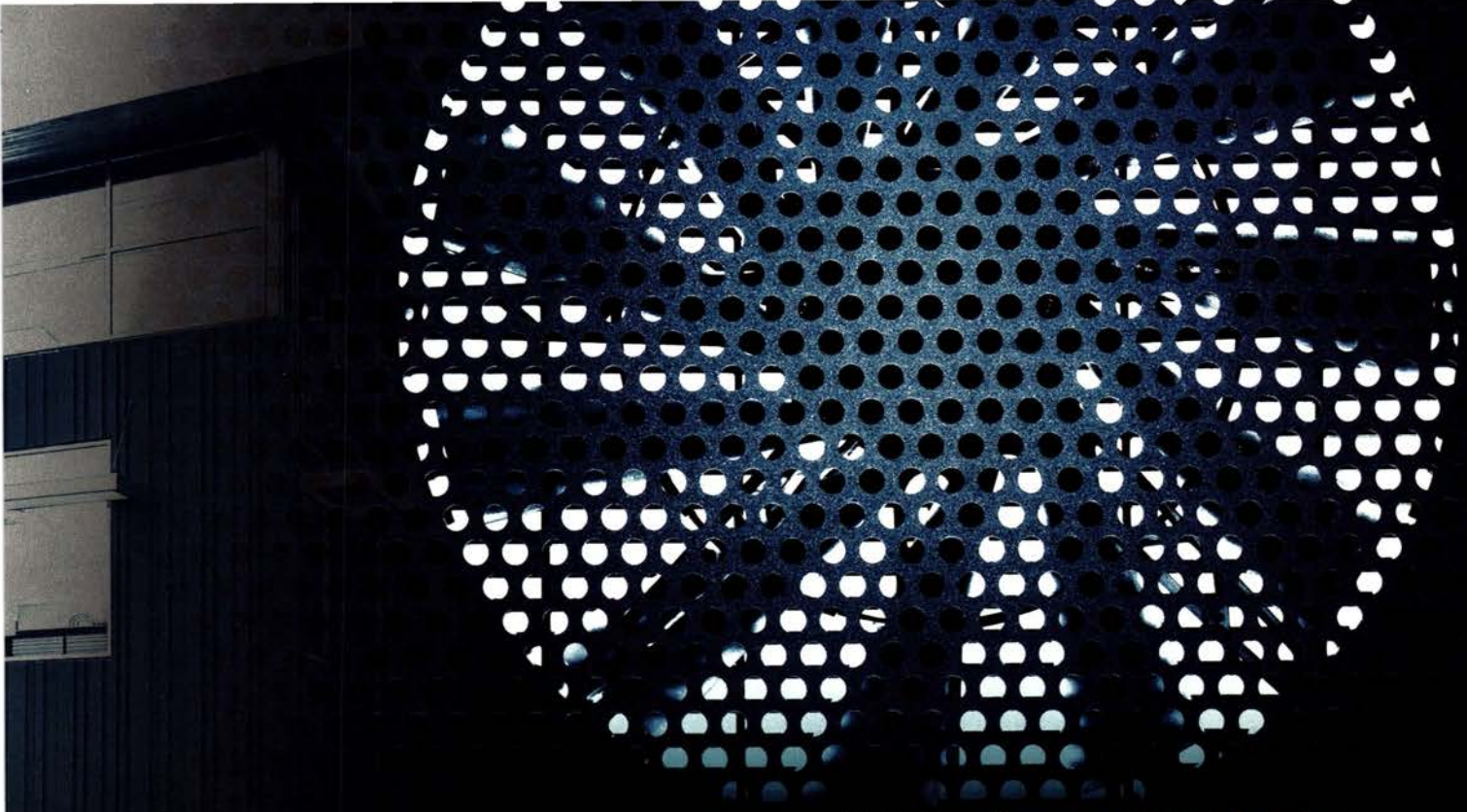

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ON THIS PAGE AND THE COVER: LONG MUSEUM WEST BUND, BY ATELIER DESHAUS. COVER PHOTO BY XIA ZHI; PHOTO ABOVE BY SU SHENGLIAN

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But Is It Art?

Reaching across the divide of disciplines, architects and artists find that their concerns can coincide.

THIS PAST SPRING, the sculptor Richard Serra was honored with the President's Medal from the venerable Architectural League of New York, which cited his evolution as an artist from the "concerns of matter and materiality to more spatial preoccupations." Accepting the award, the 74-year-old sculptor said that while he admired architects, "I'm a sculptor, and architects are architects, and I've been beating that drum for a long time." The beat goes back at least as far as a 2001 television interview in which Serra told Charlie Rose that, despite his interest in "trapping" space with his sculpture, he never wanted to become an architect—"I wasn't particularly interested in plumbing"—and went on to say that his friend Frank Gehry was "parading"—"the architect as artist. I don't buy it." Architects are not artists, Serra insisted. "Art is purposely useless."

Serra is not alone in his opinion that architecture is not art. Though the history of modern architecture includes practitioners who also made art—Le Corbusier painted constantly—we're not living in the Renaissance, where the culture celebrated the genius of Michelangelo, Bernini, and others who moved among disciplines.

Still, this is a time of crossover and appropriation. Every summer, we're treated to temporary structures such as the Serpentine Pavilion in London—the 2014 edition is designed by architect Smiljan Radić as a kind of immense luminous toadstool—or the annual installation at MoMA PS1 in Queens, New York, this summer, a project called *Hy-Fi*: a series of towers built of biodegradable bricks by The Living (architect David Benjamin). Both might fulfill Serra's definition of art through their lack of toilets alone. Similarly, a number of emerging architects—such as Oyler Wu Collaborative in Los Angeles or Situ Studio in Brooklyn—have experimented with structure, materials, and digital fabrication by creating beautiful installations that meet the criterion of having no utility whatsoever.

At the same time, artists are riffing on the built environment, as evident in two of last year's blockbuster exhibitions: the *Rain Room*, by rAndom International, at the Museum of Modern Art, and James Turrell's dematerialization of the Guggenheim Museum in his light piece *Aten Reign*—a work that could be considered belated revenge on behalf of artists such as Willem de Kooning and Robert Motherwell who protested the design of Frank Lloyd Wright's museum more than half a century ago as inhospitable to their art.

In this issue, we explore that often uneasy relationship between art and architecture, starting with the 1960s and '70s, when Gordon Matta-Clark, in a process he called "anarchitecture," sawed or carved gaping chunks out of buildings (page 60). We also look at a number of new architectural projects in the service of art—museums like the expanded and renovated Clark Art Institute in Williamstown, Massachusetts, by Tadao Ando and Annabelle Selldorf, respectively (page 76) or the darkly intense Soulages Museum by RCR Arquitectes in Rodez, France (page 86). The stark white cube that has dominated gallery design for decades has been mostly vanquished and replaced by spaces that create softer—or edgier—environments for art, such as Antonio Jiménez Torrecillas's retrofitted school for a gallery in upstate New York (page 92). Even such dramatic—and potentially overpowering—space as the arresting concrete museum by Atelier Deshaus in Shanghai was designed to work in sympathy with a specific collection (page 64).

Architects tackle art ideas too. Who can forget that the perennially busy firm of Diller + Scofidio (now Diller Scofidio+Renfro) began their practice creating conceptual art—and got their feet wet architecturally (and literally) with the 2002 "blur pavilion" in Switzerland, a building made entirely of mist? In the pages ahead, we look at recent "architectural" artwork, made not only by artists but by those trained as architects, as well (page 98).

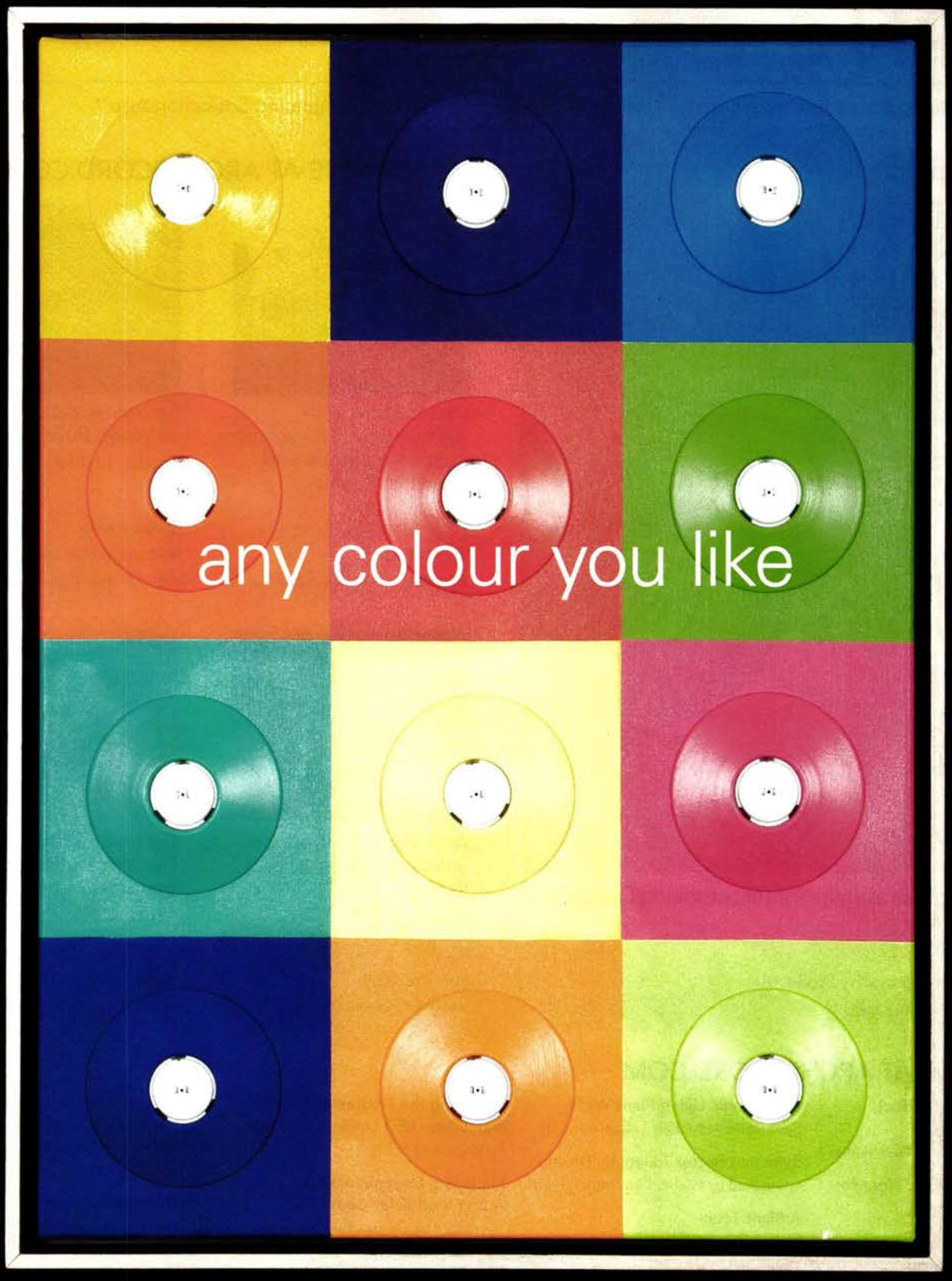
Lastly, in the continuing education feature, we examine strategies that structurally support large-scale public art, as engineers who usually work with architects bring their skills and ingenuity to unique and challenging constructions by artists (page 122).

Is architecture art? Or, under what conditions does architecture become art? We leave those questions to you to ponder. And think about this too: as much as critics like to term the work of Gehry or Zaha Hadid "sculptural," the issue here is not only what the visual object looks like. As Serra himself puts it, space has become his subject: "The steel is a vessel just to trap the space." Central to his art is "the person walking through" his sculpture—the movement of people in space and time. Great architecture shares that fundamental element, when space, time, and the movement of people come together to create a rich human experience. ■

Cathleen McGuigan

Cathleen McGuigan, Editor in Chief

PHOTOGRAPHY: © MICHEL ARNAUD



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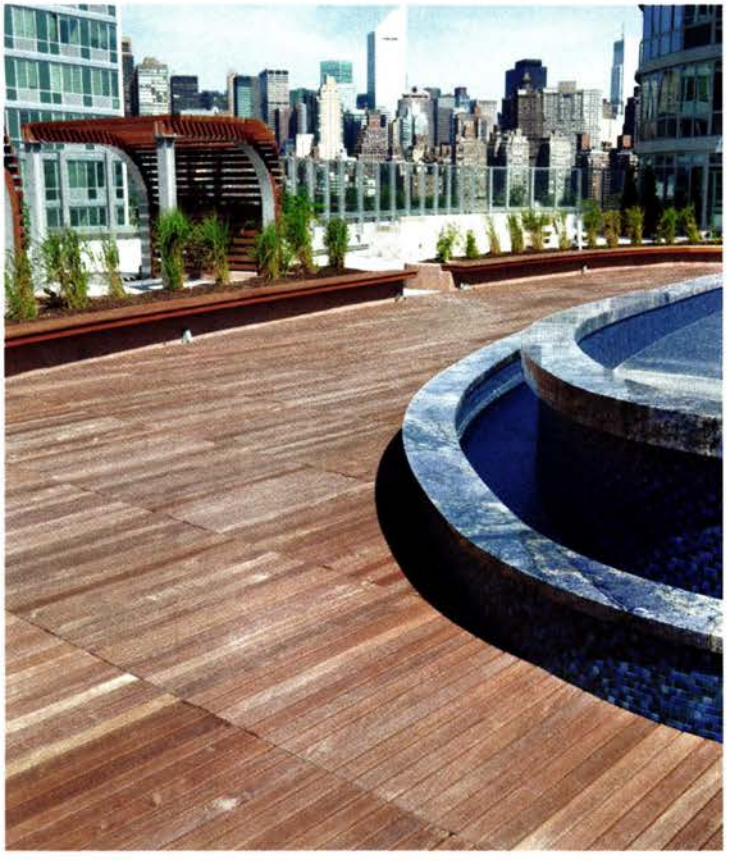

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Exterior Design Strategies for Placemaking Downtown

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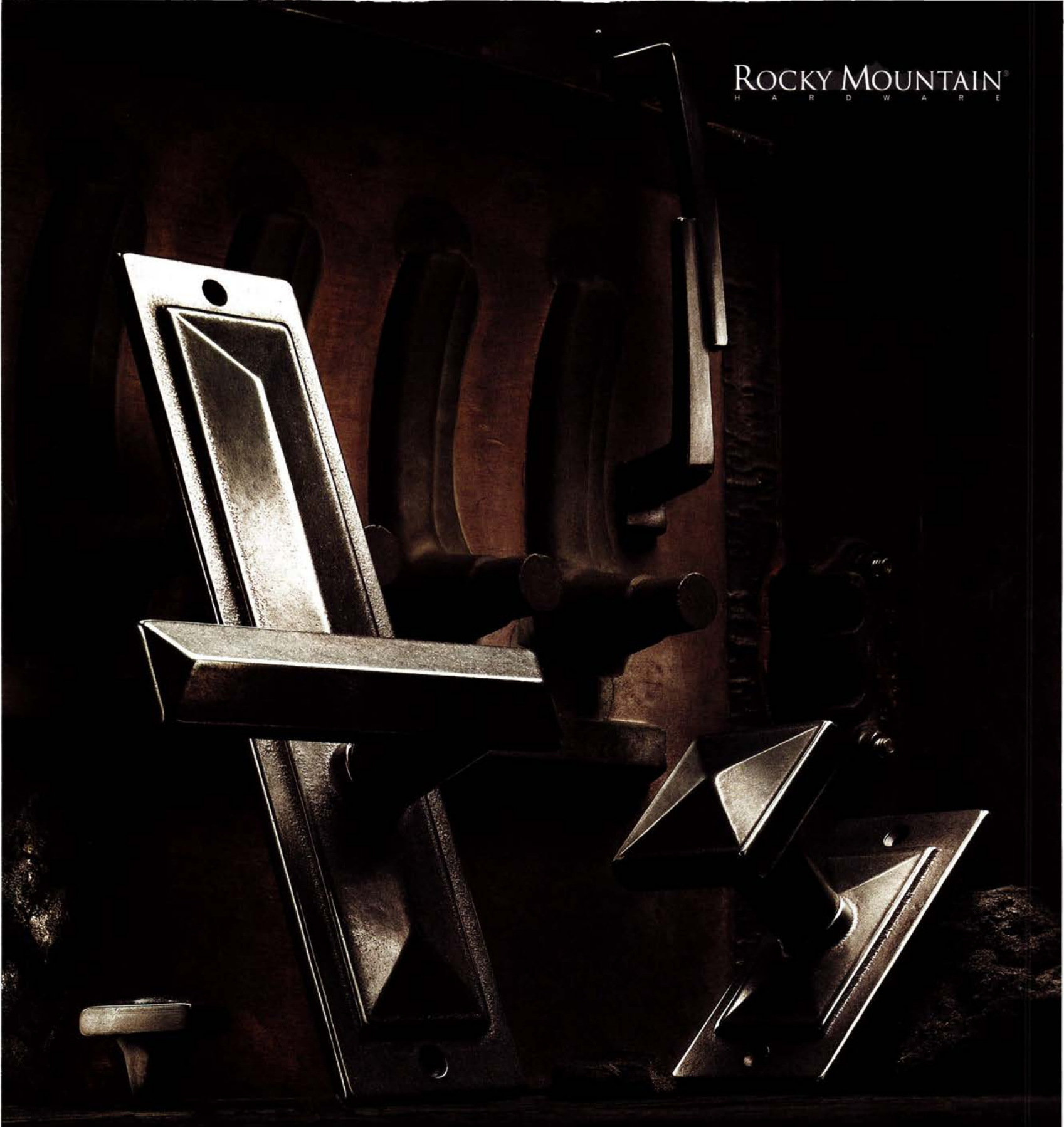

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The more I think about the plan's newly attenuated form, stretched like a piece of black bubblegum across Wilshire, the more I wonder if the architect's basic reading of Los Angeles could use an update. – Los Angeles Times *architecture critic Christopher Hawthorne on Peter Zumthor's updated design for LACMA*

Center for Civil and Human Rights Opens Its Doors to Atlanta

BY GRAY CHAPMAN

Designed for LEED Gold certification, the Center is set into a hillside facing Pemberton Place, a pedestrian park.

PHOTOGRAPHY: © ALBERT VECERKA/ESTO

FIVE DECADES ago, the powerful sermons of Dr. Martin Luther King Jr. reverberated inside the halls of Ebenezer Baptist Church, inspiring a generation of civil rights activists who shared his dreams of equality. This summer, less than 2 miles from the neighborhood where Dr. King made history, the civil rights movement is experiencing a rebirth with the opening of the long-awaited National Center for Civil and Human Rights. The 43,000-square foot Center, designed by The Freelon Group and HOK, opened to the public on June 23 with three exhibitions connecting the legacy of the American civil rights movement to the modern-day fight for human rights around the world. In addition to the Center's galleries, the building also houses conference rooms and special-event space.

The Freelon Group, led by founder Phil Freelon, was selected from a pool of top-tier architects after an international design competition. Freelon himself is no stranger to projects rooted in history and culture: the architect has worked on buildings such as the Smithsonian National Museum of African American History and Culture in Washington, D.C. (currently under construction), and the Museum of the African Diaspora in San Francisco. "I established my firm based on several tenets and ideals, and one of them was that we were about knowledge-sharing, education, and creating environments that enhance the communities in which they're built," says Freelon. (The Freelon Group merged with Perkins+Will this spring.)

The project has encountered challenges along the way, mostly because the financial collapse hit at the height of fundraising efforts, around 2008. Ultimately, Freelon's original design, a scheme inspired by interlocking arms, had to be shaved down to about half its size, but Freelon doesn't find the final product any less meaningful. In fact, he says, "it was really a process of focusing and distilling the idea into something even more powerful." Despite the roadblocks, Freelon and his team produced a design conducive to the Center's mission: to provide a visitor expe-

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rience that uplifts and inspires while lending gravity to serious and often violent stories.

That experience begins when one first catches a glimpse of the three-story building from across the site's lawn. The Center's angled exterior facade, composed of a mosaic of earth-toned phenolic-resin panels, frames a glass curtain wall through which the lobby's vibrant mural (a montage of human-rights posters) can be seen. Situated on the north end of Pemberton Place, a 20-acre tourism hub that's also home to World of Coca-Cola and the Georgia Aquarium, the building's curvilinear form is immediately distinctive. "It's exuberant, but also dignified," says Freelon.

Inside, that distinctive shape is echoed by a gently bending path guiding visitors through the exhibitions. The anchor exhibition on the lower level contains a rotating display of papers and artifacts from the Morehouse College Martin Luther King, Jr. Collection. The struggles and triumphs of the American civil rights movement are presented in often dark detail in another exhibition (designed by the Rockwell Group), where visitors meander through dark, dramatically lit corridors to explore the defining moments of the movement. Here visitors can relive the harassment endured by the Greensboro lunch-counter sit-in protestors, in 1960, via headsets, and experience the moment when Martin Luther King Jr.'s assassination hit the news on April 4, 1968. "There's this narrative power that builds and builds," says David Mandel, director of exhibitions and design. "But at the end, in one of the darkest moments, with the funeral of Dr. King, you ascend." A monumental stair leads visitors from the lower level to the lobby and then to a bright balcony level, where a wall details all of the reform legislation. At the top-floor gallery, where visitors arrive after the culmination of the civil rights exhibition, the struggle for equality is given contemporary context by a setting reminiscent of a modern art gallery. This space, Freelon says, is where the form of the building is expressed on the interior. An exposed ceiling, brushed-concrete columns, and angled walls lend a sense of gravity to the stories being told. "These issues are overbearing, they're repressive, they're literally leaning in on you," says Freelon. From the outset, those behind the Center—who included civil rights luminaries Andrew Young and Evelyn Lowery, along with former Atlanta mayor Shirley Franklin—wanted this to be a place that paid homage to history while looking forward. "We want this to be a magnet, drawing in the thinkers and the doers and the activists—sparking the kind of dialogue that makes a longstanding difference in our world culture," Freelon says. If that becomes the case, the Center will truly transform its touristy environs. ■

Phil Freelon at the Center, which he designed with HOK.

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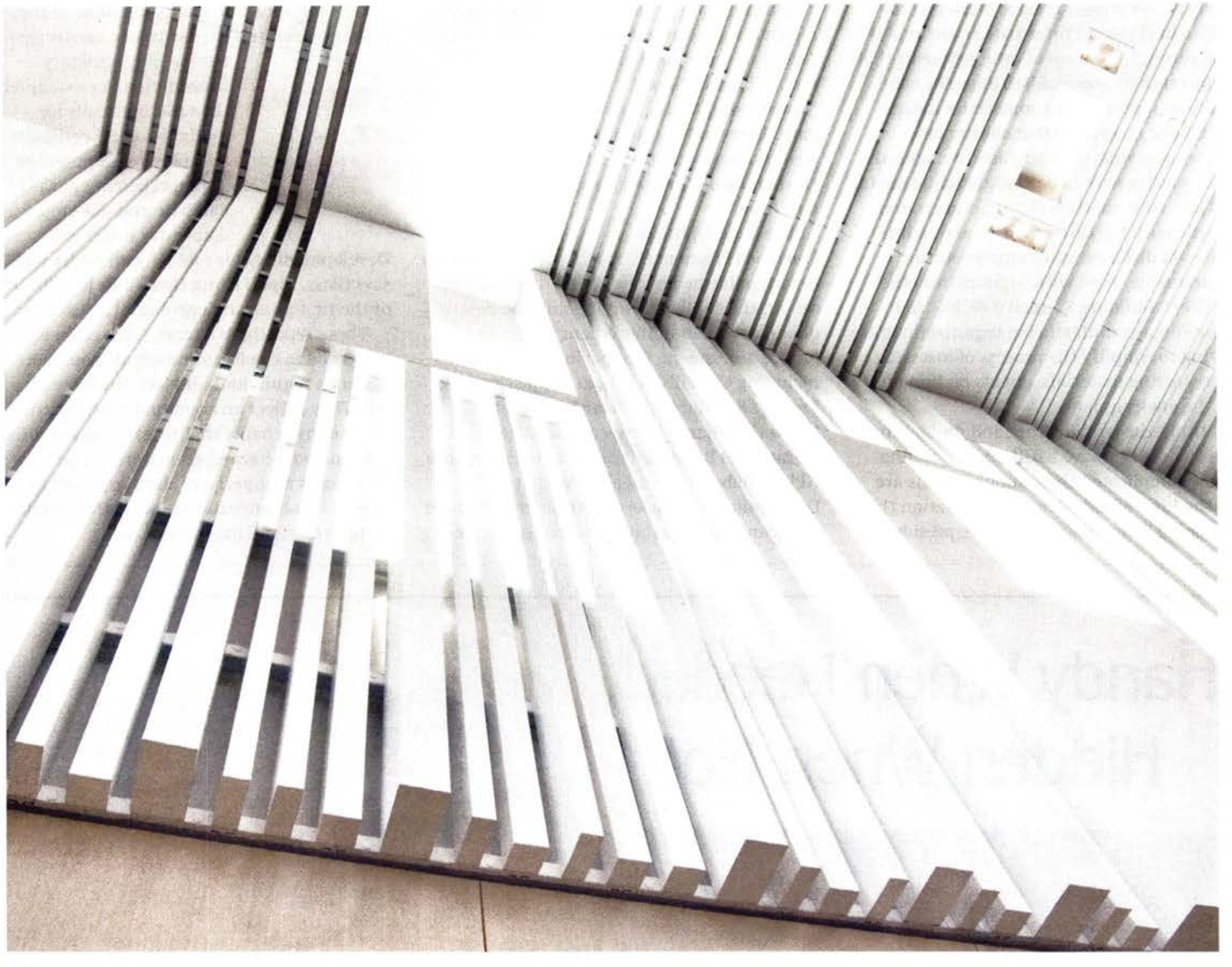

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Barz can be micro-perforated on the sides for acoustics.
Above: 2"x 4", 1"x 2" and 2"x 2" Barz.
Finish: Blanco Mat high LRV (93), no glare, no reflections.

Other finishes include Arboreal® real wood and Sarante® pvc-free faux wood veneers with a woodgrain almost indistinguishable from the real thing.

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CIRCLE 21

Hazmat Reporting Gets Simpler

BY BILL MILLARD

ARCHITECTS SEEKING safe, sustainable materials for their buildings have often had to operate in either an information vacuum or wade through an array of rating systems that can be burdensome and baffling. The complexity of supply chains sometimes means that no one is certain what substances a product contains; in other cases, a material passes muster with one program while raising red flags with another. Manufacturers, too, struggle with the discrepancies and redundancies of different programs' reporting requirements. Now, with support from the U.S. Green Building Council (USGBC), four major green-manufacturing organizations are striving to simplify the process of assessing and reporting materials' effects on humans and the environment.

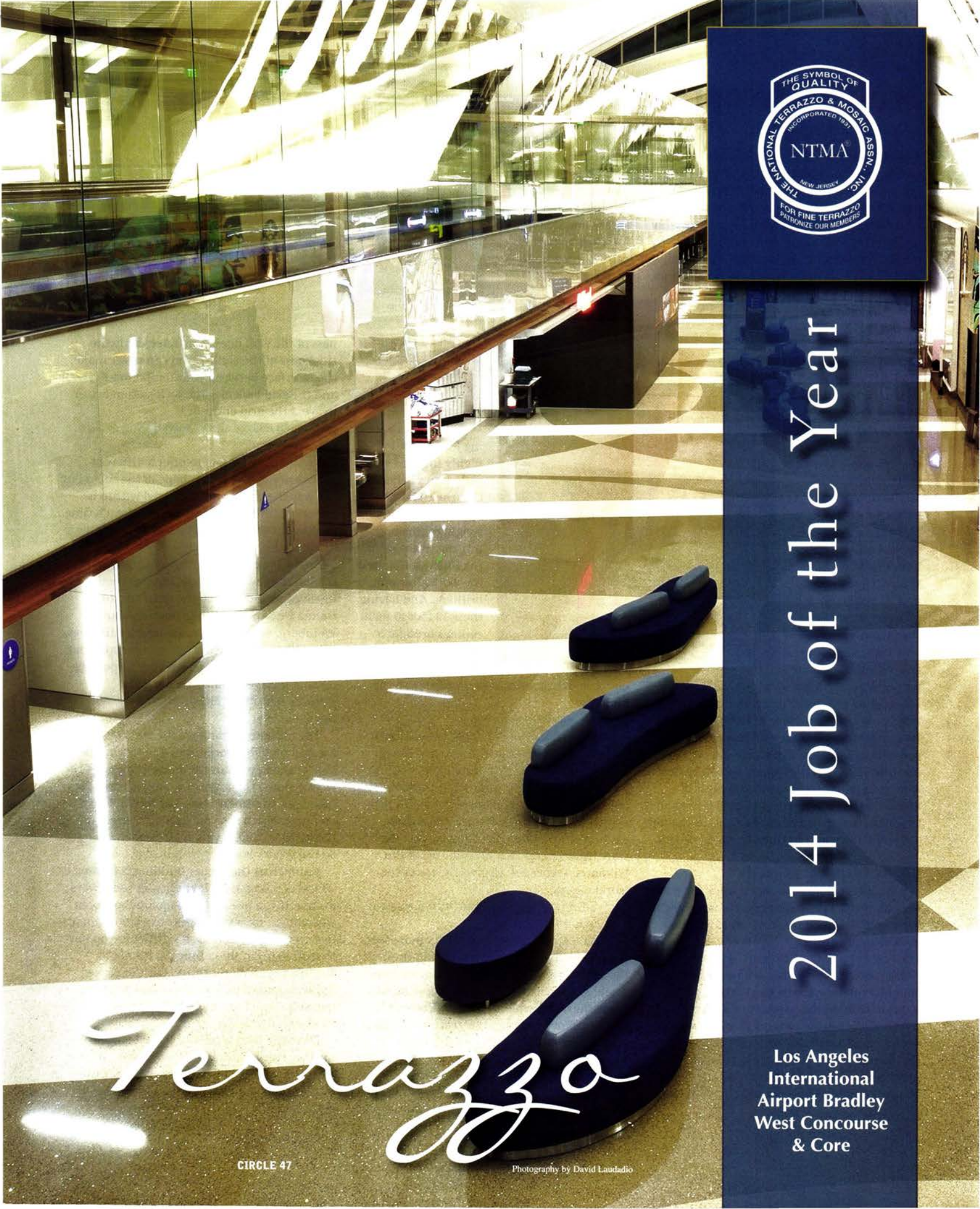
"I think the [architecture and design] community does not have a full understanding of how complicated these supply chains are and the kind of industry transformation that's happening," says Stacy Glass, vice president for the built environment at the Cradle to Cradle Products Innovation Institute (C2CPII), a San Francisco–based nonprofit that implements product and material standards. C2CPII is joining Clean Production Action, the Healthy Building Network, and the Health Product Declaration (HPD) Collaborative on a "Harmonization Task Force" charged with reconciling inconsistencies across programs. "We're making huge progress," Glass continues, "toward simplifying this path. Everybody's common goal is: we want better, cleaner, healthier materials out there."

Everyone's common goal is better, cleaner, healthier materials.

The *Material Health Evaluation Programs Harmonization Opportunities Report*, published by the USGBC last August, set out the challenge, diving into the details of best practices in ingredient reporting and hazard assessment. Comparing five protocols—including C2CPII's Cradle to Cradle Certified Product Standard, the Healthy Building Network's Pharos Chemical and Material Library and Building Product Library, and the HPD Collaborative's Health Product Declaration—the *Report* describes areas where they can align standards and cut compliance costs. All five define procedures for content inventory and screening against various "red lists" of hazardous and restricted substances.

The goal is to streamline the programs, Glass notes, not merge them. Participants recognize that different benchmarks serve different needs, from basic reporting to full C2CPII certification. Balancing some of the relevant priorities (transparency versus protection of proprietary information, for example), the task force calls for methodological collaboration plus development of a comprehensive hazard database and one-stop data-entry interface. Development of this tool is "well under way," says Glass, "and I think there'll be a rollout of the first phase at Greenbuild" in October.

These reporting systems, Glass adds, are unrelated to the Environmental Protection Agency's regulations and lack the force of law. They reflect an accentuate-the-positive philosophy, a belief that research-based information about hazardous materials and safer substances that perform similarly can drive markets and innovation in ways that simple banned-material lists cannot. ■



CIRCLE 47

Photography by David Laudadio

[NEWSMAKER]

Scott Rothkopf

BY FRED A. BERNSTEIN

MUSEUM CURATORS tend to stay behind the scenes, especially when high-profile artists are involved. But the Whitney Museum of American Art's *Jeff Koons: A Retrospective*, which runs through October 19, has been so lavishly praised that its curator, Scott Rothkopf, couldn't stay out of the spotlight if he tried. In 2009, Rothkopf left an editing job at *Artforum International* to become the Whitney's youngest-ever curator; since then, he has organized a number of highly regarded shows, but nothing like the Koons extravaganza, which fills three floors of the museum's Marcel Breuer building on Manhattan's Upper East Side. And because the show is the last one in that building before the Whitney moves to its new Renzo Piano quarters downtown, the pressure was on Rothkopf, 37, to give the old building a proper sendoff. How did he do? *The New York Times* called the show "lucid, challenging and brilliantly installed"; *New York Magazine* said it "is as near to a great show of this colossally controlling artist" as is possible during Koons's lifetime. Rothkopf (the Nancy and Steve Crown Family Curator and Associate Director of Programs) has given scores of interviews about the show, but architecture, he says, "is the one aspect of it I've never talked to anyone about."

Left: Jeff Koons, left, and Scott Rothkopf, right. Above: Jeff Koons, *Poodle*, 1991. Polychromed wood.

How did you lay out the show?

Jeff and I met at least once a week for years. We had very large-scale models of the show in his studio that we'd work on, and I also had models in my office.

Was Jeff focused on the layout of the show?

I've worked with artists whose work is really about its relationship to space. I think Jeff tends to think more in terms of discrete objects and their scale in relation to the viewer, not so much about the physical container that the objects are in. So I became, in a sense, the mediator between the objects and the space.

So you were thinking about the architecture all along?

The Breuer building has been a point of departure for every show I've done here. I've studied the building—including looking at Breuer's original wall designs—and thought a lot about it. In this case, it was a huge inspiration.

How so?

We're used to seeing Jeff's work in highly finished spaces. I always believed that the roughness of this building, the weight of this building, the variation of the floor, would make the work almost more brilliant. And having those 12-foot-10-inch ceilings brought a great sense of scale to the objects. I could go on for hours about how we worked with the building.

Can you give a few examples?

For one thing, we did a full demolition of every wall on the second, third, and fourth floors, which we don't normally do, because we're trying to reuse things. But I wanted you to feel the full dimensions of the building. I wanted to have the container, the outside walls of the building, pressing against the work. And I knew that I wanted all of the windows uncovered, to give a sense of the world beyond.

And did you think about the ceiling, with its famous coffered grid?

With a show this large, 27,000 square feet, the question of pacing is really important. I thought of the grid almost as a metronome, establishing the rhythm of the show. So we made the doors wider than usual, with no headers above—to keep the grid a continuous surface. From each room you feel the grid pulling you into the next one.

But I noticed that the walls you did put up never actually line up with Breuer's coffers.

There's a reason for that: because the thickness of the wall doesn't match exactly the thickness of the coffers, you can never make the interface between your temporary drywall and the grid look elegant. So it's often better to avoid the grid entirely.

With such a large show, how did you avoid monotony?

I wanted each room to offer a different experience. Not just the shape of the room but the way the objects are arranged within it. There's a different logic playing out each time.

Are you involved in planning for the Whitney's new building downtown?

By the time I arrived, the basic design of the building was complete, but I've been very involved, working with the chief curator, Donna De Salvo, and the director, Adam Weinberg, on things like the interior finishes, things that will give the spaces a certain character. Renzo's team has been very responsive to what it is we're doing curatorially.

Will the new building have the character of the old one?

The museums that have the most character are designed for more limited programs. If you look at the Beyeler or the Kimbell, most of the works shown there are of a similar scale; they take light in similar ways. We couldn't do a biennial, which is so much more varied, in those spaces and have it look great.

So the Breuer building is limiting?

As much as the Breuer building is held up as a kind of paragon of flexibility, in some ways it's not. If you need a 1,000-square-foot room with music, for a video, next to a 5,000-square-foot room for paintings, it's difficult; you have to stuff foam in the ceiling. So it's not as flexible as you might think. But the Breuer building taught us a lot about how to make our new space even more truly flexible.

Are you sad to be moving?

I love the Breuer building; I've enjoyed making exhibitions here. I say that without any sense of internal conflict about our move. As terrific as the building is, the Whitney has outgrown it. ■

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CIRCLE 19

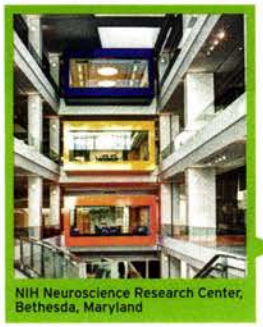
Third Year in a Row, Gensler on Top

BY ZACHARY EDELSON

FOR THE third consecutive year, Gensler holds its position as the biggest American architecture firm as ranked by revenue from architectural design work last year. In 2013 Gensler earned just over $883 million, up $76 million from the previous year, as reported by RECORD's sister publication *Engineering News-Record*. (Combined total architectural revenue from the top 300 firms increased from $10.01 billion to $11.2 billion.) With more than 40 offices worldwide—including growing construction markets in China and Indonesia—it's no surprise that almost a quarter of Gensler's net revenue came from international sources. Gensler CEO Andy Cohen cited the firm's ability to provide design solutions to clients who operate in an "increasingly interconnected and global world." Second- and third-place firms CH2M HILL and AECOM switched the places they had in last year's rankings. Another two of the top 10 offices, both of which work primarily in architecture, made recent acquisitions of other firms. In March, Perkins+Will (ranked No. 5) announced it would acquire The Freelon Group of Durham, North Carolina (see page 21), and its 40 employees. In December, HOK (ranked No. 8) announced it would acquire the Shanghai and New York offices of BBG-BBGM, which specialize in hospitality and interiors. (The Washington, D.C., office of BBG-BBGM will continue as BBGM.) ■

TOP 25 U.S. ARCHITECTURE FIRMS OF 2014

Companies are ranked by revenue (in **millions of dollars**) for architectural services performed in 2013. These data also appear in *Engineering News-Record*'s "Top 500 Design Firms" list, which, unlike our ranking, also includes firms that do engineering exclusively.



NIH Neuroscience Research Center, Bethesda, Maryland

All Aboard Florida, Miami Station

Fossil Headquarters, Richardson, Texas

RANK 2014	RANK 2013	FIRM, U.S. HEADQUARTERS	TYPE OF FIRM	TOTAL ARCHITECTURAL REVENUE
1	1	**Gensler,** San Francisco	A	883.22
2	3	**CH2M HILL/IDC Architects,** Englewood, CO	EC	485.37
3	2	**AECOM,** Los Angeles	EA	446.75
4	4	**Jacobs,** Pasadena, CA	AEC	430.67
5	5	**Perkins+Will,** Chicago	A	356.36
6	7	**URS,** San Francisco	EAC	326.9
7	6	**HDR Architecture,** Omaha	EA	297.2
8	8	**HOK,** St. Louis	AE	274.44
9	10	**Skidmore, Owings & Merrill,** New York City	AE	228.36
10	18	**Bechtel,** San Francisco	EC	214
11	11	**NBBJ,** Seattle	A	197.3
12	9	**HKS,** Dallas	AE	194.07
13	12	**RTKL,** Baltimore	E	193
14	13	**Kohn Pedersen Fox Associates,** New York City	A	177.72
15	16	**Callison,** Seattle	A	160.91
16	14	**Perkins Eastman,** New York City	A	155
17	20	**ZGF Architects,** Portland, OR	A	128.1
18	15	**Cannon Design,** Grand Island, NY	AE	127.8
19	17	**Leo A Daly,** Omaha	AE	119.75
20	24	**Populous,** Kansas City, MO	A	111.75
21	19	**Stantec,** Irvine, CA	EAL	105.43
22	22	**SmithGroupJJR,** Detroit	AE	91.2
23	37	**Hammel Green and Abrahamson,** Minneapolis	AE	89.31
24	23	**DLR Group,** Omaha	AE	83.1
25	25	**Corgan Associates,** Dallas	A	78.51

Key to firm types

A Architect
AE Architect Engineer
AP Architect Planner
EAL Engineer Architect Landscape
AEC Architect Engineer Contractor
(not all combinations listed)

See the entire Top 300 Architecture Firms list at architecturalrecord.com/news.

noted

Museum of Modern Art Appoints Architecture Curator

In July, MoMA appointed Martino Stierli as the Philip Johnson Chief Curator of Architecture and Design, succeeding Barry Bergdoll, who stepped down in 2013. Stierli currently teaches the history of modern architecture at the University of Zurich.

Aedas Will Split into Two Firms

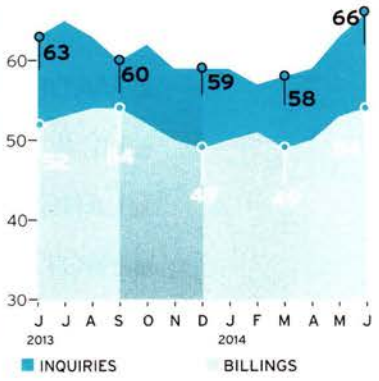
Aedas, the world's fifth-largest architecture firm (by architects employed) announced in July that part of it was splitting to become Hong Kong–based LPT and UK firm Abbey Holford Rowe. Thirteen offices in China, Southeast Asia, the Middle East, and the U.S. will continue to operate as Aedas.

Cuban Architect, Planner Mario Coyula Cowley Dies

The celebrated architect died in Havana on July 7 at age 79. Coyula held many prestigious posts in the Cuban architectural community. In 2013, he received the Premio Nacional de Patrimonio Cultural, the country's highest honor for cultural contribution.

Yale's Iconic Beinecke Library to Close for Renovation

In May 2015, the Beinecke Rare Book & Manuscript Library at Yale will close its building for 16 months to undergo a major renovation that will replace its climate-control systems and double its classroom space. The 50-year-old building, designed by Gordon Bunshaft, will reopen in September 2016.



ABI Signals Strength

The American Institute of Architects (AIA) reports that the June ABI (Architectural Billings Index) score was 53.5, up from a mark of 52.6 in May (any score above 50 indicates an increase in billings). The new-projects inquiry index was 66.4, up noticeably from 63.2 the previous month and its highest level in the last year.

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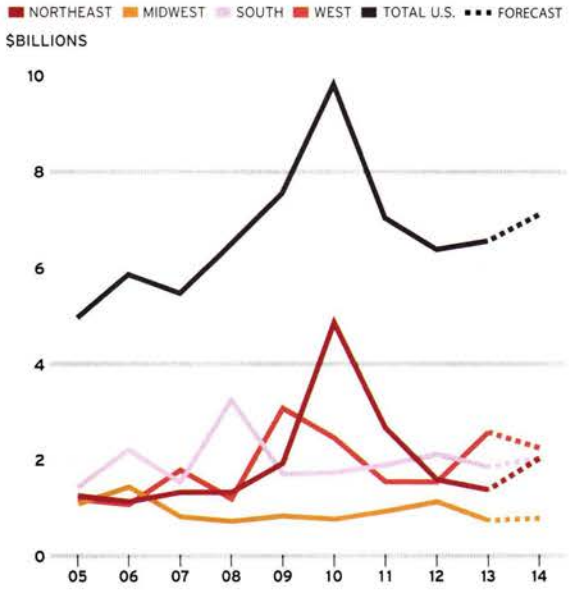
CIRCLE 51

perspectivestats
Data from McGraw Hill Dodge Analytics

MARKET FOCUS
TRANSPORTATION BUILDINGS

Although high-speed-rail efforts in a number of places could reinvigorate the transportation sector, in general, investment in new air, rail, and bus infrastructure remains sluggish, with considerable variation by region.

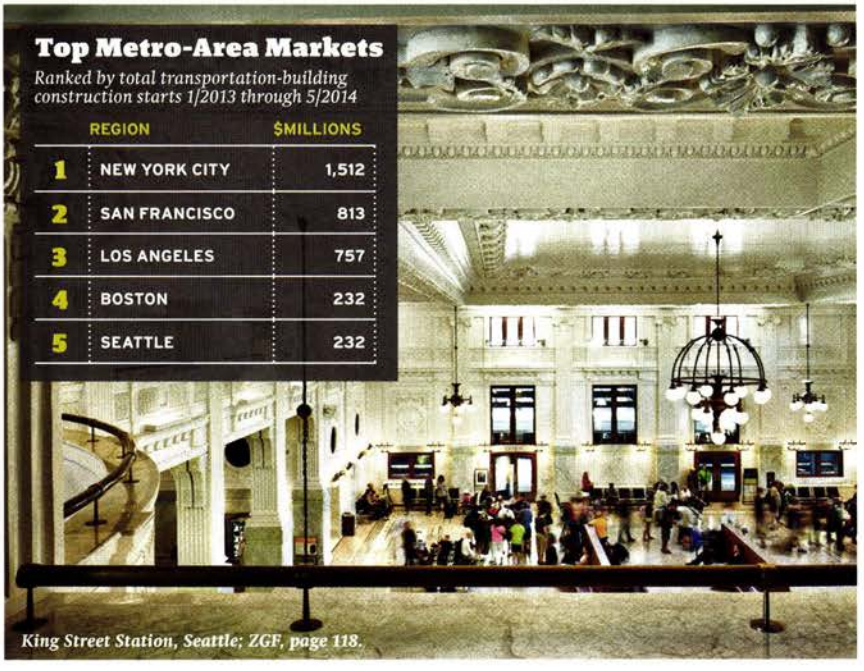
Transportation-Building Starts by Region *In addition to U.S. total and 2014 forecast figures*



Top Metro-Area Markets

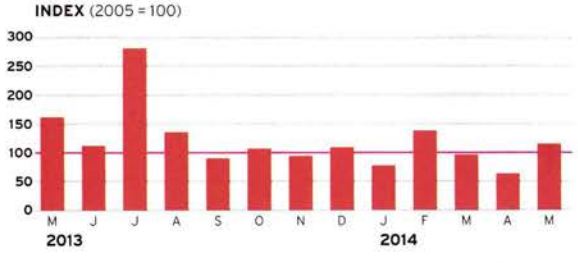
Ranked by total transportation-building construction starts 1/2013 through 5/2014

	REGION	$MILLIONS
1	NEW YORK CITY	1,512
2	SAN FRANCISCO	813
3	LOS ANGELES	757
4	BOSTON	232
5	SEATTLE	232



King Street Station, Seattle; ZGF, page 118.

The Dodge Index for Transportation-Building Construction 5/2013–5/2014



The index is based on seasonally adjusted data for U.S. transportation-building construction starts. The average dollar value of projects in 2005 serves as the index baseline.

Top 5 Design Firms

Ranked by transportation-building construction starts 1/2011 through 5/2014

1. **Corgan**
2. **Skidmore, Owings & Merrill**
3. **Kwan Henmi**
4. **Pelli Clarke Pelli Architects**
5. **HNTB**

Top 5 Projects

Ranked by transportation-building construction starts 1/2013 through 5/2014

$650 MILLION
PROJECT: Third Street Light Rail Central Subway
ARCHITECTS: Kwan Henmi, MWA Architects, Robin Chiang & Company
LOCATION: San Francisco

$258 MILLION
PROJECT: Second Avenue Subway 72nd Street Station
DESIGNER: AECOM-Arup Joint Venture
LOCATION: New York City

$208 MILLION
PROJECT: Second Avenue Subway 86th Street Station
DESIGNER: AECOM-Arup Joint Venture
LOCATION: New York City

$158 MILLION
PROJECT: Charleston International Airport Terminal Redevelopment
ARCHITECTS: Fentress Architects, Watson Tate Savory
LOCATION: Charleston, SC

$157 MILLION
PROJECT: PATH Harrison Station Redevelopment
ARCHITECTS: Port Authority of New York & New Jersey, Croxton Collaborative Architects
LOCATION: Harrison, NJ

MOMENTUM INDEX POSTS THIRD-STRAIGHT GAIN

Following a hiccup in early 2014, the Dodge Momentum Index posted its third consecutive increase. In June it gained 3.3%, reaching 128.7—a mark 22.6% above its level a year earlier.

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

McGraw Hill Dodge Analytics tracks projects from predesign through construction to capture hard construction costs, square footage, and other key statistical information.

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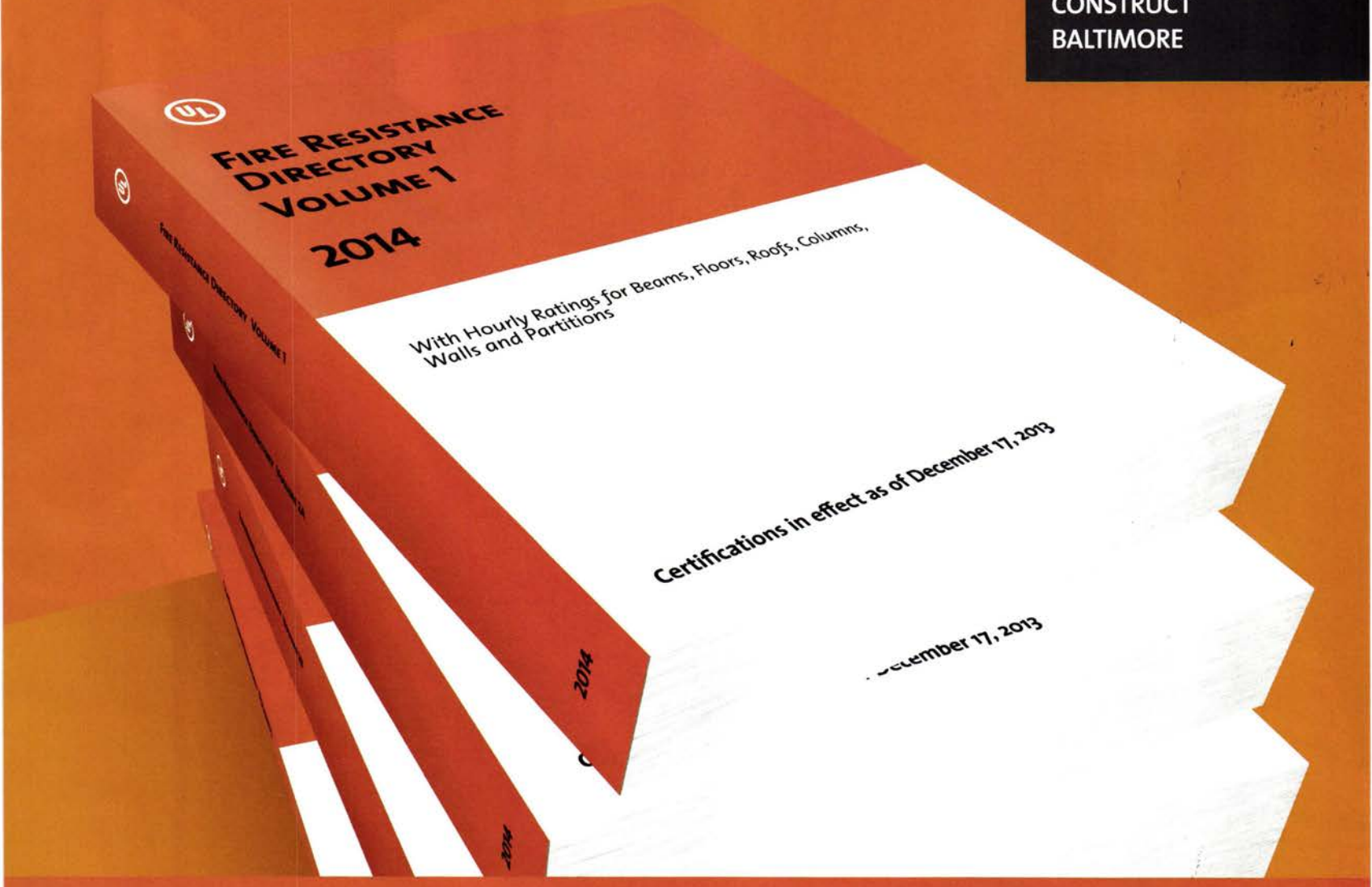

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CIRCLE 27

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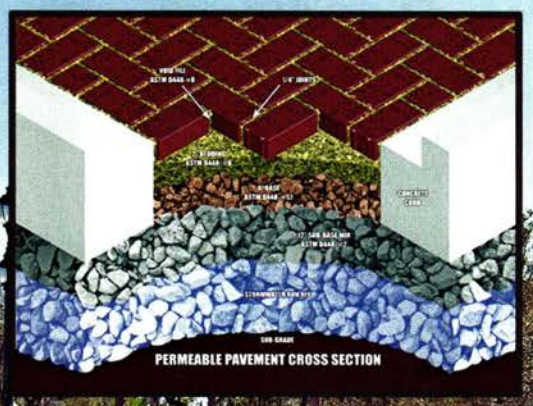

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CIRCLE 22

perspective**house of the month**

ARCHITECT ANDREW BERMAN DESIGNED A SPRAWLING BEACHFRONT RESIDENCE IN WATER MILL, NEW YORK, AS A VACATION HOME FOR AN INTERNATIONAL FAMILY. **BY JOSEPHINE MINUTILLO**

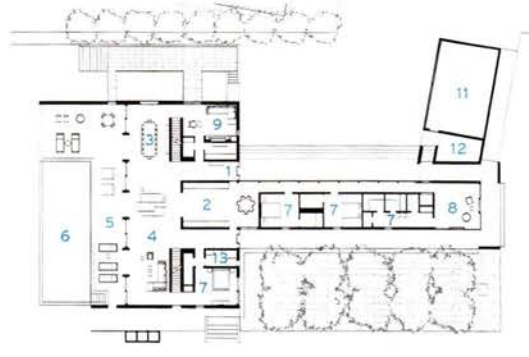
Clockwise from left: horizontal bands of board-formed concrete on the lower level contrast with vertical bleached cedar boards above. Wildflowers blanket the lower roofs, while the main roof features solar collectors for heating the pool. The living-dining area, lined in Douglas fir, opens to the pool patio. Built-ins at the large window openings provide cozy spots for an afternoon nap.

IT STARTED as a way to bring three generations of family, spread across the globe, under one roof. Expertly sited on a two-and-a-half acre lot with private waterfront access, a 7,200-square-foot residence in Water Mill, New York, serves as home base for five adults and five preteens for summers, weekends, and holidays. "The challenge was making a viable whole for a family with disparate interests and age groups," says architect Andrew Berman.

A large chef's kitchen for entertaining friends and family sits at the heart of the T-shaped plan's two-story wing. Extending from it, a one-story leg with guest quarters comes together with a lower, canted offshoot containing the garage, their roofs blanketed with wildflowers. These volumes hug an entry courtyard where the acid-etched glazed facade is opalescent by day and a welcoming lantern at night. At the western end of the house, the living-dining area opens onto the pool patio. Each veranda is sheltered by cantilevers ranging from 6 to 12 feet deep.

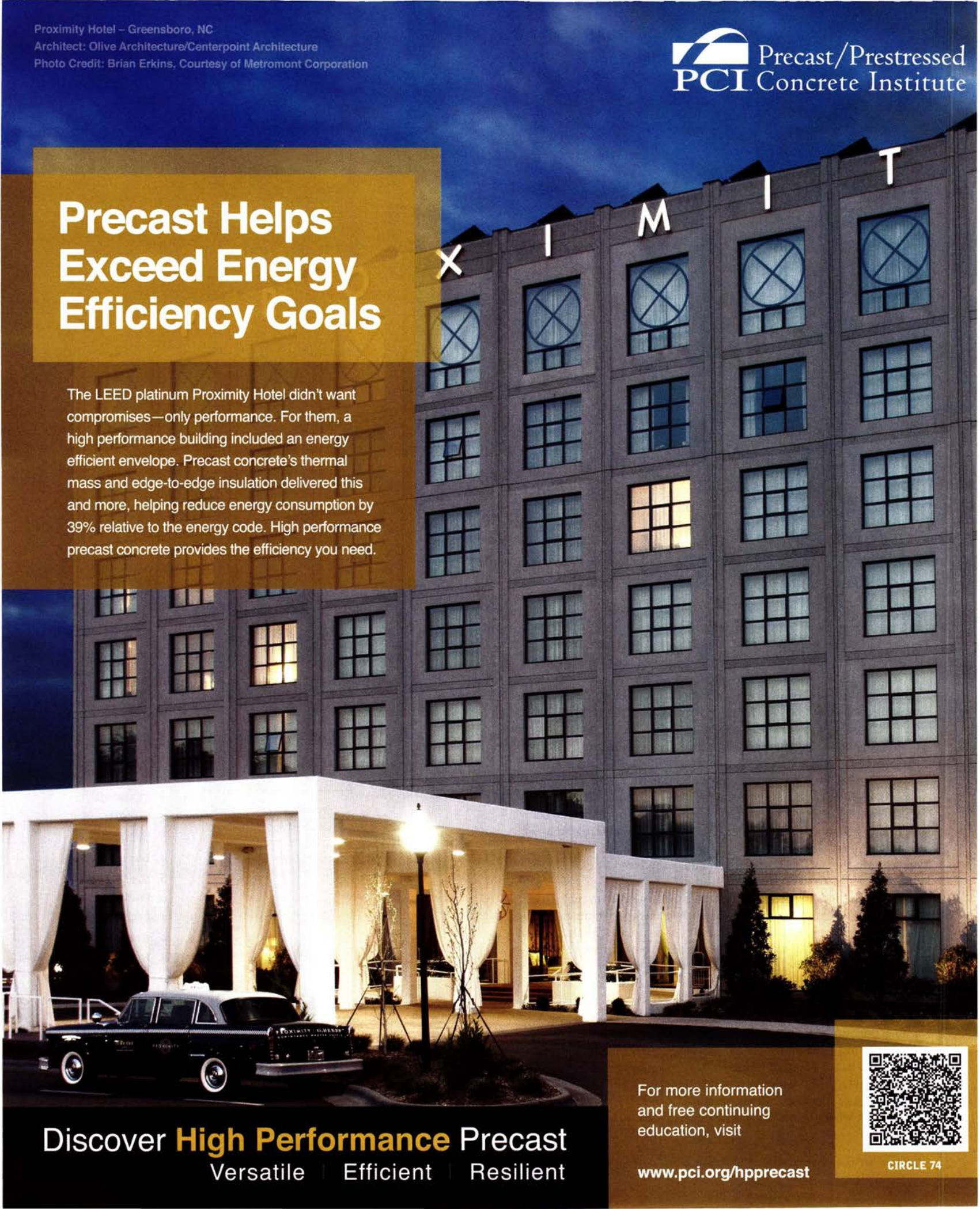
"The design was generated from the siting, in order to make use of every inch of land," says Berman. With landscape architect Coen+ Partners, he maneuvered around a series of complicated wetland and property-line setbacks to create a house open to its stunning backdrop. A gravel path encircles the perimeter of the property; supports for espaliered roses and fruit trees surround a tennis court; and a vast lawn hosts family soccer games.

Like most houses in the Hamptons, the flat-roofed structure is clad almost entirely in cedar, but with a twist: rather than the ubiquitous shingle siding, Berman used long, narrow boards of bleached wood. Horizontal bands of board-formed concrete on the exterior walls of the two-story wing's lower level contrast with vertical wood boards that sheathe the private upper levels. Douglas fir lines the interior on the lower level, where Berman kept the material palette to a minimum. ■



1 ENTRANCE
2 KITCHEN
3 DINING
4 LIVING
5 COVERED PORCH
6 POOL
7 BEDROOM
8 GYM
9 FAMILY ROOM
10 PLANTED ROOF
11 GARAGE
12 COVERED BIKE STORAGE
13 BATHROOM

View additional images at architecturalrecord.com.


Proximity Hotel – Greensboro, NC
Architect: Olive Architecture/Centerpoint Architecture
Photo Credit: Brian Erkins, Courtesy of Metromont Corporation
PCI Precast/Prestressed Concrete Institute
Precast Helps Exceed Energy Efficiency Goals
The LEED platinum Proximity Hotel didn't want compromises—only performance. For them, a high performance building included an energy efficient envelope. Precast concrete's thermal mass and edge-to-edge insulation delivered this and more, helping reduce energy consumption by 39% relative to the energy code. High performance precast concrete provides the efficiency you need.
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CIRCLE 74

ARCHITECTURAL
RECORD

Guess the Architect Contest

ENTER NOW!

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

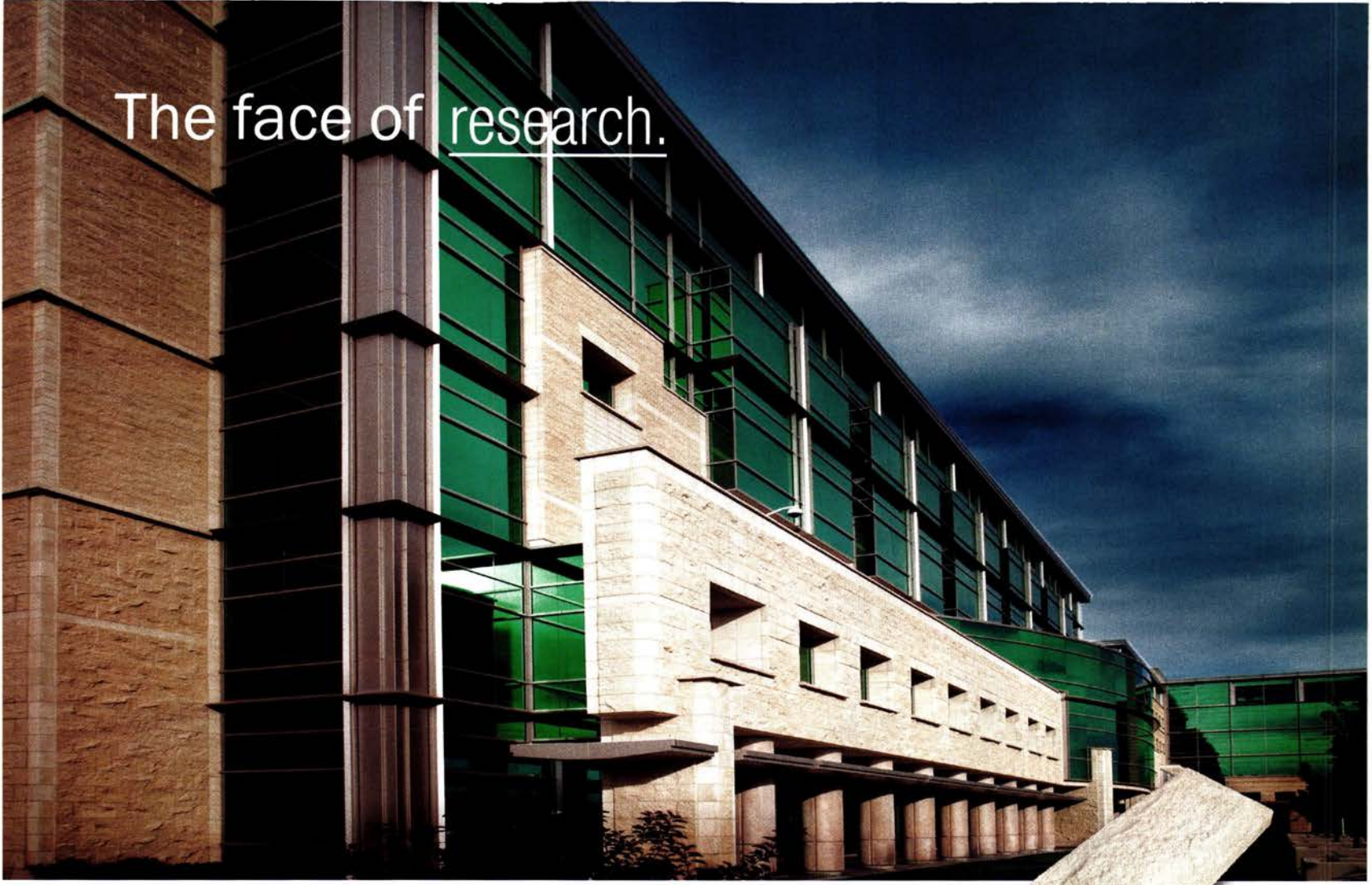
CLUE: A NORTH AMERICAN PRITZKER PRIZE–WINNER GARNERED ACCLAIM THROUGH HIS USE OF VIBRANT COLORS FOR PLANAR WALLS ARTFULLY POSITIONED AROUND REFLECTING POOLS.

The answer to the July issue's Guess the Architect is Walter Gropius. He (with partner Adolf Meyer) designed the Blockhaus Sommerfeld for a lumber merchant and builder in Berlin-Dahlem (1922), soon after establishing the Bauhaus in Weimar in 1919. For more details, including the winner, go to archrecord.com.

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

PHOTOGRAPHY: © GABRIEL A. RAMÍREZ; HARVARD ART MUSEUMS/ BUSCH-REISINGER MUSEUM, GIFT OF ISE GROPIUS, BRGA.8.13 (BOTTOM)

The face of research.



-Project: The Huntsman Cancer Institute, Salt Lake City, UT.
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Architectural Eyes on the Fashion World

An exhibition at the Metropolitan Museum of Art looks at a popular form through a new lens.

BY ZACHARY EDELSON

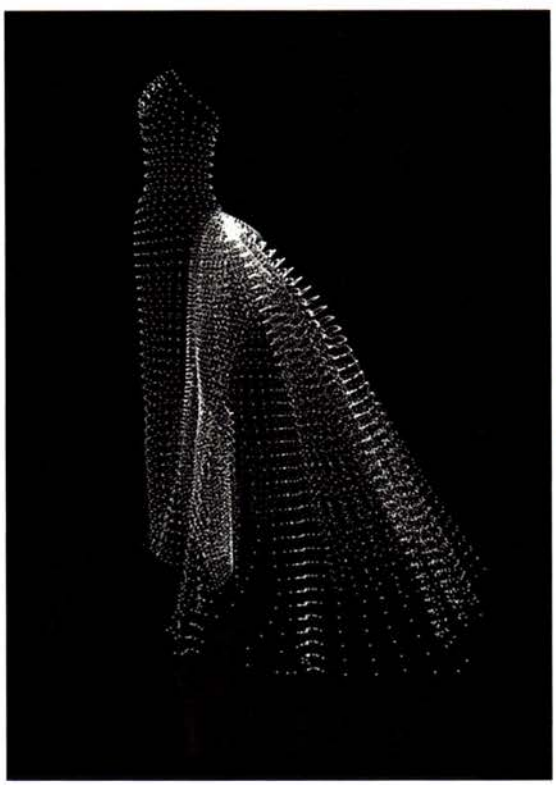
"IN FASHION, even what seems most fragile must be built on cement."

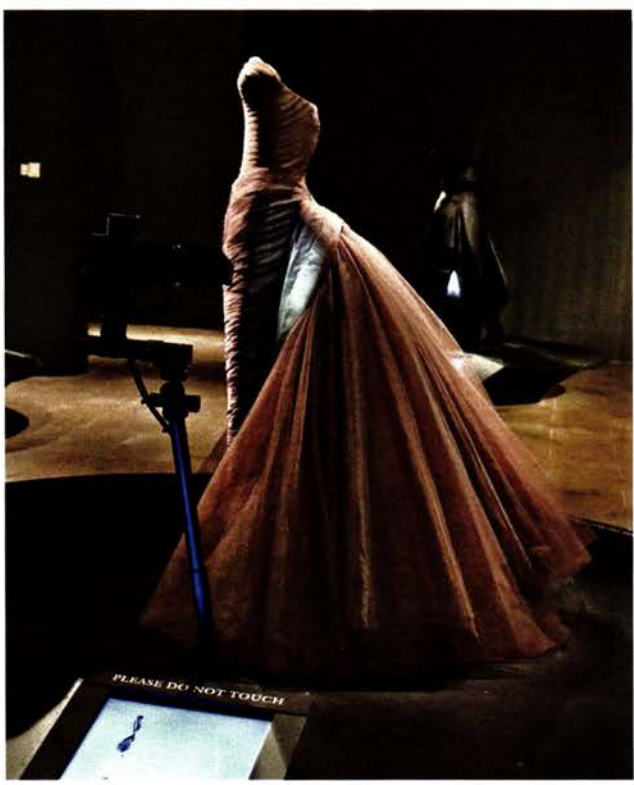
These fitting words came from Charles James (1906–78), a designer who was part engineer, part sculptor, and, above all else, an architect of fabric. Like many great buildings, his sartorial creations possess striking outward beauty and a deeply embedded philosophy of craftsmanship: James said he once spent 12 hours on a single seam. When the Metropolitan Museum of Art in New York decided to mount a major exhibition of James's work (*Charles James: Beyond Fashion*, running through August 10), the challenge facing its Costume Institute was clear: how to communicate the singular attributes of his work to the general public.

From the 1930s to the 1960s, James, a self-taught Anglo-American, designed couture for arbiters of taste such as Dominique de Menil, Millicent Rogers, and Austine Hearst, along with ready-to-wear for a larger audience. He did receive some architectural training from his brief stint in the architecture department of a large Chicago utilities company in 1924. James played with conventional seaming, used fabrics as structural elements, and constructed metal support systems, all concealed under a vibrant selection of colors, textures, and patterns—an architectural approach achieved with technical brilliance. Consequently, curators Harold Koda and Jan Glier Reeder sought to enlist exhibition designers who could understand the unusual complexity of his work. They selected the architecture firm Diller Scofidio + Renfro (DS+R) known for unconventional exhibitions—most recently their design for *The Art of Scent: 1889–2012* at the Museum of Arts and Design, in New York, in the winter of 2012–13.

"We started off knowing very little about James's dresses," said DS+R principal Liz Diller. The secrets of the garments' construction were unveiled by the analytical tools of the museum's conservation department—X-ray imaging showed the dresses' underlying structure, while microscopy further revealed material properties. The architects realized that the Met's clinical instruments could help the exhibition's visitors appreciate James's skill. "While these tools were available for the conservators, bringing that fascinating information to the public isn't something the curators had previously considered," Diller said. Digital animations, composed principally using 3ds Max and After Effects, could show a deconstruction of the design and craft of a dress: how its fabric—James's ball gowns used a luxurious abundance of silk, taffeta, or satin—was structured to embrace the female form and create the desired effects of billowing and draping. The dresses would, in essence, be seen as small works of architecture.

Unfortunately, the show had to be split into two gallery spaces that are far apart in the museum. Fifteen of James's ball gowns are in the Special Exhibition Galleries on the main floor, off the Greek and Roman wing, while other dresses, coats, and archival material are shown in the Anna Wintour Costume Center on the lower level. On the main floor, visitors entering the gallery are greeted by all 15 dresses elevated on platforms, facing forward, and as brightly illuminated as the conservators allowed. "Just simply the gowns, unadulterated but beautifully lit," Diller states, though there has been criticism that the galleries were gloomy. Hidden from that first glimpse of the dresses are robotic armatures and small display monitors for each gown. These are the exhibition's storytellers.





DS+R used handheld 3-D scanners to translate James's dresses, such as the the *Butterfly Ball Gown* (right), into digital models (left). For this particular gown, James layered brown and purple tulle to create depth of color and an iridescent sheen.

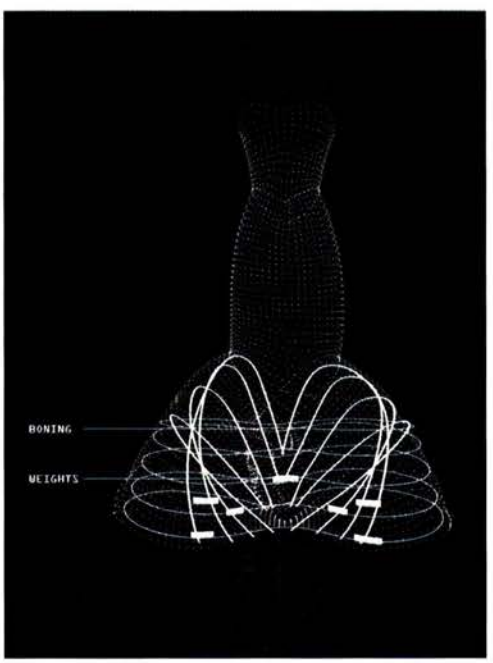
Each monitor shows an animated three-dimensional digital model of the garment, which is manipulated, taken apart, and analyzed. Most of the robotic armatures, mounted with a focused light, coordinate their movement with the animation to highlight relevant parts of the gown. The *Clover Leaf Ball Gown* (1953), for example, is an intense study in fabric strategy: the animation dissects the gown's black-and-white satin, faille, and velvet composition, then explodes its form into two-dimensional curved surfaces, reassembles the dress, zooms into each section's woven construction, performs a live section of the cloverleaf form, and finishes with a view in

elevation and plan. As the focus light of the armature glides along the gown's surface, it is synchronized with the animation's virtual cuts into the gown's layers. DS+R's architectural approach is evident: the animations use plans, sections, elevations, and details to construct the sartorial narratives.

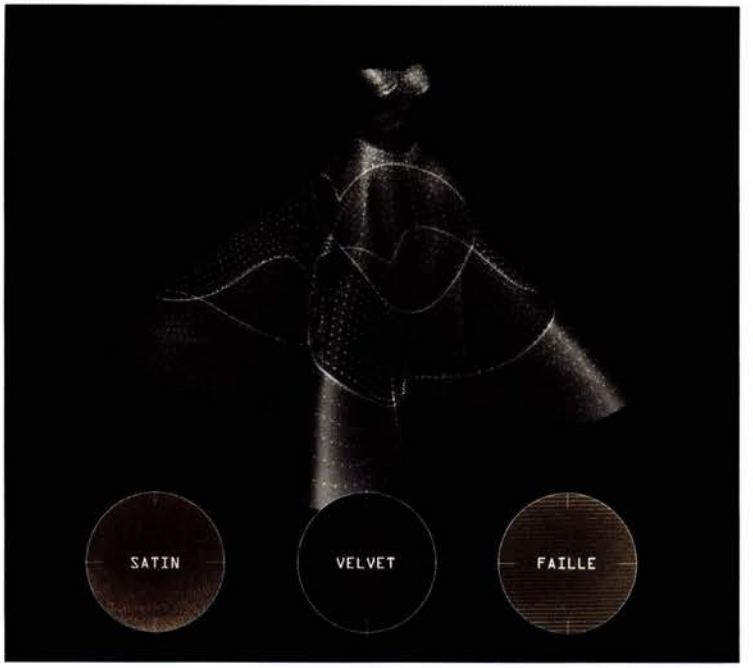
The lower-level gallery space continues the themes and strategies of the main floor with similar tools. Robotic boom-arms, essentially larger versions of the smaller robotic arms upstairs, are mounted with cameras that dynamically move around dresses, coats, and

The exhibition teaches visitors to look at nonarchitectural objects through the eyes of an artist and engineer.

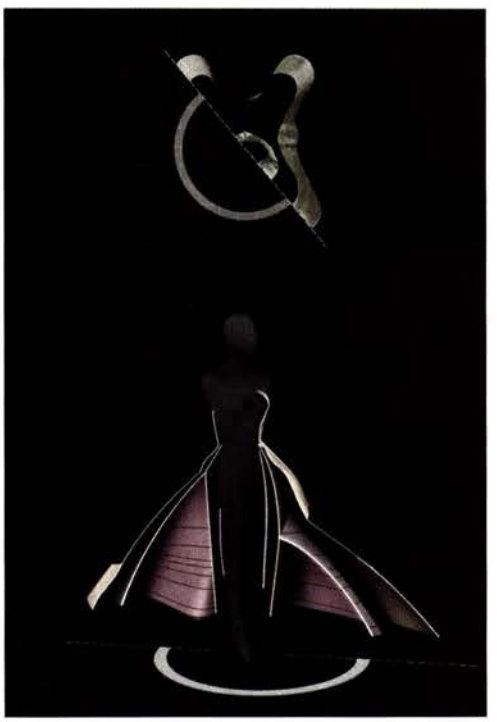
suits to capture the minute details, textures, and colors of their fabric. Wall projectors show the camera's prerecorded imagery as well as additional animations. While one projection enlarges the dark blue-black contours of a dress to the height of an entire wall, amplifying its fine gradients of shadow and sheen, another projection analyzes the layers of green-gray silk satin in *Figure-Eight Evening Dress* (1939) with X-ray imagery.



The *Lampshade Evening Dress* (above) is supported by concentric and transverse boning.



The *Clover Leaf Ball Gown* (left; below; below, left) of 1953 was made for Austine Hearst and worn at the coronation of Queen Elizabeth II. The dress weighs 10 pounds yet is designed to comfortably balance on the wearer's hips. James understood that dresses were meant to be dynamic when used: the *Clover Leaf* is calibrated to gently sway as its wearer walks.



The subdued black or mirrored walls throughout the exhibition are meant to foreground the vibrant colors and rich fabric of the dresses and mentally transport visitors from the museum: the playful reflection of the gowns' red, cream, pink, and green colors among the gallery's surfaces contrasts with the starkly classical halls outside.

But, most of all, it's the architectural eye that unlocks the secrets of the garments and reveals their brilliance. The exhibition teaches visitors to look at nonarchitectural objects through the eyes of an artist and engineer. Sections and details are paired with visual and structural analysis to give a substantive lesson in what it means to think and visualize the world architecturally. If a dress can be thought of in plan or a fabric understood as having unique material intelligence, then surely other objects or disciplines could yield new insights if analyzed from a similar perspective. This exhibition explores the work of a fashion designer who thought like an architect to make architectural thinkers out of a wider public. ■

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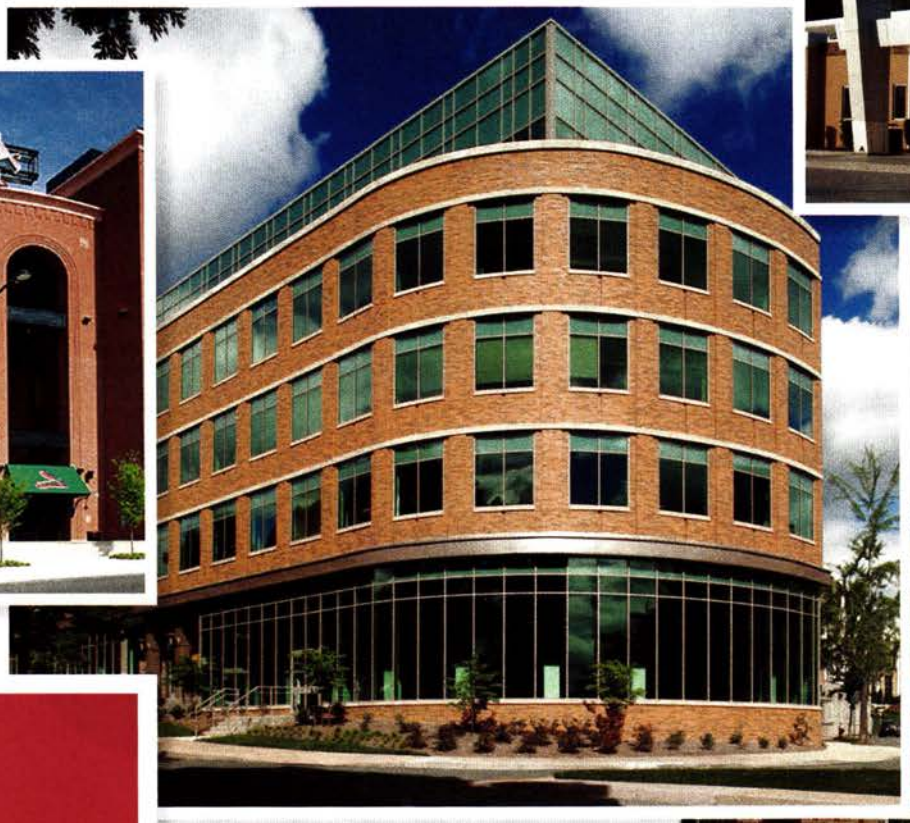

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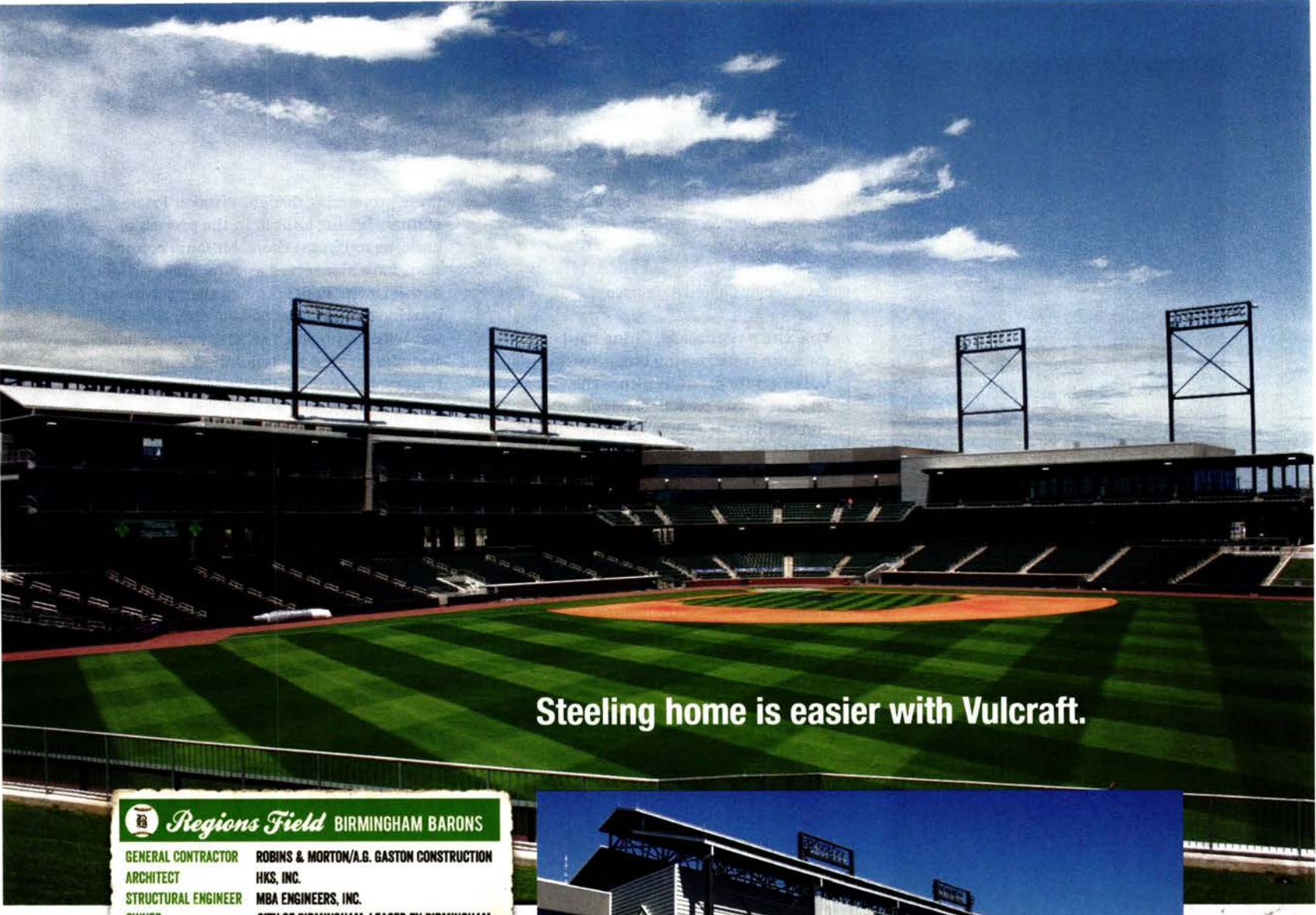

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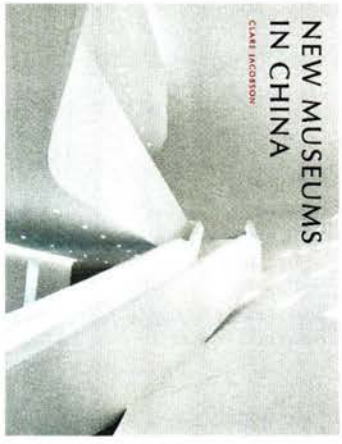
CIRCLE 63

Cultural Revolution

New Museums in China, *by Clare Jacobson. Princeton Architectural Press, November 2013, 256 pages, $50.*

Reviewed by Clifford A. Pearson

FOR THE PAST decade, China has been on a museum-constructing binge, tossing out new buildings for art and culture the way a sailor on leave tosses back beers. From 2000 to the end of 2011, the People's Republic of China added 1,198 museums, nearly doubling the number it had at the start of the millennium. Some were commissioned by ambitious politicians hoping to advance their careers. Some were put up by developers as ill-conceived amenities for enormous housing projects. Many remain empty much of the time, their institutional software lagging years behind their building hardware. But a growing number are bringing innovative architecture and sophisticated art to a country hungry for culture.



Clare Jacobson, an American writer and contributing editor to RECORD who has lived in Shanghai for the past five years, has witnessed this remarkable boom, seeing dozens of new museums open in her adopted city. She watched one of them, Perkins+Will's Shanghai Nature Museum, emerge from the ground and take form literally before her eyes from her 25th-floor apartment. (It is scheduled to open later this year.) She brings a journalist's eye to the subject, acknowledging the odd and sometimes amusing aspects of China's newfound love of museums. She cites, for instance, the recently opened Russian People Museum in Enhe, Inner Mongolia, a small town that "has little else to offer tourists, save for a couple of souvenir shops and a Russian bakery."

Jacobson understands that in 21st-century China, museums represent more than just a healthy interest in culture. "New museums in China are not simply anonymous buildings," she writes; "they are designed to make a statement." She explains that many of these buildings don't work very well as museums, and a good number don't have staff properly trained as curators or museum administrators. But China has been importing some of the biggest names in architecture to design these projects, with eight Pritzker Prize–winners having built or in the process of building museums there. Museum commissions have also served as launching pads for homegrown talents proving themselves and starting to attract worldwide attention. So it was with Wang Shu, the 2012 Pritzker laureate, who secured his reputation with the remarkable Ningbo History Museum, completed in 2008. And an emerging generation of Chinese architects are getting the chance to cut their teeth with these jobs. Browse through Jacobson's book and you'll be introduced to many of these rising stars, including Pei Zhu, Ma Yansong of MAD Architects, Hua Li of Trace Architecture Office, Liu Jiakun, Xu Tiantian of DnA Design and Architecture, Lyndon Neri and Rossana Hu, and the firm Urbanus Architecture & Design. Because they have the opportunity to build frequently and build creatively, these architects will probably become more familiar to us in the near future.

In her introduction, Jacobson provides an overview of the rising wave of new museums, offering statistics and observations to put it in perspective. Then she presents 51 examples from around the country designed by both foreign and Chinese architects. The great majority are completed buildings, while a few—such as the Zhang Daqian Museum by Miralles Tagliabue EMBT and the China Comic and Animation Museum by MVRDV—are still in the works. Each case study provides readers with a concise text explaining the project and the architect's design strategy, and most include floor plans and sections. The plans, though, don't have legends, which would have made them easier to understand. The book was designed by Jan Haux, who gives it a clean, modern look and uses vertical text for chapter titles and museum names as an abstract allusion to traditional Chinese writing.

Bringing together all these projects in one volume, Jacobson gives readers a sense of the range of China's current museum boom. Digging deeper, though, into what this says about the country, its aspirations, and its place in the world of art and culture will probably have to wait until we have a longer-term perspective on the topic. ■

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Crossover Artist?

Frank Gehry weighs in on his friendships with artists, how he designs for art—and why he resists certain labels.

BY CATHLEEN MCGUIGAN

PHOTOGRAPHY: © CONSTANCE MENSH FOR THE PHILADELPHIA MUSEUM OF ART

THERE ARE few major American architects who have been more closely linked to art and artists than Frank Gehry—he's often talked about the inspiration he found in a circle of Los Angeles artists in the early days of his career. He's designed artists' studios, gallery installations, and, of course, art museums, most recently the Fondation Louis Vuitton, an arresting 126,000-square-foot exhibition center in Paris that will open in October. Last month, the Philadelphia Museum of Art opened an exhibition of his planned expansion of their facility (he appeared at the museum, above). Over the years, critics have used art metaphors to describe his architecture—though the term "sculptural" is one that he now rejects. Gehry spoke with RECORD editor in chief Cathleen McGuigan about his connection to the art world—and whether an architect can also be called an artist.

How did you become so involved with art?

When I was a child in Toronto, even though my family was very poor, my mother took me to art galleries. Later, growing up in the L.A. architectural scene, the Japanese and Asian influence was very big, so I studied Asian art and I got very involved with woodcut drawings. Of course, Frank Lloyd Wright had a collection of those woodcuts, and so there was a linkage between art and Wright.

In architecture school at USC, the art school was in the same building. I was taking art classes and architecture, so I knew people on both sides of that fence.

Then, in the early '60s, I was doing the Danziger studio on Melrose in Los Angeles. While it was under construction, this funny guy came around and started talking to me. His name was Ed Moses. So he's an L.A. artist, and then he brought other artists by, like Billy Al Bengston and Ken Price. He invited me to his house for dinner, and I got to know the whole culture of the L.A. art scene. I was kind of an outsider—I mean, they wouldn't have used the word sycophant, but I was kind of a nice guy who was hanging around and was really excited about their work. I met a lot of New York artists who came to L.A. too, like Jasper Johns and then Bob Rauschenberg—I spent a lot of time with him.

What impact did the art scene have on you?

It was hard not to be influenced by it all, because they were making things—they had a process. If they wanted to do something and there was no way to do it, they would invent the technology. I learned that way back then from those guys. And we still do that, like the tapestry for Eisenhower [metal screens designed for the Eisenhower Memorial in Washington, D.C.]. Nobody had done it before—we invented the machine and made it. I mean, I don't do it myself. There are people in the office with their own particular kind of genius.

So you don't *not* do something because it hasn't been done.

Oh, no, no, no—come on! I jump off the cliff.

Many years ago, in 1980, you were quoted as saying that you approached each building "as a sculptural object," but you would no longer put it that way.

When you say I was approaching the building as sculpture—not really. I was approaching the building as a building, with the responsibility to the community it was being built in and all that self-righteous stuff. That's how I did it. I believed in all that and still do.

I wasn't the one who said you approached a building as sculpture. I'm just quoting you, from a long time ago.

I know, I know. I say a lot of things—it depends when.

But can architecture be approached as art?

So here's the issue. The history of architecture, in my opinion, shows that it has a long lineage as sculpture, as art. There is an art of architecture. And it comes from Phidias, the guy who did the Parthenon, and before him, all the way to the present.

There is an art to it. You have to decide what proportion, what shape, what color. And in those past cultures, certain rules of the game applied—they had fluted columns and capitals and all that stuff, but there was a lot of variety in it. Somebody was making choices, and it didn't all look the same.

A lot of it played outside the so-called box, for its time. So if you go to the Pazzi Chapel in Florence by Brunelleschi, you say, "Where the hell did that come from?" Or the dome that he did. These are very big innovations, and they're in the service of architecture in creating space, but if they're not art, I don't know what is.

But we don't talk about architects as artists in that way today.

So there's a certain period in the culture, today, where artists are saying, no, you're not an artist. When you get that kind of response, you either go up to them and argue about it or you just say OK.

So when somebody asks me if I'm an artist, I always say no, I'm an architect. Because the social mores today are that architecture is not an art. It's the engineering, matter-of-fact stuff to solve housing and provide offices and things like that. So I don't see it as that, but if the rest of the world wants to see it that way, maybe it's their lack of interest in it today that allows every city in the world to look crappy.

You have created so much important work for showing art in your designs for museums and galleries.

Well, for me it's been based on talking to the artists all these years. Most of the artists that I like and grew up with were not people who made a case to have neutral white galler-

ies. I remember Daniel Buren and Michael Asher and a few others telling me, you know, that's the last thing they wanted.

The most pristine white galleries are very toxic to a lot of artists because the purity overcomes their impurity. So Arte Povera, for instance, would not be good in those galleries.

Now, for the Guggenheim Bilbao, you made a variety of different kinds of galleries.

Yeah, and the art world or the museum world hated it. I think I did one museum after that. Renzo did 24. I was told that my kind of museum is not what they wanted.

But Cy Twombly had a show that traveled before he died. And he was told, "Stay away from Bilbao." So finally his last show did go to Bilbao. I never got to see it, but he called me from there to tell me how wonderful it was and everything.

You've designed a number of art exhibitions, most recently a subtle and sensitive installation of small works by Alexander Calder that just closed at Renzo Piano's Resnick Pavilion at the Los Angeles County Museum of Art. You brought them beautifully to life.

Well, I grew up in a time when Calder reigned supreme. There was a show in the '60s at the Guggenheim in New York where he showed the *Circus* and he worked on the installation. And I remember just falling in love with his work there. And that's what encouraged me to make curved walls for this exhibition.

Aha! The Guggenheim's walls.

Yeah. The walls were curved. So it was clear that that was helping it at that time.

Designing an art installation is not exactly like designing an entire museum. Why do you do it?

It's a labor of love. For the Calder, we made models of the building. We did the whole thing and actually made scale models of each piece.

You've talked about the process of art and architecture—about being influenced by the making, the invention that you see in artists' work.

I see my artist friends work very diligently with engineers and with contractors and builders to get their work done. And a lot of them, because it's smaller stuff, have resorted to having their own factories, like Jeff Koons, because they can. But it's the same as what *we* do with the general contractors, only we're at a larger scale.

But I think there's a lot of emotion and feeling in the process. And when that emotion and feeling isn't there, it isn't in the building, and you can tell.

Yes, you've said before, architecture has to have emotion in it—you can't drain it of emotion. Isn't that a property it shares with great art?

Yes, ma'am. But I don't want to claim myself an artist, a mediocre one or a great one. That's not my game. It is what it is. At any point in time, the culture will call it whatever they call things like that. And that's going to be it. ■

The history of architecture, in my opinion, shows that it has a long lineage as sculpture, as art. There is an art of architecture.

A new art museum by Frank Gehry, the Fondation Louis Vuitton in the Bois de Boulogne in Paris, will open this October.

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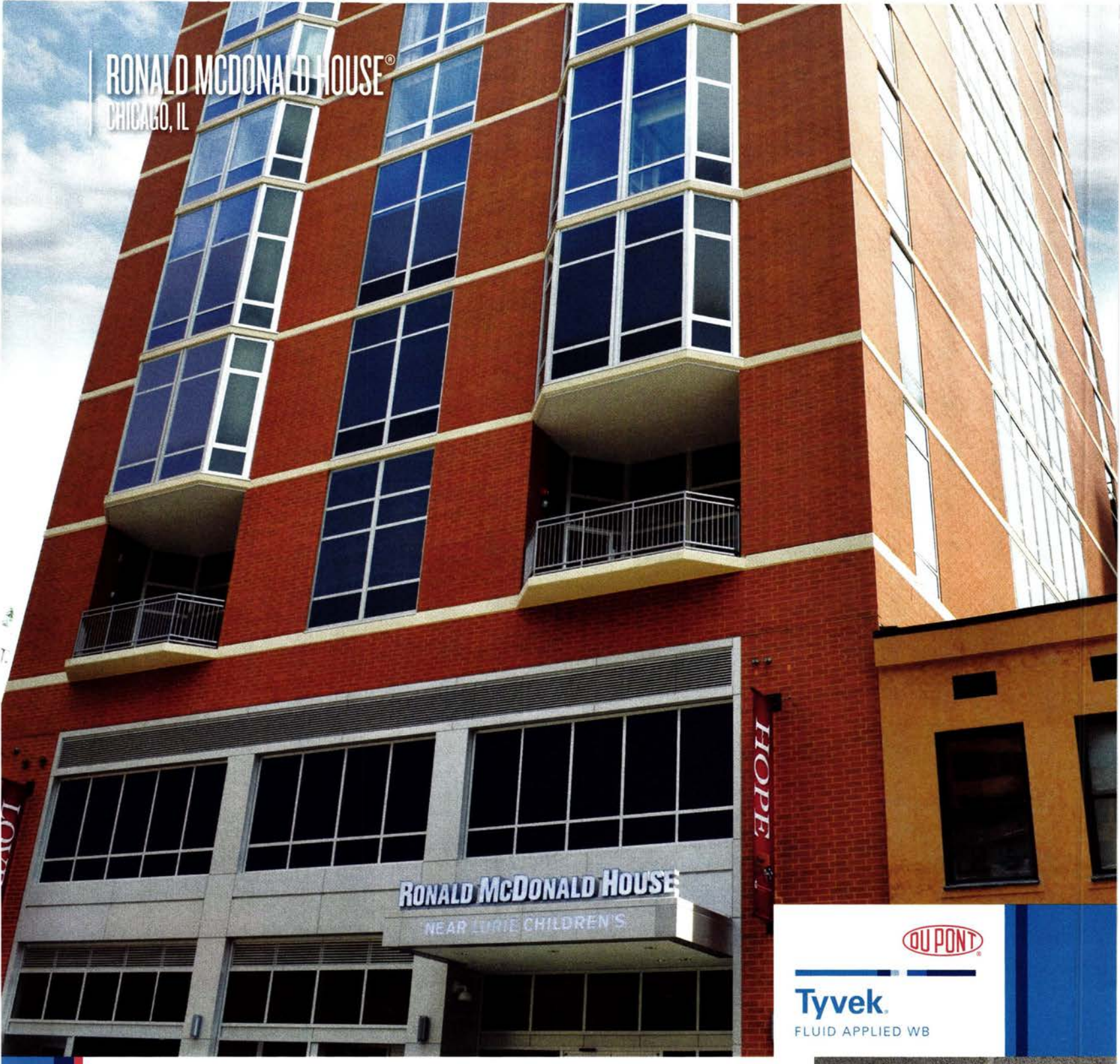

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Lumenfacade Inground

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delconca.com CIRCLE 201

Evia Lounge

Made by hand in California, the radiantly heated outdoor Evia Lounge (right) by Galanter & Jones is defined by a contoured 1"-thick cast-stone sheet that appears to drape over a powder-coated steel tube frame. The seat can be specified in white, charcoal, orange, or blue-gray, while the base comes in silver, brass, black, or white. Overall, it measures 5' 4" wide x 2' 5" deep x 2' 6" high.

galanterandjones.com

CIRCLE 204

Minnione Tree Grate

Iron Age Designs offers made-to-order grates constructed of recycled materials including iron, bronze, and aluminum, in powder-coat color or baked-on oil finish. Its Minnione Tree Grate, shown here in oxidizing raw cast iron, features an ornate pattern that borrows its curves from the shape of a wine opener's blade. The tree grates have an opening of 12"; custom dimensions are also available.

ironagegrates.com

CIRCLE 202

Shade Pod

Tuuci's latest shading device, Shade Pod (left), fills a need for covering large areas—of more than 250 square feet—in outdoor hospitality settings. Its mast, which can be mounted in-ground or on a portable weight, supports one to four square-shaped canopies that can be independently operated. The mast is constructed of Tuuci's proprietary Aluma-Teak or satin anodized aluminum; the 8'-wide canopies utilize the company's UV-resistant Tuff-Skin woven fabric. tuuci.com CIRCLE 203

Flo

Brown Jordan Fires's Flo (left) is an outdoor table that integrates a long and slim EcoSmart-brand fire pit sunk just below the surface to create a dramatic, ribbonlike flame. The 65" long x 39½" wide x 13" high cast fiber-cement block comes in natural gray or black. The burner uses NRG Bioethanol and can be specified in three lengths: 19¾", 27½", and 35¾". brownjordanfires.com

CIRCLE 205

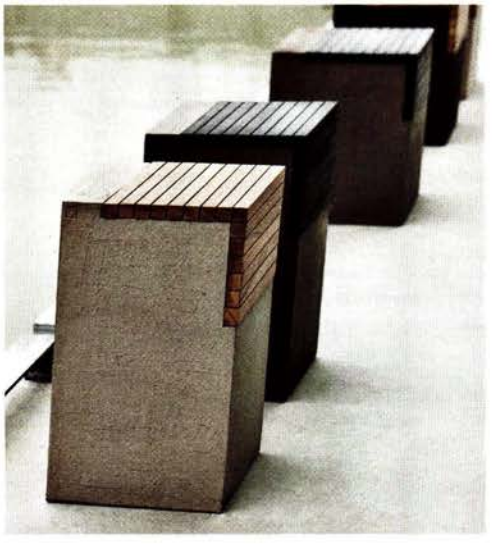
Cabanas

The relatively new company Shelter Outdoor offers clean-lined structures for outdoor and poolside leisure spaces, including Cabanas (right). Their aluminum frames—produced in three sizes up to 13' x 13'—are powder-coated white for weather and salt resistance, and feature built-in channels for optional curtains. The textile roof is retractable to provide open sky views and sun. shelteroutdoor.com

CIRCLE 209

NRBO-225 Curved Bench

A series of curved modular benches from Victor Stanley, NRBO-225 (above) can be combined to create continuous, serpentine seating configurations. Each 6' section—available in fixed, concentric, or custom radii—is composed of recycled solid steel and finished in one of 10 colors. The benches attach to each other via junction braces, and can be mounted in-ground or on a surface. victorstanley.com CIRCLE 206



MultipliCITY

Designer Yves Béhar and his firm, fuseproject, have created MultipliCITY, a site-furnishings line from Landscape Forms that is at once global and regional. The collection comprises a bicycle rack, benches, solar-powered path lights, and receptacles that share mass-produced structural elements (like aluminum frames) while other components, such as hardwood details, are locally sourced and manufactured to evoke regional flavor and reduce carbon emissions from shipping. landscapeforms.com

CIRCLE 208

ZS

Designed by Atelier Vierkant, ZS outdoor stools (above) are minimalist forms fashioned out of a clay-based aggregate that can be tinted black, white, extra-white, or gray. Slatted seats, in teak or polyethylene, add warmth to the overall design. ZS comes in two sizes: 15¾" square x 27¼" high or 17¾" square x 21⅓" high; a bench version, called ZSL, is also offered. Available in the U.S. through Avenue Road. avenue-road.com CIRCLE 207

PHOTOGRAPHY: COURTESY BROWN JORDAN FIRES/BROWNJORDANFIRES.COM (TOP LEFT)

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CIRCLE 80

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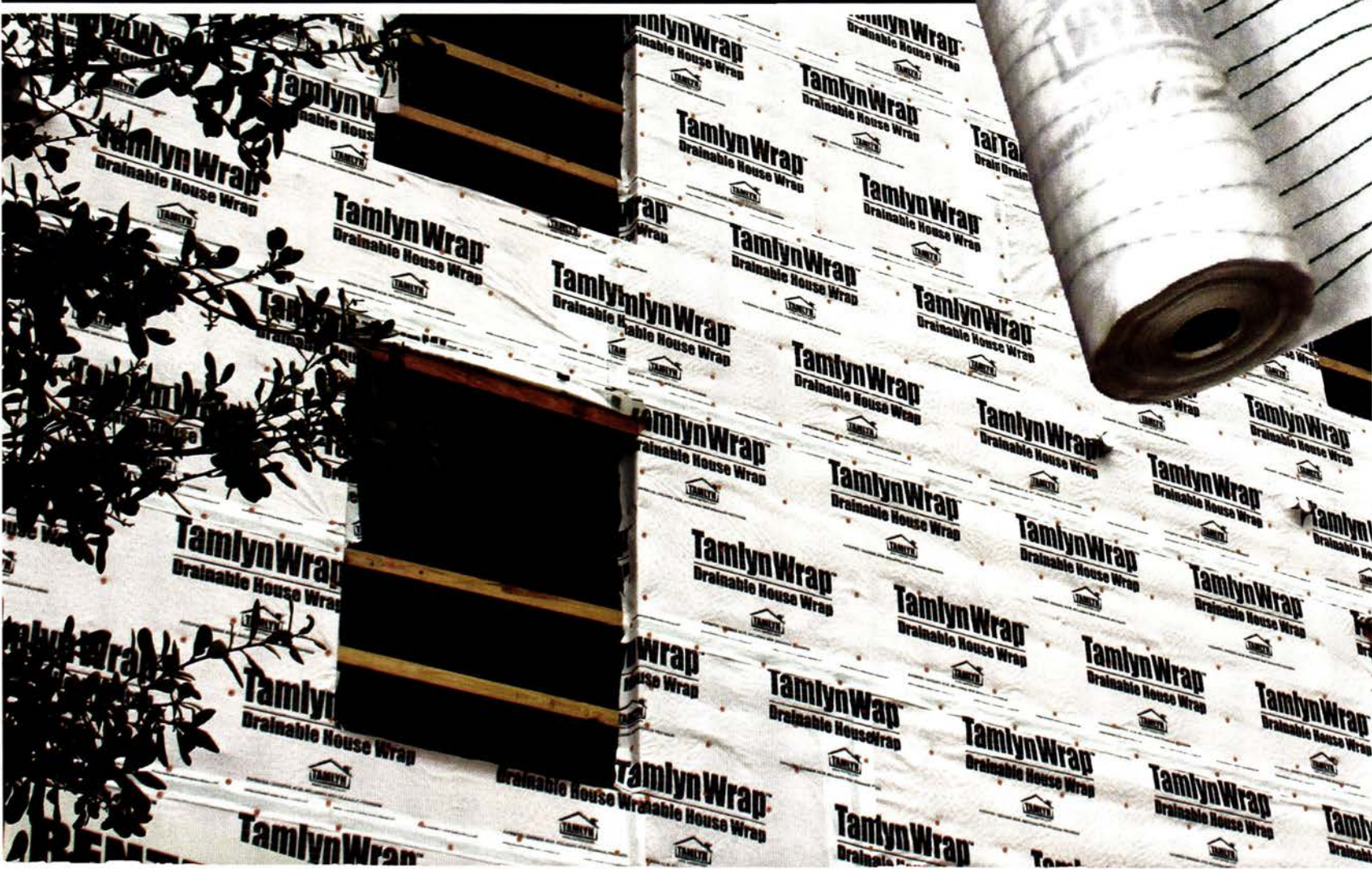

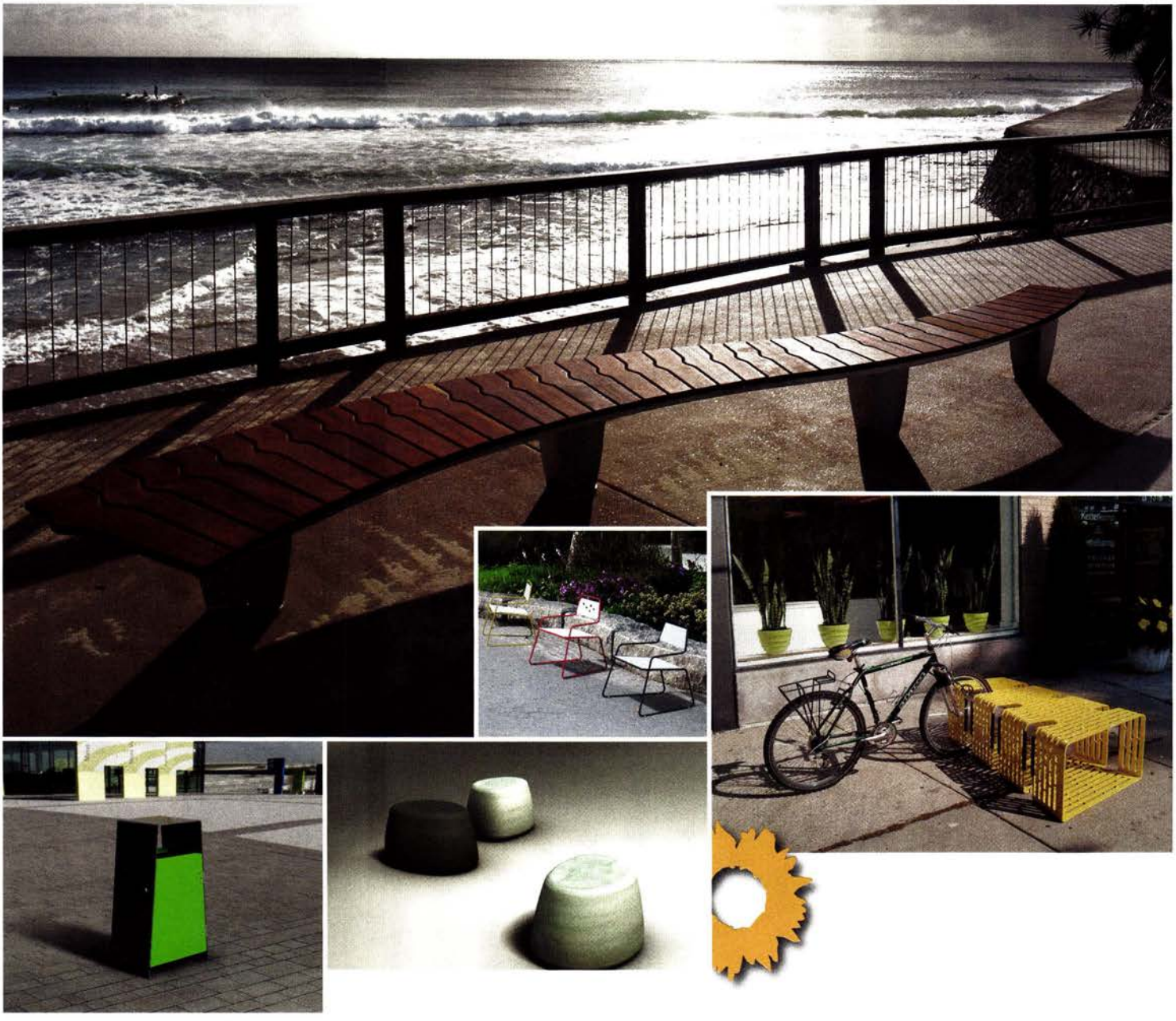

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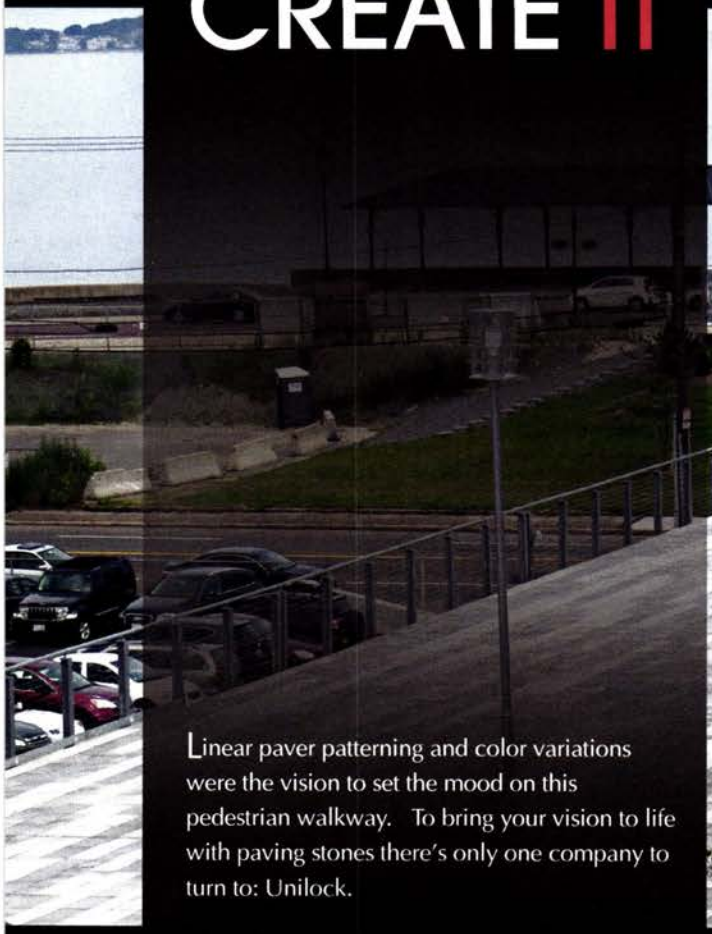
Images (clockwise): 1) Pinch Bench; 2) Buzz Bench; 3) South Chair; 4) Pebble Stool; 5) Marino Receptacle

CIRCLE 33

CREATE IT



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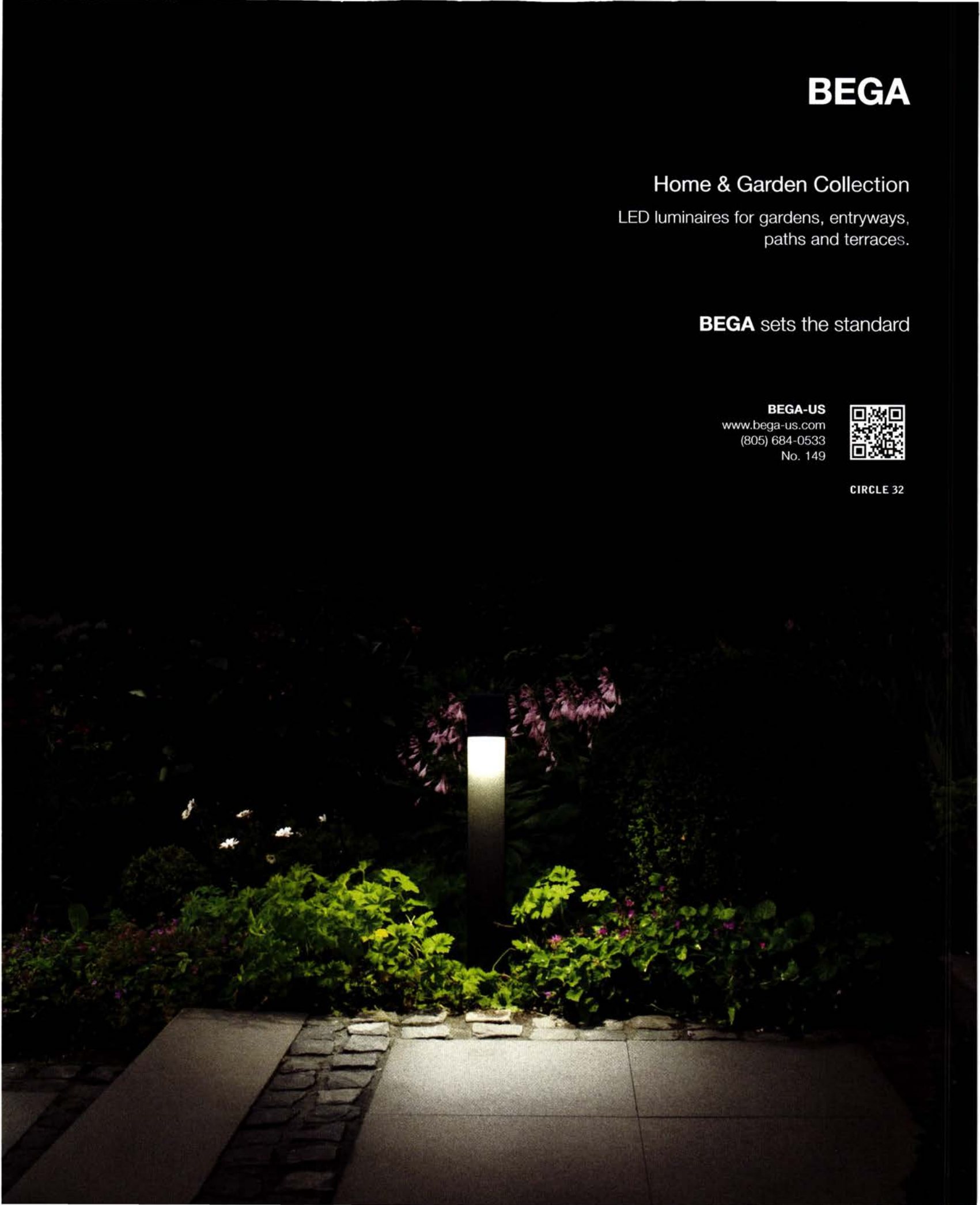


ART AND ARCHITECTURE

In this special section, we look at many and various points where art and architecture overlap—but not without some friction. What follows is a short history of artists as architecture's antagonists, a survey of new architectural projects in the service of art, and a look at the practices of contemporary artists and designers who borrow the tools and concepts of each others' disciplines.

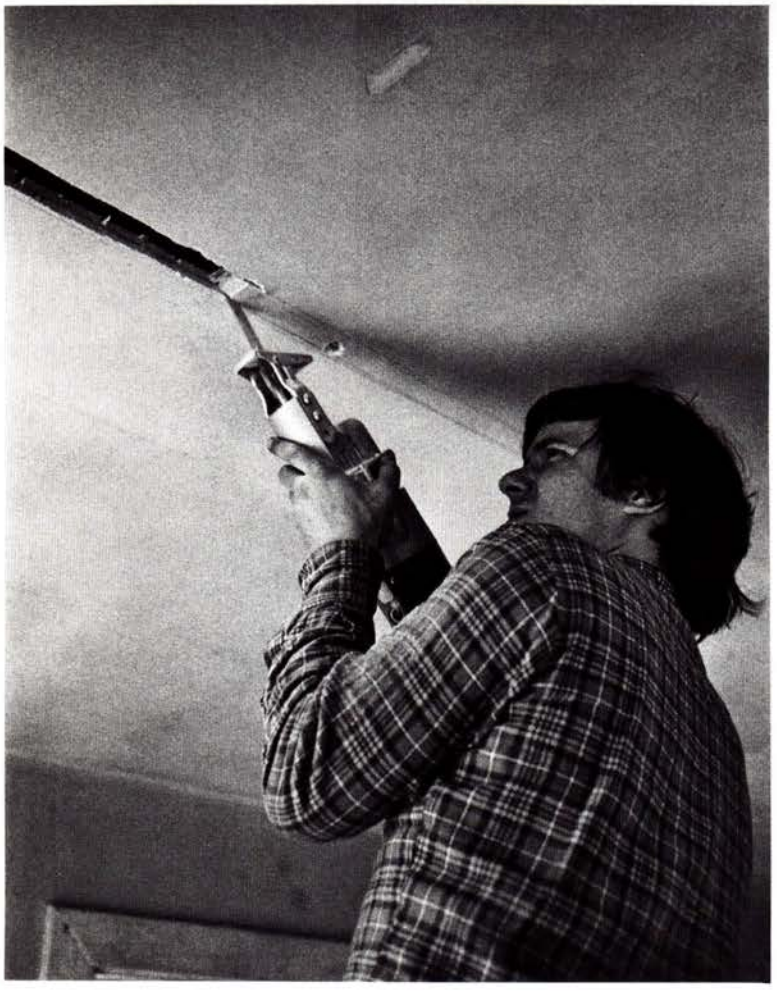
PHOTOGRAPHY: © ESTATE OF GORDON MATTA-CLARK/ARTISTS RIGHTS SOCIETY (ARS), NEW YORK. CENTRE CANADIEN D'ARCHITECTURE/CANADIAN CENTRE FOR ARCHITECTURE, MONTRÉAL

DISCIPLINE PROBLEM

The relationship between art and architecture in recent decades has ranged from sympathetic complicity to outright hostility.

BY PETER PLAGENS

THE ARTIST



Gordon Matta-Clark's most famous instance of what he called "anarchitecture" amounted to cutting through an abandoned house, as one would a cake, and then tilting the two halves slightly so as to reveal a slim vertical "V" of empty space between them. However physically destructive his actions toward the built environment might have appeared, it was more semiotic (exploring the interweave between positive and negative space) than condemnatory—along the lines of the Surrealist Louis Aragon's more extreme statement that, artistically, the best architecture might be achieved by applying dynamite to a church.

Though it is a stretch to say whether contemporary artists who work with architecture have, in one way or another, followed Matta-Clark or Aragon, the relationship between architecture and art over the past half-century or so—beginning in the early days of Minimalism—has become more complex and more adversarial.

The root reason is that architecture is an art form in which clients hire architectural firms to create buildings that may be functional but also embody identities and agendas. And by its very nature, architecture tends toward the dictatorial, in the sense that, once built, we can't *not* see it, or even, when an offending or inconvenient building rises in our own neighborhood, avoid interacting with it. Art, on the other hand, is usually proudly avoidable, tucked inside galleries and museums and, most importantly, useless. Or at least its aesthetic quality has no impact on practical utility. After all, a bad painting will cover a crack in the wall just as well as a good one.

Early in the history of modernism, however, hope for utopian collaboration between art and architecture filled the air. "Painters and sculptors, champions of the art of today . . . join together so that we might rebuild the cities," Le Corbusier exhorted artists in 1923. "Then your works will find their place within the framework of the era, and, everywhere, you will be accepted and understood. Tell yourselves that architecture needs your attention. Be mindful of architecture."

Such optimism is still around in places. An intensely colored wall drawing by Sol LeWitt may have a cold, algorithmic rationale behind it, but it sure does brighten up the lobby of a Manhattan apartment building. Even the politically and racially charged faux-antebellum silhouettes of Kara Walker, no matter how arresting,

A 1975 photo montage shows Gordon Matta-Clark's *Conical Intersect* (opening page), and a 1974 photograph reveals the artist creating his seminal building cut *Splitting* (opposite). Kara Walker's *My Complement, My Enemy, My Oppressor, My Love*, 2007, was installed at the Walker Art Center in Minneapolis (above).

PHOTOGRAPHY: © DAVE SWEENEY, COURTESY WALKER ART CENTER

refrain from punching holes in the museum walls on which they're installed.

Yet art—particularly sculpture—has been getting pricklier in its attitude toward architecture. It didn't mean to, at least not in a programmatic sense. It was just that in wrenching itself away from 19th-century academicism, sculpture radically simplified the ornate (and, ironically, architectural) pedestal into simple blocks and cylinders. Then, such early-modern sculptors as Brancusi made the pedestal an integral part of the sculpture itself; successors such as Anthony Caro did away with the pedestal altogether. With the dawn of Minimalism in the mid-1960s, sculpture took on as much of the quality of modern architecture—large scale, simple forms, theatrical siting—as it could without veering into functionality. The late, rough-hewn, tons-of-steel works of Richard Serra arguably shape space in the manner of architecture with their feats of engineering.

Some contemporary artists have given themselves license to practice architecture (although precedents go back as far as 1919, when Kurt Schwitters started on his *Merzbau*, his house-as-assemblage masterpiece in Hanover, Germany). Rachel Whiteread built a short-lived structure-as-relief with *House* (1993–94). The full-size cast of the inside of an about-to-be-demolished residence in East London commented with a kind of wistful strength on the destruction necessarily preceding much new architecture; the work still paid homage to the visual dignity of the built environment. And if any of James Turrell's *Skyspaces* (precisely crafted ceiling/roof openings that crop the sky into crisply bordered, meditative shapes) imply that, in the end, the materiality of conventional architecture is metaphysically vulgar, they simultaneously work as beautiful examples of architecture itself.

With some notable exceptions—such as Light and Space works by Turrell, Robert Irwin, Doug Wheeler, and others, which have a plays-well-with-architecture vibe—both contemporary architecture and contemporary art have seen much of their residual utopianism evaporate in subsequent decades. Another leitmotif began to waft through the dialogue between art and architecture: hostility crept in—gently, at first. The spectator experiences, for example, Dan Graham's glass-and-mirror "pavilions"—frequently installed on the roofs or in the lobbies of museums—as being, according to the artist, "somewhere between architecture and television." A bit of snark lurks in that last word. It implies that architecture lies on a media continuum, and can get (if it has not already gotten) coolly trivial, bereft of any lingering socially reformative drive. Graham's pavilions are International Style architecture intentionally miniaturized and made into walk-in perceptual puzzles for a few people at a time, with no real function for their form to follow.

In 1974, for his art exhibition at the Claire S. Copley Gallery in Los Angeles, Michael Asher simply *removed* the transverse wall in the gallery—the one visible barrier between the gallery's empty exhibition space and its small rear office. He then repainted the walls and repaired the carpet. I was there: the effect was astonishing. The gallery came visually more alive, with the clarity of being inside a simple storefront box somehow invigorating. It was like those yellow-tinted sunglasses that supposedly make everything appear sharper (at least in the infomercials), except that the colors in the gallery—people's skin, their clothes, the catalogue spines in the office, etc.—were true. Though Asher's working philosophy was almost as apolitically phenomenological as Turrell's, an implied Post-it for architects could be spied in the piece: "Folks, take away some of what you do and you can actually improve what's left behind."

Four years earlier, Robert Smithson had attacked architecture more forcefully, albeit as a sidebar to the main concept he was exploring: Can making itself constitute sculpture? In *Partially Buried Woodshed* (1970) at Kent State University in Ohio, Smithson—with more than a little of Aragon's attitude—piled dirt on an abandoned shed until it partially collapsed. Today, when Smithsonesque gestures are fairly common in the edgier precincts of contemporary art, there's a term for this semi-guerilla technique: "buildering," a combination of "building" and "bouldering," the risky, rope-and-harness-free method of rock-climbing.

In 2004, the Spanish artist-provocateur Santiago Sierra had a Belgian museum's doors and windows taken out (after obtaining permission and removing all the works of art), so that the galleries were exposed to the elements. That same year, he strained the structural integrity of the upper floors of an Austrian *kunsthalle* with 300 tons of bricks, requiring additional pillars on the lower floors and, naturally, a restriction on the number of viewers.

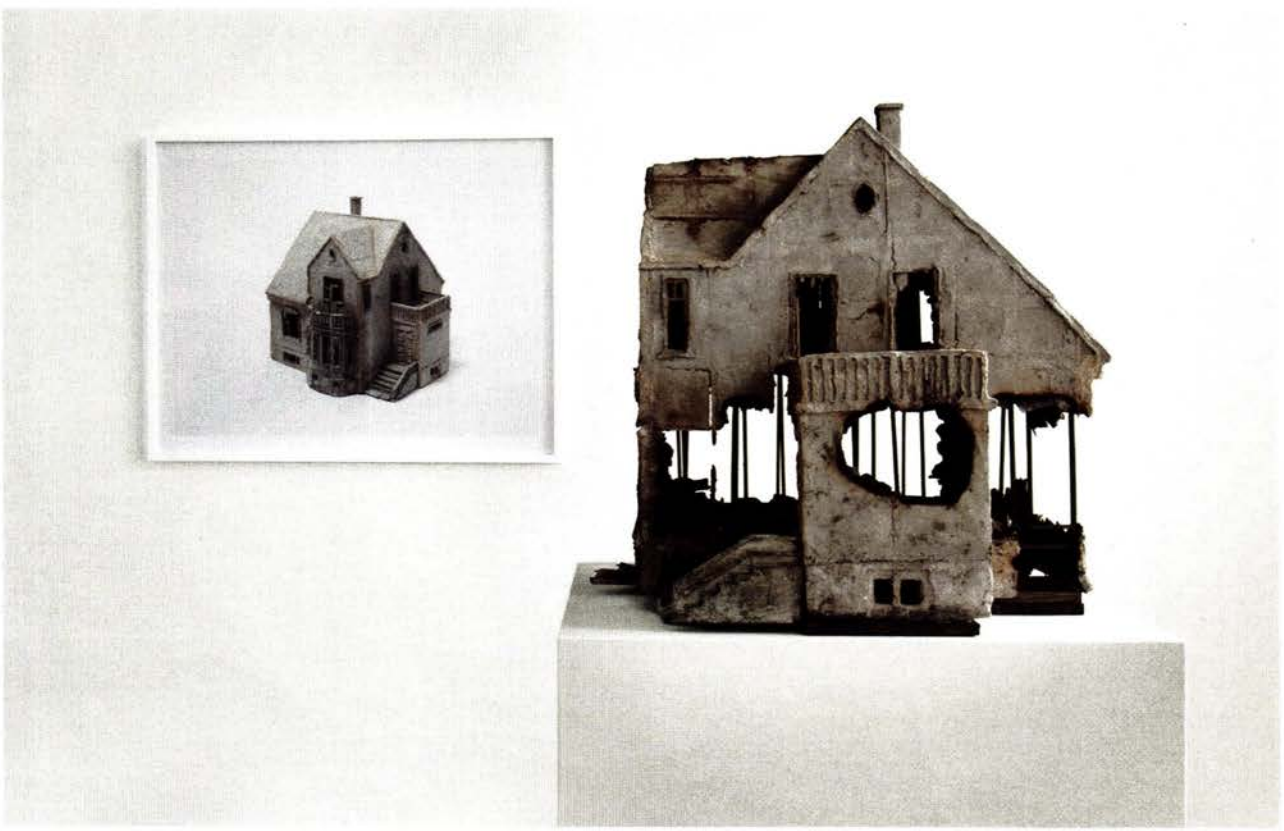
Not all of contemporary art's antagonism toward architecture arises from a deep critical impulse. Much of it comes from the simple fact that just putting flat, rectangular paintings and moderately sized sculpture on the walls and floor of the traditional white-cube gallery won't get many artists noticed, exhibited, published, and collected in today's hyper-market-driven, showbiz-like art world. More and more, art is expected to do something directly to the architectural setting in which it's shown. Sometimes it's just cheerful, temporary augmentation with easy cleanup; Sarah Sze's intricate suspended sculpture is an example. At other times, it's not a mere usurpation of the architect's function, but an actual reassertion of art's ultimate authority over architecture, saying, in effect, that the first figurative painting on a cave wall was more important than the cave itself. In the years to come, serious architecture will be tested by how it responds to these kinds of challenges from artists.

Artists are architecture critics on the ground, operating (like architects themselves) with space and physical material instead of words after the fact. If contemporary architecture is to be more than just practical—if it is to have aesthetic and theoretical resilience—it will need to come to terms, however fractious, with art. ■

Peter Plagens is a painter and art critic. He was a senior writer at NEWSWEEK *from 1989 to 2003.*

Robert Smithson created *Partially Buried Woodshed,* 1970 (left) by piling earth onto a shed on the grounds of Kent State University in Ohio until its structure gave way. For decades, Dan Graham has created pavilions that play with viewers' perceptions of space. His *Hedge Two-Way Mirror Walkabout,* 2014 (below), a collaboration with the Swiss landscape architect Günther Vogt, is installed on the roof of New York's Metropolitan Museum of Art through November 2.

PHOTOGRAPHY: © ESTATE OF ROBERT SMITHSON/LICENSED BY VAGA, NEW YORK, COURTESY JAMES COHAN GALLERY, NEW YORK/SHANGHAI (TOP); HYLA SKOPITZ, COURTESY THE METROPOLITAN MUSEUM OF ART (BOTTOM)



Rachel Whiteread's *House*, 1993 (above) presented a ghostly cast of the inside of a demolished London home on a block razed for redevelopment. To make *Unbuilt 5–Magnús Th. S Blöndal Residence, Sólvellir 18, 1925–Architect: Einar Erlendsson*, 2012 (right), Katrín Sigurdardóttir (see page 98) constructed a model of a planned but never realized residence in Reykjavik, set fire to it outside her New York studio, and then reconstructed the burnt pieces. The work is part of the Icelandic artist's ongoing *Unbuilt Residences* series.

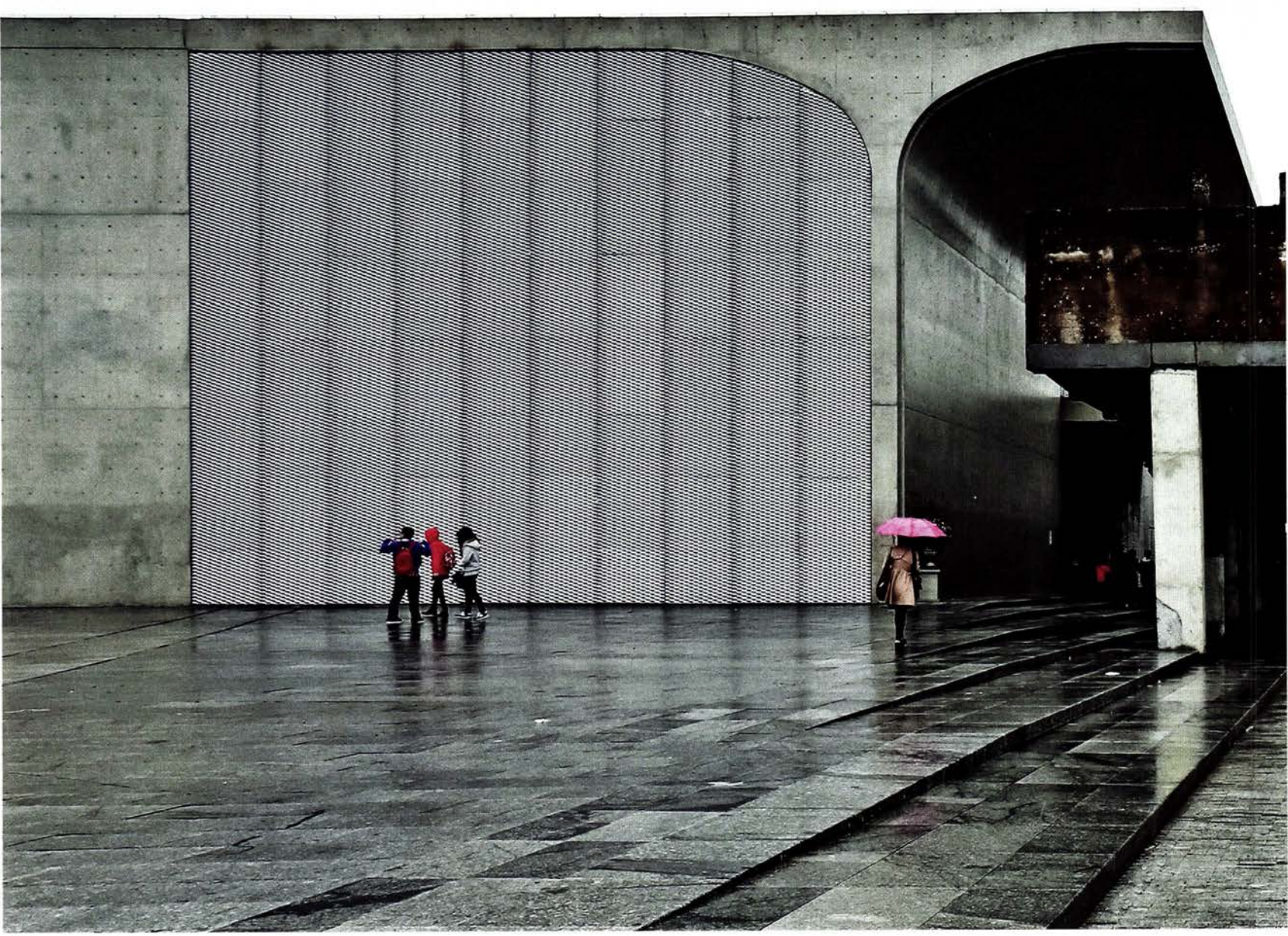
PHOTOGRAPHY: © JOHN DAVIES, COURTESY ARTANGEL (TOP); COURTESY 18 GALLERY (BOTTOM)

Long Museum West Bund | Shanghai | Atelier Deshaus

CATALYTIC CONVERTER

A new art museum transforms an old coal-conveying platform into a different kind of power generator, jump-starting the redevelopment of an industrial part of Shanghai.

BY CLARE JACOBSON



INDUSTRIAL ART The stripped-down concrete-and-aluminum facade of the Long Museum West Bund echoes the modest aesthetic of an extant 1950s-era coal-conveying platform at its entrance.

PHOTOGRAPH: © SU SHENGLIANG, EXCEPT AS NOTED

A coal-conveying platform from the 1950s and a parking garage from the first decade of the 21st century act as unlikely form-givers to Atelier Deshaus's new Long Museum West Bund in Shanghai. The 355,000-square-foot project deftly serves the art it displays—the private collection of local couple Liu Yiqian and Wang Wei. Yet its ability to create striking architecture from undervalued remnants of previous construction may be its true masterpiece. By turning these liabilities into assets, the building stands out from the myriad of new museums being built in China.

The raised concrete platform is a vestige of a wharf on the Huangpu River in a part of town formerly dotted with industrial facilities. Newly dubbed the West Bund to associate it with the glamourous Bund to the north, this part of Shanghai's Xuhui District is changing rapidly. Under the direction of former district mayor Sun Jiwei, who was trained as an architect, the area has been reconceived as a cultural precinct that incorporates its industrial heritage. Other projects there reuse an airport hangar, a cement plant, and oil tanks.

Liu Yichun, principal of Shanghai-based Atelier Deshaus, welcomed the coal-conveying platform that Sun requested remain on-site. Liu says that when the original function was removed from the object, its structure revealed its inherent beauty. It now stands like an oversize sculpture at the entrance to the museum. Liu sought to mimic its unadorned aesthetic in his design, creating a bare, cast-in-place concrete building with none of what he calls the "beautiful clothes"

CONCRETE CONNECTIONS
Public spaces at both the entrance level (opposite) and the second floor (below) connect different parts of the museum and extend out to a new riverfront park along the Huangpu River.

of other museums. He used subdued materials—perforated aluminum panels and glass—and set them flush with the concrete to establish smooth surfaces. The perforated metal filters sunlight into aboveground galleries.

While Liu embraced the midcentury relic on-site, he had less enthusiasm for the more recent concrete parking garage, an underground structure that was the only completed part of a proposed tourist center. Its grid of pillars spaced 28 feet apart didn't promote the kind of spaces he wanted for the museum, but he finessed this by embedding an irregular pattern of concrete walls in the structure that rise one or two stories above grade and then splay into arches that support the roof. They produce a mix of grand, vaulted exhibition spaces that Liu likens to a Roman ruin or a spacious cave. At the top of some arches, windows shaded by fixed metal louvers bring additional daylight into the space. Liu acknowledges the influence of Louis Kahn's Kimbell Art Museum on his design.

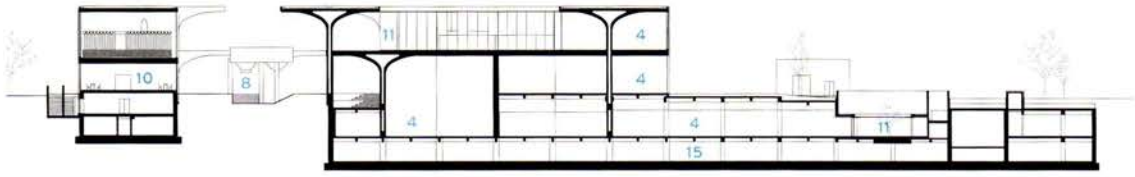
The sectional contrast between the repurposed underground floors and the new ones above works well with the museum's inaugural exhibition, *Re-View*, which opened in March. Ancient Chinese scrolls, paintings, and calligraphy sit comfortably in lower-level galleries with low ceilings, dark painted plasterboard walls, and electric light. Contemporary art—a mixture of large and small paintings and sculpture—alternately fill the vast spaces of the vaulted upper floors or sit humbly within them, to dramatic effect.

The variety of galleries in the Long Museum West Bund differs from the regularity found in the first museum that Liu Yiqian and Wang Wei commissioned in Shanghai: the box-shaped Long Museum Pudong, which opened in 2012 on the opposite side of the Huangpu and was designed by Zhong Song. According to Wang, that museum was built to accommodate the full range of the couple's collection, so it called for standardized spaces for presentation. Floors exhibiting the country's contemporary, revolution-era, and traditional art have similar gallery spaces, regardless of content.

The new West Bund museum was designed to be a more flexible place. *Re-View*, which runs through the end of August, features works from Liu and Wang's collection. But

SECOND FLOOR

1 ENTRANCE
2 LOBBY
3 SHOP
4 ART GALLERY
5 VIDEO
6 OPEN TO BELOW
7 TEMPORARY EXHIBITIONS
8 COAL-HOPPER UPLOADING BRIDGE
9 ART AND DESIGN SHOP
10 RESTAURANT
11 COURTYARD
12 TERRACE
13 AUDITORIUM
14 FOOTBRIDGE
15 PARKING
16 STORAGE



SECTION A - A

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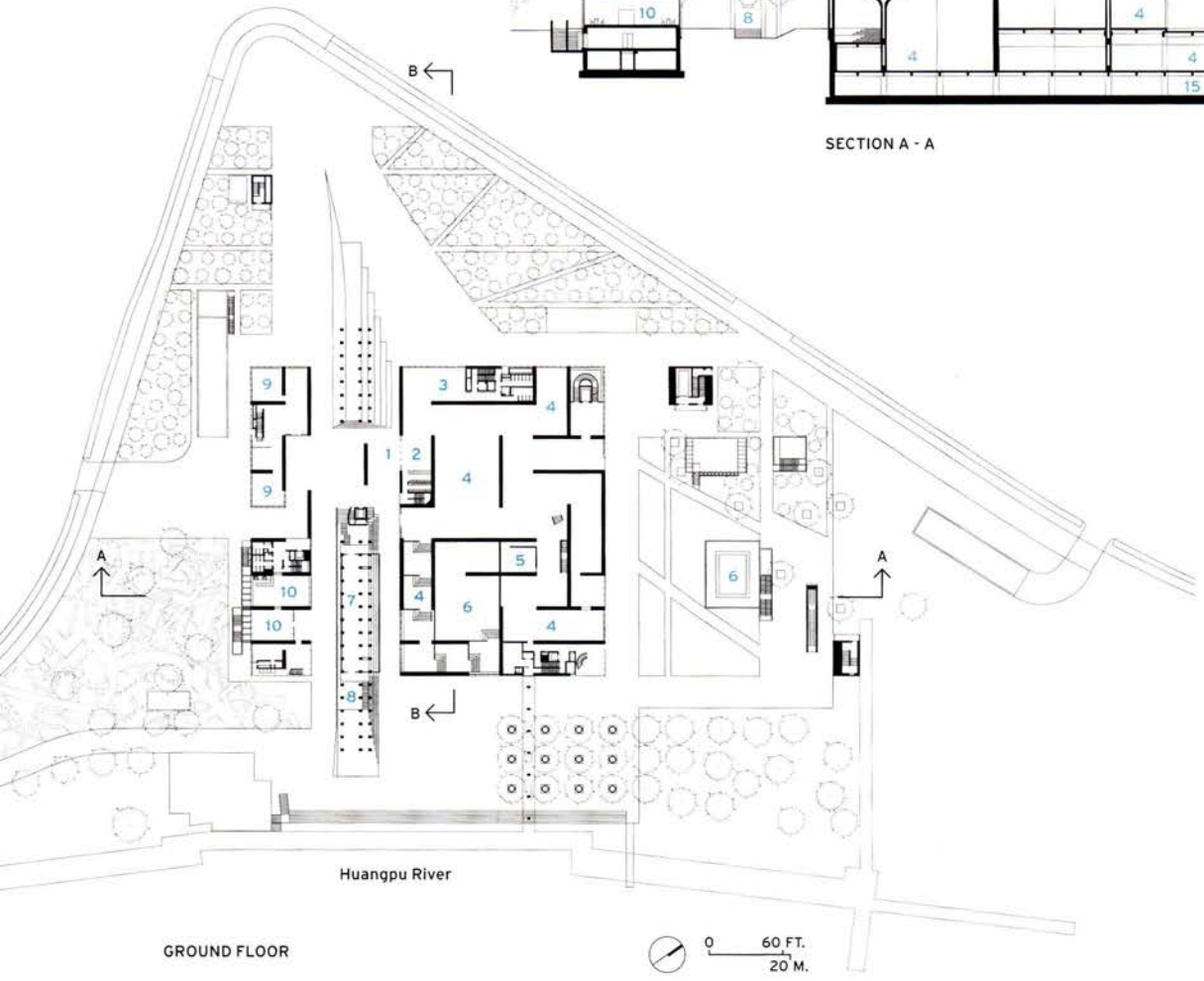

Huangpu River

GROUND FLOOR

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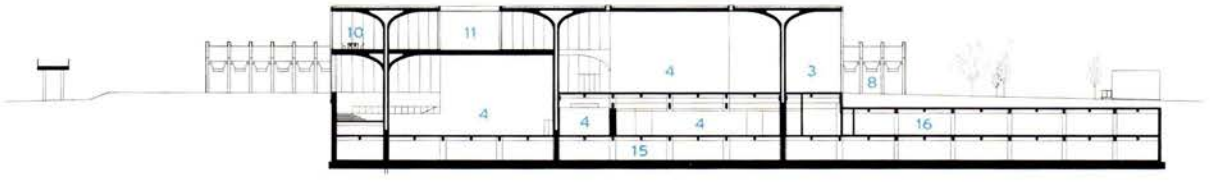

SECTION B - B

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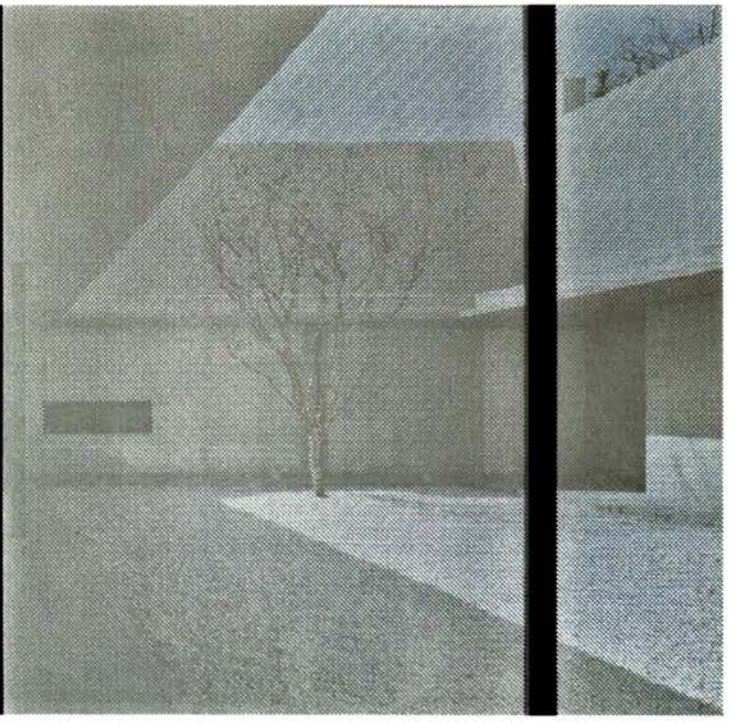
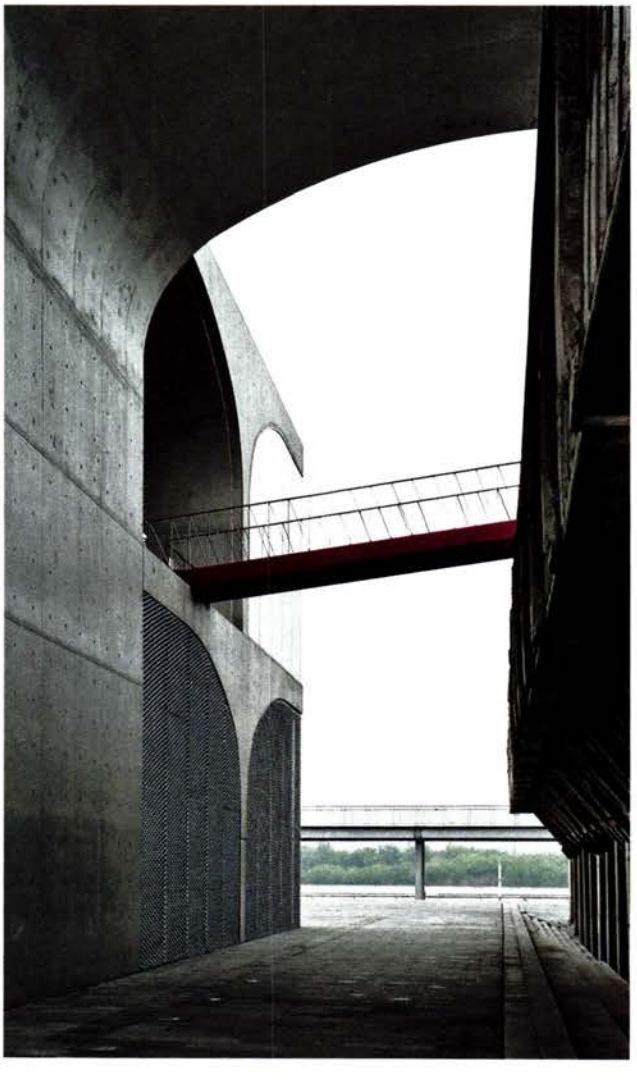
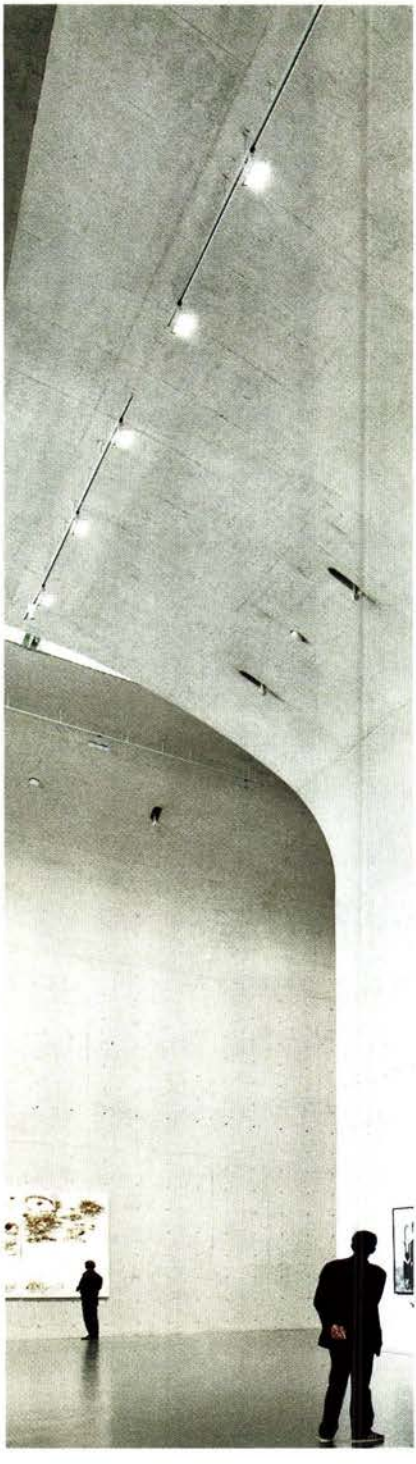




FLUID DYNAMICS A sculptural stair takes visitors down to underground galleries (above), while a footbridge connects a second-story space with the coal platform (left). The lobby looks out to an entry plaza (top).

PHOTOGRAPHY: © XIA ZHI (TOP)



MODERN HERITAGE
The vaulted concrete structure creates flowing spaces on the ground floor for galleries and circulation (above). The architects brought daylight into second-foor galleries from between and above the vaults (right), showing the influence of Louis Kahn.

Wang plans to hold exhibitions of outside works, fashion, and even automobiles. The bold, vaulted galleries could enliven these diverse shows. Ancillary spaces such as a reading room, children's activity center, and an outdoor film-screening area add to the museum's versatility. (Some of these—including an auditorium, restaurants, a design shop, and a VIP room—are still under construction.) The various functions are split into two main wings that straddle the central coal-conveying platform.

Walkways on the first and second floors connect the two halves, and bridges extend from the museum to an elevated promenade that runs along the river. Circulation around the outside of the building is crucial to its design. "The museum belongs to the park," says the architect. In other words, it is not merely a destination for art aficionados; it is also something you might come across as you walk your dog.

The project's role as a civic catalyst may seem odd to Western readers more familiar with museums built to be stars rather than team players. But the museum-building boom in China—like that in the United States in the late 19th century—reflects cultural aspirations, and is also intended to establish urban centers. The Long Museum is one of the first buildings to be completed in the West Bund; construction of office and entertainment structures will follow.

Building cultural anchors for new developments is a common practice in China today. Less common is preserving architectural and industrial remains found on-site. At the Long Museum West Bund, Atelier Deshaus shows that history can serve contemporary architecture, and that even the most unlikely artifacts can be sources of beauty. ■

PHOTOGRAPHY: © XIA ZHI (ABOVE AND OPPOSITE)

credits

ARCHITECT: Atelier Deshaus – Liu Yichun, Chen Yifeng, partners in charge; Wang Longhai, Wang Weishi, Wu Zhenghui, Wang Xuepei, Chen Kun, design team

ENGINEERS: Tongji Architectural Design Group (structural, m/e/p)

CONSULTANTS: Shanghai Guangyu Lighting Design (lighting); Tongji University Institute of Acoustics (acoustics)

GENERAL CONTRACTOR: Shanghai Huicheng; Construction & Development

CLIENT: Long Museum

SIZE: 355,000 square feet

CONSTRUCTION COST: $51.6 million

PROJECT COST: $65.2 million

COMPLETION DATE: March 2014

SOURCES

CURTAIN WALL: Zhejiang Zhongnan

GLASS: Shanghai Yaohua Pilkington

INTERIOR AMBIENT LIGHTING: Erco, iGuzzini

DOWNLIGHTS: NVC

EXTERIOR LIGHTING: iGuzzini

ACOUSTICAL CEILINGS: Star-USG

PAINTS AND STAINS: Dulux

Delfina Foundation | London | Studio Octopi and Shahira Fahmy Architects

TRANSPARENT PROCESS A courtyard off the public gallery in the basement features artist Gayle Chong Kwan's *WASTESCAPE*, made of used and new plastic food packaging.

ARTISTS COLONY

A foundation offers food, shelter, and work space in two conjoined townhouses, fostering a kind of think tank for artists.

BY HUGH PEARMAN

PHOTOGRAPHY BY JULIEN LANOO

Delfina Entrecanales is an unusual cultural philanthropist, her Delfina Foundation in London is an unusual place, and the architectural concept underlying it was born of an unusual international collaboration. The result of all this unorthodoxy is a small renovation and adaptive-reuse project that manages to be an intense and inventive environment for the changing roster of artist-residents there.

The 86-year-old Spanish-born Entrecanales first came to Britain after the Spanish Civil War, became moderately wealthy, and, some 40 years ago, decided to use that wealth to help artists establish themselves. She began converting industrial buildings into ultra-low-rent artists' studios: first in Stratford, East London, then in the Bermondsey quarter of South London, kick-starting the regeneration of those areas. Along the way, she helped the careers of hundreds of British artists, including Tacita Dean and Martin Creed. For a small organization it has had remarkable influence.

Periodically Entrecanales reinvents her enterprise, most recently in concert with her young director Aaron Cezar. In its latest iteration in Victoria—the heart of London—the Foundation operates an international program, with a special interest in artists from Africa and the Middle East. At first it occupied a tiny 1920s house in one of those typical London tucked-away, secret corners that even most Londoners don't know about (I didn't). Now it has doubled in size with the purchase of an identical house next door. From the outside, apart from its greenish-yellow shutters, this pair of faintly Italianate brick houses is indistinguishable from its neighbors. Inside, however, it is one building, interconnected in usual and unusual ways, with structural-glass floor panels allowing diagonal views through the building. The combined houses function as a home for artists, the Foundation's offices, and a public gallery.

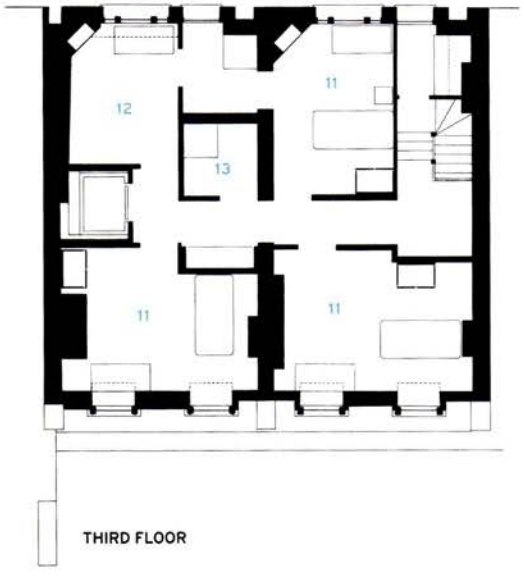
True to its ideals, the Foundation launched an architectural competition with the brief that British architects must work with colleagues from the Middle East or North Africa. Ten-year-old London practice Studio Octopi (directed by Chris Romer-Lee and James Lowe) teamed with Giza-based architect Shahira Fahmy, who happened to be in London at the time of the competition. They decided the building should remain domestic in feel. "We explored the idea of the domestic hearth in Middle Eastern society and in Western society, together with the idea of layering," says Romer-Lee.

The place is buzzing. So far in 2014, 37 artists of highly diverse nationalities have passed through the building, with another four starting this summer. The house is not used for messy studio work; if that's required, artists rent a space elsewhere. The idea is to provide a residential research facility for the kind of deep thinking that may or may not

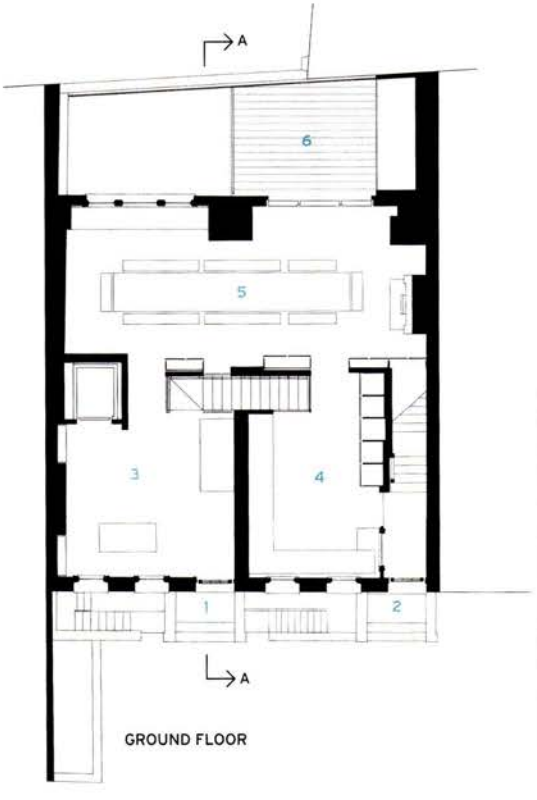
SECTION A - A

0 10 FT.
3 M.

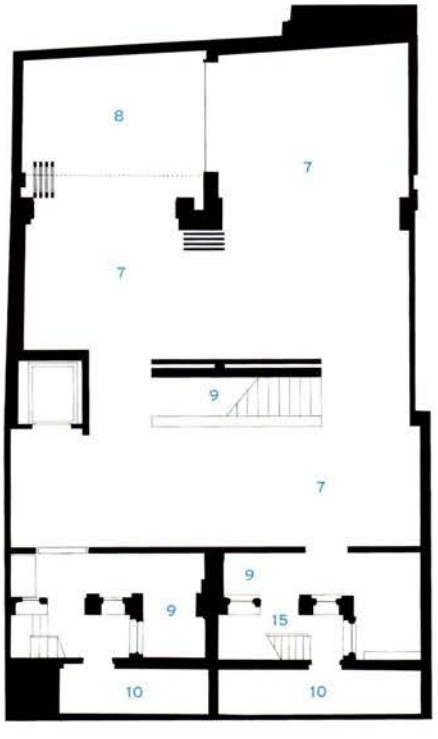
1 PUBLIC ENTRANCE
2 RESIDENT/STAFF ENTRANCE
3 RECEPTION
4 KITCHEN
5 DINING/GALLERY
6 TERRACE
7 GALLERY/WORKSHOP
8 COURTYARD
9 STORAGE
10 LIGHT WELL
11 BEDROOM
12 STUDY/GUEST
13 BATH
14 FOUNDER'S OFFICE
15 VAULT



THIRD FLOOR



GROUND FLOOR



BASEMENT

0 10 FT.
3 M.

HOME OFFICE
The foundation purchased two identical townhouses and combined them (opposite). Its administrative offices are located behind a sliding door (above, at right) and next to the shared library (above, at left) on the second floor. Glass panels help to create a sense of connection between the various floors.

immediately result in the making of art, although some of the bigger bedrooms have workspace. The gallery show on view in late June included a variety of video and installation pieces by a recent batch of residents, but it's clear that this place is dedicated to stimulating artists rather than the public.

Arranged on four floors, plus a basement level for studios and gallery space, the Foundation has eight rooms for the artists, who are typically there for three to four months at a time. The big architectural move was to separate the circulation of the artist-residents from that of the public (who are allowed on the ground and basement levels) and administration (who occupy the second floor). Having two front doors—one private and one public—aids the separation. The artists' shared kitchen is deliberately at ground level, however, as far from their bedrooms as possible, to ensure mingling. Visual links are made between the two worlds, with daylight filtering down through the building via the strategically placed glass panels in the floors at the ground, second, and third levels. Through the thick glass, you get glimpses into other parts of the complex, the idea being to maintain connections and avoid over-possessiveness about space.

The interior finishes are of the "scrape and reveal" aesthetic, a cherishing and highlighting of a building's evolution. For example, there are two patches of lovingly retained old floral wallpaper, and sections of exposed brick showing traces of removed pipes. It's all a way to play with these bourgeois buildings and genteel surroundings, as is the subdivision of spaces with folding and sliding doors. According to Cezar, the concept works. "We think of the whole house as a studio. It creates different conversations." ■

credits

ARCHITECTS: Studio Octopi – James Lowe, partner in charge; Chris Romer-Lee, Melissa Beasley, Kathriona Lyons; Shahira Fahmy Architects – Shahira Fahmy, principal

ENGINEER: Nous Engineering

CONSULTANTS: Nous Collaborative (competition organizer); Building Construction Solutions (quantity surveyor); Alliance Planning; MLM (building controls)

GENERAL CONTRACTOR: City Interiors

CLIENT: Delfina Foundation

SIZE: 4,560 square feet

CONSTRUCTION COST: $2.3 million

COMPLETION DATE: January 2014

SOURCES

GLASS FLOORS: Specialist Glass Laminates

LIGHTING: Erco

RESIN FLOORING: Senso

BLOCK PAVERS: Wienerberger

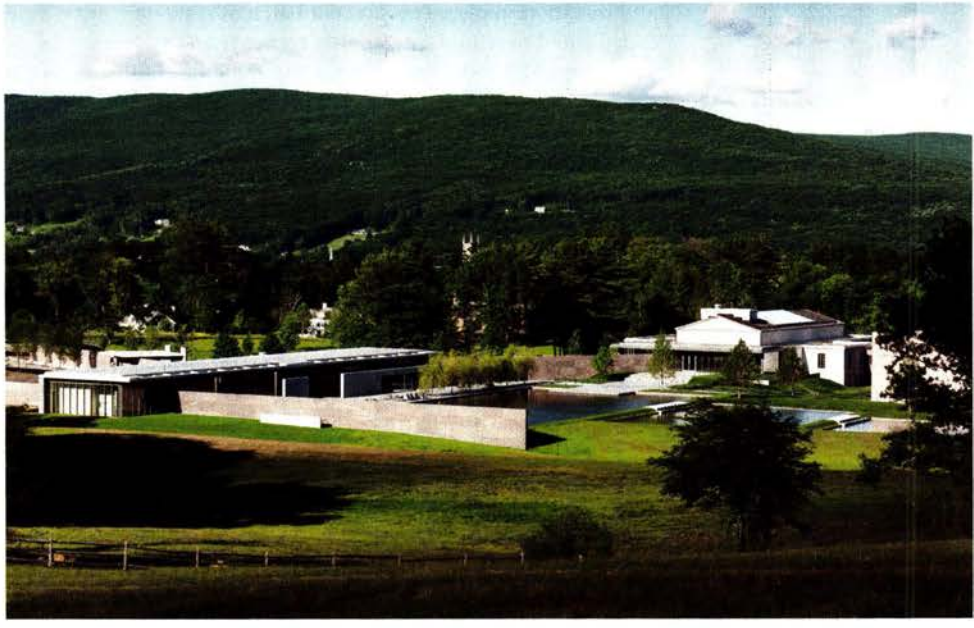
Visitor Center, Clark Art Institute | Williamstown, Massachusetts | Tadao Ando Architect & Associates with Gensler

LASTING IMPRESSION

Since it opened in 1955, the Sterling and Francine Clark Art Institute has drawn 200,000 visitors annually to see its French Impressionist paintings among 9,000 works of art. Last month the Clark completed a $145 million campus expansion on its 140-acre site in the Berkshire mountains of Massachsetts. Included is a new visitor center by Tadao Ando Architect & Associates and a renovation of the existing museum by Selldorf Architects (page 82).

BY WENDY MOONAN

PHOTOGRAPHY BY JAMES EWING



FINISHING TOUCHES
Tadao Ando's visitor center (above) seems to float on a reflecting pool to the west of the original museum building (opposite, bottom). According to the master plan, the center forms the new entrance to the Clark campus on the north, removed from the existing buildings on the east. In Ando's scheme, red granite walls cut diagonally through rectilinear volumes to frame views and define edges of the outdoor spaces.

In the late 1990s, Michael Conforti, the director of the Sterling and Francine Clark Art Institute in Williamstown, Massachusetts, decided the Clark sorely needed a renovation and expansion of its existing buildings. In order to attract – and accommodate – visitors to its extraordinary collection of Impressionists and Old Masters in its arcadian setting in the Berkshires, he asked Cooper, Robertson & Partners to come up with a master plan. In 2001, the firm proposed siting a new structure housing a conservation lab and visitor center behind the two major buildings on the Clark campus: the 44,000-square-foot museum, a white marble temple designed in the classical style by Daniel D. Perry in 1955, and the art library next door, the Manton Research Center, a 100,000-square-foot Brutalist behemoth designed by Pietro Belluschi with The Architects Collaborative in 1973.

Conforti adopted the plan, but insisted anything new be unobtrusive. "The character of the Clark is one of intimacy, humanity, and small-town scale," he explains. He organized an architectural selection process and assembled a jury that, in 2001, unanimously chose Tadao Ando, the 1995 Pritzker Prize–winner, to take on the expansion.

Conforti was thrilled about Ando, but found his first design placed too much bulk on the site. After long deliberations, the team decided to move the conservation lab to a more remote spot on a hill a 10-minute hike away. "We had always imagined a building there, but didn't know it would be that one," Conforti says. Ando completed the 32,000-square-foot conservation lab, known as the Lunder Center on Stone Hill, in 2008.

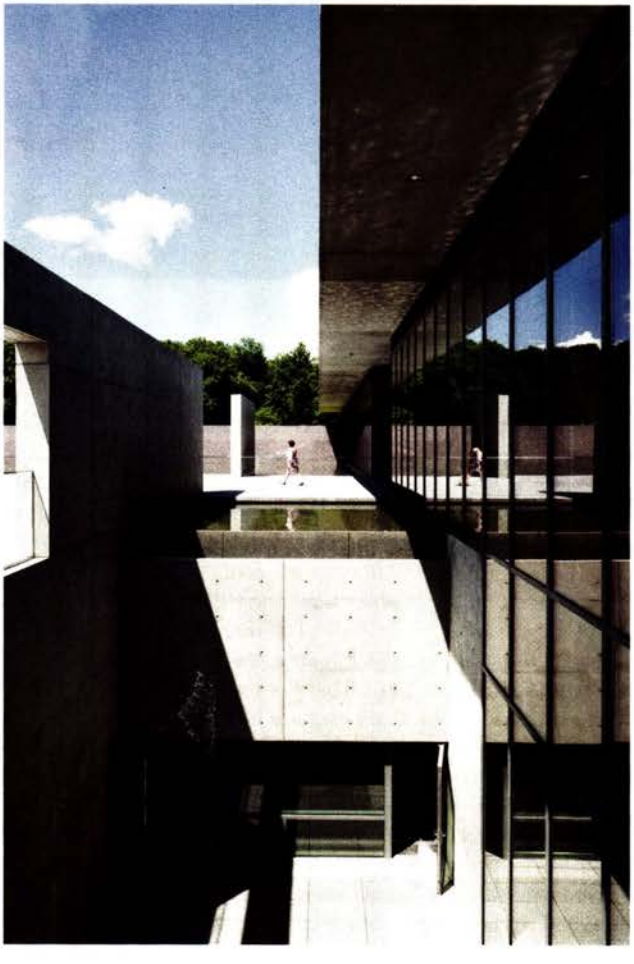
Finally, last month, the Clark opened Ando's visitor center, a long, low, modern shed seemingly only one story high. There is a reason it looks small: 65 percent of the 42,600-square-foot two-level structure is below grade.

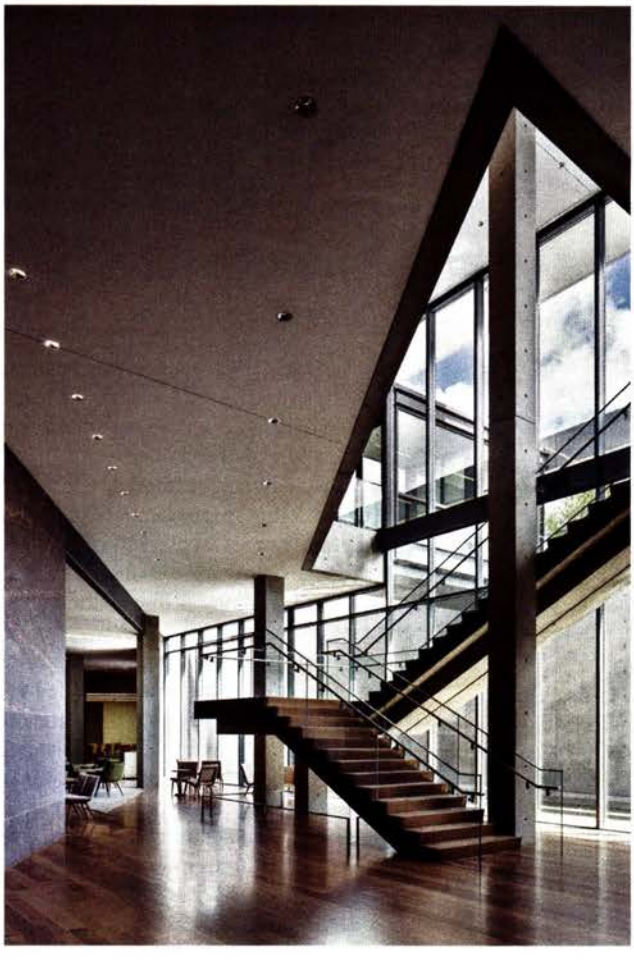
In plan, it is a rectilinear volume that retains the orthogonal grid of the nearby classical-style museum. But Ando has integrated the new building into the landscape by organizing it around an outdoor reflecting pool and introducing long diagonal walls that dramatically frame the views. The extended planes of the walls pull the eye in prescribed directions.

"It's all about taking the view away and giving it back to

View additional images at architecturalrecord.com.

SURREAL AND SERENE Red granite walls define the new entrance on the north side of the campus and Tadao Ando's visitor center (right). Ando designed the crisp, smooth planes to contrast strikingly with the rolling hills of the Berkshires landscape yet direct the gaze up to them. As visitors enter the ground-floor lobby of the steel-framed-and-reinforced-concrete structure, they find that an open stair (bottom, right) leads to a lower level. From a portion of the terrace off the lobby on the south side (bottom, left), visitors look into a sunken court that admits light to a café and the lobby downstairs. Along the south-facing glass wall, Ando placed freestanding reinforced-concrete walls with large openings to frame the view of the pool and the landscape.





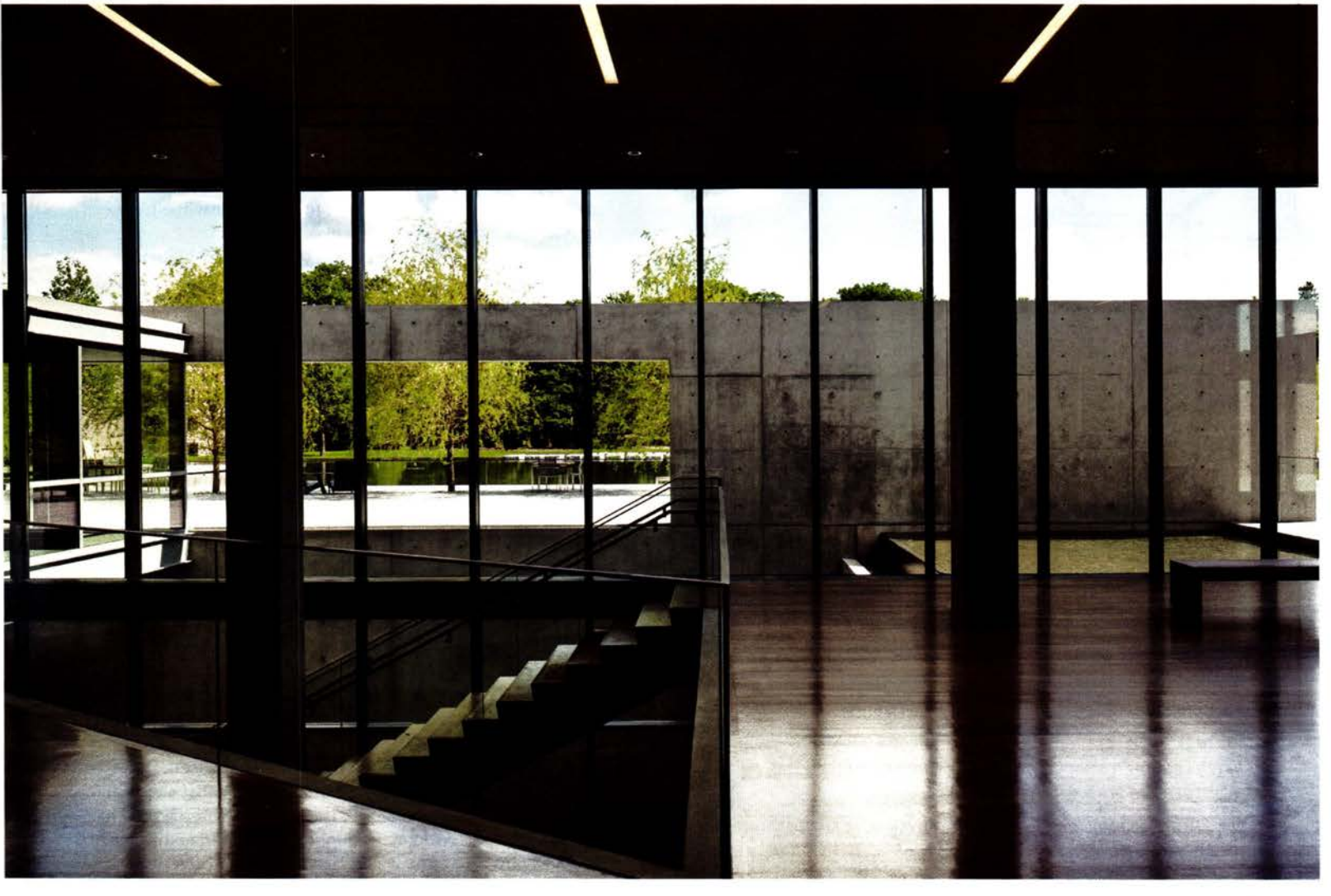
SLIPPING AND SLIDING Ando deployed freestanding concrete walls, shallow pools, and glass planes with a masterful syncopation reminiscent of Mies van der Rohe (above). The shallow pool, a void, functions as the center of his choreography of stone, concrete, and glass on the south elevation, revealed in layers from the entrance lobby (below).

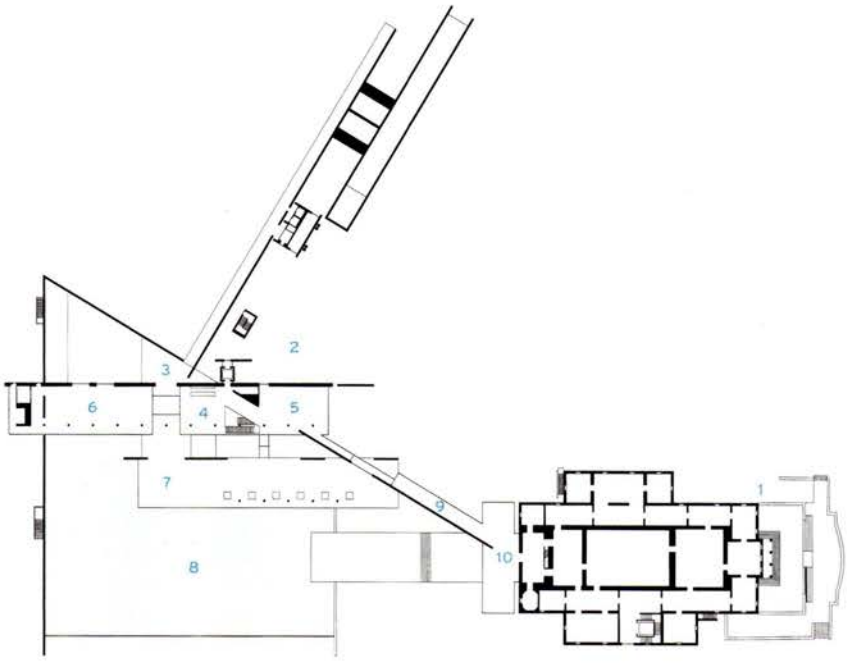
you," says Gary Hilderbrand of Reed Hilderbrand Landscape Architecture, Ando's choice of consultant. "I wanted to create a synergy among the buildings with this water feature," says Ando, known for reflecting pools, such as the dramatic one at his Modern Art Museum of Fort Worth (2002).

The framing walls are a red granite the color of dried blood. The stone is from the same Minnesota quarry that sheathes the Manton. Conforti so loves it, he took a slab to Japan to show Ando early on, and the architect eventually adopted it. "I used stone for the first time, but in a very confident way," Ando now says. Elsewhere at the center, he employs his signature "Ando concrete," poured into forms of birch plywood covered with phenolic surface film that make it silky smooth.

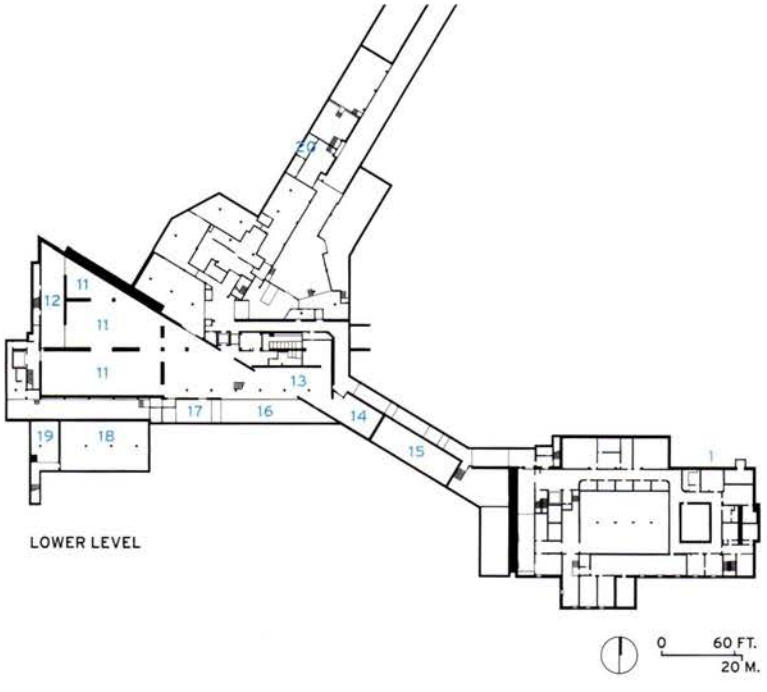
One of Ando's red diagonal walls bounds an enclosed walkway between the center and a new entrance pavilion that Ando designed for the west front of the 1955 museum. (See page 82 for more details of the museum renovation.) Another red wall, perpendicular to the first, extends 340 feet from the center to the parking lot. In plan, these two walls form a "7"–a motif Ando previously employed at the Lunder Center up the hill.

Visitors might initially find the emphasis on solid stone oppressive: the 12-foot-tall walls are the first thing you see





MAIN LEVEL



LOWER LEVEL

0 60 FT.
20 M.

1 1955 MUSEUM
2 VISITOR CENTER
3 ENTRANCE
4 LOBBY
5 SHOP
6 MULTIPURPOSE
7 SOUTH TERRACE
8 WATER FEATURE
9 LINK
10 NEW ENTRANCE PAVILION TO 1955 MUSEUM
11 GALLERY
12 SCULPTURE COURT
13 CAFÉ
14 FAMILY ROOM
15 UNOCCUPIED
16 LOWER POOL
17 PRIVATE DINING
18 PUMP ROOM
19 RESEVOIR
20 PHYSICAL PLANT/LOADING DOCK

after you park; they channel you to the center while blocking views of nearly everything else.

Then comes the surprise, when you enter the lobby, as your gaze is pulled through the building to the glass wall and beyond to the three-tiered reflecting pool and, in the distance, the Stone Hill meadow and the Berkshires. It is breathtaking. In fact, you are looking through two walls: a freestanding, 115-foot-wide concrete one on the outdoor terrace has huge openings incised to "double frame" the view. It makes you think of Le Corbusier.

Ando's visitor center includes, on the ground level, a reception area, shop, and multipurpose space for temporary exhibitions, conferences, or events. To inaugurate this gallery, Conforti asked Selldorf to design the installation of an exhibition of ancient bronzes from the Shanghai Museum (through September 21). Selldorf executed elegantly proportioned vitrines for the ancient vessels and mounted a temporary screen of diaphanous gauze to filter the sunlight and give the open, airy space a sense of enclosure.

The main lobby adjoining this gallery is dramatically pierced by a switchback stair to the lower level café. It seems to float in the double-height atrium. If the layout appears labyrinthine, it is. As Conforti says, " You cannot know the building until you go through it and it reveals itself."

Ando's new building shares a quiet, minimalist sensibility with its older sister up the hill, the Lunder Center, which has studio spaces, classrooms, and more galleries in addition to the labs, plus an expansive terrace with views of Vermont's

Green Mountains to the north. The two structures, which add 97,700 square feet of space to the Clark campus (including the physical plant), sit snugly in the landscape and provide serene, luminous spaces for art. Both offer a sense of progression and a seamless integration of indoor and outdoor spaces, including framed views. Says Ando, "It is my intention for people to easily experience the spirit and beauty of nature through architecture." From that perspective, mission accomplished. ■

Wendy Moonan's writing on architecture and design has appeared in The New York Times *and the* Smithsonian.

credits

DESIGN ARCHITECT: Tadao Ando Architect & Associates – Tadao Ando, principal; Masataka Yano, project architect

EXECUTIVE ARCHITECT: Gensler – Madeline Burke-Vigeland, principal in charge

ENGINEERS: Buro Happold (structural); Altieri Sebor Wieber (m/e/p/fp); Vincent P. Gutlow & Associates (civil)

CONSULTANTS: Reed Hilderbrand Landscape Architecture (landscape); wHY Design (retail/café); ARUP (engineering and lighting)

CLIENT: Sterling and Francine Clark Art Institute

SIZE: 42,600 square feet

TOTAL PROJECT COST: $145 million

COMPLETION DATE: July 2014

SOURCES

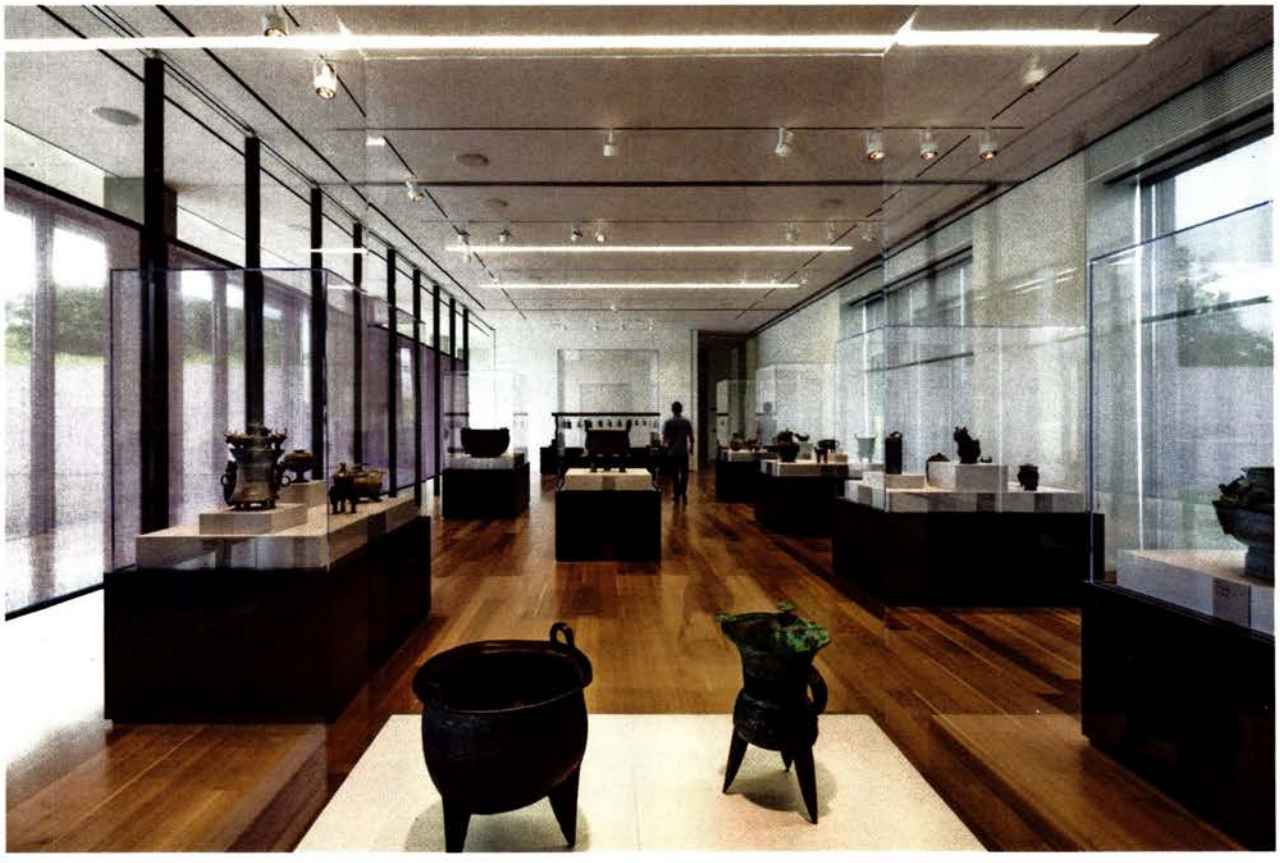
GLASS: Wausau Window

HANDRAILS: C.R. Laurence.

ZINC PANELS: John W. McDougall

ELEVATORS: Thyssenkrupp

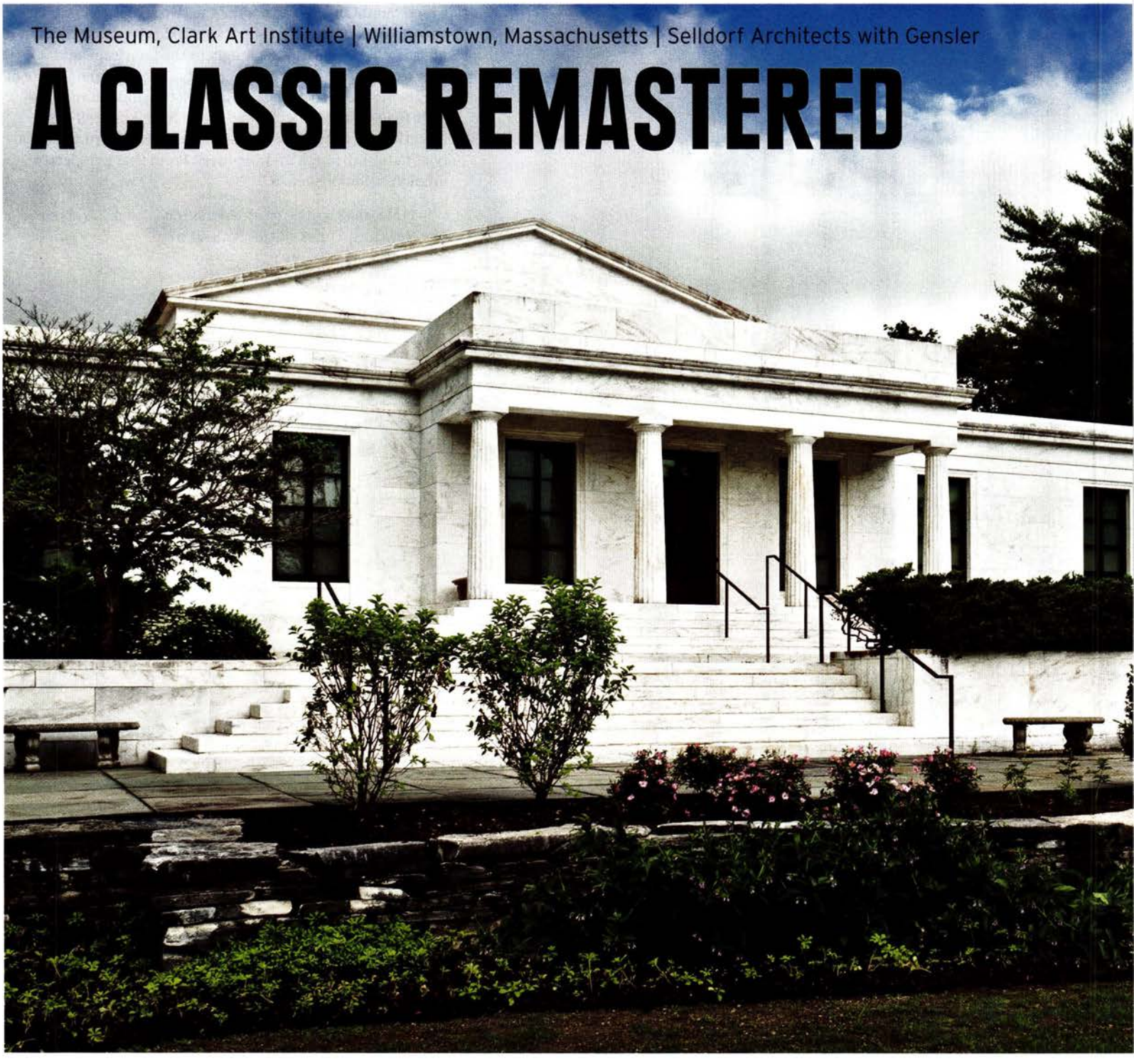
WINDOW SHADES: MechoShade LVC Window Shades



LAYERED LOOK
Within the visitor center, a multipurpose space features the exhibition *Cast for Eternity: Ancient Ritual Bronzes from the Shanghai Museum*, open until September 21. The Clark asked Annabelle Selldorf, the architect for the renovation of the museum next door, to design the installation. Her elegantly proportioned glass vitrines and translucent enclosing screens create a well-mannered setting that defers graciously to Ando's architecture.

The Museum, Clark Art Institute | Williamstown, Massachusetts | Selldorf Architects with Gensler

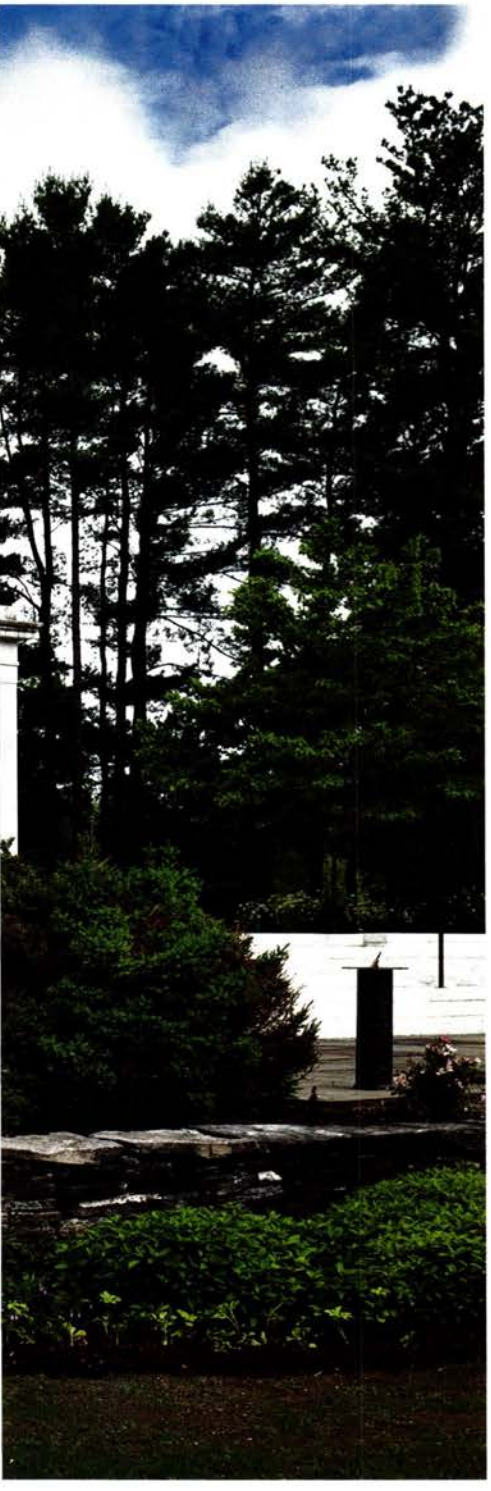
A CLASSIC REMASTERED



A sensitive restoration and renovation of an art museum intensifies its original aura.

BY WENDY MOONAN

PHOTOGRAPHY BY JAMES EWING



Annabelle Selldorf was an obvious choice to renovate the venerated museum of the Sterling and Francine Clark Art Institute in Williamstown, Massachusetts, home to a stellar collection of European and American paintings. Long esteemed by the art world for her minimalist approach, the German-born, New York–based architect designed the Neue Galerie New York (2001), the Stanze del Vetro glass museum in Venice (2012), and several high-profile Manhattan galleries, including David Zwirner's most recent space in Chelsea (RECORD, June 2014, page 168). Michael Conforti, the Clark's director, hired Selldorf in 2007, six years after he commissioned Tadao Ando to design a new visitor center and conservation laboratory. But the two architects, both renowned for museum work, did not collaborate. "Ando and I met after I was hired," Selldorf recalls. "He said, 'I'll do my thing, and you do yours.'" That was the only discussion.

Her program was to do a gut renovation of the museum, a white-marble temple designed by Daniel Deverell Perry, which had barely been touched since it opened in 1955 (in 1973 it was linked by a passageway to the Manton Research Center next door, which Selldorf is also renovating for a 2015 completion).

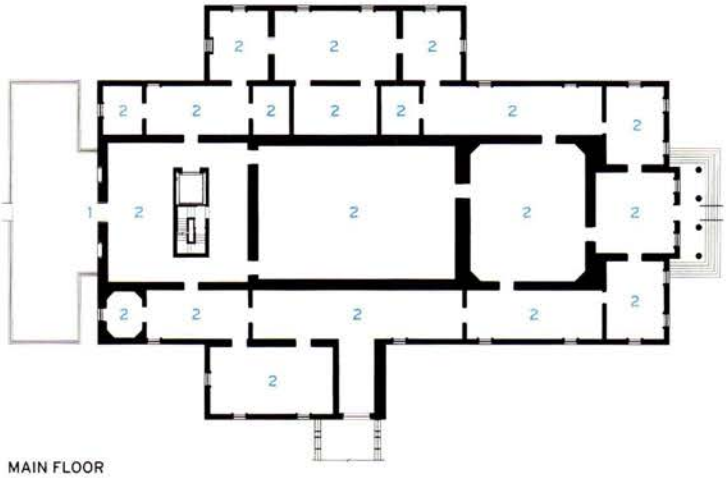
Selldorf had to rethink the entire visitor experience, since it had already been decided to switch the museum entrance from the columned, formal front to the back. (In 2001, Conforti had adopted a Cooper Robertson master plan that suggested expanding the Clark to the west, behind the museum.) The first move was to change the original circulation pattern, basically a one-way procession around the periphery that ended in the skylit Renoir Room at the center. "I wanted a route of circulation that was not coercive," Selldorf says. By eliminating the corridors, she could ensure that "every space is used for looking at art."

Selldorf also transformed the former white-marble lobby of the original entrance into a well-proportioned winter garden, complete with a new skylight, to display sculpture. By doing so, and by converting former offices into new galleries, the architect gained 2,200 more square feet of exhibition space for a total of 43,770 square feet. "The greatest challenge was making the spaces coherent," she says.

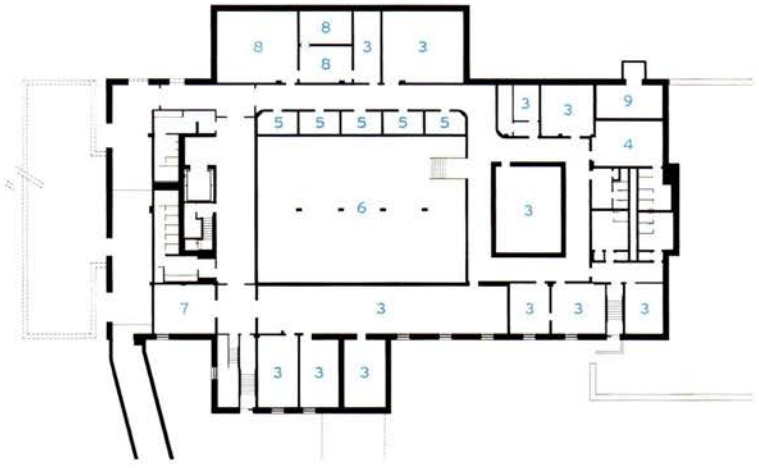
Selldorf is proudest of replacing the putty-colored walls with a muted but varied palette of tones: pearl gray, pale lilac, mauve, and aubergine. "I started looking at where paintings were to be placed and developed a family of colors that is very specific to the art," she says. She adds, with a laugh: "The curators assumed, because I am a modern architect, I'd want white. But I was thinking about colors from the beginning. The day I presented my color scheme was the most anxious

SIMPLER, SIMPLEST Selldorf Architects renovated and restored the white Vermont-marble classical-style museum designed by Daniel D. Perry in 1955. It will still house the permanent collection, although the entrance has been moved from the east side (above) to the west, where Tadao Ando has added a new glass pavilion overlooking the reflecting pool and the visitor center. Inside the museum, Selldorf devised a color palette of soft, muted shades for the various galleries (right).

View additional images at architecturalrecord.com.



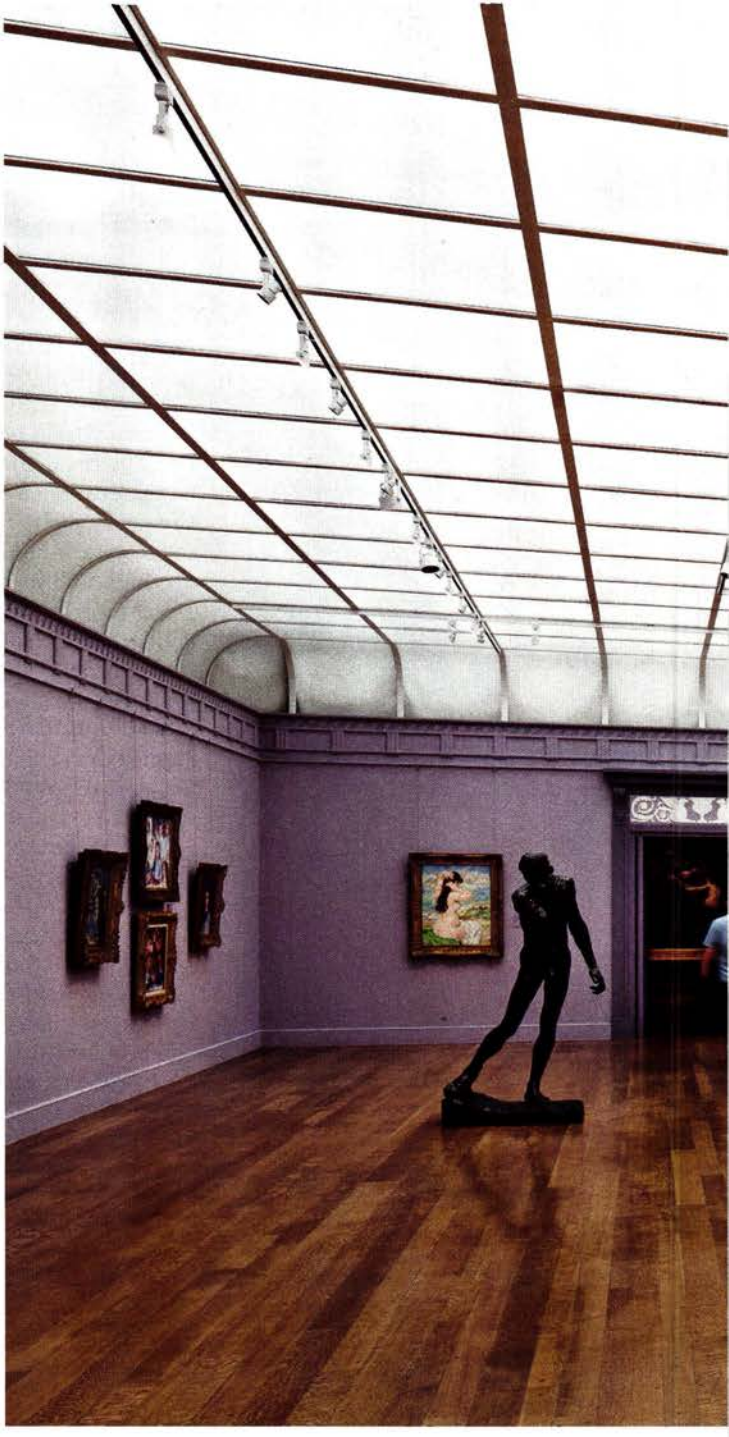
MAIN FLOOR



LOWER LEVEL

0 16 FT.
5 M.

1 ENTRANCE
2 GALLERY
3 STORAGE
4 STAFF LOUNGE
5 OFFICE
6 MECHANICAL
7 MAIL ROOM
8 PHOTO STUDIO
9 ELECTRICAL



one for me. Michael warned me he would battle with me over the colors." They did fight, but now Conforti concedes, "I'm glad she won."

The task at hand involved more than coming up with a sophisticated color scheme. Selldorf had to take the walls down to the studs to replace the electrical, plumbing, lighting, and HVAC systems. And she cleaned and updated the laylight for the enormous ceiling in the Renoir room, enhancing the natural light that evenly saturates it.

Most striking, perhaps, are the new galleries for the decorative arts, for which Selldorf designed casework, vitrines, lighting, and furniture. Now the Meissen porcelain and antique Augsburg and English silver glow in their subdued eggplant-colored setting.

Selldorf is modest about her contribution. "The permanent art collection is the jewel in the crown," she says.

MAUVE OVER
The rich colors of the paintings in the gallery where Renoir reigns (above) are set off by tinted walls. The existing oak floors have been stained a slightly darker shade. Selldorf cleaned the laylight and updated it with safety film. Above it and the attic space, the architect replaced the original composite translucent material on the roof with a new version of the same product.

"My goal was to make the museum look better without anyone noticing anything had been done."

The architect also insisted on retaining the museum's "domestic" character—the small galleries with windows looking out at the expansive panorama of nature, to "create a relationship between the art and the landscape," she says.

The one thing Selldorf was not permitted to do was design the new entrance to the west, which faces Ando's visitor center: Ando had already done it before she got there. It's a 2,000-square-foot glassed-in porch that is both lobby and sculpture court, a perfunctory modernist appendage to the white temple. Asked about it, Selldorf says, "Don't get me started . . ."

Nevertheless, now, as soon as you enter the first gallery, you are immersed in the museum's Old World atmosphere. What's great is that, while the interior may feel historic, it's not. It's all Selldorf. ■

credits

DESIGN ARCHITECT: Selldorf Architects – Annabelle Selldorf, principal; Sara Lopergolo, Lisa Green, partners; Julie Hausch-Fen, associate partner; Matthew Conrad, project manager; Joe Smith and Jeanette Trudeau, project architects

EXECUTIVE ARCHITECT: Gensler – Madeline Burke-Vigeland, principal in charge

LANDSCAPE ARCHITECT: Reed Hilderbrand Landscape Architecture

ENGINEERS: Buro Happold (structural); Altieri Sebor Wieber (m/e/p/fp); Vincent P. Gutlow & Associates (civil)

CLIENT: Sterling and Francine Clark Art Institute

SIZE: 43,770 square feet

TOTAL PROJECT COST: $145 million

COMPLETION DATE: July 2014

SOURCES

GLAZING: Oldcastle BuildingEnvelope

PAINTS: Benjamin Moore, Farrow & Ball, Sherwin-Williams

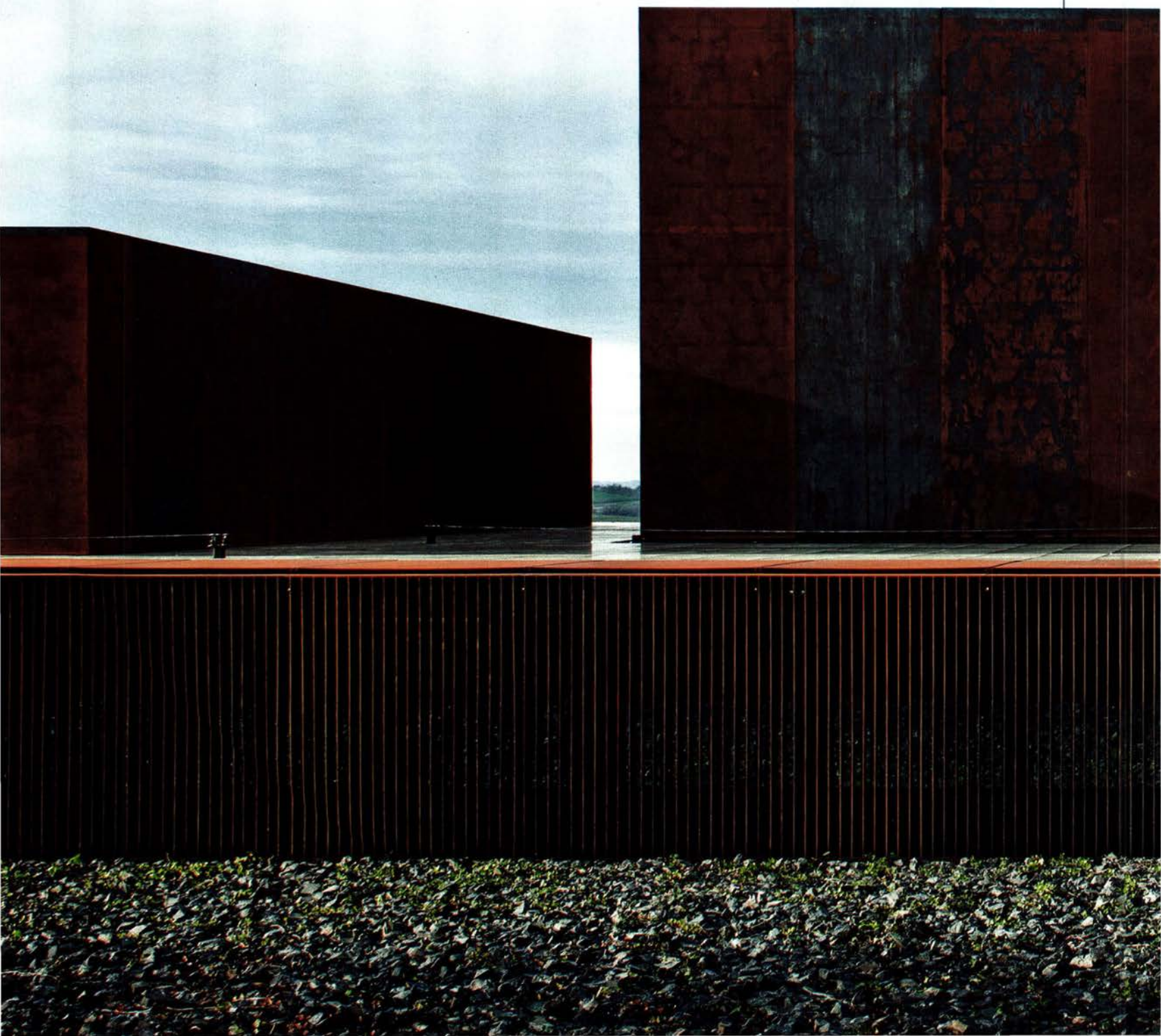
SKYLIGHT: Kalwall

Soulages Museum | Rodez, France | RCR Arquitectes

FADE TO BLACK

A museum made of dramatic weathering steel volumes celebrates the monochromatic career of French abstract artist Pierre Soulages.

BY DAVID COHN



PHOTOGRAPHY: © PEP SAU

PURE FORM Visitors enter the museum from a park and encounter the mostly windowless, quiet, sculptural volumes that contain galleries. A glimpse of the town and countryside can be seen beyond.

FACE FIRST
The museum is set into–and cantilevers over–a hillside. A stair (above, at left) connects the park that lies beyond it to the town below. Simple weathering steel forms provide the perfect backdrop to the Gothic Roman Catholic Rodez Cathedral nearby (opposite).

Poised mastery of minimalist spatial composition and building craft–with weathering steel plate as a major protagonist–is evident in every detail of the Soulages Museum, dedicated to the work of the French abstract artist Pierre Soulages and located in his hometown of Rodez, in southwest France. Evident too in the building, by RCR Arquitectes of Olot, Spain, is its sophisticated integration into its surroundings and its rapport with the artwork it houses, which was donated to the French State by the artist and his wife, Colette.

The museum becomes visible through the trees of the town's main park, the Foireil Garden, first as a series of discrete, windowless gallery pavilions dressed in Cor-Ten steel. The five boxes create vertical accents along the horizontal volume that unites them. Between these forms, glimpses of the distant countryside beyond can be seen, a vista made possible by the town's privileged hilltop position. RCR pushed the building to the rear of the park and partially buried it in a steep slope, inserting a stair between two of the boxes to connect it to the neighborhood below. From there, the north side, with the weathering steel volumes cantilevering over the hillside, the museum's monumental scale is revealed, in contrast to its more subdued south-facing presence. "We wanted to find a site that interfered as little as possible with the park," RCR partner Ramón Vilalta comments, "and to relate the project to the circulation around it."

From a deep entry porch and lobby on the south, visitors descend to the gallery level via a staircase on one side, or they can access a bridge (which holds a small auditorium and leads to a café and restaurant) spanning the exterior stair. The low horizontal volume has two levels: a mezzanine housing offices and classrooms, and a large gallery space below it, which connects the pavilions of various sizes that are attached to it. This arrangement shapes what Vilalta describes as "an itinerary with a changing rhythm," in which visitors weave in and out and around the gallery pavilions. While the low connector-gallery spaces are finished entirely in steel plate and daylit from north-facing window walls, the taller pavilions that interrupt them have contrasting walls of white plaster and receive indirect daylight from skylights above.

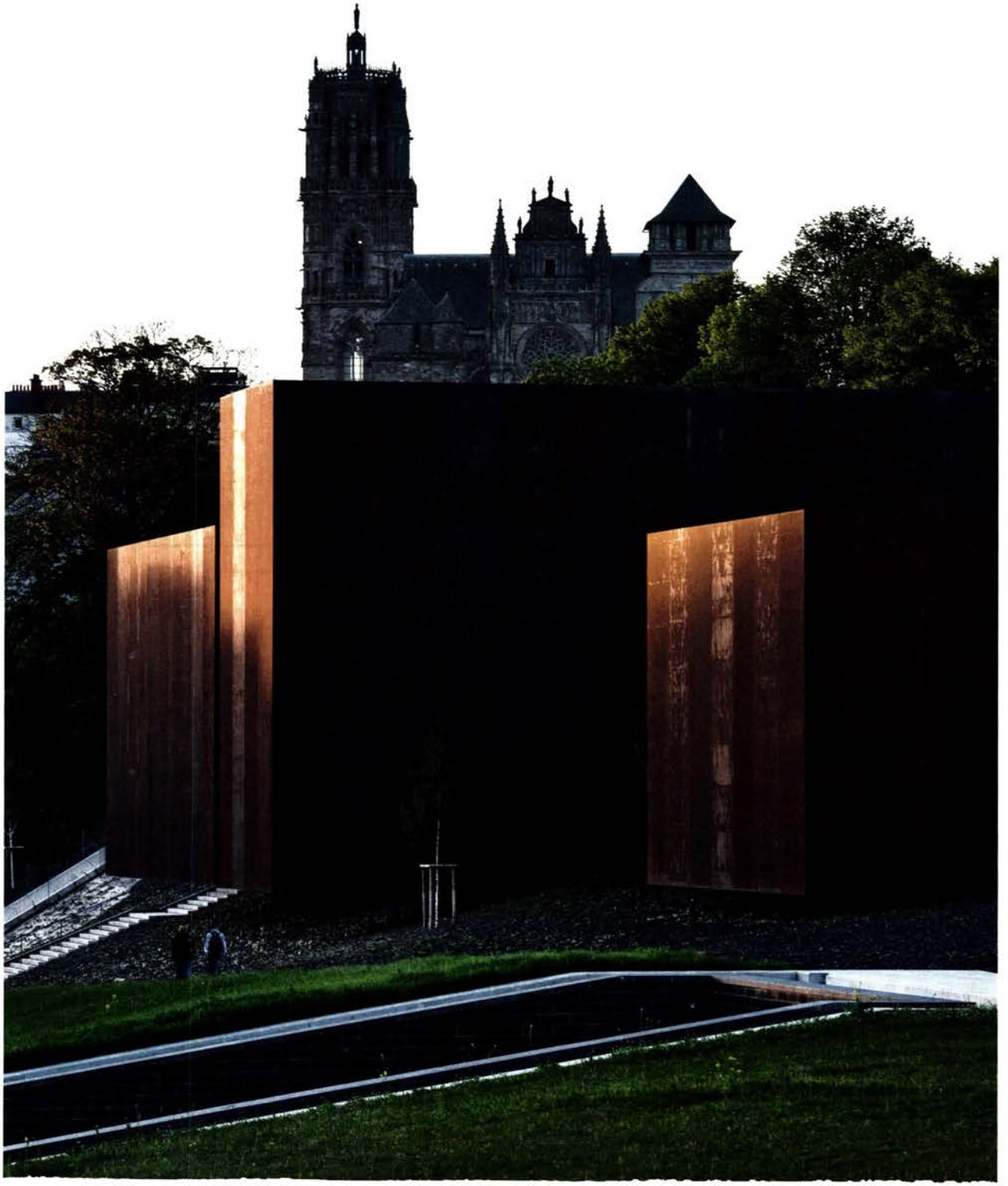
The architects worked closely with Soulages and his wife (the nonagenarian couple sat on the jury for the 2008 open competition for the project) to develop the galleries so as to meet the display requirements for different kinds of work and to create this varied procession. The horizontal exhibition space has a zone at its back protected from light, tucked under the mezzanine, where sensitive works on paper are shown. To the north, this connector space is interrupted by the three taller pavilions. These temple-like spaces form a high point of the experience, displaying particularly important groups of works: preparatory studies of Soulages's stained-glass windows for a church in nearby Conques, his early paintings made with a walnut stain, and his large-scale works. A fourth pavilion is dedicated to temporary exhibitions. With their stark contrasts between dark and bright spaces and surfaces, and their serious, somber atmosphere, the galleries assume an elegant supporting role for Soulages's work, in which single tones dominate–especially black on white–and where firm brushstrokes and solid color planes contain expressive gesture. There is an unmistakable dialogue between the building and the work it houses as they seem to whisper back and forth to one another, like partners in a dance.

The architects have built the museum almost entirely of coarse steel plate, inside and out, a material that they have

worked with extensively, as in their Les Cols Restaurant in Olot (RECORD, September 2003, page 136). The Cor-Ten for the exterior is burnt in appearance, creating a mottled, painterly effect and echoing some of the battered, acid-etched plates for Soulages's engravings. Vilalta also compares its reddish tones to the native stone of the town's Gothic cathedral, which is visible from the park. For the floor-to-ceiling windows of the building's low horizontal portion, RCR used deep fins of 6-millimeter-thick steel plate, following a 6-foot modular bay. Along the park-facing southern facade, exterior vertical louvers made of weathering steel screen the offices and teaching spaces.

Inside, RCR uses unpainted steel plate for every surface, with the exception of the walls and ceilings of the taller galleries. Floors have a waxed finish, which draws out the material's varied colors. Walls and ceilings are varnished in a deep, more uniform hue (to hang the artwork here, the architects employed a magnet system). In contrast to the matte finish of the exterior, these surfaces respond to light with a burnished glow.

RCR has developed the restaurant space, run by local chef Michel Bras, with the same attention they dedicate to the



PHOTOGRAPHY: © HISAO SUZUKI (OPPOSITE); PEP SAU (THIS PAGE)

galleries. Its exterior entrance offers one of many memorable experiences, leading visitors into a courtyard screened by a Cor-Ten steel grille, where a steel-slatted walkway crosses a reflecting pool lined with oversize basalt gravel—a sequence that reveals the influence of the architects' travels in Japan.

In fact, a Zenlike, meditative calm and intensity can be felt throughout the building: in the architects' use of material, texture, and rhythm; in the idiosyncratic organization; and in the exquisite, studied craftsmanship (realized with a tight budget of just $325 per square foot for the 65,700-square-foot structure, a feat that Vilalta attributes to the commitment of the entire building team). RCR's refined sensibility is in harmony with Soulages's artwork, which often has an Asian, calligraphic quality of its own, although the architecture always takes a backseat. The variety of the gallery spaces, with their dramatic contrasts of proportion and light, transform what might have been an overly uniform review of a single artist's career into a coherent experience alive with surprise. ■

credits

ARCHITECT: RCR Arquitectes – Rafael Aranda, Carme Pigem, Ramón Vilalta, principals; Gilles Trégouët, associate

ASSOCIATE ARCHITECTS: Passelac et Roques Architectes; Yann Lodey (site monitoring)

ENGINEER: Grontmij

CONSULTANTS: Artec3 (lighting); Thermibel (acoustics); Maffre Architectural Group (exhibition design)

CLIENT: Greater Rodez

SIZE: 65,700 square feet

CONSTRUCTION COST: $21.4 million

COMPLETION DATE: January 2014

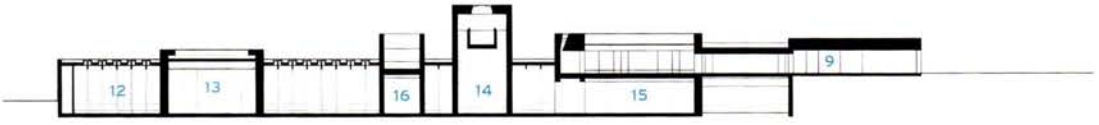
SOURCES

STEEL FRAME: Vilquin

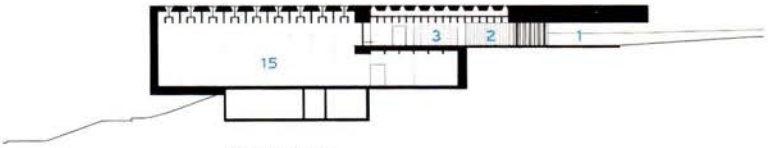
METAL PANELS: Bellapart Group

ELEVATORS: Otis

LIGHTING: iGuzzini; Lutron

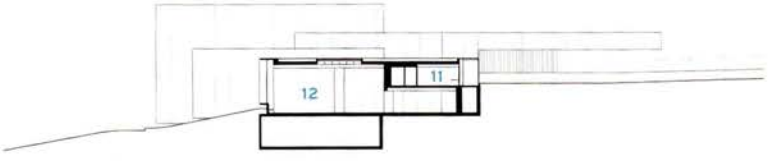


SECTION A - A



SECTION C - C

EXHIBITION FLOOR



SECTION B - B

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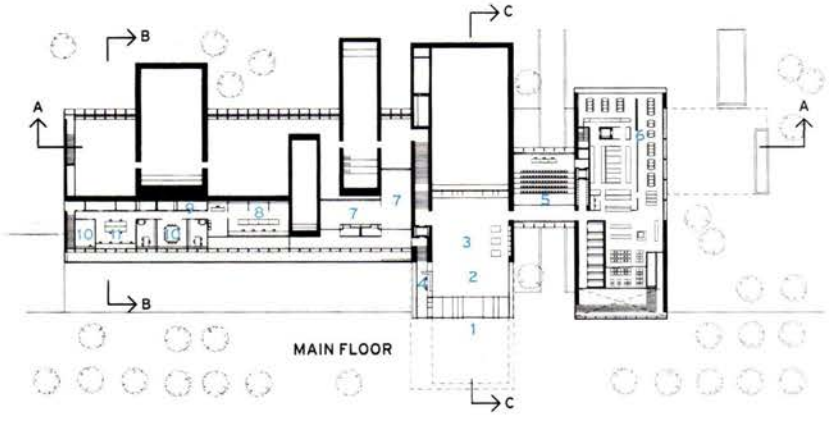
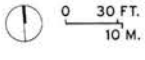


MAIN FLOOR



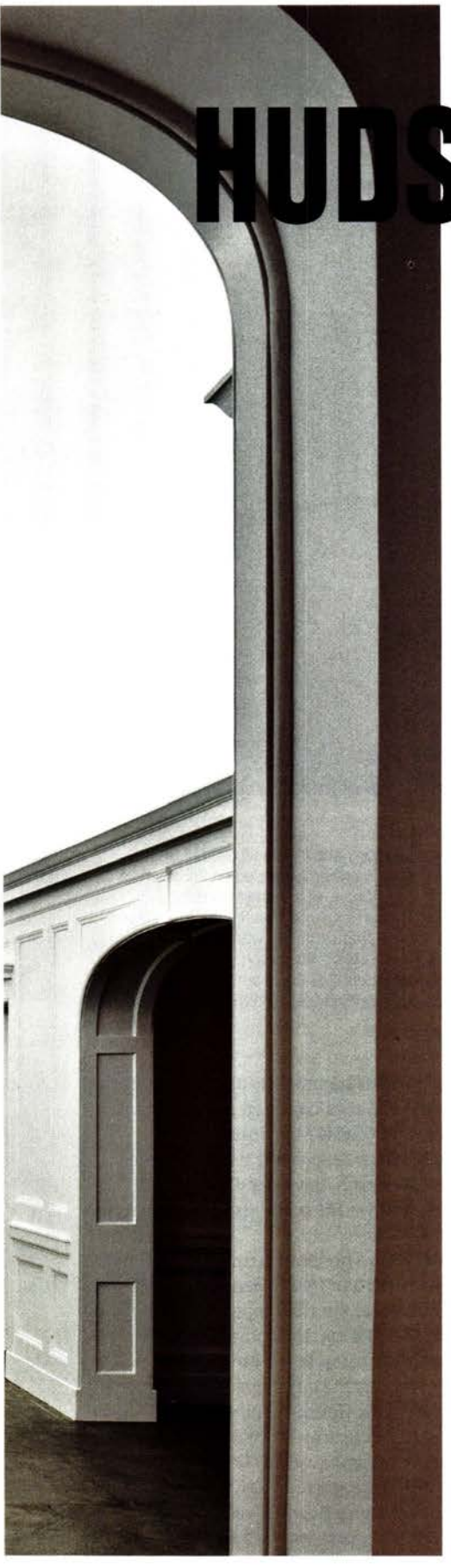
1 ENTRANCE
2 LOBBY
3 INFORMATION AND STORE
4 RECEPTION
5 AUDITORIUM
6 RESTAURANT
7 TEACHING STUDIO
8 CONFERENCE ROOM
9 STORAGE
10 MEETING
11 OFFICE
12 WORKS ON PAPER
13 WORKS ON CANVAS
14 STAINED-GLASS STUDIES
15 TEMPORARY EXHIBITIONS
16 EARLY WORKS
17 LITHOGRAPHS, ETCHINGS, SCREEN PRINTS

BLACK LIGHT
The architects used steel plate for most surfaces, as in the gallery shown above, attaching artwork to the walls using a magnet system. In the temporary exhibition gallery (right), paintings from the artist's *Outrenoir* ("black-light") series are hung from cables as freestanding objects, as Soulages intended (they are finished on the back with blank canvas).

PHOTOGRAPHY: © HISAO SUZUKI

Jack Shainman Gallery: The School | Kinderhook, New York | Antonio Jiménez Torrecillas

OLD SCHOOL
Architect Antonio Jiménez Torrecillas restored the Martin van Buren School's entry but updated the lighting and finishes to convey its new role as an art space. (Here, a recent work by the artist Nick Cave greets visitors.) The three-level Colonial Revival building (opposite) was originally completed in 1929.



HUDSON RIVER SCHOOL

A Spanish architect converts a historic building in upstate New York into an outpost for a Manhattan art dealer.

BY WILLIAM HANLEY

PHOTOGRAPHY BY JAMES EWING

It looked like a graduation. On a Saturday afternoon, a crowd of people gathered around a small stage set up on the lawn in front of the Martin van Buren School, a sturdy Colonial Revival building in Kinderhook, New York. But rather than students in caps and gowns, a small parade of people beating out pseudo-African rhythms on hand drums proceeded up onto the stage. Next came a group of writhing dancers in gold masks and neon fur suits, and, finally, duos of performers inside colorful horse costumes. The audience, a mix of locals and a Manhattan art crowd who made the two-hour journey up the Hudson River, applauded the performance, which was organized by Chicago artist Nick Cave. Off to one side, art dealer Jack Shainman was beaming.

Just under two years ago, Shainman, who has two galleries in Manhattan and owns a farm near Kinderhook, acquired the 30,000-square-foot school to house his inventory and collection, as well as to serve as a large exhibition space. The school district closed the 1929 building in 2011 because of dropping enrollment and eventually sold the property to the gallery for a reported $550,000. Shainman hired Spanish architect Antonio Jiménez Torrecillas to renovate the building—the art dealer has been a longtime fan of Torrecillas's work in the designer's home city of Granada, Spain—giving him his first large-scale commission in the United States. The performance, along with an exhibition of new work by Cave, marked the debut of The School, as the gallery has dubbed the space, which is currently open to the public by appointment. "I was impressed by the building and the innate power of the place," says Torrecillas. "The school's construction is so solid, and it has survived in excellent condition."

Torrecillas and his firm worked with Carlos Vega, an artist and Shainman's business partner, to reconfigure the school's plan, tailoring its interiors to suit the gallery's roster of artists and the various scales and materials of their work. To host large sculptures and installations, the designers inserted a rectangular 5,000-square-foot gallery with a 24-foot-high ceiling into the heart of the building, carving the space out of the basement and ground floor and reorganizing the school's warren of rooms around it. From a restored entry—updated with white walls and uplighting above the moulding—visitors move through a series of long, narrow hallways that step down as they wrap in a square shape around the outside of the large gallery. "The building is very Palladian," says Shainman. "And we tried to keep that symmetry in the new plan." At the bottom, a

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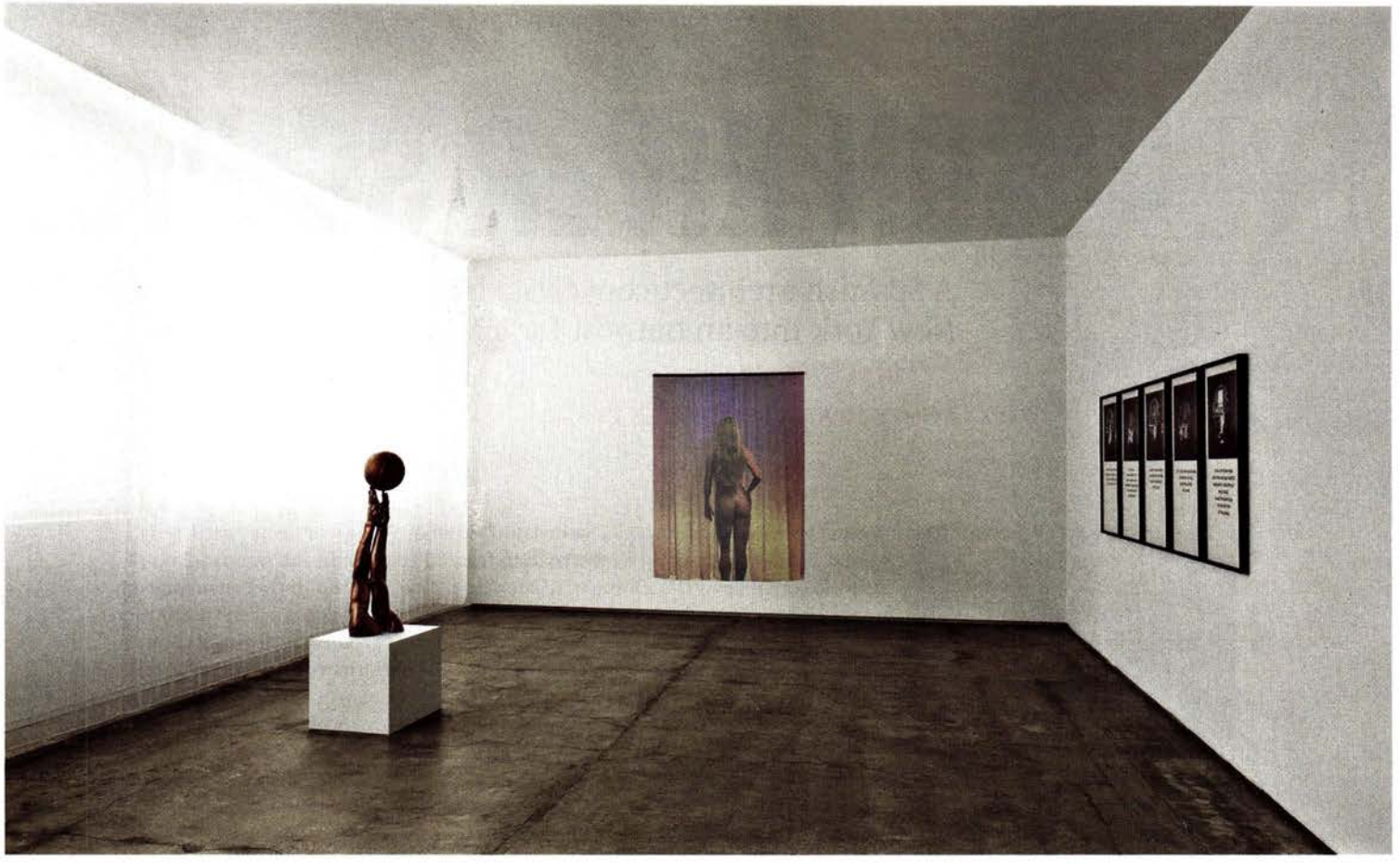


COLOR THEORY A former classroom (above) is now used to display work by artists represented by Jack Shainman, including (from left to right) Hank Willis Thomas, Michael Snow, and Carrie Mae Weems. For this and other second-floor galleries, Antonio Jiménez Torrecillas designed a simple lighting scheme that combines warm daylight from The School's existing windows with cool artificial light from vertical pairs of fluorescents. A scrim set about 2 feet in front of the windows diffuses light from both sources, blending them to form an even color temperature.

low-ceilinged space under the entry provides a moment of compression before opening into the large gallery.

The design required excavating 8 feet below the building and repouring sections of the foundation. In addition, the project added 15 geothermal wells to provide heating and cooling for the school-turned-art space.

On the second floor, to bring a sense of openness and to display larger artworks in what were once small offices and classrooms, the architect removed several interior walls from the brick structure, redistributing their loads with a steel-beam system threaded into the metal roof truss. "The building almost had too many big walls, which is a strange problem for a gallery," says Shainman. "It's kind of like having too much closet space in Manhattan." Some rooms have been converted into white-walled galleries, while others have been left raw, with traces of their former use readable in the stripped walls.

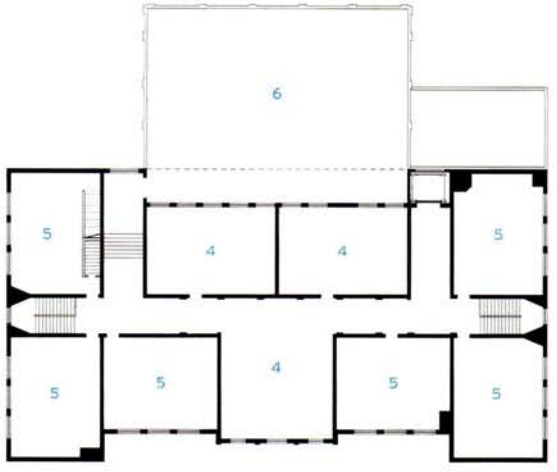
The resulting space feels open, but still looks like a converted school rather than a generic white box. "The existing classrooms and hallways made for perfect showrooms," says Torrecillas. "For me, the greatest power of the building is the honesty of its original construction."

Torrecillas kept the existing window configuration—the building is located in a historic district—but used a cleverly simple lighting scheme to calibrate conditions in the galleries. He added shading over the glazing that filters daylight to a warm glow, and in between windows, the architect added pairs of vertical fluorescent tubes that balance out the natural light with their cool color temperature. Translucent scrims, stretched from wall to wall and floor to ceiling about 2 feet in front of the windows, blend the opposing light qualities into a near-neutral color temperature that fluctuates just enough to change throughout the day.

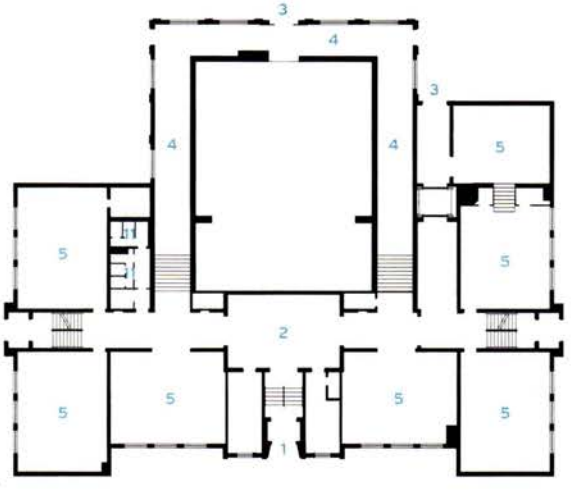
During the opening weekend, the lighting set off a selection of work from artists that Shainman shows, including Cave's signature, crowd-pleasing *Soundsuits* and a sampling of his more recent work. The latter consists of engrossing collections of objects, sourced from flea markets and junk stores. Many of the knickknacks are once-common racial caricatures—what Shainman calls "racist Americana." They embody sinister attitudes that, despite the banishment of this kind of casually racist kitsch, have not disappeared from American culture, and yet the work also affectionately elevates these scorned objects.

Such complex gestures were previously tough to find in Kinderhook, a town of fewer than 10,000 people that is more Mayberry than cultural mecca. But that appears poised to change. The OMA-designed Marina Abramović Institute, a hybrid museum and training camp being built by the celebrity performance artist, is taking shape in neighboring Hudson, New York. Paired with Hudson's indigenous galleries and proximity to Dia Beacon, Mass MOCA, and other institutions, the area seems ready to become a significant art destination. "When we started working on the building, we never thought that's how the region would be," says Shainman. "But now, here we are." ■

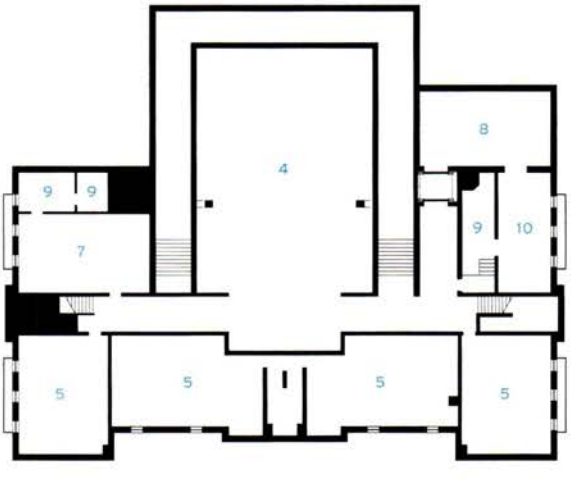
STUDY HALL
On the second floor, one of The School's unfinished spaces (above, left) shows a 2008 *Soundsuit* by Nick Cave. Also on the second floor, the architect took out masonry walls in the former principal's office suite—transferring their structural loads to a newly added steel beam in the ceiling—in order to open up the space and display larger work, such as Cave's 2014 installation *Property* (left). On the ground floor, a series of narrow hallways wrapping The School's main gallery volume double as exhibition spaces (above, right), currently showing a selection of Cave's *Soundsuits*.



SECOND FLOOR



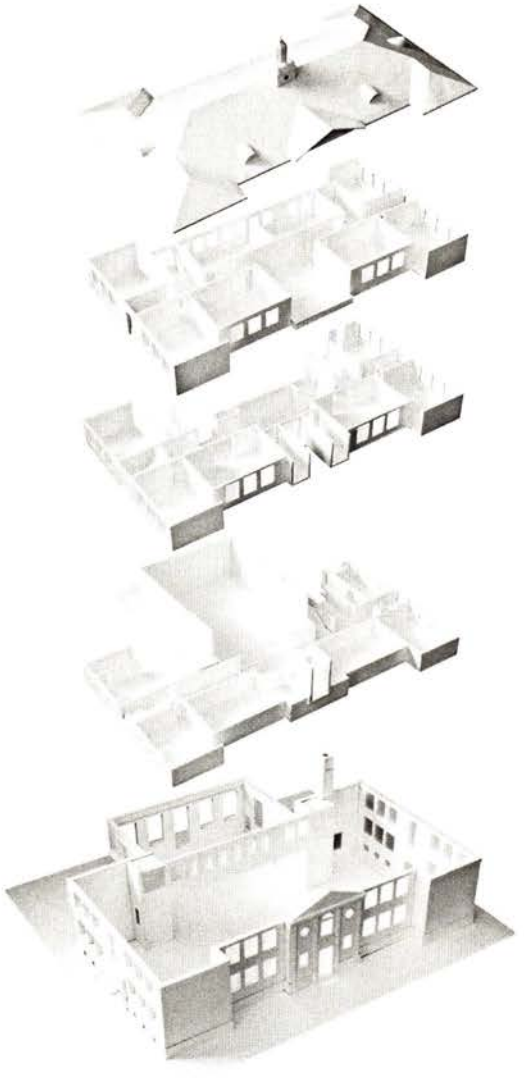
GROUND FLOOR



BASEMENT

0 30 FT.
10 M.

1 VISITOR ENTRY
2 FOYER
3 ART ENTRY
4 GALLERY
5 STORAGE
6 TERRACE
7 KITCHEN
8 CATALOG ARCHIVE
9 MECHANICAL
10 PACKAGING
11 RESTROOM



AXONOMETRIC PROJECTION

credits

ARCHITECT: Antonio Jiménez Torrecillas

ENGINEERS: Cesar Gomez Vida (structural); Taconic Engineering – Chad Lindberg (structural)

CONSULTANTS: Scheriff Electric (electrical systems); C & E Rothermel (HVAC and plumbing)

GENERAL CONTRACTOR: Lorne Dawes Construction

CLIENT: Jack Shainman Gallery

SIZE: 30,000 square feet

COMPLETION DATE: May 2014

SOURCES

STRUCTURAL SYSTEM: S & S Fabrication

WALL COVERINGS: Georgia Pacific

PAINTS AND STAINS: Benjamin Moore

LIGHTING: Bartco, Juno, Lithonia, Philips, Prulite

HARDWARE: BEST, HES, Schlage

DRAMA CLUB
As visitors make their way through the hallway galleries and down to the newly excavated basement level, they find themselves in a low-ceilinged space below the entry (left). There, lighting set behind plexi sheets casts a glow on Nick Cave's simply titled assemblage *Sculpture* (2013). Turning to the right, this moment of compression opens into the main gallery (below), with its 24-foot ceilings. In the current show, a phalanx of Nick Cave's *Soundsuits* stands in front of what was the proscenium of the school's theater.

SOMETHING BORROWED

BY WILLIAM HANLEY AND LAURA RASKIN, WITH ZACHARY EDELSON

As disciplines, art and architecture have been variously connected and separated at different points in history—sometimes allied and sometimes pitted against one another in hierarchies of the arts. But practitioners often happily play on both sides of the fence, with artists and architects sharing each others' tools, methods, and languages.

The last few decades have seen architects marshaling complex engineering to push their buildings into the territory of sculpture. And there have also been prominent contemporary artists and designers—Vito Acconci, Diller Scofidio + Renfro, and even Frank Stella, to name only a few—taking up architecture to make art.

For a current generation of artists and designers working in or near this tradition, borrowing takes many forms. Some use modeling software and digital-fabrication tools to realize their work. Others use design and construction methods to conceptual ends. Many work with architecture to invoke the institutions and histories embodied in its structures and typologies. Most, like the small group on the following pages, use some combination of these strategies to deploy architecture to artistic ends—and inspire others working in either discipline.

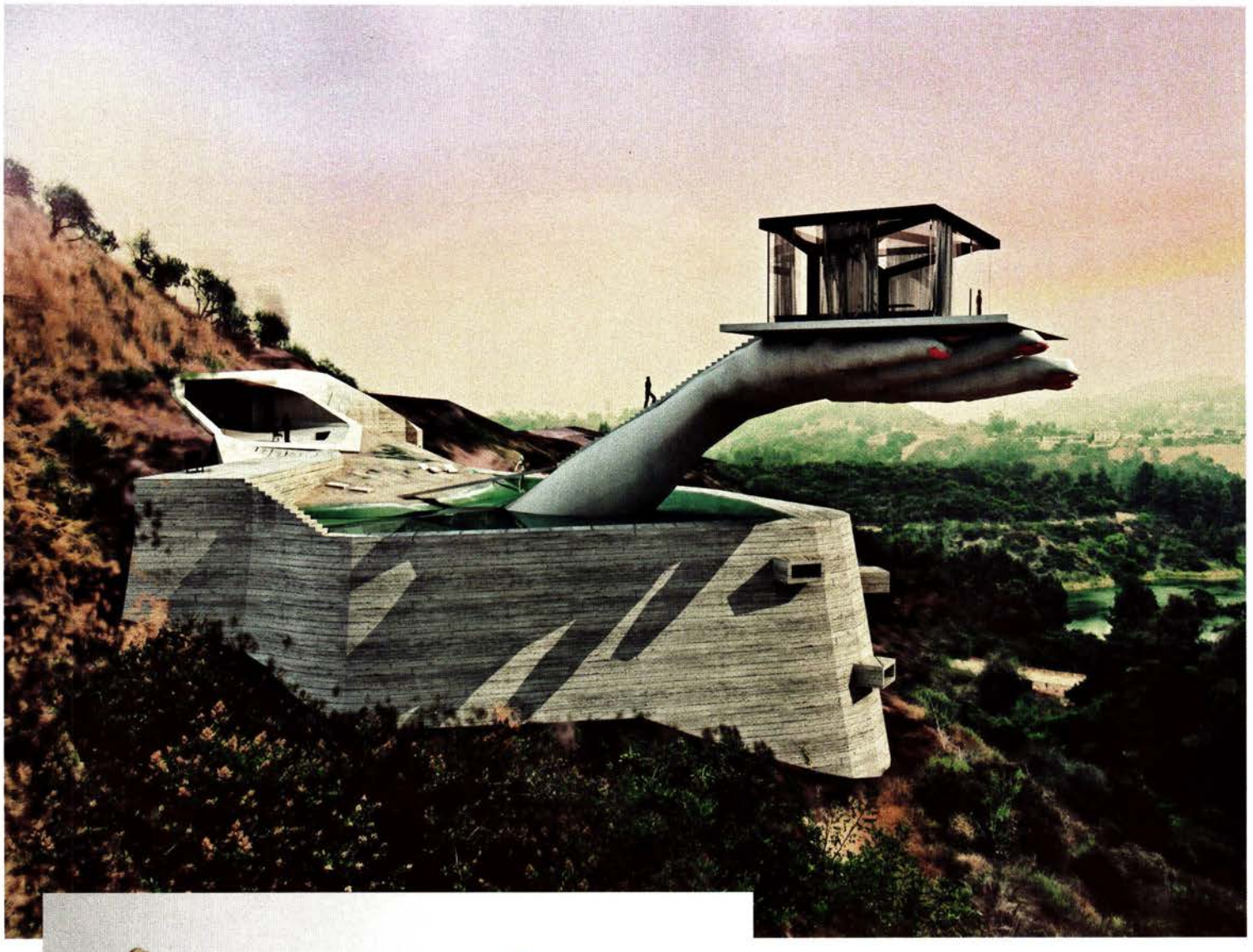
KATRÍN SIGURDARDÓTTIR was born in Reykjavik and moved to the United States in 1988 to attend the San Francisco Art Institute. The artist now splits her time between studios in Long Island City, New York, and Iceland. As it is in her life, a kind of diasporic mobility is a key theme in Sigurdardóttir's work. "I've had this fantasy of taking a place and somehow attempting the impossible of having it move," she says. She does this with *Foundation*. Inspired in part by 18th-century architecture and construction, *Foundation* is a fragment of an imaginary pavilion, but also a distinct place in and of itself. It was conceived to travel, beginning as the Icelandic Pavilion at the Venice Biennale in 2013 and installed in the Palazzo Zenobio, where it intersected with the walls of an historic laundry (above). Then it was moved to the Reykjavik Art Museum and was most recently on view at the SculptureCenter in Long Island City (left). While architects typically draw buildings that do not yet exist, Sigurdardóttir creates spaces that come with a rich, layered "history" of her own making. Her process "is akin to the way an architect or spatial designer would think, but also the way an archeologist would work," she says. Like an aging monument, *Foundation*'s handmade tile surface now has a scuffed patina from thousands of visitors, and a rough underbelly that roots the sculpture in reality.

PHOTOGRAPHY © ORSENIGO CHEMOLLO, COURTESY THE ARTIST AND THE ICELANDIC ART CENTER (TOP); RON AMSTUTZ, COURTESY KATRÍN SIGURDARDÓTTIR (BOTTOM)

View additional images at architecturalrecord.com.

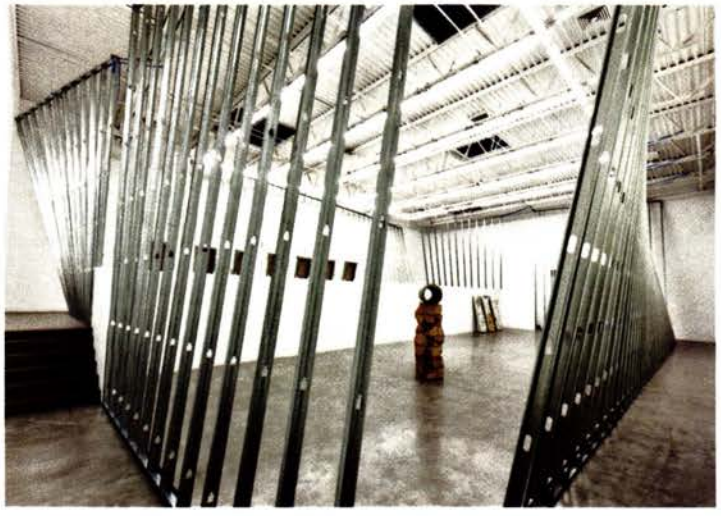
ALEX SCHWEDER practices what he calls "performance architecture," installation and event-based work that explores how people comprehend the built environment and how that perception shapes their bodies, social relationships, and desires. The New York artist has designed disorienting exhibitions with inflatable walls, a mobile hotel room perched atop a scissor lift mounted to a van, and home "renovations" that take the form of therapy sessions held inside a storage unit—rather than redesigning living spaces, he advises clients on how to live in their spaces differently. Explaining the unorthodox renovations, he quotes Cedric Price: "If someone comes to you expecting a new house to transform their life, you should ask them if they've considered getting a divorce instead." Schweder received an M.Arch. at Princeton University—Elizabeth Diller was his thesis advisor—and worked as a designer in New York for seven years before focusing on his art practice. (He is currently pursuing a Ph.D at the University of Cambridge, focusing on the performance-architecture idea.) This year, with his frequent collaborator Ward Shelley, Schweder designed and constructed *In Orbit*, 2014 (this page), a 25-foot wheel equipped with two sets of desks, cabinets, chairs, beds, and kitchens. Inside a large Brooklyn warehouse, the duo lived on the installation—one on top, one on the bottom—for 10 days, synchronizing their interdependent movements. Much of his work has an element of humor—if not preposterousness—a condition Schweder cultivates. "When something is funny, or a little ridiculous, people let their guard down, he says. "They become more receptive to new experiences and ideas."

PHOTOGRAPHY: COURTESY ALEX SCHWEDER, PIEROGI GALLERY



ANDREAS ANGELIDAKIS is not sure why millions of people are obsessed with cat videos. "It's a curious thing, what captures people's attention," he says. "Architecture is a lot slower than that kind of exchange of images." Much of the work of the Athens and Oslo–based designer, artist, and curator imagines awkward encounters between the seemingly fixed presence of architecture and the fleeting visual effluvia of Internet culture. He responded to a call from *Pin-Up* magazine to conceive a Case Study house for contemporary Los Angeles by first mining Twitter conversations about the city, creating *Hand House*, 2010 (above). For another series, he finds readymade digital models on the Web, which he then collages—sometimes along with crude scans of found objects—and 3-D-prints. At the center of much of his work stand classic forms of modern architecture and imagery that references Greek economic history—witness *Bone Domino*, 2014 (left), with its homage to Le Courbusier and nod to the ubiquitous hastily built concrete structures that began to dot the Greek landscape in the 1960s. Angelidakis developed his practice while studying architecture at SCI-Arc and then Columbia University. "I think like an artist, but with the tools of an architect," he says. "I try to tell stories with buildings." A survey of his work is on view at the National Museum of Contemporary Art in Athens through September 7, and he is curating a show at the Swiss Institute in New York that will run September 17 to November 23.

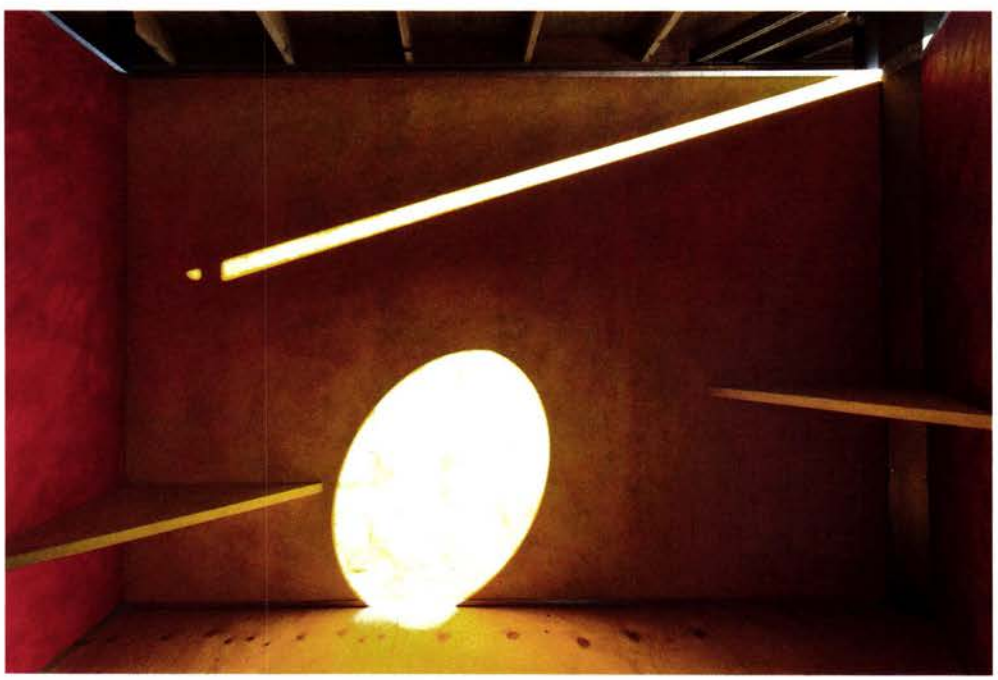
PHOTOGRAPHY: ©ANDREAS ANGELIDAKIS AND *PIN-UP* MAGAZINE (TOP); COURTESY NATIONAL MUSEUM OF CONTEMPORARY ART (BOTTOM)



ALLYSON VIEIRA builds monuments—but she uses unexpectedly humble material. Take her 2013-14 exhibition *The Plural Present* (above). There, the New York-based artist filled a gallery with Classical ruins: *The City Wall*, 2013, delimited the space with a colonnade that framed *Beauty, Mirth, and Abundance*, 2013, three figures striking a *contrapposto* that echoes the famed Greek statue of the three graces at the Metropolitan Museum of Art. But Vieira's statues are made from cheap brick, crudely carved and stacked into angular abstractions. Rather than a pediment, they hold up a length of pipe. The city walls are nothing more than 20-foot metal studs—the kind you could pick up at Home Depot—torqued into an elegant shape, though it appears to be suspended in mid-collapse. "I'm into the long time line," says Vieira, who has an exhibition at The Breeder gallery in Athens opening on August 27 (the gallery also represents Andreas Angelidakis, profiled on the opposite page). "I don't want to make work about today if I can't also make work about 1,000 years ago," she adds. Vieira's interest in the architecture of antiquity comes from a fascination with building, sculpture, material, and time—the churn of the making process, and a cycle of construction and collapse in which one era's ruins become another's raw material. Her workaday palette fixes her historical references in the present. "I'm interested in human proportions that go into building," says Vieira, whose column figures are exactly her height. "I love that the width of a standard sheet of drywall is roughly a person's arm span." For a pair of 2012 works in her *Weight Bearing* series (right), the artist sawed stacks of gypsum board into jagged figures and then raised a steel I-beam onto the top of each pair. Like the threshold of a ruined temple, her works have an aura of inscrutable ritual significance, one whose meaning seems lost to time even as its shape endures. "The post-and-lintel structure is the easiest way to raise a surface," she notes. "The forms that get me excited are the ones that have persisted."

PHOTOGRAPHY: © DANIEL PEREZ, COURTESY SWISS INSTITUTE (TOP); © CATHY CARVER, COURTESY LAUREL GITLEN, NEW YORK (BOTTOM)

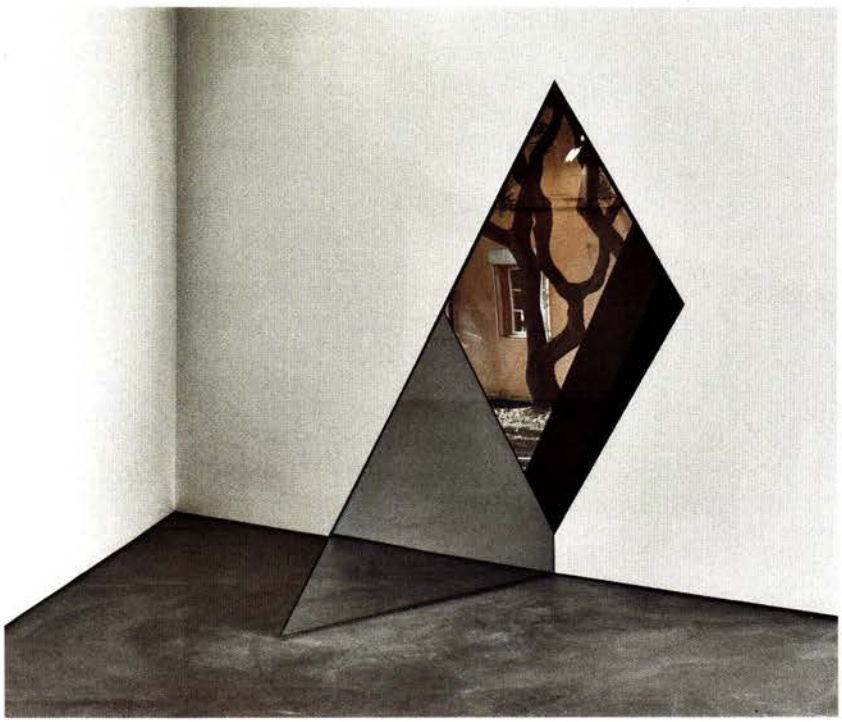
SNARKITECTURE, the name that artist Daniel Arsham and designer Alex Mustonen have given their nearly 10-year-old design collaboration, cuts two ways. On the one hand, it references the fictional creature in Lewis Carroll's nonsense poem "The Hunting of the Snark"; on the other, it invokes the arch tone of Internet writing. Their work ranges from installations to interiors to objects—they recently designed a set of headphones and a stand for the Dr. Dre-founded, Apple-acquired Beats brand. "We've tried to define our practice as either things you can hold and use, or things you can inhabit," says Arsham. But no matter the scale, the work, befitting their portmanteau moniker, has an aesthetic running through it that is playful but also coolly detached. The collaborations share a stark palette with Arsham's artwork, for which he often casts outmoded consumer technologies and musical instruments in cultured marble (essentially a hardened composite of marble dust and a binding agent), producing strange, seemingly crumbling likenesses that have the look of extraterrestrial ruins. Snarkitecture used a similar approach in a 2013 installation, *The White Room* (top), a ghostly vignette of a car crash with keyboards spilling out of the trunk. In general, the work contains an otherworldly, slightly science-fiction element, saved from too much whimsy by its icy coloration and materials. Their interiors tend to be cavelike. An installation for the Design Miami/ fair in 2012, for example, turned vinyl tubes into stalactites, while a 2010 pop-up for fashion designer Richard Chai looked like a scooped-out geological confection. (The duo has a history of working with fashion brands, and they have a new interior for street-wear retailer Kith opening this fall.) For their 2011 installation *Dig* (left and below), they filled New York's Storefront for Art and Architecture with grayish EPS architectural foam, which Arsham and a small crew then tunneled through according to a path Mustonen based on the space's distinctive openings, designed by Vito Acconci and Steven Holl in 1982. "It's a play between what we think of as the precision of architecture and something that is excavated by hand—a loose or irrational dream space," says Mustonen. "On the most basic level, we're asking architecture to do things that it's not supposed to do."



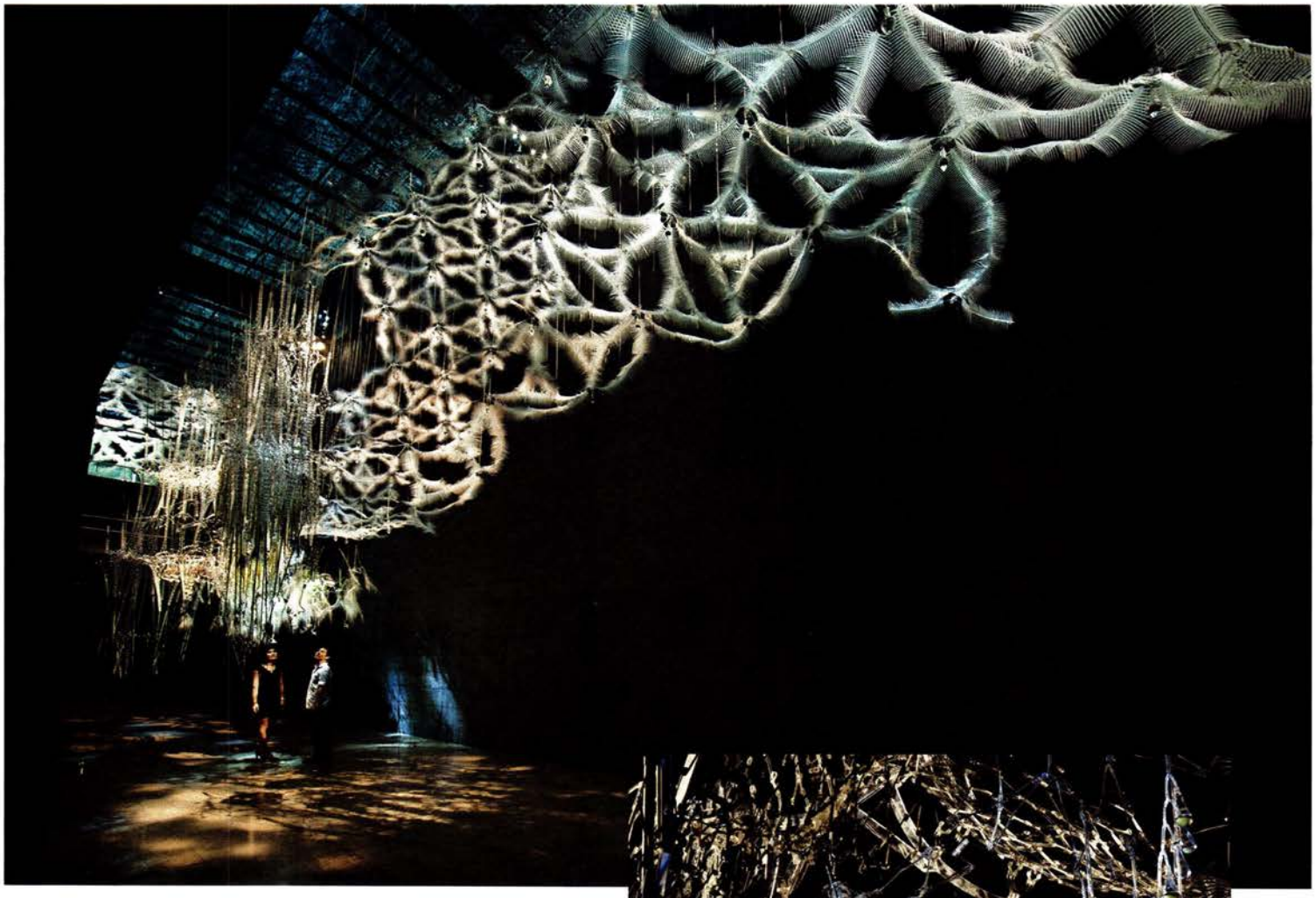
HALSEY RODMAN constructed *Gradually/We Became Aware/Of a Hum in the Room* (shown here) over a couple of weeks this spring, in Joshua Tree, California. "I've always wanted to make something you could go in and spend time in," says Rodman, a New York–based painter, sculptor, and installation artist, and the incoming cochair of sculpture at Bard College. At smaller scales, Rodman has played with architectural construction in his sculpture and explored the blurry boundaries between interior and exterior landscapes, but *Gradually* is his first enterable structure. The triangular plywood and steel-frame structure sits atop a platform at High Desert Test Sites, artist Andrea Zittel's compound for a rotating collection of experimental installations and performances. *Gradually* is three identical triangular rooms, each with a porthole and built-ins at bench, desk, and shelf height. The exterior and interior walls are painted dusty purple, fading red, yellow, magenta, and peach—hues that evoke what Rodman imagines as the color of the sky "opposite a sunset." (In a humorous move, he asked a set of triplet sisters to each interpret the five colors and had the pigments mixed to their specifications.) For Rodman, the structure "was like a portrait of a self with a continuous interior and exterior. [The building] is a very strong image, like a body." In the fall of 2015, it will be disassembled, and the walls will be opened up and displayed inside-out in the Manhattan gallery Art in General. The conceptual project has roots in Rodman's fascination with the liminal space where one entity ends and another begins, and the impossibility of being both inside and outside simultaneously. Its cross-country voyage has a literal narrative too: Rodman is from California and has lived in New York for 14 years. "It was a real effort to bridge that gap. The idea of distributing the structure in time and space is related to wanting to permanently unhinge it in terms of its interior and exterior."

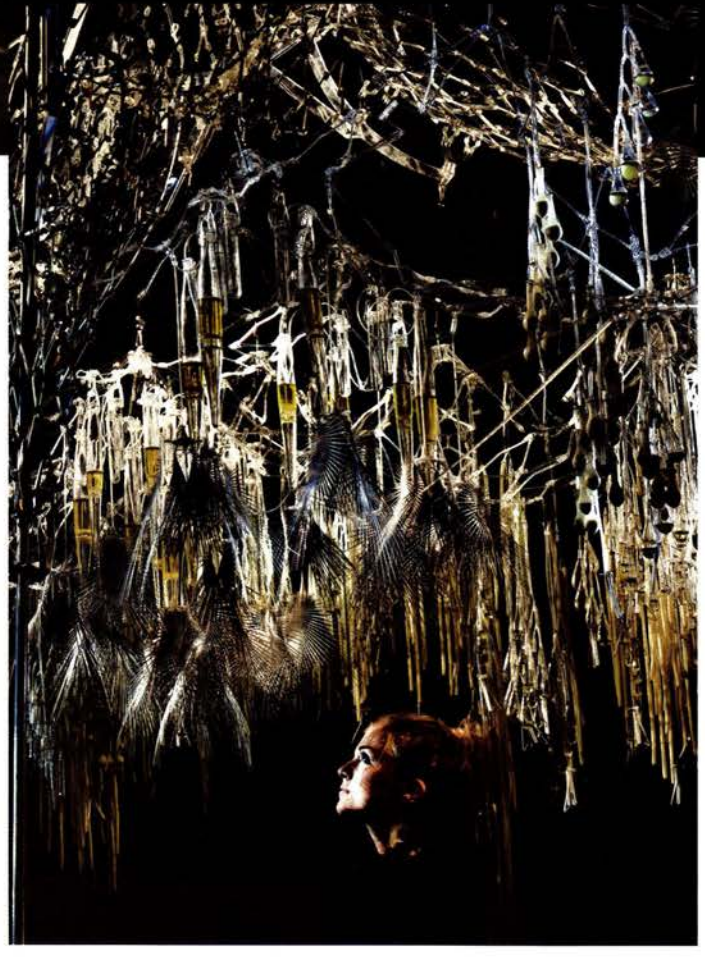
PHOTOGRAPHY: © NOAH KALINA (OPPOSITE, TOP); STOREFRONT FOR ART AND ARCHITECTURE (OPPOSITE, MIDDLE AND BOTTOM); JOHN PEARSON (THIS PAGE)

SARAH OPPENHEIMER studied painting at Yale, where she received her M.F.A. in 1999, but, over the last decade, architecture has been her canvas and medium. Oppenheimer manipulates existing architectural spaces, distorting our perception of an interior's geometry and programmatic logic. "I felt very trapped by the historical constraint and the limited range of moves that seemed possible within painting," says Oppenheimer. "One way [painting] felt constraining was the relationship of object to image." Striving to break free from that constraint – and upend the conventions of representation – led her to an interest in problems of navigation and rethinking architectural spaces: "I'm really excited about the idea of intervening in that logic," and therefore drawing attention to it, she says. For her latest installation, *33-D* (shown here), in the Kunsthaus Baselland in Muttenz, Switzerland, through September 7, the Texas-born, New York-based artist studied the gallery's structural grid, light, and progression of rooms. She made two incisions in the walls and inserted large trapezoidal panes of low-E glass at 45-degree angles. The glass reflects and extends the space, and openings in the walls invite visitors to pass through them, further distorting the rationality of the white-cube galleries. While each of Oppenheimer's installations responds to its locale, she resists calling her work site-specific. Instead she has developed her own empirical models (using variables such as distance and direction) that give her a "scaffold" for each project, no matter where it is. "Because [architecture] wasn't the field I was trained in, it's a huge body of knowledge that remains fascinating and rich," says Oppenheimer. Her work is embedded in architectural history but not nostalgic for it.



PHOTOGRAPHY: © SERGE HASENBÖEHLER





PHILIP BEESLEY takes the same core idea as the point of departure both for his architecture and his otherworldly installations: the shared experience of public space. "How architecture makes a place fundamentally," says Beesley, "and the collective experience of dwelling, encounter, and sharing stands at the core of both practices." He describes his installations, which float above visitors, as "unapologetically experimental" and as seeking to change how we interact with the built environment. Composed of light plastics such as acrylic and polymer, along with glass and electronic systems, the sculptures from his *Ephiphyte* series (above and right) feature reactive electronic sensors that make parts of the installation twitch when visitors draw near. Small flasks he calls "proto-cells" contain various chemical reactions—most notably, substances that capture carbon dioxide from the air. These complex sculptures, developed in collaboration with electrical, robotic, and chemical engineers, are still in early stages of development. Beesley aims for them to acquire their own intelligence, behavior, and metabolism. For the time being, they still provide a tangible way for the public to interact with an organic and sensitive architecture. And, unlikely as it may seem, this experimental work informs the more conventional built projects of Beesley's Toronto-based practice. His Niagara Credit Union, for example, features a lightweight branching canopy and gathering space not unlike his sculptures. Above all else, he's confident about how our society is developing increasingly powerful tools that connect us to each other and the environment. Effortlessly checking temperature or pollution levels on our smartphones may be just the beginning, he says. "The new ways that we're able to tune into our surroundings should foster optimism."

ROB FISCHER, whose background is in sculpture, has been building domestic structures since college and often moves them from one remote rural landscape to another, exploring the seemingly opposing ideas of protection and adventure. While clearly not architecture, the temporarily inhabitable spaces have a dioramic quality, sometimes containing elements that hint at occupation, like a bed or stove. "I've always liked when modernist sculptors started using string and glass and plexiglass," he says, citing Constructivist sculptor Antoine Pevsner and his brother Naum Gabo as sources of inspiration. Fischer uses scrap materials to build walls, floors, roofs, and windows, creating collaged volumes that give the structures the air of having histories. He dragged *Mirrored House (Disappearing House) in the Woods* (above) to various locations (once towing it out on a lake), where it makes a kind of shimmering mirage—the surrounding landscape becomes inherent to its meaning. This itinerancy, and the rough-and-ready construction, evoke Brooklyn-based Fischer's roots in the Midwest (he still spends summers there, at a house in Minnesota) and its spirit of self-reliance and making do with what's available. Recently, Fischer's *Good Weather (Glass House)* (right and top, right) was on view at Derek Eller Gallery in Manhattan. The welded steel frame is fitted with mostly tempered glass that the artist painted with screen-printing ink. "I wanted to make a sculpture that was, at least on the surface level, really joyous and beautiful," says Fischer.

PHOTOGRAPHY: © ROB FISCHER (TOP LEFT); ADAM REICH, COURTESY THE ARTIST AND DEREK ELLER GALLERY (TOP RIGHT, BOTTOM)

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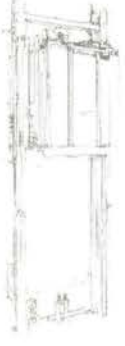

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Turin, Italy

A sleek new train station by Silvio d'Ascia Architecture helps to rejoin two long-severed neighborhoods.

By David Cohn

TUNNEL VISION Porta Susa's glass vault evokes both classic train stations and the city's glazed commercial galleries.

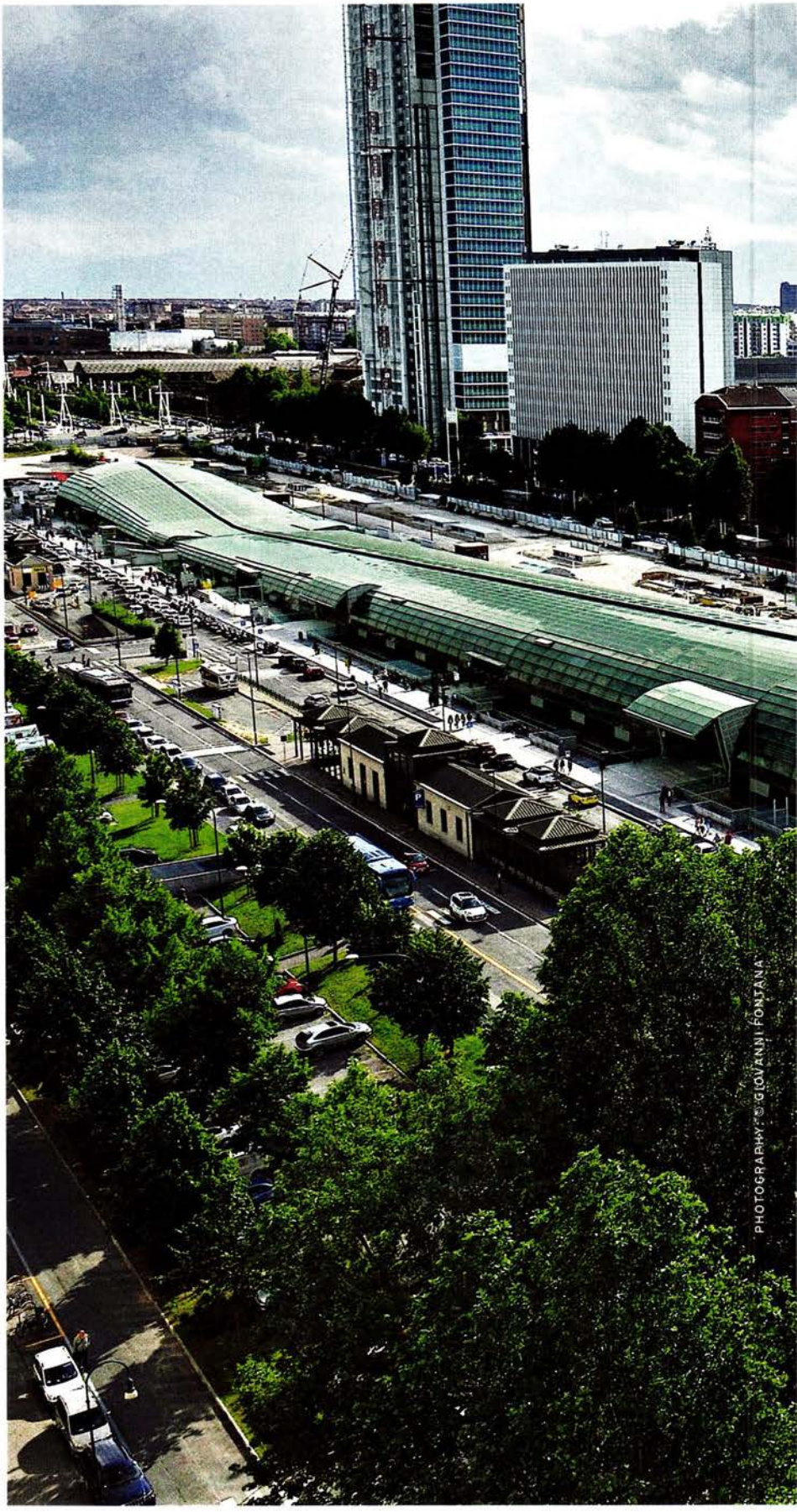
PHOTOGRAPHY: © MARCO MERLETTI

Paris-based Italian architect Silvio d'Ascia conceived Turin's Porta Susa High-Speed Train Station as a new urban crossroads. In so doing, he hoped to help suture the long-standing rift that the railroad had created between the city's disparate halves. The building's glazed, vaulted main concourse also evokes both the traditional iron-and-glass sheds of railroad terminals and the glass-roofed commercial galleries of northern Italian cities (most notably, Milan's Galleria Vittorio Emanuele II, although Turin boasts a couple of its own). D'Ascia hoped to emulate such spaces—which were a key reference for the Italian Tendenza movement, when he was a student in Naples in the 1980s—while remaining thoroughly contemporary, he says, but "without any trace of postmodernism."

The building is the centerpiece of a large-scale, ongoing urban-renewal plan known as the Spina, or Spine. The project includes burying the railroad tracks, which formerly cut off the city center on one side from a newer, more modest neighborhood on the other. Over the tracks, a new boulevard for pedestrians, bicycles, and cars will be lined with buildings. As a part of this scheme, D'Ascia's winning competition entry in 2002 included a 38-story mixed-use tower at the station's southern end, which is awaiting financing. Across the boulevard, a 550-foot office tower by Renzo Piano is now under construction.

The tube-like station, which sits above the now-buried tracks, stretches more than 1,200 feet, the same length as the high-speed trains that stop here on their way to Paris and Rome. The station also serves regional and commuter rail lines and has a metro stop, as well as underground parking. Its main concourse is one level below grade and is spanned at regular intervals by street-level bridges, which, like the larger urban plan, help connect the two sides of the city. D'Ascia has designed the new building—which replaces a smaller existing station that awaits future uses—as a magnificent promenade, soon to be filled with stores, restaurants, and cafés. He also envisions other activities for the space, such as markets, fairs, and music performances, creating a focal point where previously surface-level tracks formed a barrier across the city.

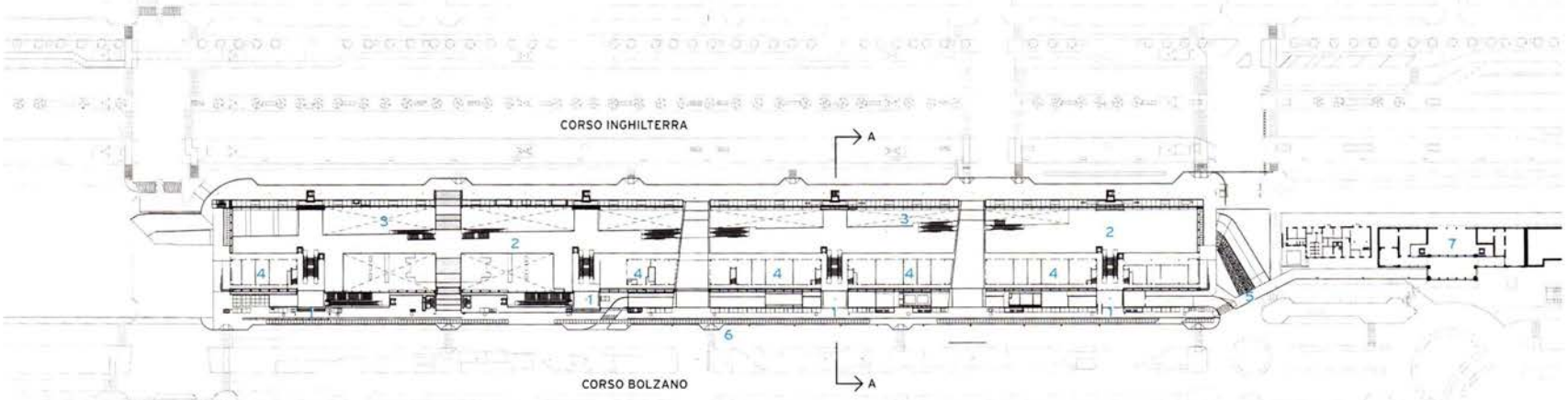
Approached from the street, Porta Susa is monumental in scale but low to the ground, communicating its role as a mediator between the city and the subterranean platforms. D'Ascia has manipulated the building's vault along its course, gradually flattening and lowering its arch toward the south, and then bringing it back up again to full height at its southern terminus, where it will connect to his future tower. "The idea was to follow the flow of the interior," he explains. "The lowest part of the gallery corresponds to the



PHOTOGRAPHY: © GIOVANNI FONTANA

LONG LOOK Spanning more than 1,200 feet, the vaulted gallery flattens along its course in response to the flow of interior spaces. A tower by Renzo Piano, now under construction, is visible in the background.

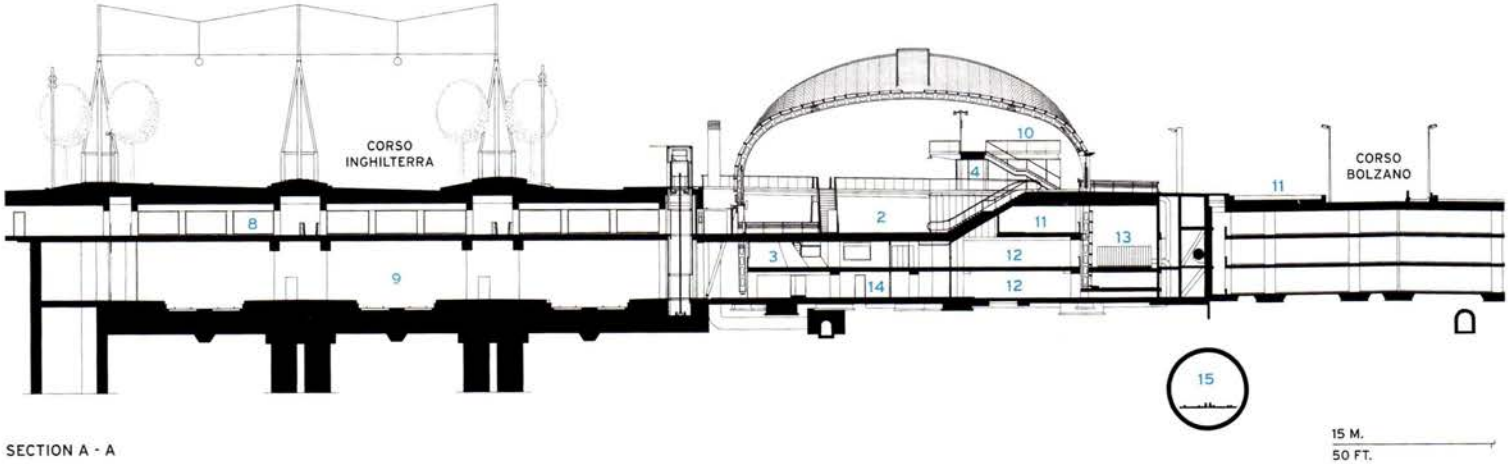

Torino Porta Susa



1 ENTRY
2 MAIN HALL
3 PEDESTRIAN RAMP TO TRAIN
4 SHOP
5 SOUTHERN ENTRY/PEDESTRIAN RAMP
6 BUS STATION/TAXI STAND
7 FORMER STATION
8 PEDESTRIAN BRIDGE TO TRAINS
9 TRAIN PLATFORM
10 CAFÉ LEVEL
11 DROP-OFF ZONE
12 PARKING
13 MECHANICAL
14 STORAGE
15 METRO

SITE PLAN

50 M.
150 FT.



SECTION A - A

15 M.
50 FT.

credits

ARCHITECT: Silvio d'Ascia Architecture – Silvio d'Ascia, architect in charge; Francesca Nicolosi, project manager; Etienne Seif, Giulia Perino, Simone Aureli, Manfredi Rubino, Antoine Rocca, Silia Barracco, Federica Ferrara, Marie Boenders, Paolo Coppola, Riccardo Camarda, Dan Dorell, Felix Levêque, Laetitia Lafourcade, Massimo Camassi, project team

ASSOCIATE ARCHITECTS: AREP; Agostino Magnaghi

ENGINEERS: Simete, AREP, Map3 (structural); Syspro (electrical); Giuseppe Amaro (fp); Gianfranco Sillitti (mechanical); Claudio La Montagna (management)

GENERAL CONTRACTORS: Cogel; Pivato; CESI

CLIENT: RFI Ferservizi (Groupe FS)

SIZE: 323,000 square feet

CONSTRUCTION COST: $88 million

COMPLETION DATE: January 2013

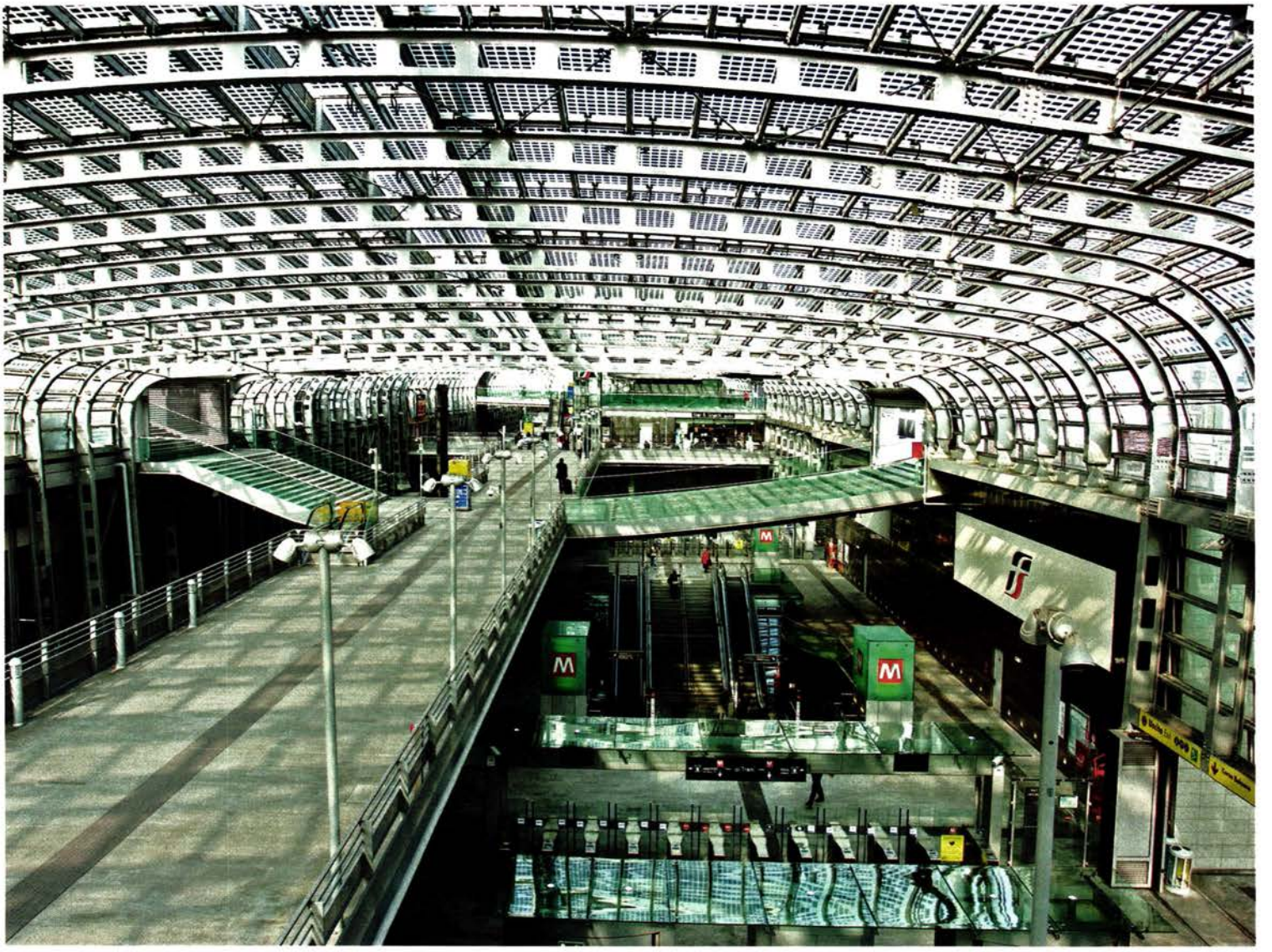
SOURCES

METAL PANELS: Cima

GLAZING: Cima, EnergyGlass

LIGHTING: Disano, Diesse Electra

ELEVATORS/ESCALATORS: Schindler



void of the metro station, 70 feet below grade." On one side of the interior, mezzanines and terraces for restaurants and shopping overlook the concourse. On the opposite side, a long ramp descends from the main concourse to the depths of the metro station.

The building's materials and detailing could be described as no-frills high-tech, in keeping with the tight budget of $90 million for over 323,000 square feet of space. The floors are of local granite, and the structure is a series of steel ribs with perforated webbing, digitally designed and fabricated to adapt to the vault's flowing shape. Grids of photovoltaic cells cover the glass and will produce 680,000 kilowatt-hours per year. The hall is ventilated via louvers between the glass panels, which are staggered like shingles to accommodate the curving profile. Fans draw cool air from the train tunnels, and a misting system produces a cooling effect on hot days.

Not all the elements of the project are smoothly resolved, however. The variety of different-shaped and -sized entries, combined with an assortment of stairs and ramps, create a visual discord along the length of the station. Additionally, exteriors are cluttered with ventilation stacks and other mechanical equipment, often less than elegantly enclosed in louvered sheds. The train platforms—which were not designed by D'Ascia but by technicians of the RFI, the state-controlled railroad—are grim, functional spaces, especially the access-ways. But the roughness of some of these elements is not out of step with the character of classic railroad stations. "This is not an airport," the architect points out. It's not a sealed, climate-controlled environment but a shed, open to the weather and to the sound of arriving trains.

The exaggerated length of the building—it is far longer than functionally necessary—echoes other features of central Turin: its boulevards with monumental arcades and its leafy avenues lined with mature trees. Its great length also recalls one of the city's most famous landmarks, the 1923 Fiat Factory at Lingotto, more than 1,600 feet long, with a test track on its roof. In 1989, Renzo Piano converted the building into a multiuse commercial and cultural center, creating an urban amenity for the city's working-class district and Turin as a whole. As the Porta Susa concourse fills out with activity, this role as a thronging pedestrian thoroughfare is one it can aspire to as well. ■

GRAND GESTURE
Bridges span the concourse at entry points to connect the two halves of the city (above). The former station (opposite) still occupies the site. Its future use remains to be determined.

Let's Fly Away

Long Beach, California

HOK's new passenger concourses recall the relaxed atmosphere of early air travel.

By Sarah Amelar
Photography by David Lena

TOP FLIGHT
The meet-and-greet plaza (above) has views through a glass wall into the secure outdoor space, where arriving and screened departing passengers circulate. Deep overhangs, or canopies, provide shade and sheltered routes for the occasional rainy day. The benches, like the boardwalk in the secure garden, are made from ipé.

THE HISTORY of aviation in Long Beach, California, is legendary—from the landing, on its sandy shores, of the first transcontinental flight to its female-powered aircraft production during World War II and its more recent output of mammoth commercial and military jets. Yet, decades after vast and complex airports became the norm, Long Beach (LGB)'s passenger terminal remained a quaint relic of a bygone era.

In the romantic spirit of early air travel, W. Horace Austin and Kenneth Wing designed this gleaming-white Streamline Moderne structure in 1941 with nautical portholes and heroic floor mosaics. Even as modern jets dwarfed the classic 24,000-square-foot terminal, its curb-to-gate journey, typically with just a couple of planes boarding at once, was a breeze, reminiscent of a small island airport.

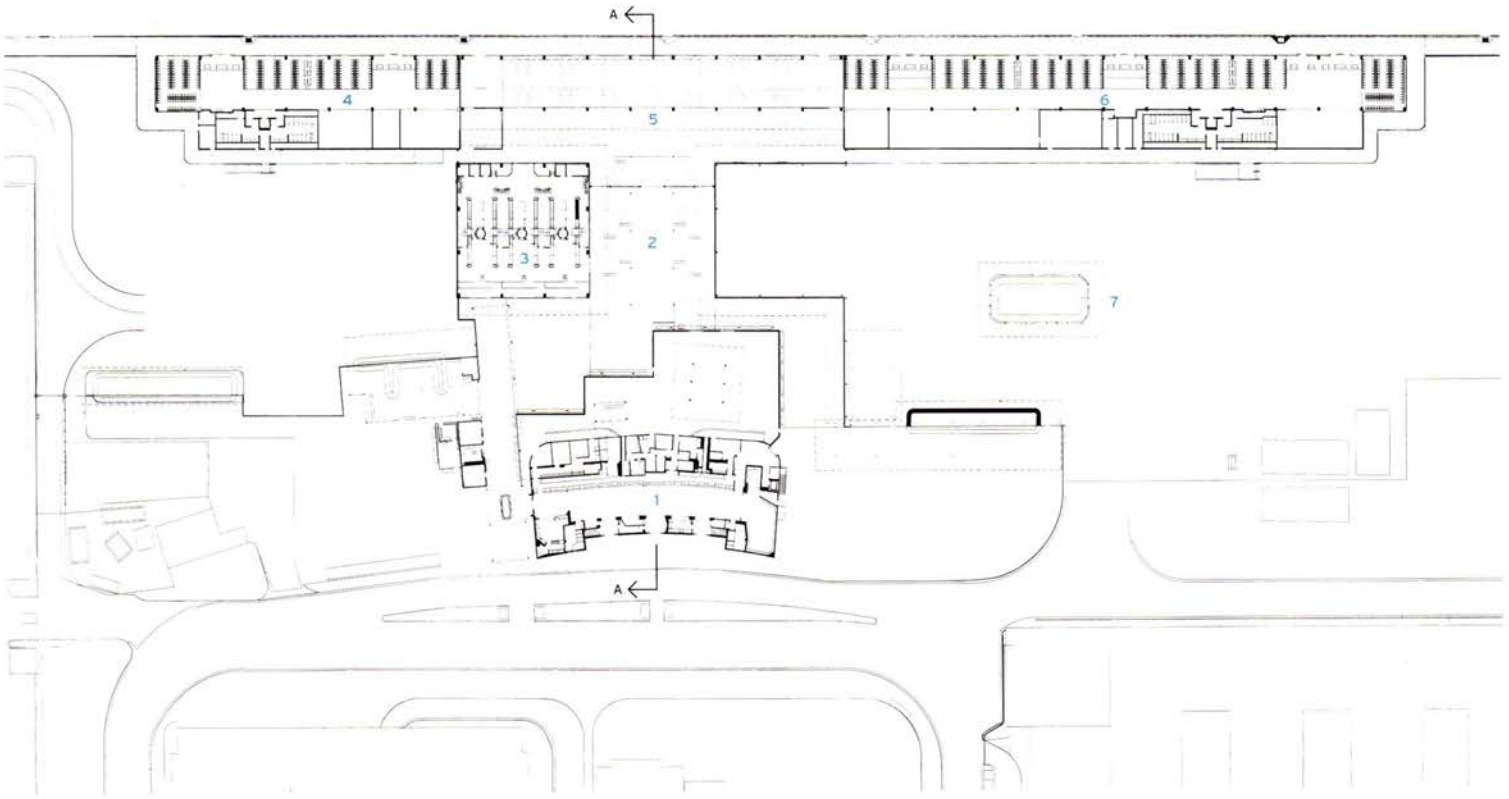
As jet sizes and security requirements grew, LGB inserted a cluster of ad hoc passenger-handling structures—including more than 20 converted trailers—between the original building and its more ambitious airside. Despite the modesty of this municipal facility, it's always had impressive runways to accommodate the high-powered aeronautical manufacturers sharing the airfield. Along its edges, Boeing operates the former Douglas (later McDonnell-Douglas) plant, whose production has included DC-10s and C-17s, and Gulfstream Aerospace runs a finishing and servicing center.

In 2005, the airport explored updating the passenger facilities, engaging CH2M Hill engineers, with HOK, to produce an environmental-impact report (EIR). But community opposition—centered on Long Beach's stringent noise-abatement policies—stalled further work. There was also concern about preserving the prominence and integrity of this landmarked icon, as well as the ease and spirit of traveling through it.

By late 2010—agreeing on conditions such as capping the number of gates at the existing 11—the airport and community were finally ready to move forward. For the multiphased $140 million plan, HOK won the $45 million commission to design LGB's new concourses—providing gate-side boarding lounges and concessions—plus a security-screening building, a central meet-and-greet plaza, and adjacent grounds. (The historic terminal's renovation will occur in a later phase.)

Inspired by Southern California's mild climate, HOK's solution interweaves secure indoor and outdoor spaces,

BON VOYAGE
The security-checkpoint building (above) borders the meet-and-greet plaza. Transparency characterizes all of HOK's new structures at LGB. The plaza and the secure garden (left) are landscaped with drought-tolerant native plants. The historic terminal, with its restaurant and original control tower, is visible throughout the rest of the airport.



SITE PLAN

15 M.
50 FT.

1 HISTORIC TERMINAL
2 MEET-AND-GREET PLAZA
3 SECURITY CHECKPOINT
4 SOUTH CONCOURSE
5 GARDEN
6 NORTH CONCOURSE
7 BAGGAGE HANDLING

credits

ARCHITECT: HOK – Ernest Cirangle, design principal; Dave Holloway, project manager; Chris Anderson, project designer; Kyle Wang, construction administrator; Ellen Resurreccion, intern; Analisa Alt, interior designer

ENGINEERS: Saiful Bouquet (structural); VCA (civil); Syska Hennessy Group (m/e/p/fp); Faith Group (IT); Kleinfelder (geotechnical)

CONSULTANTS: Meléndrez (landscape); Horton Lees Brogden (lighting); Newson Brown (acoustical)

GENERAL CONTRACTOR: Soltek Pacific

CLIENT: Long Beach Airport

OWNER: City of Long Beach

SIZE: 46,000 square feet

CONSTRUCTION COST: $28 million

PROJECT COST: $45 million

COMPLETION DATE: December 2012

SOURCES

GLAZING: Oldcastle BuildingEnvelope

DOORS: LaCantina Doors, Arcadia, Stiles, Besam

EXTERIOR LIGHTING: Birchwood Lighting, Bega, Lithonia

SECTION A - A

6 M.
20 FT.

keeping the airport experience relaxed, even resortlike, while, almost imperceptibly, meeting the constraints of budget, access controls, and EIR-allowed square footage.

The modernization keeps the 1941 terminal front and center, the airport's gateway and pinnacle. The building houses many of its original functions: ticketing and check-in at grade; a restaurant overlooking the airfield one floor up; and a control tower, now used for backup operations, at the top. Still freestanding and requiring no security clearance for its public interior spaces, the building allows 360-degree circulation around its perimeter.

Beyond it, travelers pass HOK's open-air meet-and-greet plaza, en route to the 8,900-square-foot security-checkpoint building. Its steel moment frame allows for flexibility. "The TSA's setup changes all the time," explains HOK design principal Ernest Cirangle, "so we needed to design for that."

Once screened, passengers have the rare opportunity—within an airport—to enjoy the outdoors. To reach the concourses, they cross a secure 21,000-square-foot garden, studded with palm trees and native drought-tolerant plants. Its canopy-shaded wooden boardwalks evoke the city's beachfront. And the concessions are all local, including coffee and wine bars, plus a patio with fire pit–side dining.

Transparent and clean-edged, HOK's long, rectangular concourses house the boarding gates in two separate, aligned buildings (25,000 and 13,000 square feet, respectively). Between them is a garden, on axis with the original control tower.

The decision not to install any boarding bridges saved about $500,000 each (from a budget already significantly lower per gate than the average airport). It also let the architects keep the concourses low: one story, rather than the two required for jetways. So, the 1941 building remains visible throughout the facility.

"We weren't trying to mimic or upstage the historic terminal," says Cirangle of HOK's design, now on track for LEED Gold certification. "Our idea was to quietly offer a different, but compatible experience that would complement or resonate with the original." Retaining the sense of convenience, clarity, and proximity to the aircraft, the boarding lounges are at grade, with polished-concrete floors flowing directly out to the tarmac.

"It's more like a destination than a transportation hub," says LBG senior civil engineer Jeff Sedlak. "I've seen *arriving* passengers lingering here for a glass of wine or a meal before exiting security." And he often spots people snapping photos of the airport concourses—perhaps because the palm tree-and-boardwalk ambience has a way of making any arrival, whatever its purpose, feel like the beginning of a vacation. ■

TRANSPORTING EXPERIENCE
Smooth polished-concrete floors (top) line the concourse buildings. The decision not to install jetways allowed the architects to keep the gate lounges at grade, connecting directly to the tarmac (above). Instead of boarding bridges, LBG uses portable metal stairs and ramps.

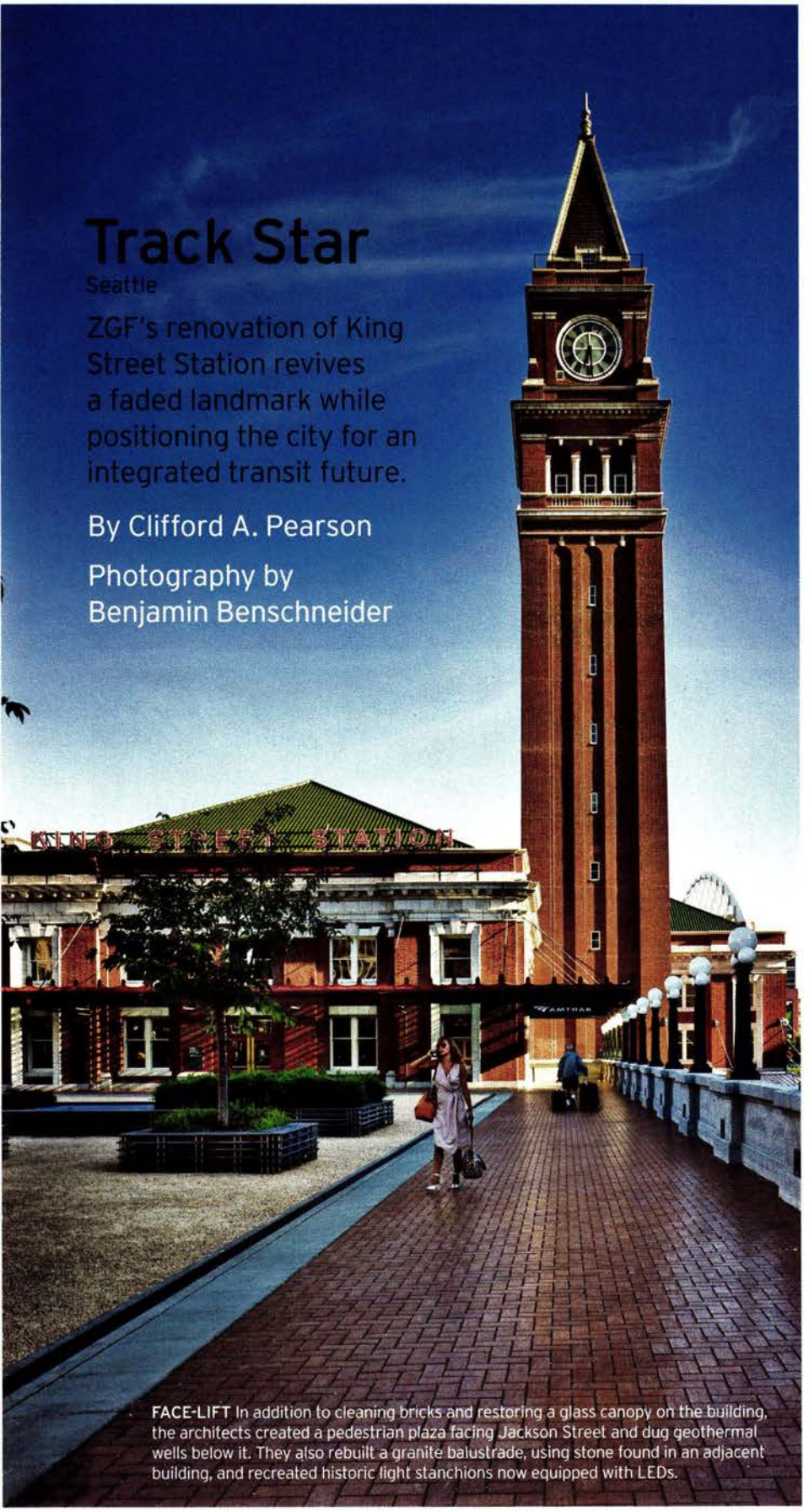
Track Star

Seattle

ZGF's renovation of King Street Station revives a faded landmark while positioning the city for an integrated transit future.

By Clifford A. Pearson

Photography by Benjamin Benschneider



FACE-LIFT In addition to cleaning bricks and restoring a glass canopy on the building, the architects created a pedestrian plaza facing Jackson Street and dug geothermal wells below it. They also rebuilt a granite balustrade, using stone found in an adjacent building, and recreated historic light stanchions now equipped with LEDs.

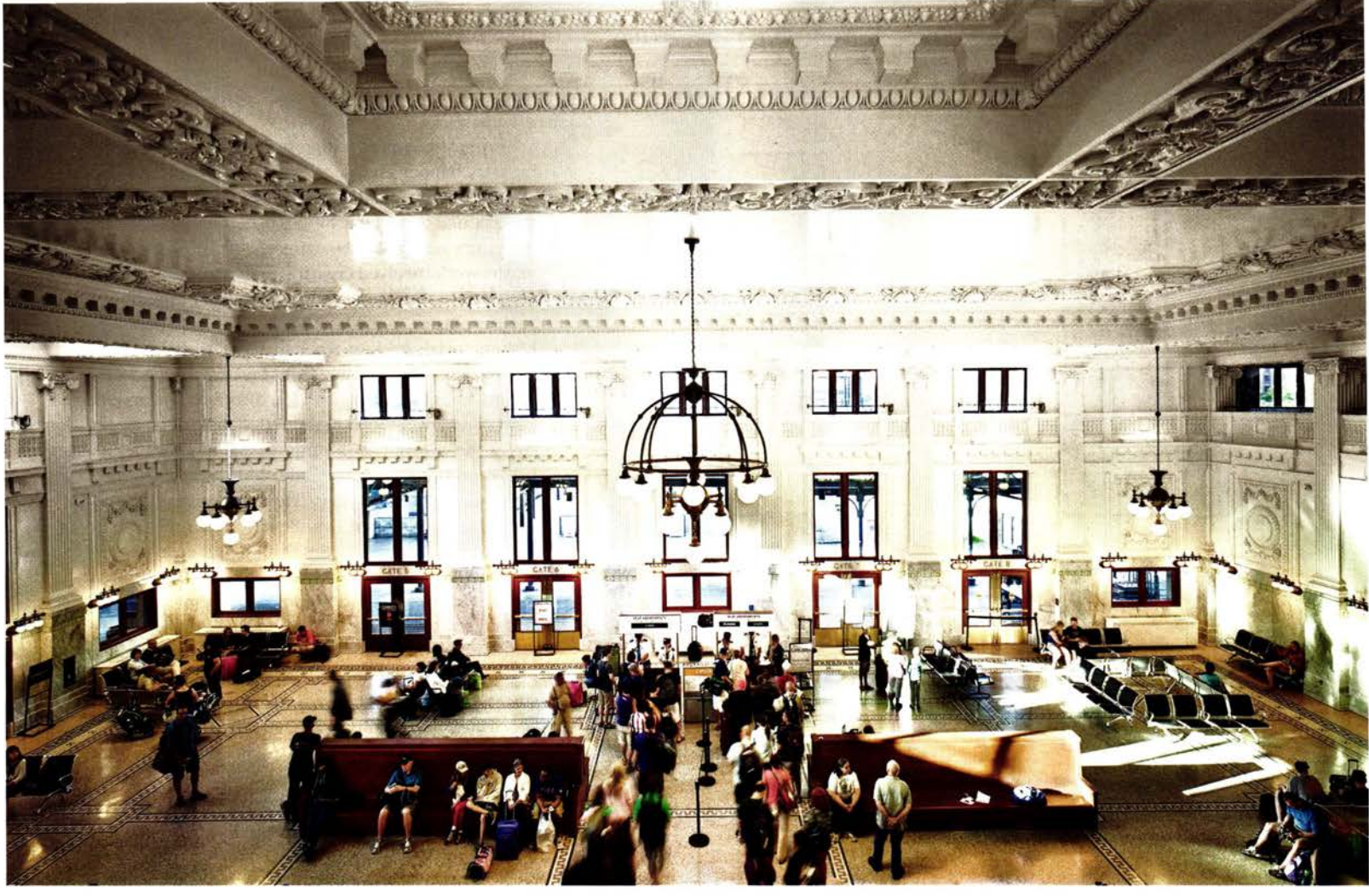
ALTHOUGH JUST 1,800 Amtrak passengers use it each day, the recently renovated King Street Station in Seattle serves as a landmark and urban catalyst at the junction of several changing neighborhoods. With historic Pioneer Square to the north and the ethnically diverse International District to the east, the station is playing an important role in stitching together a part of town that had become quite ragged over the past few decades. Major new developments nearby—such as two sports stadiums and a $300 million mixed-use complex called Stadium Place—are turning the area into a critical hub increasingly reliant on mass transportation. Within just a few blocks, you'll find a Sounder commuter rail station, two Link light-rail stations connecting downtown to the Seattle-Tacoma airport, and, starting this fall, new streetcar stops.

With its 242-foot-tall campanile, modeled after Venice's in the Piazza San Marco, the King Street Station asserts a strong presence. Completed in 1906, the red-brick Italianate building was designed by Reed & Stem, one of the architects of New York's Grand Central Terminal, which opened seven years later. The downturn in long-distance rail travel in the second half of the 20th century and the persistent financial woes of Amtrak, the station's sole tenant, led to a steady deterioration in the building's condition. An unsympathetic remodeling in 1965 concealed the main waiting room's ornate coffered ceiling and a second-floor arcade. It also ripped out much of the interior's intricate plasterwork and marble finishes, and replaced a stair on the west side of the building with an escalator.

The station's fortunes changed for the better when the City of Seattle bought the building in 2008 for $10 from the Burlington Northern Santa Fe Railroad and, in 2010, hired ZGF Architects to oversee a complete renovation. The city's department of transportation would eventually cobble together $55 million in funding from 15 different sources, including federal, state, and city agencies, and nonprofit organizations. By restoring the 62,400-square-foot building to its former glory, government officials hoped to use the project as leverage to revive Seattle's original downtown, an area dating back to 1852. All the work on the station had to be done while Amtrak used the facility without interruption.

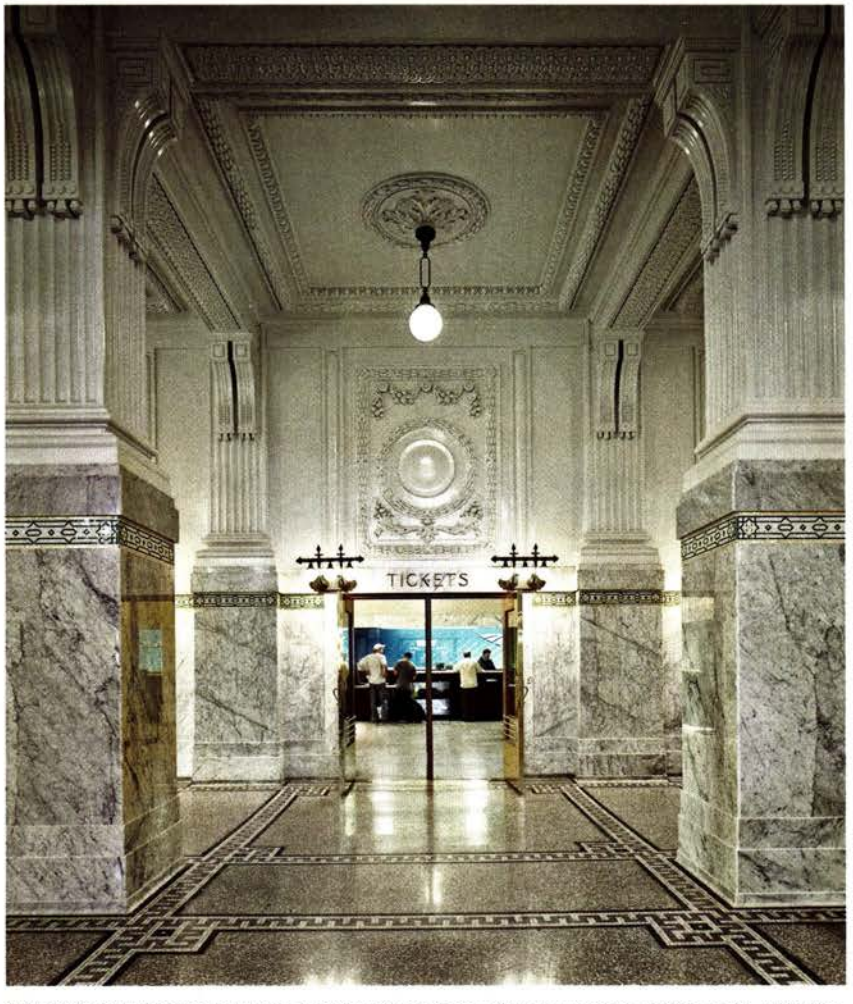
Even before ZGF got involved, the city started repairing the old building. In 2008, it hired Otak—a planning, design, and engineering firm—to renovate the station's roofs, specifying new green-glazed terra-cotta tiles from the company that manufactured the original ones and installing them on the main building. On the campanile, it used salvaged glass tiles for the pyramidal roof and fixed the four clocks.

Once ZGF was onboard, work began on a major seismic upgrading that would eventually account for more than 40 percent of the project's total cost, $55 million. In the main public areas, ZGF and engineers at Arup carefully slipped new steel elements behind surfaces whose historic finishes were being restored. To keep the new structure flush with the building envelope, the designers cut 35-foot-high slots within the brick perimeter, inserted steel columns and high-strength grouting, then connected the columns with flat steel plates. In places where historic finishes were not being restored, they employed less expensive steel cross bracing.



TIME TRAVEL
The project's first phase involved repairing the station's roof with glazed terra-cotta tiles from the company that made the originals, rebuilding the campanile's roof with salvaged glass tiles, and fixing the tower's four clocks (left). In the main waiting room (above), workers removed a dropped ceiling added in the 1960s and repaired or recreated ornamental plasterwork and other finishes. Old wood benches came from a nearby train station.

1 ENTRANCE
2 AMTRAK BAGGAGE/TICKETING/WAITING
3 AMTRAK BACK OF HOUSE
4 MECHANICAL
5 LEASE SPACE



TRADING PLACES The ticketing area occupies a place originally used as a dining room, while the former women's waiting room is now leasable space that could accommodate a restaurant.

For most people catching trains at the station today, the big wow happens in the main waiting room, where a suspended ceiling installed in the 1960s was removed to reveal the original ornate one and to bring in more daylight from clerestory windows. Repairing the old ceiling and other plasterwork involved creating molds from existing sections and then casting new sections using traditional materials such as plaster, hemp, and burlap. The architects also brought lush materials back to other surfaces, finishing walls with gray-veined white marble from Carrara, Italy (since the original quarries in Alaska had closed) and repairing terrazzo floors and jewel-toned mosaic tiles on both walls and floors.

On the exterior, ZGF simplified vehicular and pedestrian traffic on the King Street side, while rebuilding the metal canopy over the entrance. The firm removed the 1960s escalator that had marred this elevation and rebuilt a covered staircase that connects the King Street entrance to Jackson Street 18 feet above. Eliminating a parking lot on Jackson Street, the architects redesigned this upper level as a pedestrian plaza with planters and seating, and recreated 23 old bronze-and-glass light stanchions now equipped with LEDs.

From the beginning of the project, the client made sustainability a critical goal. As a result, the building today consumes 68 percent less energy than before the renovation, according to ZGF. To accomplish this, the firm dug geothermal wells below the Jackson Street plaza, used ground-source heat pumps for heating and cooling, and restored operable windows throughout the building. Photovoltaics on a restored trackside canopy and water harvesting for toilet flushing also helped the project earn LEED Platinum certification.

"King Street Station had long played a critical role in the civic life of the city," says Tim Williams, the project manager at ZGF. "Our goal was to restore that." The building's ties to the rest of the city will be strengthened when retail space adjacent to the Jackson Street plaza is leased and more direct connections are made to the commuter and Link rail stations. Until then, the building bridges Seattle's past to a still-evolving future. ■

credits

ARCHITECT: ZGF Architects – Bob Zimmerman, partner in charge; Greg Baldwin, design partner; Tim Williams, project manager; Carlos Bres, Tony Delles, Chris Frost, project architects; Kim Myran, Melissa Eby, interior designers; David Grant, landscape architect; Randal Bennett; Marc Chavez, Brian Geller, design team

ENGINEERS: Arup and Coughlin Porter Lundeen (structural); KPFF (civil); Rushing (m/e/p)

CONSULTANTS: Pivotal Lighting Design, Affiliated Engineers, Eleek (lighting); Artifacts Consulting (historic preservation); Hart Crowser & Associates (geotechnical); Performance Consulting, EverGreene Architectural Arts (plaster restoration)

GENERAL CONTRACTOR: Sellen

CLIENT: Seattle Department of Transportation

SIZE: 62,400 square feet

CONSTRUCTION COST: $39 million

PROJECT COST: $55 million

COMPLETION DATE: May 2013

SOURCES

GLASS: Oldcastle BuildingEnvelope

CLOSERS: Norton

EXTERIOR SEATING: Landscapeforms

EXTERIOR LIGHTING: Sistemalux

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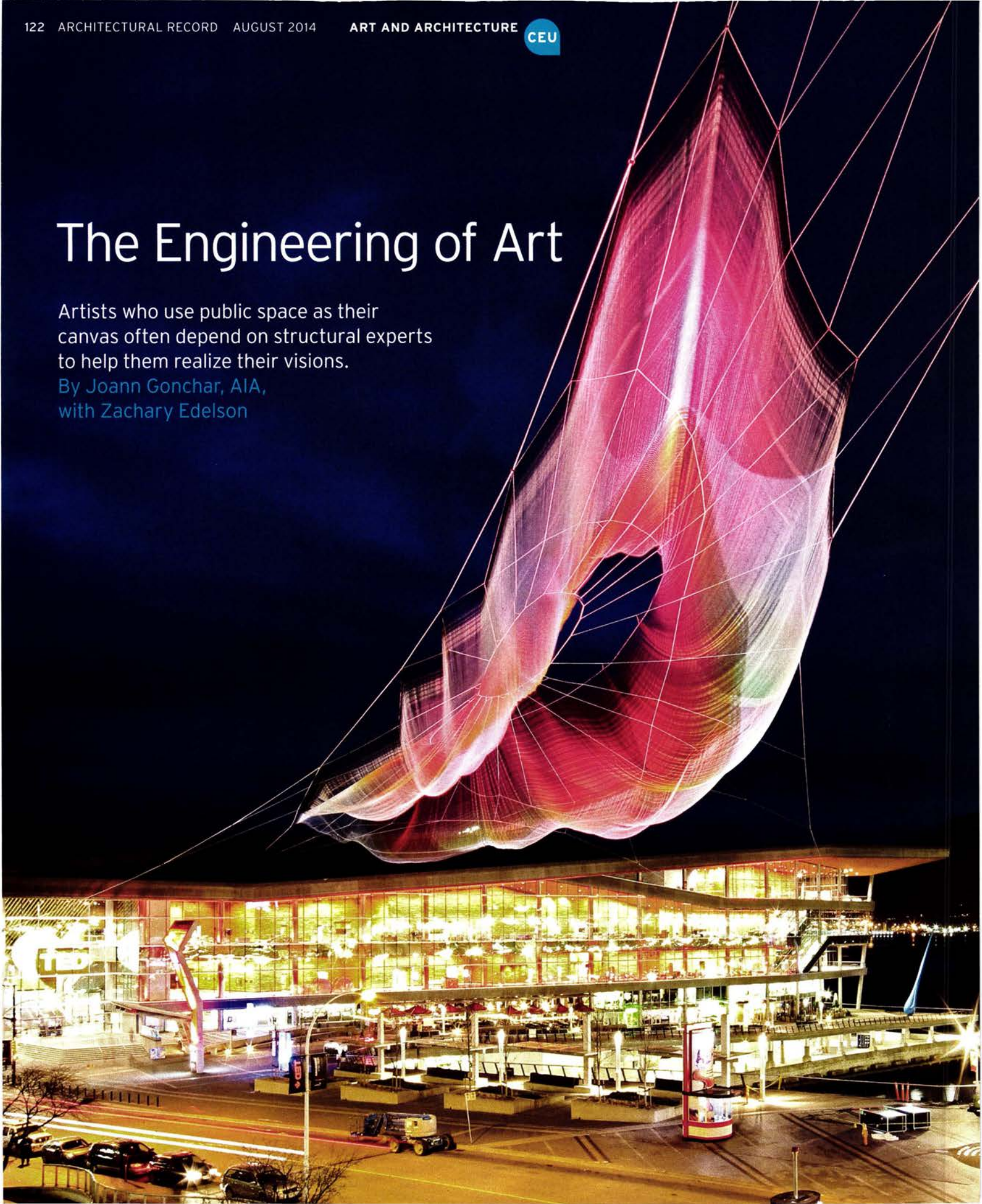
CIRCLE 18

The Engineering of Art

Artists who use public space as their canvas often depend on structural experts to help them realize their visions.

By Joann Gonchar, AIA, with Zachary Edelson



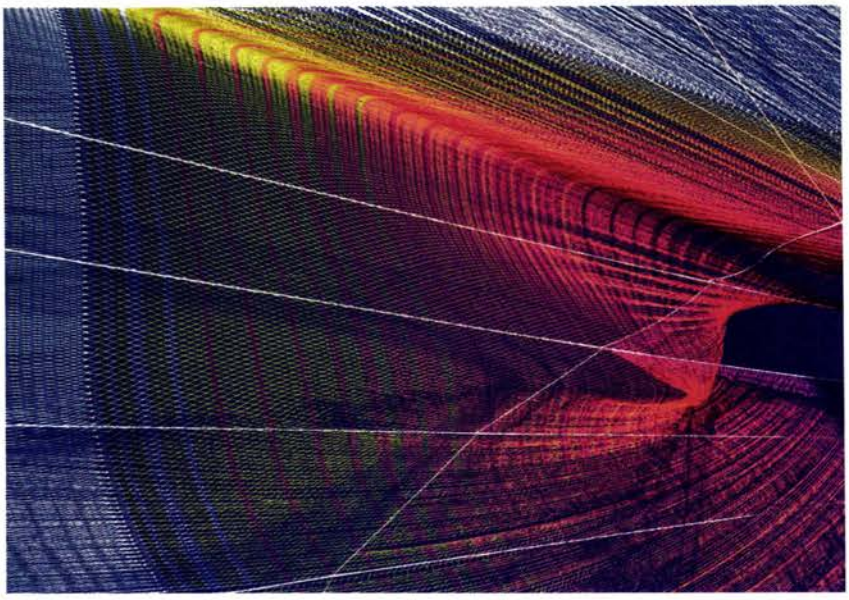
THE ARTIST toiling in solitude has long been a romantic ideal. But it rarely holds in reality, especially for those who work at the civic scale, making pieces that straddle the blurry boundary between art and architecture. These artists rarely work alone, typically relying on a host of collaborators to realize their visions, including studio assistants, fabricators, and even city officials. Frequently, they also need engineers–not only to ensure the works' structural soundness and the public's safety, but also to understand or refine the response of their pieces to the surrounding environment.

Engineers who work with artists say it can provide a particularly satisfying challenge, especially when it involves unconventional materials. There are rarely codes or prescriptive design standards that apply to such structures; instead, they must depend on the fundamentals of engineering physics.

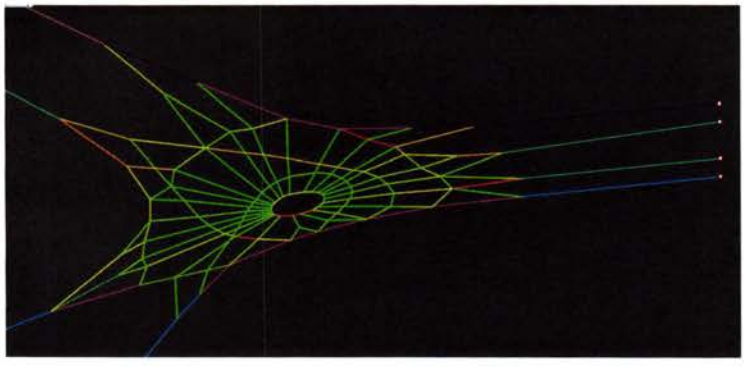
PUBLIC ANEMONE

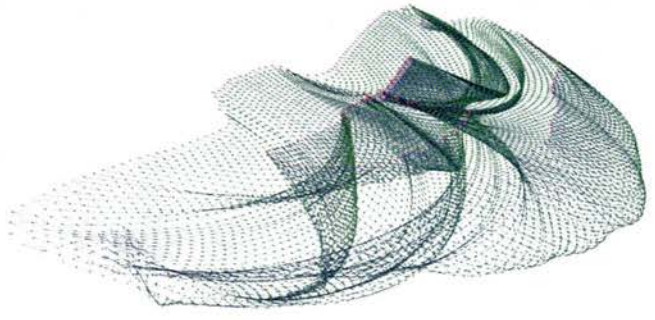
The collaboration between the Seattle office of Arup and Boston-based artist Janet Echelman illustrates this reliance on "first principles" of engineering, as Cormac Deavy, an Arup principal, puts it. Echelman's installations, often made of woven net, respond to the forces of nature, including wind, sun, and water. Her most recently completed piece–*Skies Painted with Unnumbered Sparks*–was installed for about two weeks in March outside the Vancouver Convention Centre, marking the 30th anniversary of the Technology, Entertainment and Design (TED) Talks and the event's move to British Columbia from its previous home in Long Beach, California.

The work, which resembles an airborne sea anemone, ripples and undulates against the sky. It animates the public space below with its constantly changing form and an interactive feature, devised with the help of Google, that allows visitors to control its lighting with their mobile devices.



Unnumbered Sparks is made of almost 1 million feet of braided fibers held together by 8,600 machine- and hand-tied knots. It ripples and undulates in the wind and appears lighter than air, even though it weighs about 3,200 pounds.





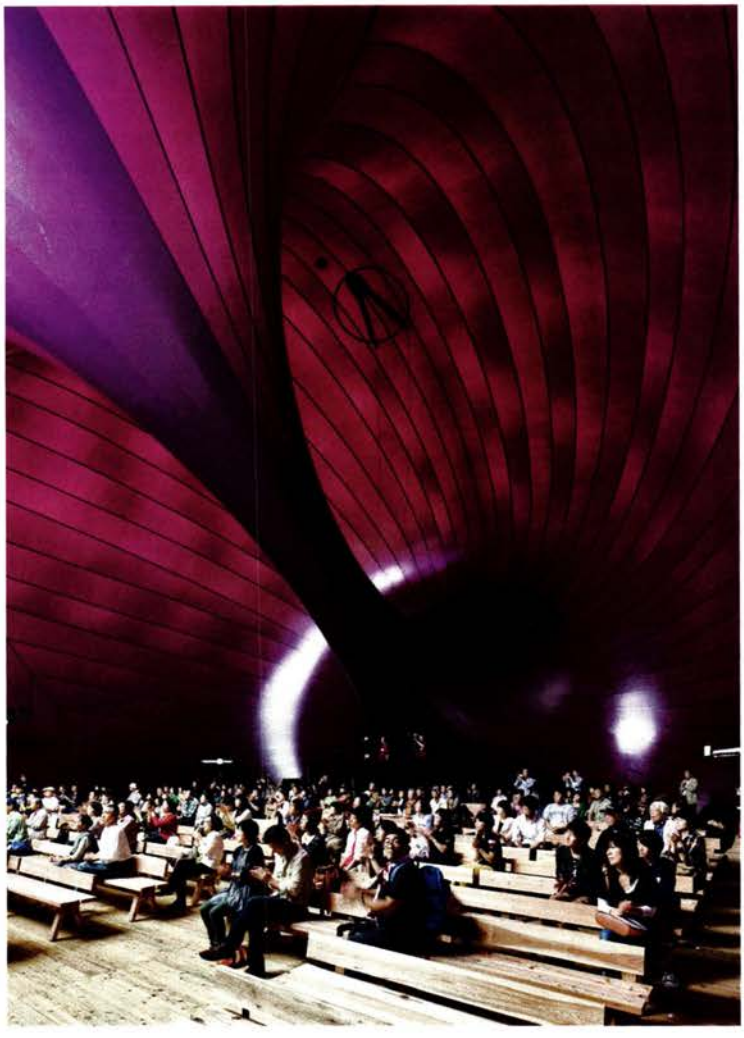
SKIES PAINTED WITH UNNUMBERED SPARKS, VANCOUVER, CANADA
Janet Echelman's 745-foot-long sculpture, installed for about two weeks in March outside the Vancouver Convention Centre (opposite), is the largest prestressed rope structure in the world, according to engineers at Arup. It consists of a structural net of polyethylene rope and a draped net of polyester twine. Among the analyses that engineers performed were iterative studies of the stresses in the structural net (above, top)–with the goal of achieving a uniform distribution–and explorations of the deformations of the draped net (above) from wind.

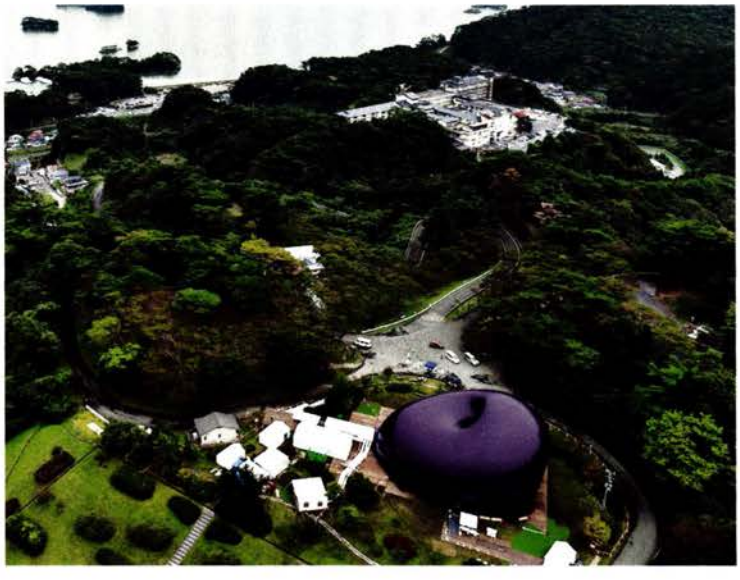
Spanning a plaza between the convention center and a hotel across the street, *Unnumbered Sparks* consists of a structural net made of polyethylene rope that's about 1.5 inches in diameter, and a draped net of polyester twine held together by 8,600 hand- and machine-tied knots. At 745 feet long, it is more than twice the size of any of Echelman's earlier pieces. However, Echelman maintains that bigger isn't necessarily better. "Everything is about the proportional relationship between the human body and the spatial context," she says, adding, "It is about finding the right scale for the right place."

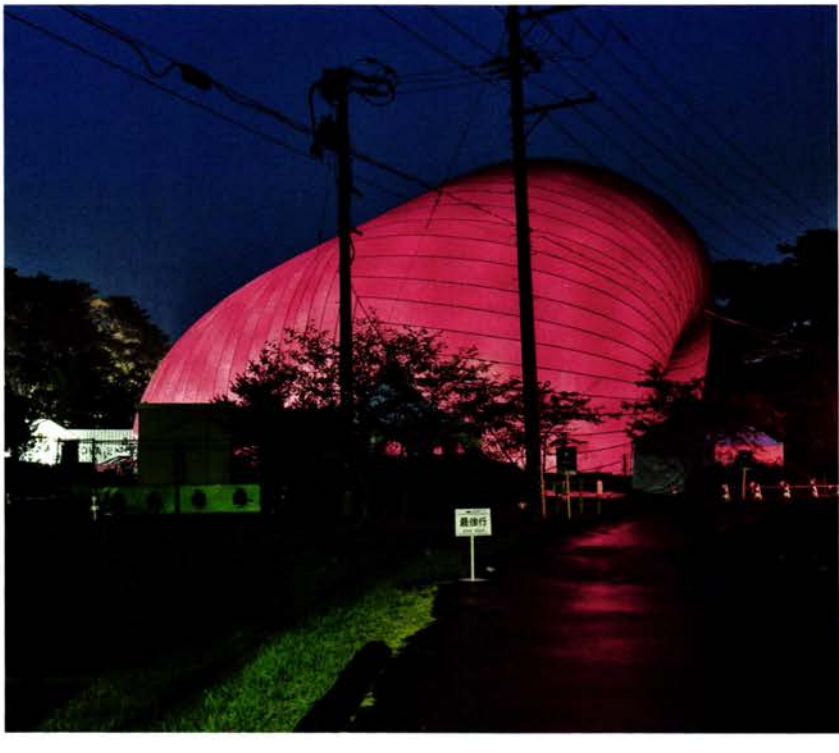
Although size, in and of itself, was not one of Echelman's goals, *Unnumbered Sparks* turns out to be the largest prestressed rope structure in the world, according to Clayton Binkley, an Arup senior engineer. (The piece is "prestressed," he explains, because tension has been applied to the structural net during installation in addition to the loads created by the work's own weight.) Complexities accompany this distinction, since the magnitude of the forces in the rope net are proportional to the square of the span.

Working closely with Echelman's studio, in a highly iterative process, Arup studied various aspects of the piece, such as the size and number of panels making up each section of the draped net. Echelman and her team used custom software developed for her by Autodesk, and Arup, in turn, used the data generated by the tool for its analyses, which included evaluating the distribution of stresses over both the draped net and the cover net, as well as modeling the sculpture's response to the wind. Often they would rely on algorithms that Arup developed specifically for Echelman's work.

Based on these investigations, Arup provided the artist with design parameters, including a weight limit. With such information, she could make some areas of netting more dense and others more open. The structural consideration that governed the design was actually how much wind *Unnumbered Sparks* would catch–a quantity dependent on the net's surface area–rather than how heavy it was. But weight provided a metric that was easier to work with than twine area was, explains Binkley.







ARK NOVA, MATSUSHIMA, JAPAN Conceived as a performance venue that would tour the region of Japan devastated by the 2011 Tohoku earthquake and tsunami, *Ark Nova* was first deployed last fall in Matsushima (top, right). The inflatable 500-seat hall, designed by Anish Kapoor and Arata Isozaki, is enclosed by 22,000 square feet of PVC-coated polyester. The normally opaque eggplant-colored membrane becomes nearly translucent when light shines through it. The welded seams between sections of the skin are revealed on the interior during the day (above) and on the outside at night, when Ark Nova is illuminated from within (bottom, right).

The final sculpture weighed in at about 3,200 pounds, which included its moorings to the convention center and the hotel, devised by local engineers Glotman Simpson. These connections—five sets of eyelets and shackles for each building—tied into the existing structures' columns with steel plates and epoxy, and were designed to withstand 200,000 pounds of wind force, a load that firm principal Rob Simpson considered the "worst-case" scenario.

The anchorage details, as well as the structural net, will need to be modified if *Unnumbered Sparks* is installed elsewhere—a possibility that Echelman says she is exploring with several cities, both in the United States and internationally.

PLUM COMMISSION

Wind loads were also a critical concern for *Ark Nova*, an inflatable and movable concert hall designed by London-based sculptor Anish Kapoor and Tokyo-based architect Arata Isozaki. First deployed for a music festival held last fall in Matsushima, Japan, the bloblike but engaging form of eggplant-colored PVC-coated polyester was conceived as a performance venue that would tour the region affected by the 2011 Tohoku earthquake and tsunami.

Mitigating the response of the roughly 500-seat hall to the wind was particularly tricky, since the 318,000-cubic-foot volume has a "toroidal" form—one that turns in on itself—creating a diagonal tube that penetrates the interior. Wind flowing through this tube accelerates and can produce suction, explains Christopher Hornzee-Jones, director of Aerotrope, a London-based aeronautical and structural-engineering firm that has consulted on Kapoor's projects for more than a decade.

To counteract uplift forces, Aerotrope studied several possibilities for securing the hall, including ground anchors and water-filled containers as ballast. Hornzee-Jones preferred the latter solution, because it would be simple to transport the containers once they were emptied. But, due to concerns about the containers' performance during an

AIR GARDEN, LOS ANGELES Ball-Nogues Studios' installation for the Los Angeles International Airport extends 95 feet below a skylight to just 13 feet above the floor (above). The almost 6,000-pound sculpture is made of thousands of stainless-steel bead chains suspended from six cables (top, right) that in turn are hung from the skylight's structural members. The colorful chains overlap in space, creating moiré patterns (right) that shift depending on the quality of light coming through the skylight and the vantage point of the viewer.

earthquake, the team finally settled on a more conventional ballast system of steel plates. "We didn't have the development time to prove that it would all be okay," he says, "though I am sure it could be done."

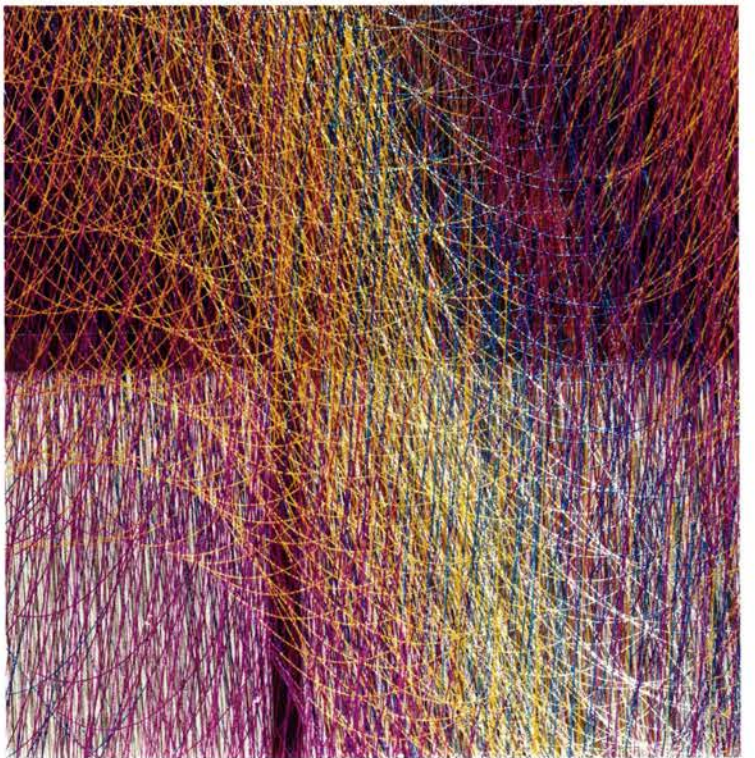
According to Hornzee-Jones, the fabric itself can withstand high forces sustained for a short amount of time, such as those produced by gusts. But one concern over the long term, he says, is creep—deformation that increases over time when stress is maintained on a material. To mitigate this phenomenon, *Ark Nova*'s inflation pressure is kept at a level adequate to maintain its form but low enough to limit the permanent stresses on the membrane.

Critical to the perception of the concert hall's shape is the articulation provided by the seams between sections of membrane fabric. These are particularly evident from the inside during the day, when sunlight shining through the skin makes it almost translucent. Aerotrope, along with Tensys, a firm that specializes in tensile structures, worked out the layout of the seams with Kapoor and Isozaki before sending the final geometry and detailed engineering studies to MakMax, the fabricator in Japan. MakMax generated the cutting files and welded the pieces together to create a single membrane with a surface area of 22,000 square feet.

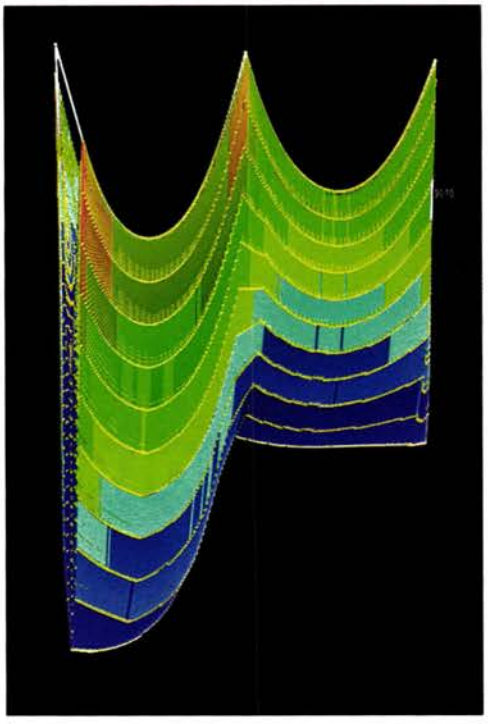
Last October, after the festival in Matsushima ended, *Ark Nova* was deflated and folded in a packing sequence carefully worked out to avoid damage to the membrane. The resulting bundle, which Hornzee-Jones describes as "a several-ton brick," now awaits deployment this coming fall at a yet-to-be-announced location elsewhere in the Tohoku region.

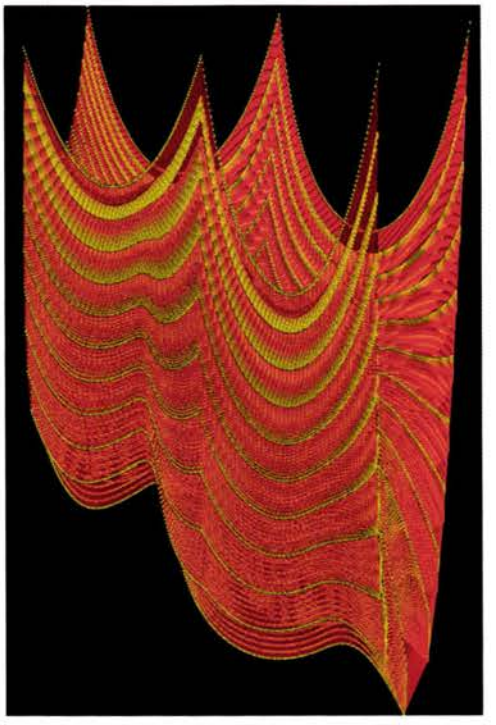
JUST BEAD IT

Not all civic-scale installations are exposed to the elements, as *Ark Nova* and *Unnumbered Sparks* were. *Air Garden*, a permanent piece completed last fall by Los Angeles–based design and fabrication practice Ball-Nogues Studio, is sheltered from the wind and rain. Made of thousands of



PHOTOGRAPHY: © JOSHUA WHITE (LEFT AND BOTTOM); COURTESY BALL-NOGUES (MIDDLE)





Engineers from Buro Happold created a finite-element-analysis model of *Air Garden*. An axonometric view (left) created from this model, reveals the amount and complexity of the data that was analyzed. Among the studies that the engineers performed for Ball-Nogues was an examination of the forces acting on the bead chains (far left). Stress increases near the supports, since the uppermost sections of the bead chains must carry the weight of those below.

stainless-steel-bead chains—the type that are often used as light pulls—the sculpture is installed inside the Tom Bradley International Terminal at the Los Angeles International Airport, extending down 95 feet below a skylight.

But even though architects Benjamin Ball and Gaston Nogues did not have to consider the impact of weather on their piece, the design process and structural analysis of *Air Garden* were far from straightforward. The colorful bead chains hang from six cables that in turn are suspended directly from the skylight's structural elements, an arrangement that creates difficult-to-analyze double catenaries. The almost 6,000-pound sculpture "is entirely soft in tension, like a big wet rag," says Ball. "If you move one point, the whole thing changes."

The result is considerably more appealing than a wet rag: *Air Garden* is a diaphanous veil with moiré patterns that shift depending on one's vantage point and the quality of light coming through the skylight. In order to predict these effects during design, Ball and Nogues use proprietary software created specially for them, as well as visualization tricks that help the designers cope with the resolution limitations of a computer screen. "The size of a pixel is greater than the width of a bead chain," Ball points out.

To determine how best to attach the piece to the skylight and understand the loads and stresses in each of the bead chains and cables, Ball-Nogues worked closely with the Los Angeles office of engineering firm Buro Happold. Using a method of numerical analysis known as "dynamic relaxation," the firm also helped the designers fine-tune *Air Garden*'s ultimate geometry. The technique can be used to determine, for example, how much the individual bead chains will stretch due to gravity, how weight would be redistributed as a result, and how long each chain should be, explains Ron Elad, an associate principal in Buro Happold's Los Angeles office.

Elad emphasizes that even before this step, *Air Garden*'s form was nearly set. "The architecture and design tools get very close to the final solution," he says. What's more, the piece is the product of themes that Ball-Nogues has been exploring for several years. "They select a material and technology that they want to work with and continue to refine them, each time pushing them more and more," says Elad. But that is what he finds so satisfying about working with Ball-Nogues and artists in general: "It is an opportunity to show the care we take to create elegant solutions," he says.

These sentiments echo those of Aerotrope's Hornzee-Jones, who maintains that, with artwork, "it is absolutely crucial that the details all come out right, even if that means they essentially disappear." He seems to have no qualms, however, about his efforts' being almost invisible. "It's when the engineering disappears," he says, "that you end up with art." ■

IMAGES: COURTESY BURO HAPPOLD

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Learning Objectives

1 Describe the role of structural engineers in several recently completed, high-profile public art projects.

2 Describe the types of analyses engineers performed for these projects and identify some of the tools used for these analyses.

3 Explain some of the stresses each piece is subject to from wind, gravity, and other forces.

4 Define fundamental structural-engineering terms such as "creep" and "prestressed."

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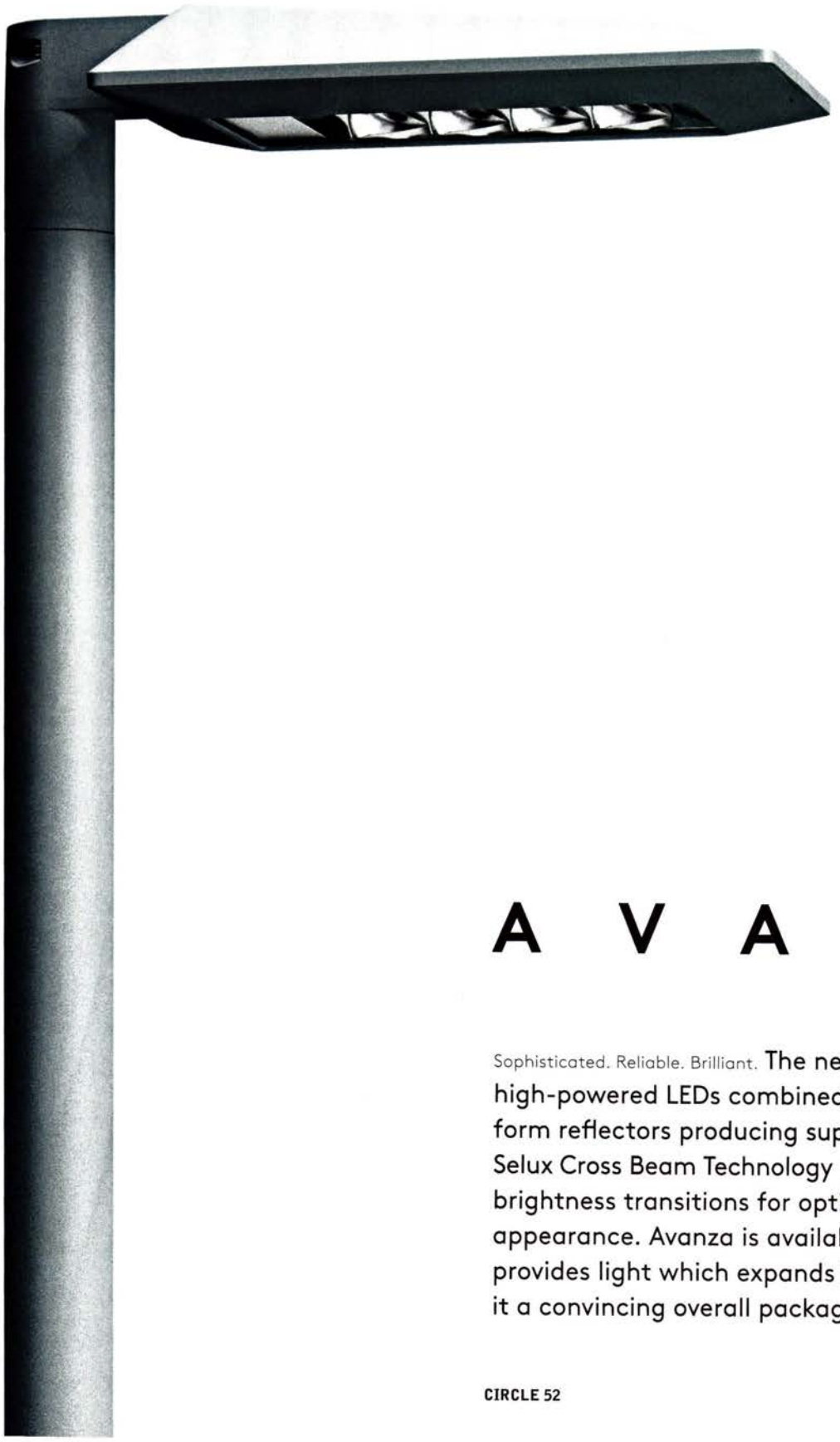

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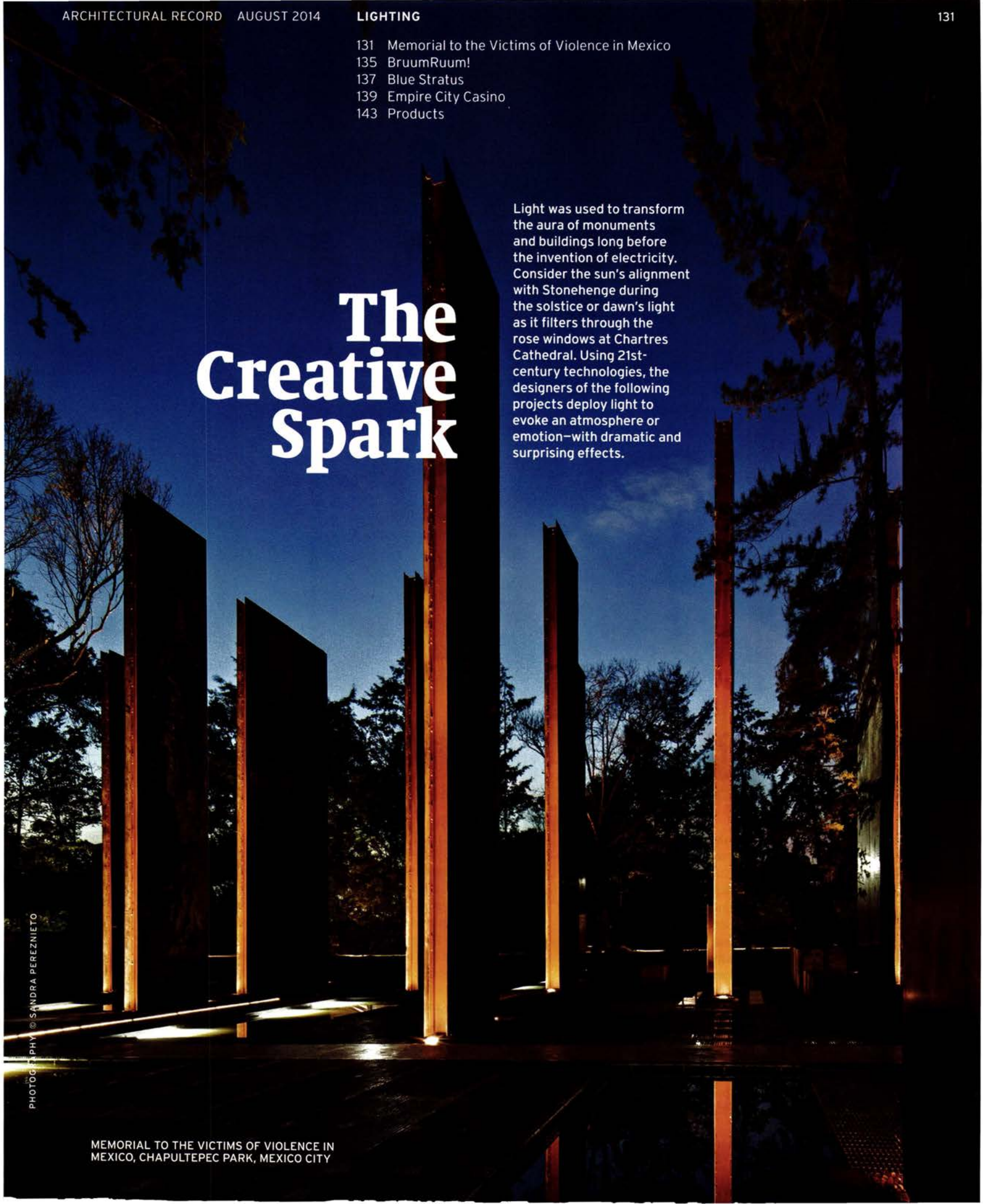
CIRCLE 52

The Creative Spark

Light was used to transform the aura of monuments and buildings long before the invention of electricity. Consider the sun's alignment with Stonehenge during the solstice or dawn's light as it filters through the rose windows at Chartres Cathedral. Using 21st-century technologies, the designers of the following projects deploy light to evoke an atmosphere or emotion—with dramatic and surprising effects.



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MEMORIAL TO THE VICTIMS OF VIOLENCE IN MEXICO, CHAPULTEPEC PARK, MEXICO CITY

Memorial to the Victims of Violence in Mexico

Mexico City

Gaeta Springgall Arquitectos / Lighteam

By Josephine Minutillo

ERECTING A MONUMENT to casualties of crime is never straightforward, and can be controversial. Mexico City's Memorial to Victims of Violence in Mexico, a tribute to the many lives lost in the country's drug wars, incited its share of debate concerning its location next to a military base and ambiguity over exactly who and how many it would be honoring. Local firm Gaeta Springgall Arquitectos responded to these issues by creating "not a monument, but a living experience," says partner Luby Springgall.

Approaching the project with the sensitivity of an artist rather than with an architect's impetus to build, the design Springgall and partner Julio Gaeta devised, a 161,000-square-foot interactive space inside the historic Chapultepec Park, won a national competition with a simple composition that incorporated three elements—steel, water, and light.

"Light is very important here because light is the opposite of dark," says Springgall. "Light is hope, light is life. It is the most positive thing." The architects partnered with lighting designer Gustavo Avilés of Lighteam during the competition phase, and then continued to collaborate closely with him during what was, at times, an unusual construction process.

Full-scale mock-ups of the design were brought to the site early on to see how light could work as an architectural element and give the project, which is accessible to the public 24 hours a day, meaning for visitors from the outset. But the main feature of the memorial—70 towering steel walls measuring 8 feet by 39 feet, positioned both vertically and horizontally amid a sometimes dense area of trees—had already been put in place before the final luminaires were chosen. Several lighting manufacturers, all Mexican, were subsequently brought to the site to test their fixtures on the actual installation. "It was a very democratic process, if not an easy one," recalls Avilés. "But it was good, because it was a real exercise."

A GLOWING TRIBUTE LEDs delineate the memorial's architectural elements—lithe concrete benches and rugged steel walls—among the trees of Chapultepec Park. Visitors are invited to draw or write messages on the hollow metal walls—carved out with the backlit words of such luminaries as Gandhi and author Carlos Fuentes.

LIGHTING THE WAY
Recessed linear LEDs suggest a promenade, guiding visitors through the memorial and serving as a safety measure for spatial orientation. More symbolically, the promenade was designed to inspire silence, reflection, and a sensation of peace. Fixtures attached to tall poles accommodate downlights aimed at walkways and uplights illuminating the trees.

Fighting glare was the biggest challenge, according to Avilés, who worked with the selected manufacturers on adjusting their products to most effectively eliminate it by hiding lamps, adding accessories, and painting the insides of fixtures black. "Glare would destroy the peaceful nature of the project," he says. "We wanted soft shadows."

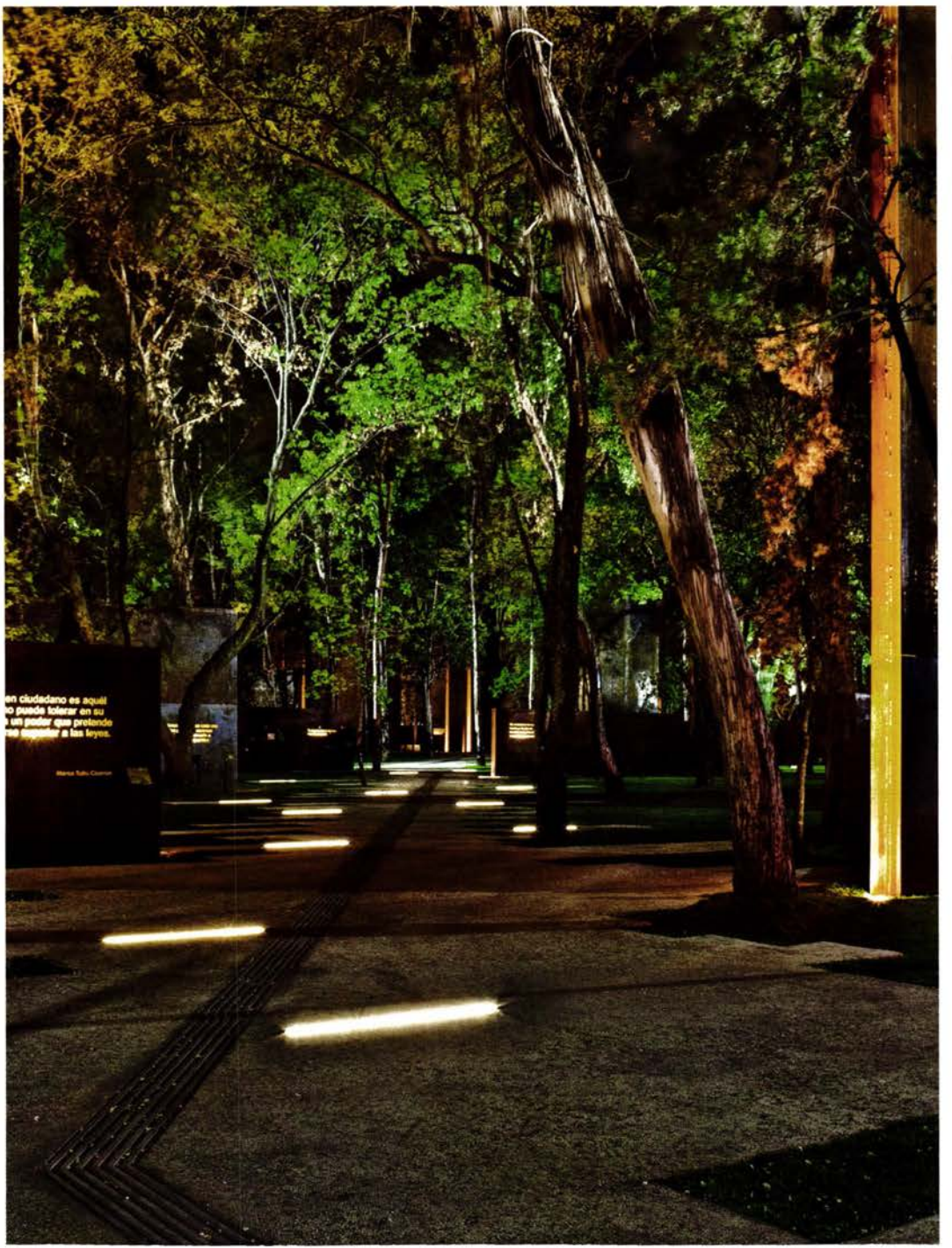
The designers chose LEDs for all lighting components. Recessed linear fixtures were placed in the ground to suggest a promenade, guiding visitors and serving as a safety measure for spatial orientation. At the base of each of the weathering steel walls, narrow LED strips were recessed in the ground so that subtle silhouettes were created while the light source was concealed. Tubes of cool 6,000-Kelvin LEDs were used underwater in reflecting pools to keep the water looking "fresh," says Avilés.

Overhead, two kinds of fixtures on poles were employed. Downlights illuminate walkways, while uplights project onto trees. The lighting designers wanted to create a balance of color temperatures in the trees, using cooler lights to make them appear greener at the extremes of the memorial, and warmer ones for a more intimate feel at the center.

The memorial does not include names, because, as Springall explains, "We didn't know who the victims were." Instead, approximately 40 different quotes related to violence, memory, love, absence, and pain—from figures such as Cicero, Gandhi, Martin Luther King Jr., and Mexican novelist Carlos Fuentes—are carved out of the panels and illuminated by LED strips housed within light boxes in the steel walls.

Opened last year, it invites a steady stream of visitors to add names and express their own experiences by writing or drawing on the walls.

"It is very beautiful during the day to see people interface with the memorial," says Avilés. Illuminated, in the evening, the sense of absence it creates becomes stronger. ■



PHOTOGRAPHY: © SANDRA PEREZNIETO

credits

ARCHITECT: Gaeta Springall Arquitectos – Julio Gaeta, Luby Springall, principals; Jesica Amescua, Brenda Ceja, Liliana Ramírez, Guillermo Ramírez, Edgar Martínez, Christian Ortega, Carlos Verón, Daniela Dávila, Miguel Márquez, José Luis Martínez, Jorge Torres, Paolo González, Juan Verón, design team

LIGHTING DESIGNER: Lighteam – Gustavo Avilés, principal

ENGINEERS: Jorge Cadena (structural)

CONSULTANTS: Hugo Sánchez, Tonatiuh Martínez (landscape)

CLIENT: PROVICTIMA (Non-Governmental Organizations Against Violence in Mexico)

SIZE: 161,000 square feet

PROJECT COST: approximately $2.5 million

COMPLETION DATE: November 2012

SOURCES

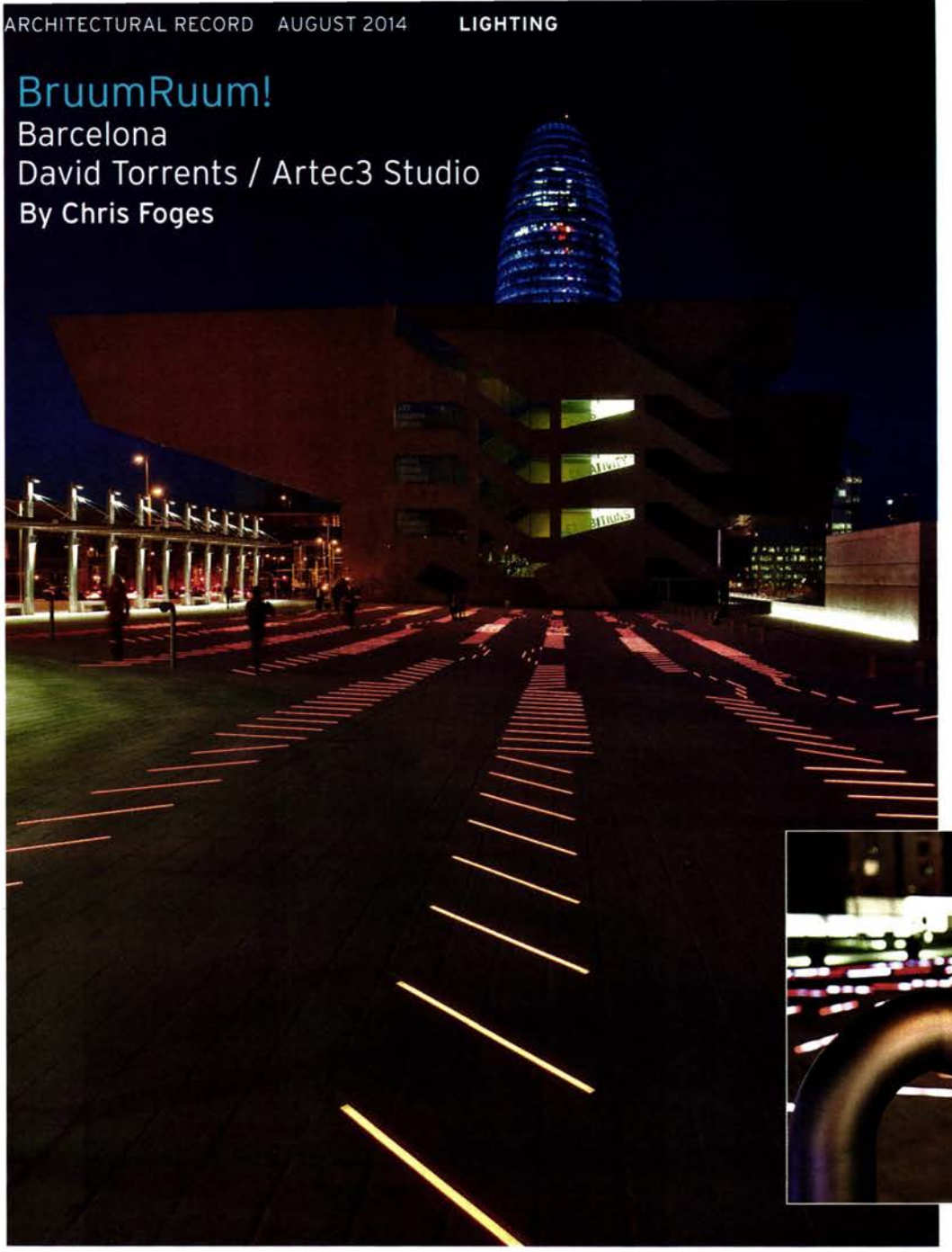
LIGHTING: Ventor (fixtures), Network (controls)

BruumRuum!

Barcelona

David Torrents / Artec3 Studio

By Chris Foges



credits

ARCHITECT: MBM Arquitectes

DESIGNER: David Torrents

LIGHTING DESIGNER: Artec3 Studio – Maurici Ginés

ENGINEERS: JG Ingenieros

CONSULTANTS: LEDsControl (DMX control)

CLIENT: BIMSA / Ajuntament de Barcelona

SIZE: 35,500 square feet

PROJECT COST: $678,000

COMPLETION DATE: May 2013

SOURCES

LIGHTING: DeWiTec (Instalight 1060 RGB)

WHEN THE transformation of Barcelona's Plaça de les Glòries Catalanes is complete, the traffic-choked nine-acre square will be a leafy oasis in the middle of a new business and leisure district. For now, new arrivals here—including b720 Arquitectos' mirror-roofed market hall and MBM Arquitectes' anvil-shaped DHUB design museum—must contend with the sight and sound of congested roads and the demolition of elevated highways that scythe through its heart. Appointed to create a permanent installation on the museum's plaza, multidisciplinary designer David Torrents has made a virtue of this condition, using noise as an input for a responsive light show, *BruumRuum!*

Sensors in a canopy on the northwest edge of the plaza pick up the clanking of trams and the rumble of subway trains. They are linked to 522 in-ground linear LED fixtures; 10 rows run in pairs along the length of the square. For economy, most fixtures align with joints in the granite paving, though some are laid in diagonal cuts across the slabs, creating a rippling effect. Shades of red, green, and blue light register the intensity of ambient noise.

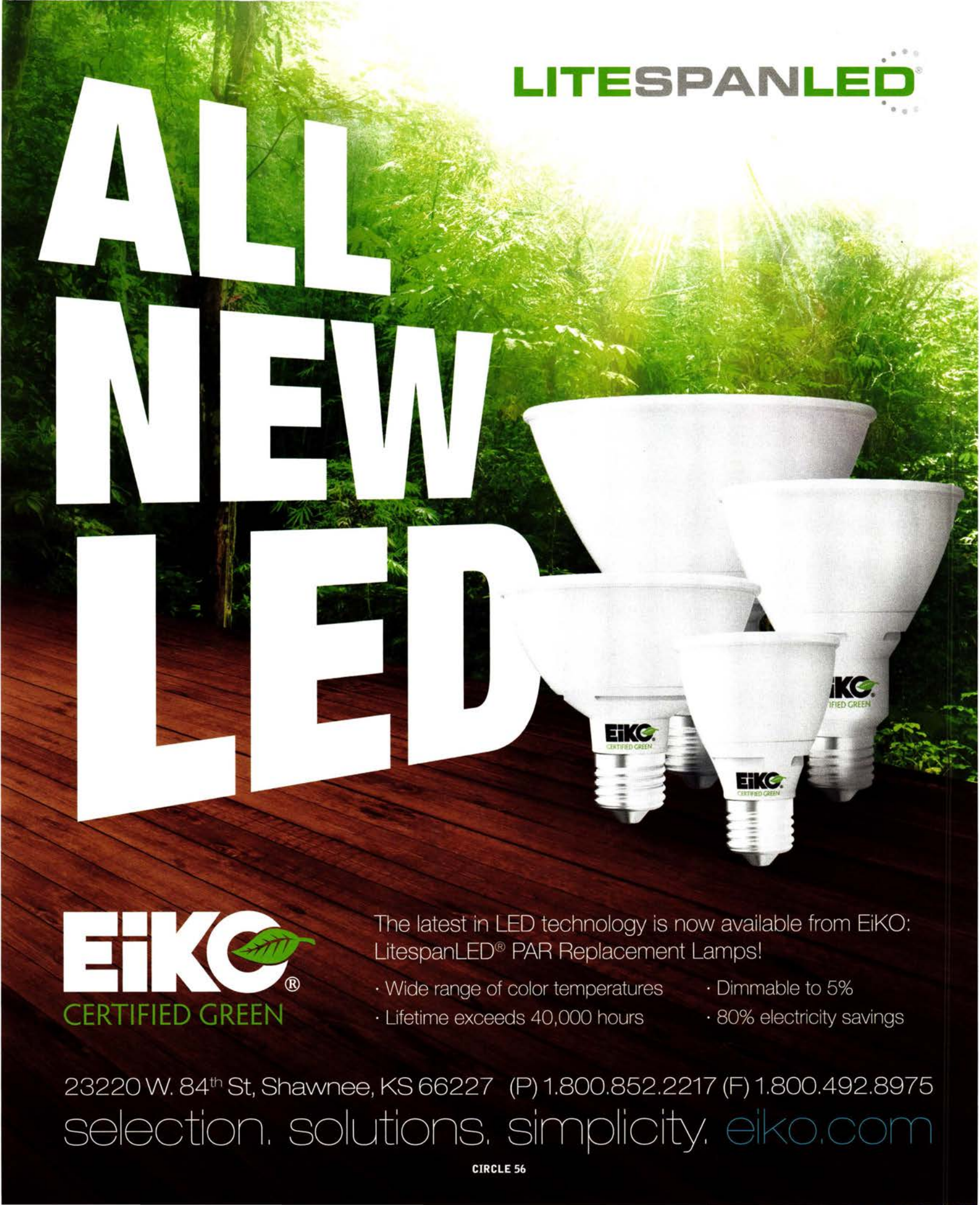
At the plaza's west end, chest-high aluminum "trumpets" are set into the paving. Sensors in the mouthpiece of each translate visitors' voices into one of 35 geometric patterns, superimposed across the blocks of light.

Users discover the connection between speech and light by chance. A man bellows into the mouthpiece and pulses of white light race down the array of pink lines toward the far end of the square. A woman shrieks, causing strips of solid color to fragment into speckles like luminous raindrops.

During the hours of operation, from dusk to midnight, the plaza is rarely crowded, lending an intimate quality to a public spectacle. But if visitors are disconcerted by the mix of light and sound in so large a space, inhibitions are quickly forgotten, says Torrents: "They just shout, shout, shout!" ■

SOUND BYTES
Sensors at the edge of Barcelona's DHUB museum plaza pick up the city's sounds and transfer them into light via a PC running Matrix software that connects to 522 in-ground LED fixtures (top). Trumpet-like tubes capture individual voices to create dynamic patterns (above).

View additional coverage and video at architecturalrecord.com.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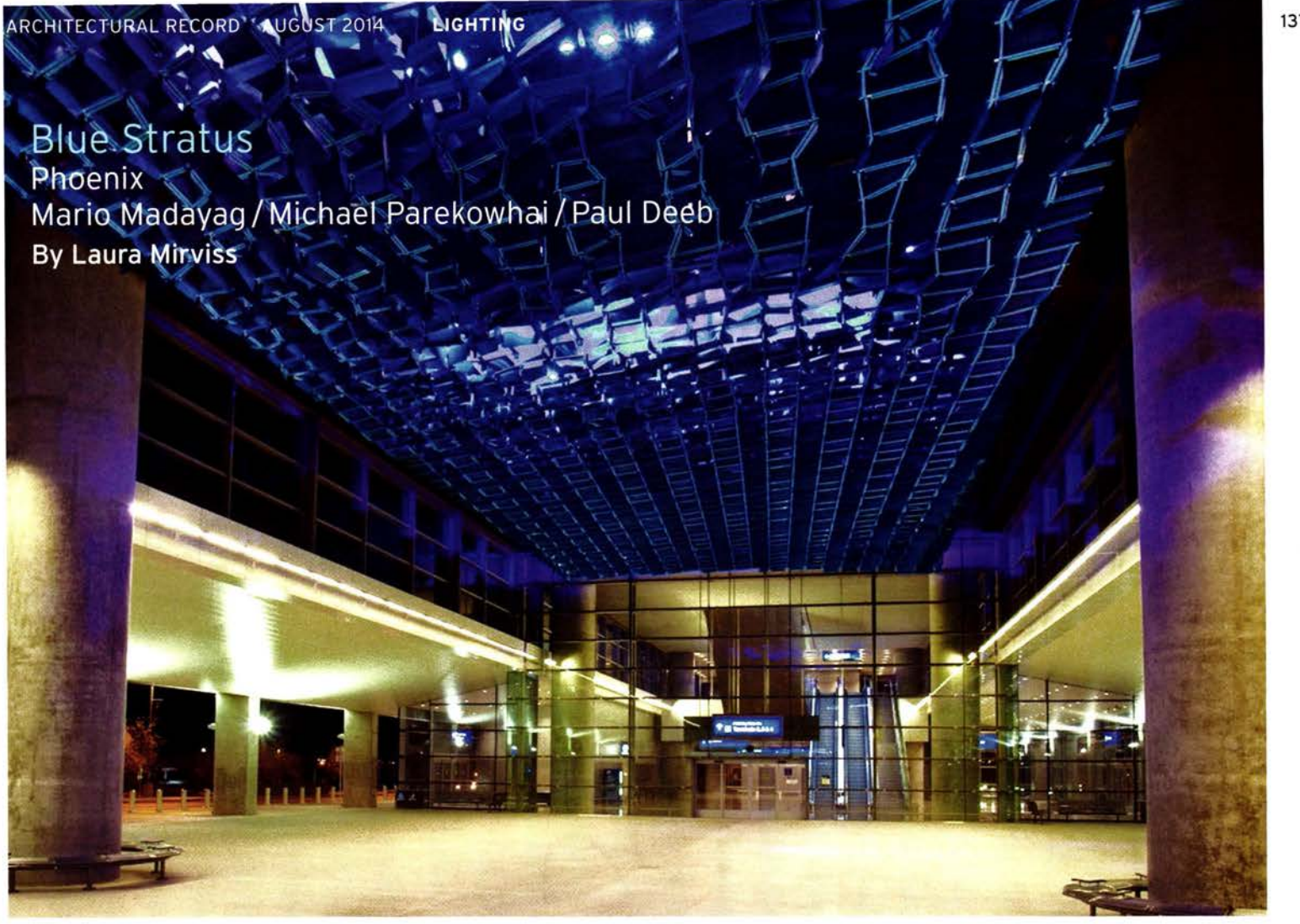
CIRCLE 56

Blue Stratus

Phoenix

Mario Madayag / Michael Parekowhai / Paul Deeb

By Laura Mirviss



PHOTOGRAPHY: © CRAIG SMITH

ART IS AT the heart of the architecture of the recently completed HOK-designed shuttle stations serving the Phoenix Sky Harbor International Airport. Among the half-dozen works on view, *Blue Stratus*, a luminous ceiling installation, serves as a bold entrance to this major new point of access to the airport.

The massive 150-by-40-foot work, a steel grid frame adorned with 6,610 reflective blue aluminum panels, is mounted to a braced steel support system above a ground-floor atrium where passengers wait to catch a train to the airport or transfer to the city's light-rail system.

"We're interested in the underlying stories of a place," says architect Mario Madayag, who conceived the competition-winning scheme with artist Michael Parekowhai after they learned from a local exhibit that Arizona's desert was once ocean. "That became the inspiration for the work, along with Arizona's big blue sky."

The designers wanted to re-create the sensation of being at the bottom of a swimming pool and watching light ripple above. "They merged the idea of being underwater with being under the sky," says Edward Lebow, the director of the Phoenix Office of Arts and Culture Public Art Program, which commissioned the piece in collaboration with the Aviation Department Percent-for-Arts program as part of an ongoing $1.5 billion airport-infrastructure project.

To enhance reflective qualities, the designers installed 20 color-changing LED fixtures above the piece and programmed them to match the six shades of blue used for the panels. Each fixture has a dedicated time sequence that varies in color and intensity throughout the day. "The piece always looks different," says lighting designer Paul Deeb, who used a Color Kinetics playback controller to establish the schedules. "There's never any repetition—though at night, the colors are deeper and more saturated, and, during the day, brighter." In the evening, four white LED downlights, positioned at the center of the work, evoke the aura of light filtering through water or clouds.

The lowest-hanging aluminum panels, reflective on one side and blue on the other, are loosely bolted to the grid and sway gently in the wind. "You can actually watch the wind move across the piece—like wind moving across water," says Deeb.

At night, a blue glow permeates the sky beyond the station, visible to passengers arriving on the train. "There is a really lovely purple-blue haze," says Lebow. "It has a resonance that is kind of surprising." ■

WATERWORK The installation, suspended above the atrium of a new station for the shuttle to the Phoenix airport, is a structural grid composed of 209 blue-painted welded steel modules, adorned with more than 6,000 aluminum panels.

credits

DESIGN TEAM: Mario Madayag, Michael Parekowhai, Paul Deeb

ENGINEERS: CH2M Hill, formerly Paragon Structural Design (structural); Dinter (electrical)

CLIENT: Phoenix Office of Arts and Culture

OWNER: City of Phoenix/ Phoenix Airport Museum

SIZE: 6,000 square feet

CONSTRUCTION COST: $1.4 million

COMPLETION DATE: April 2013

SOURCES

METAL FRAME: Eberl Iron Works

LIGHTING: Altman

ALUMINUM REFLECTORS: Alanod-Solar

PAINTS AND STAINS: Sherwin-Williams

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CIRCLE 54

Empire City Casino at Yonkers Raceway

Yonkers, New York
Studio V Architecture/ Tillotson Design Associates

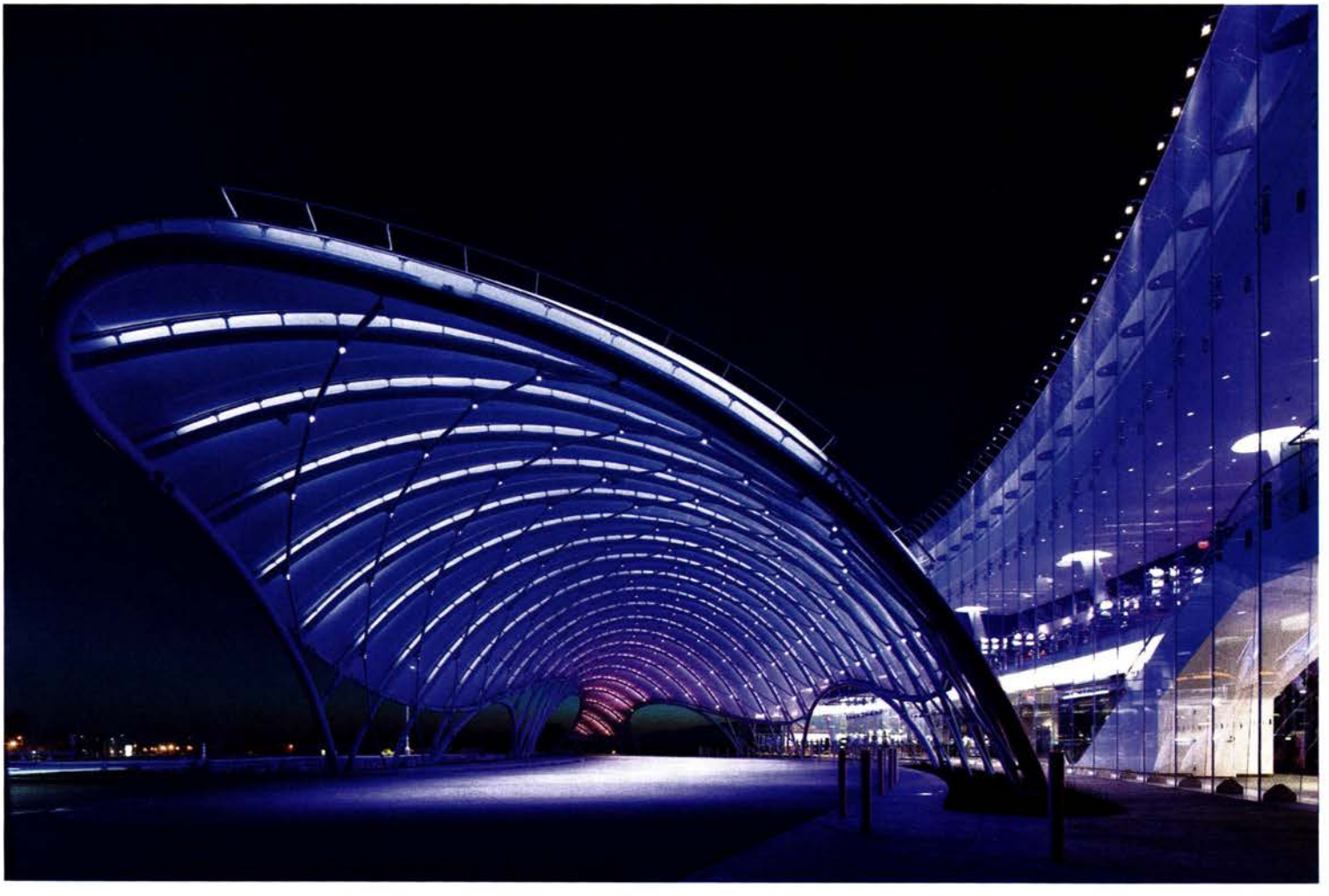
By Anna Fixsen

"GOOD TASTE" and "casino design" may seem to be an unlikely pairing. But when Studio V Architecture partnered with lighting designer Suzan Tillotson to create a new face for the Empire City Casino at Yonkers Raceway in New York, they found an elegant resolution of the division in a luminous curved facade and porte-cochère.

"We thought a lot about it conceptually," Tillotson says. "How you feel when you leave a casino and it's 3 in the morning and the color you want to experience."

Once known for its storied racetrack, where prominent thoroughbreds such as Seabiscuit once galloped, the 115-year-old facility fell into decline; by 2000, *The New York Times* stated grimly that "Yonkers Raceway is dying." With a multimillion-dollar renovation designed by EwingCole and the introduction of slot machines in 2006, however, owner Timothy J. Rooney—whose family owns the Pittsburgh Steelers—transformed the flagging raceway into a top-performing casino.

Wishing to literally build on this success, Rooney asked the New York–based Studio V to create a 63,000-square-foot addition for the existing casino. "He wanted to do something completely contemporary and reinvent the place," says the firm's principal, Jay Valgora. "We really looked at the porte-cochère as a sculptural object that would be a reinterpretation of the racetrack." Valgora opened the steel-frame building by adding a glass facade. He worked closely with engineer Nicholas Goldsmith, of FTL Design Engineering Studio, to devise a beautiful yet cost-effective porte-cochère. Fascinated with gridshells—latticed, double-curved structures—the architect and engineer arrived at the sweeping curves of the canopy after extensive tests and modeling. Supported by structural steel, the grid is composed of pres-



HIGH ROLLER To veil both facade and porte-cochère in light, the lighting designers covered the structures with a translucent frit. Metal halide downlights hover above the casino curtain wall on delicate curved poles, while custom RGB LEDs illuminate the canopy's surface.

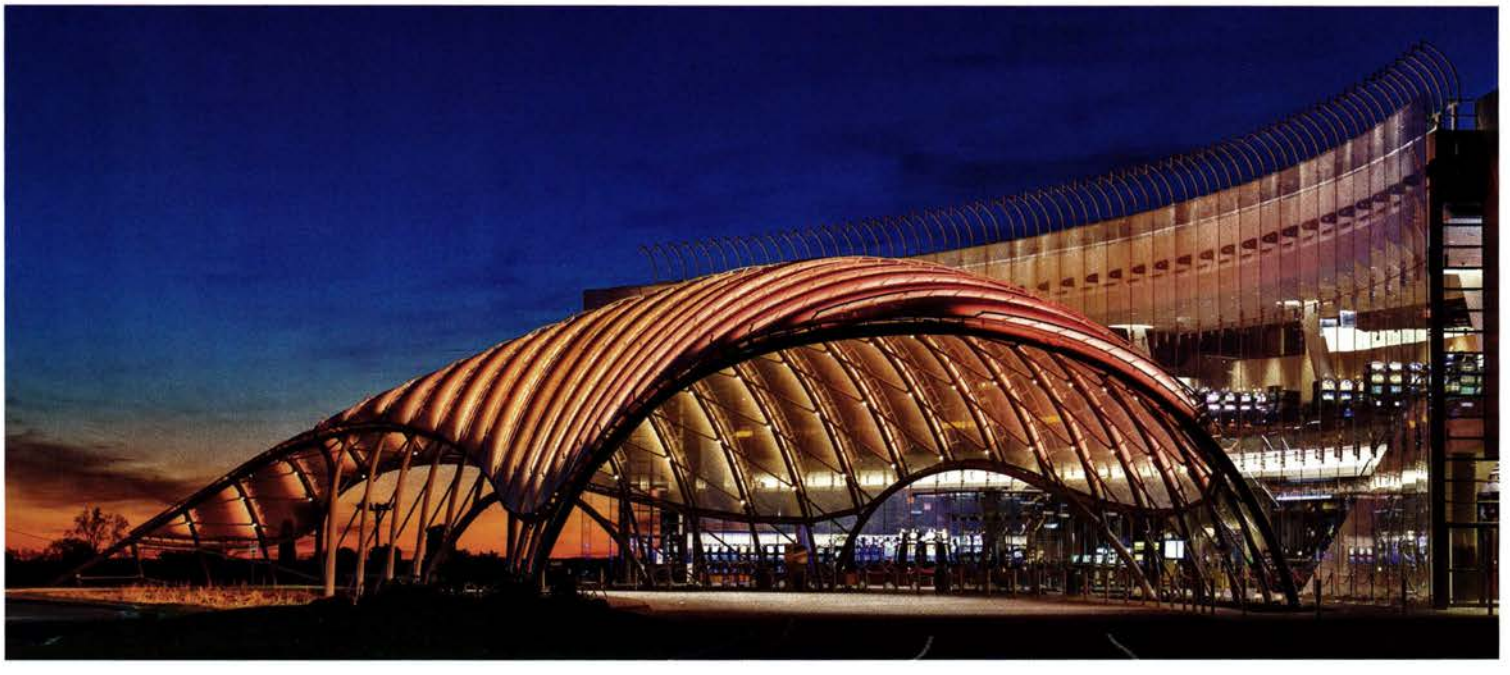
PHOTOGRAPHY: © PAUL WARCHOL

surized Ethylene tetrafluoroethylene (ETFE) pillows—a kind of high-tech plastic.

Tillotson then collaborated with the architects to create a gradated frit for both the glass facade and the surface of the porte-cochère, to dispel and soften the individual lights and to conceal the bustling casino activities beyond. While metal halide lamps mounted on gently curved poles at the top of the facade illuminate the glazing with simple on/off programming, lighting the canopy proved more challenging. "We wanted a smooth sequence of color across the armature," says Tillotson. "Jay wanted to emphasize the form."

The lighting design team worked directly with a manufacturer to design a custom RGB LED system for the top of the porte-cochère that evokes a sunset and sweeps gradually across its 200-foot span. Dimmable high-color-rendering white LEDs on the underside of the canopy's frame illuminate vehicles beneath and play off of the glittery pavement embedded with glass chips.

In the evening, the luminous colors spread slowly over the shell of the canopy, creating a gracious beacon. "Most casinos are about theming and creating false internal environments—creating a fake New York, a fake Paris, or a fake Venice," says Valgora. "Our project has none of that—it was about creating a beautiful sculptural object in front that is completely contemporary, but relates to the history of the place." ■



ALL-NIGHTER Tillotson worked with the LED manufacturer to devise a lighting system that would dynamically mimic a sunset, changing hues over the course of the evening: gradually, these colors spread across the 200-foot-long porte-cochère. Underneath its surface, dimmable high-color-rendering white LEDs light up the vehicles driving beneath it.

credits

ARCHITECT: Studio V Architecture – Jay Valgora, principal

LIGHTING DESIGNER: Tillotson Design Associates

ENGINEERS: DeSimone Consulting Engineers (structural); FTL Design Engineering Studio (specialty structural); Dolph Rotfeld Engineering (civil); Edwards & Zuck (m/e/p)

GENERAL CONTRACTOR: LPCiminelli

CLIENT: Empire City Casino at Yonkers Raceway

SIZE: 63,000 square feet

PROJECT COST: $36 million

COMPLETION DATE: February 2013

SOURCES

GLASS: Sentech Architectural Systems, FH Graham LLC

DOWNLIGHTS: Lucifer, Bruck, Philips, Edison Price, Portfolio, Neo-Ray

EXTERIOR LIGHTING: HK Lighting Group

DIMMING SYSTEM: ETC Unison

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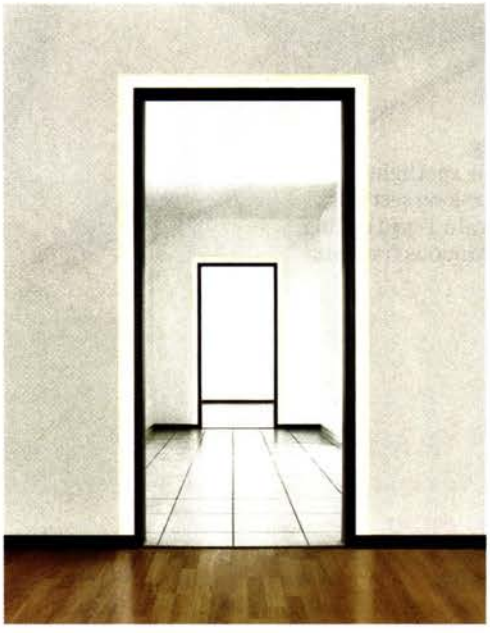
products**lighting**

A MARRIAGE OF INNOVATION AND BEAUTY SETS THESE NEW LUMINAIRES APART FROM THE PACK. **BY SHEILA KIM**



Verge

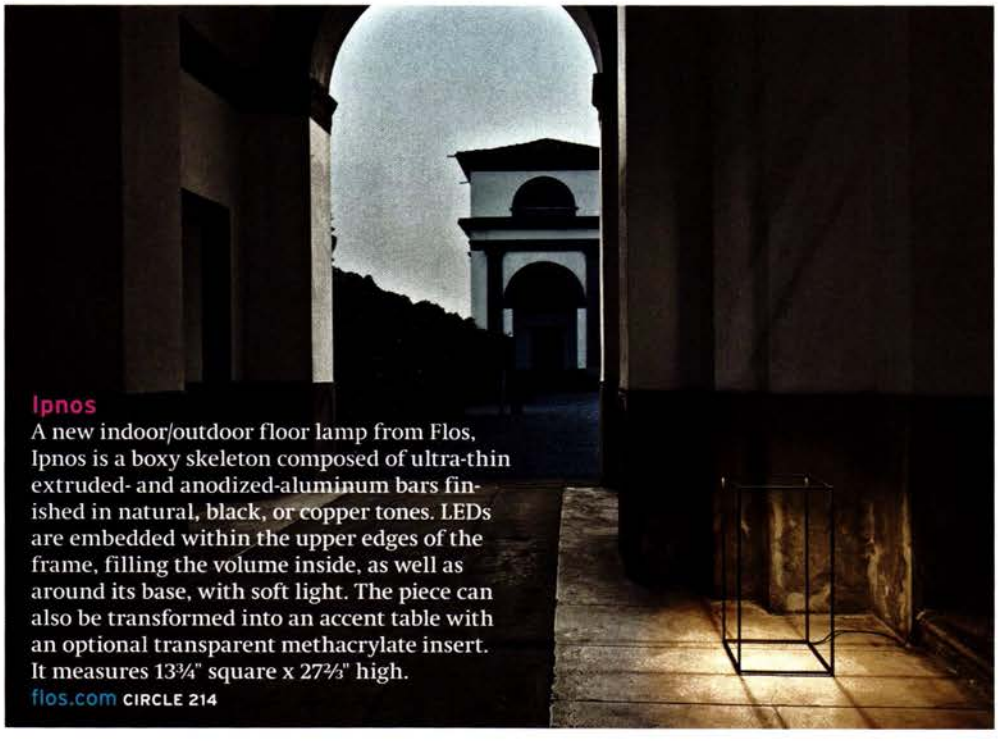
Pure Lighting's Verge (above) allows light to become part of the architecture. The system consists of a plaster-in aluminum channel with a 4"-wide paintable aluminum backer plate and either white or RGB Soft Strip LEDs in 5' increments up to 40'. It is ideal for illuminating door frames, coves, floating wall effects, and other dramatic linear designs. Six color temperatures are available for the white LEDs, from 2,400K to 5,700K. purelighting.com **CIRCLE 210**

Plumage

The tiered design of Axo Light's Plumage was inspired by overlapping feathers of tropical birds. But this pendant, offered as either a hanging or floor lamp, has "feathers" that are removable, washable, and made of fire-resistant Trevira CS fabric. Available in red, fuchsia, orange, green, brown, light gray, white, or multicolor, the shade comes in three sizes—31½", 47¼", or 70¾" diameter. Plumage takes halogen or fluorescent E27 bulbs. axolight.it.com **CIRCLE 211**

Open

Aptly named Open (left), Peerless Lighting's new beamlike fixture features a lens-free open trough from which light appears to emanate out of thin air. LEDs concealed along the bottom lips reflect and diffuse the light to produce this optical trick. Available in 4' or 8' sections, the extruded-aluminum unit comes in suspended, recessed, or surface-mounted versions to provide direct, indirect, or wall-wash illumination. Powder-coat options include low-gloss white, low-gloss aluminum, or black. peerlesslighting.com **CIRCLE 212**



Ipnos

A new indoor/outdoor floor lamp from Flos, Ipnos is a boxy skeleton composed of ultra-thin extruded- and anodized-aluminum bars finished in natural, black, or copper tones. LEDs are embedded within the upper edges of the frame, filling the volume inside, as well as around its base, with soft light. The piece can also be transformed into an accent table with an optional transparent methacrylate insert. It measures 13¾" square x 27⅔" high. flos.com **CIRCLE 214**

CY3

Lucifer Lighting has expanded its Cylinder Family of surface-mounted LED can luminaires with CY3. Its sleek, die-cast aluminum body—which measures 6½" long x 3⅛" in diameter—can be specified with a brushed, matte black, matte white, or bronze powder-coat finish. It swivels 361° and tilts up to 45° angles. luciferlighting.com **CIRCLE 213**

Grafik T

"T" stands for touch control in Grafik T (above), a new architectural dimmer switch from Lutron. The actual control is an elegant, slightly raised vertical bar that integrates LEDs to visually display light levels as it is pressed. It functions as a stand-alone unit to control a single source or room, or as the central switch controlling multiple sources or a whole building. Grafik T can be used in conjunction with Lutron's wireless and daylight-sensing systems.
lutron.com CIRCLE 215

GATICA

An acronym for "General and Task Illumination, Controls, Adjustability," GATICA (right) is an ingenious all-in-one LED system that, as its name states, provides general, wall wash, and direct spot lighting. A single 6"- or 12"-wide luminaire achieves such flexibility and modularity thanks to tiltable light panels and optional aimable spotlight modules. The housing itself, offered in 2'-, 4'-, and 8'-long sections, can be suspended, recessed, or integrated into a lay-in T-grid ceiling, and connected to other units to create longer, continuous fixtures.
techlighting.com CIRCLE 216

SlimStyle BR30

After introducing a flattened LED A-lamp last year, Philips has followed up with a streamlined LED floodlight for indoor applications. SlimStyle BR30 (left) is much lighter and less bulky than its counterparts—making it easier to handle and install—due to the elimination of the typical aluminum heat-sink; instead, its flat, disc-shaped head conducts the heat away. The new lamp uses only 9.5W to emit an impressive 650 lumens, which amounts to 85% less energy usage compared to standard 65W incandescent BR30 lamps.
philips.com CIRCLE 217

Nomi OLED Sconces

For Winona Lighting's Nomi, a modern, high-tech take on a traditional wall sconce, a flat Organic Light Emitting Diode (OLED) panel replaces the pillar candle. The die-cast aluminum fixtures come in two styles: Straight (shown) is a bar format measuring 17⅞" long x 2⅞" wide x ¼" thick, while Curve gently arcs; it measures 18½" long x 3" wide x ¼" thick. Three color temperatures are offered: 3,000kK, 3,500K, and 4,000K.
acuitybrands.com CIRCLE 219

NanoLED NXT Cylinder

Though USAI has been producing decorative trims for its in-ceiling downlights, the company hasn't offered a decorative fixture until now, with the NanoLED NXT Cylinder. Its extruded-aluminum body, offered in three lengths from 10" to 15", can be finished in white, black, metallic colors, or any Pantone hue. Four mounting options—surface, wall, cable, or stem—are available, as are three beam spreads that can be changed simply by removing the bottom trim and swapping out the reflector. usailighting.com CIRCLE 218

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products **lighting trends**

IN JUNE, LIGHTFAIR BROKE ATTENDANCE AND EXHIBITOR RECORDS IN LAS VEGAS, SHOWCASING INCREASINGLY INNOVATIVE LED TECHNOLOGIES THAT LOOK TO THE FUTURE AND PROVIDE MORE THAN ILLUMINATION. **BY CRAIG DILOUIE**

LEDs Get Connected

WITH QUALITY and performance improving, and cost decreasing by about 18 percent each year, light-emitting diode (LED) technology is well positioned for further adoption by the design community for general lighting. LED lighting's growing popularity is primarily due to its energy efficiency and longevity. However, as digital devices, these light-emitting diodes are inherently compatible with digital lighting control, and manufacturers have begun to develop new solutions with sensors and control intelligence embedded within luminaires or the LED module itself.

This intelligence opens up an array of capabilities that will enable owners to better manage a building's energy consumption, maintenance, and occupant comfort. These include greater design flexibility, automatic setup, integration with non-lighting sensors and controls, and the ability to generate and share information. Additionally, many of these products utilize wireless controls—which facilitates installation, particularly in existing construction—and plug-load controls integrated into lighting-management systems. Following is a sampling of what's new.

Designed for commercial interiors, Cree SmartCast Technology and Philips DuaLED luminaires with SpaceWise Technology feature luminaire-integrated occupancy and daylight sensors using two-way wireless (mesh network) communication, and push-button setup and commissioning via a handheld remote.

Acuity Brands' XPoint and xCella wireless lighting systems operate solo or combine with the company's other control products to create wireless or hybrid wired/wireless systems supported by floor-plan control, monitoring, and analytic software. XPoint is designed for lighting management and building-wide applications; xCella is for self-configuring room-based lighting, HVAC, and plug-load control using battery-free switches and sensors with power-harvesting technology.

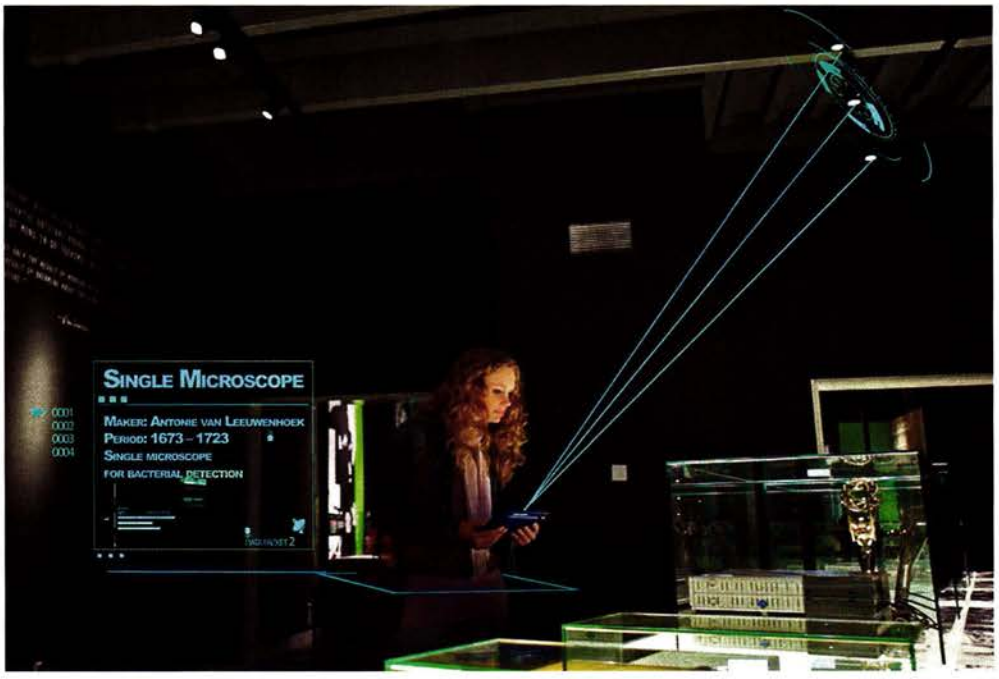
Cooper Lighting's LumaWatt platform is designed for roadway, parking garage, and outdoor fixtures, and features integral and/or remote sensors, programming, and power metering. The system also monitors luminaire performance and detects failures.

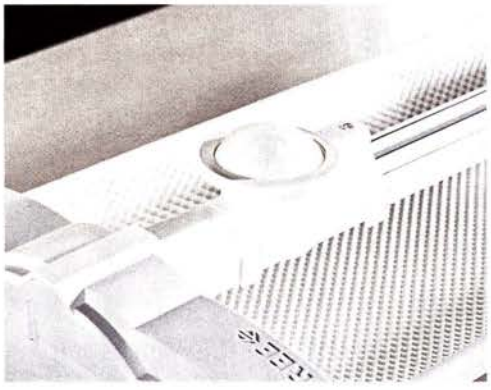
LED producer Xicato, in collaboration with Eschelon, takes integration a step further by incorporating sensors, diagnostic tools, and the light source into a single module, the XIM.

Sensity's NetSense 2 streetlight platform enables data-intensive video sensing that can be used for security/surveillance, real-time parking availability, traffic reports, and snowfall-depth detection.

Looking ahead, Acuity Brands, GE, and Philips all recently demonstrated LED systems that use visible light to communicate wayfinding, and target sales information by interacting with user smartphones and tablets via special apps. The first use being explored commercially is in big-box retail stores, but there is potential for other applications at, for instance, convention halls and museums. (Philips is currently showcasing this technology at the Boerhaave Museum in the Netherlands.)

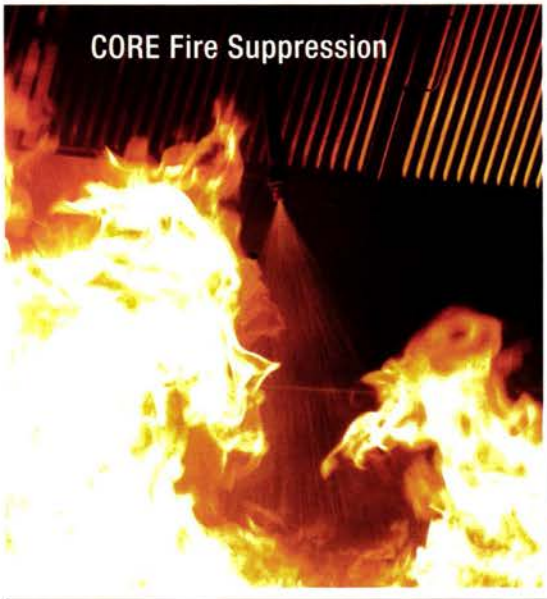
The next stage in the LED phenomenon has begun and presents the potential to redefine lighting as we know it. ■

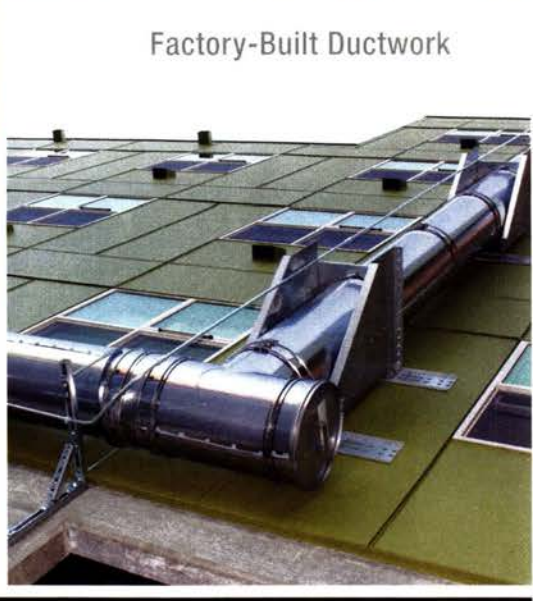




As LED lighting improves in quality, performance, and cost, manufacturers are developing "intelligent" systems that do more than light buildings. An exhibition by and about Philips at the Boerhaave Museum in the Netherlands features overhead lights that interact with visitors' mobile phones and tablets to deliver display guides (above). Cree's SmartCast luminaire has integrated daylight and motion sensors (below, right). Xicato's intelligent XIM module (below, left) has integrated sensors, controls, and diagnostic tools. It communicates with digital devices and computers via Echelon power-line communication technology.

View additional images at architecturalrecord.com.





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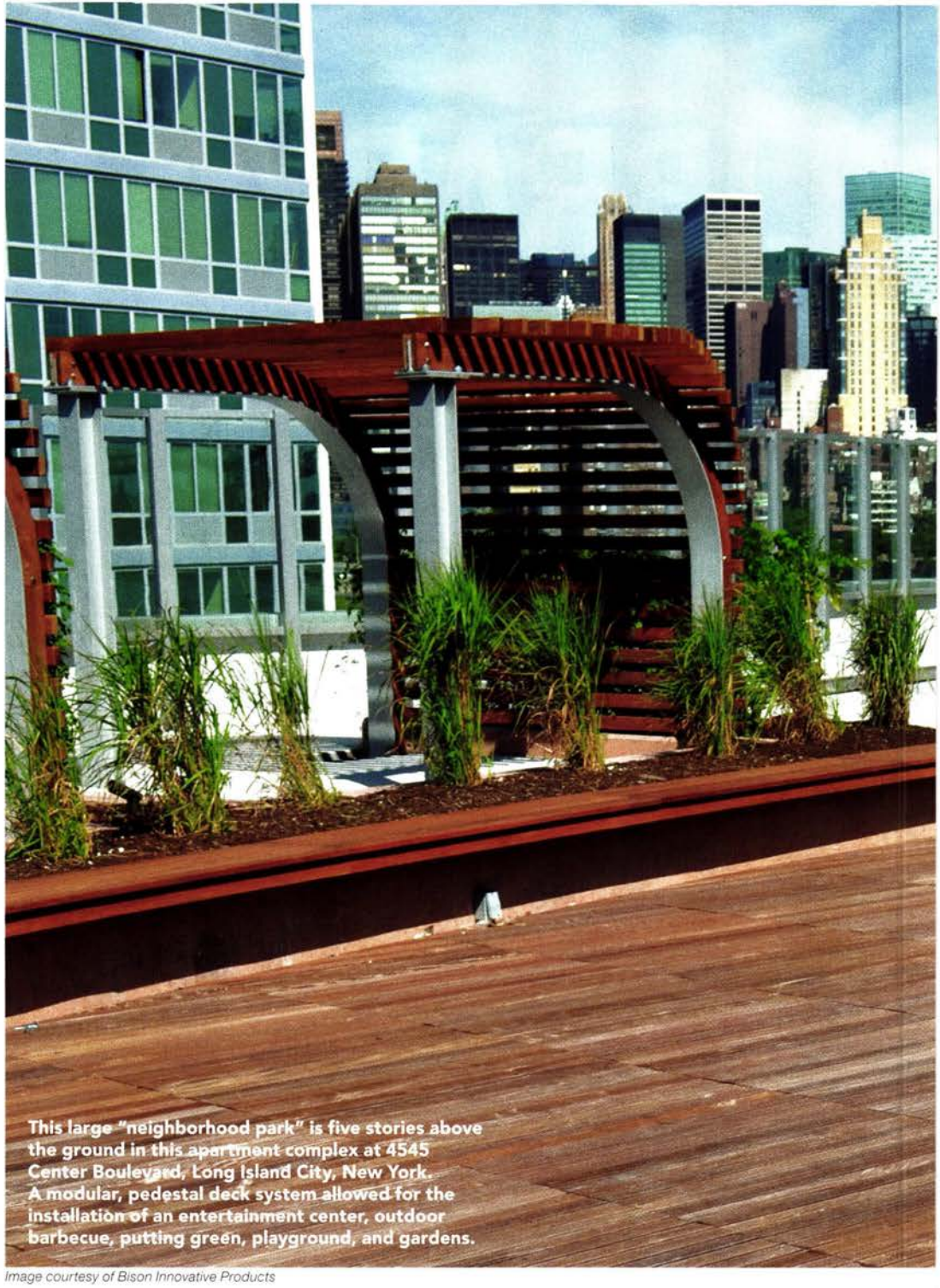
For more details and to enter online visit http://app.wizehive.com/apps/recordproducts2014.
E-mail questions to ARCallForEntries@mhfi.com. (Please indicate ***Record Products*** as the subject of the e-mail.)
Submissions are due September 5, 2014.

Exterior Design Strategies for Placemaking Downtown

Claiming leftover outdoor space with innovative lighting, paver suspension systems, and colorful modular decking

Sponsored by Bison Innovative Products, IRONSMITH, and Kim Lighting

By Celeste Allen Novak, FAIA, LEED AP



This large "neighborhood park" is five stories above the ground in this apartment complex at 4545 Center Boulevard, Long Island City, New York. A modular, pedestal deck system allowed for the installation of an entertainment center, outdoor barbecue, putting green, playground, and gardens.

Image courtesy of Bison Innovative Products

Architect James S. Yu, AIA, principal at SY Design in Port Huron, Michigan, has an LED lighting model for an outdoor installation resting in the middle of his studio workspace.

Yu is reluctant to allow the developer to install the new LED lighting designed to accompany a gateway to Port Huron, because it looks so great in his office. Once installed, this energy-efficient LED light sculpture will provide an exciting entry to the new riverfront boardwalk along the St. Clair River that divides Canada from the U.S. By working with manufacturers, he was able to adjust the amount of lighting required for this heavily trafficked area so that the unique, colorful display will not disappear in the ambient lighting. Says Yu, "we were able to work with a lighting color consultant to identify the appropriate light intensity to maximize visibility. This project highlights a new community gathering space for Port Huron."

He is one of many architects who understand that their mission is not just to design buildings, but to claim a "third place"—that social gathering space for people to live, work, and play both outdoors and indoors. These design professionals are becoming placemakers. They are creating new urban environments using innovative new materials, lighting, and planting techniques. They are motivated by research and development statistics that show outdoor amenities add value both for healthy communities as well as for the bottom line.

PLACEMAKING

"At recent conferences and in professional journals, the advantages of claiming outdoor spaces by using color, materials, lighting, and vegetation to create new, imaginative outdoor spaces is becoming a smart development tool. Young millennials are choosing to live in dense urban environments and are seeking new lifestyle amenities. Developers are finding that they can add market value even as they shrink housing units to maintain affordability, by adding exterior amenities. Rooftop gardens, outdoor kitchens, entertainment areas, putting greens and urban retreats increase the value of these downtown properties. Young professionals are asking for these amenities in the housing that they are selecting. The added advantage is that outdoor amenities also build community," says Lisa von Gunten, president of Bison Innovative Products.

Building community or placemaking has become an important design element that bridges the gap between the design of a single building and the environment and landscape around the building. "Placemaking is a quiet movement that reimagines public spaces as the heart of every community, in every city. It's a transformative approach that inspires people to create and improve their public places. Placemaking strengthens the connection between people and the places they share,"[1] according to the Project for Public Places, a leader in research and documentation of what makes great public spaces. Authors Jane Jacobs and William H. Whyte began to research and write about making great places in the 1960s.

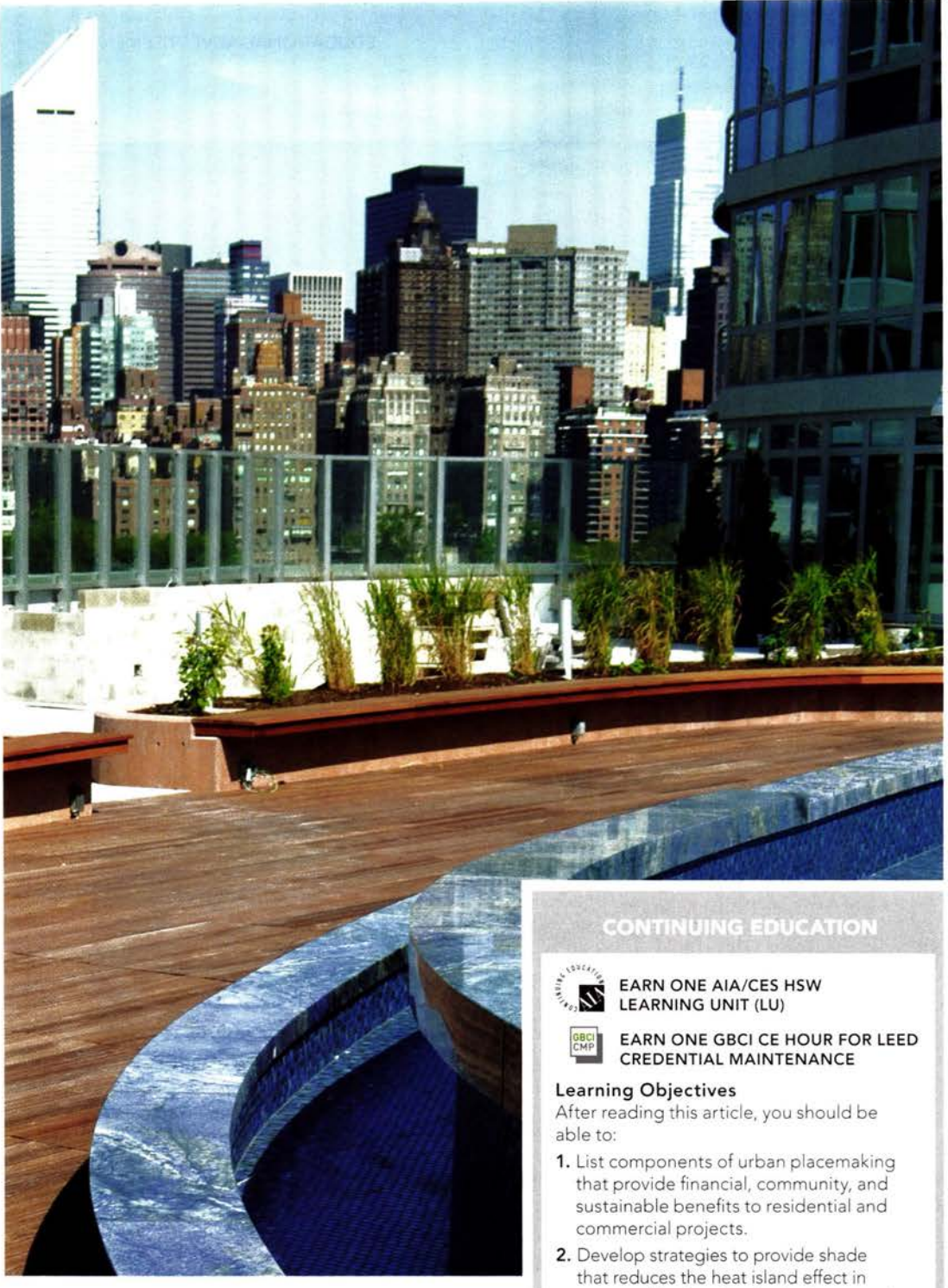


Photo courtesy of Kim Lighting

Innovative LED lighting can be placed in landscape areas to highlight and enhance plants and trees.

This movement has grown to be inclusive of both public and private spaces. The principles of placemaking are focused on inclusion and process. Key attributes include design that is attractive, safe, accessible, interactive, inclusive of the environment, and multi-generational.

Architects are consulting with communities to find ways to light urban spaces efficiently, preserve trees, and create "break-out" spaces for community events that give compelling reasons to be downtown. In California, New York, Illinois, Iowa, and Colorado, to name just a few, pop-up restaurants are reclaiming parking spaces for downtowns. This trend is made possible by new pedestal outdoor floor decking systems. The commercial sector is also finding value in the creation of outdoor gardens, street-side seating, rooftop bars, and dance floors. Health centers are using their rooftops for tennis, play areas, and running tracks, and the demand is growing for similar amenities on top of mixed-use housing projects.

Some of the tools that have been refined in recent years to add to the architect's toolkit include versatile roof deck pedestal systems, efficient LED lighting, and paver suspension systems that allow for the preservation of mature trees and compliance with the Americans with Disabilities Act. "The challenge to designers, owners, and communities is to preserve the character of public space while managing organic materials. Capturing public spaces through energy-efficient lighting, planting trees downtown, or creating garden paving systems require the integration of natural materials with mechanical systems. Successful outdoor places bring people together and help preserve culture and community," says Paul Bambauer, president of IRONSMITH.

Integrating high-tech lighting, utility installation, and stormwater control requires the knowledge of both the micro—and the macro—climate of the specific location. "Because of the complexity of interactions in public spaces, daylighting, type of vegetation, outdoor signage, the impact of weather, daylight, and climate, designers must analyze many factors when considering lighting the outdoors. Sophisticated LED lighting systems can be calibrated to specific locations and are more sensitive to color renditions that highlight organic features. Energy-efficient LED systems will become standard in illuminating activities downtown while complying to Dark Sky ordinances and security concerns," predicts Steve Wojno of Kim Lighting.

Each of these innovative products addresses the complexity and contradictions the designer faces while integrating organic materials into their placemaking. A review of some of these issues will aid the designer in avoiding some common mistakes.

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Learning Objectives

After reading this article, you should be able to:

1. List components of urban placemaking that provide financial, community, and sustainable benefits to residential and commercial projects.
2. Develop strategies to provide shade that reduces the heat island effect in communities, by planting both new and mature trees using innovative paver suspension systems.
3. Define approaches to energy-efficient outdoor lighting and the application of LED lighting to Dark Sky requirements.
4. Discuss the advantages of pedestal-based gravity roof decking to provide outdoor settings that promote health and healing using materials that are FSC certified or have recycled content.

To receive 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 for free.

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Photo courtesy of IRONSMITH

Custom trim rings for the Haas School of Business can be adjusted for tree growth.

DESIGN FOR MICRO-CLIMATE

Most designers are knowledgeable about the elements of climate. Temperature ranges, wind speed, solar aspect, and rainwater/snow volumes are all elements that are part of every initial site analysis. As the design professional digs deeper into a project, they analyze the human factors that impact design, traffic, public/private use of the building or public space, the adjacent buildings, and natural features that are in the immediate vicinity of the proposed project. Local, state, and/or national zoning codes may require stormwater treatment, tree or canopy shade calculations, lighting controls for "dark sky" preservation. In addition to these, an integrated approach includes the calculation for growth of organic materials, the color and intensity of lighting systems, and the sloped surfaces of uneven or deliberately canted roof and paving surfaces. The following is a review of some details to consider when drilling into the complexity of integrative design that is made less difficult by innovative paver suspension systems, LED lighting, and new decking systems.

Paver Suspension Systems That Preserve Mature Canopy Design

The microclimate of a public space is created by a variety of impacts caused by weather and orientation. These might include salt spray and snow collection in the winter, adjacent buildings or features that can create wind tunnels or too much or too little sun, water fountains, vehicle and pedestrian traffic. Creating the atmosphere of sun and light spatter or nighttime elegance and safety and defining a place for pedestrians to walk or dine can be a challenge.

In the past, the approach to outdoor design has been to strip a site of all vegetation and then

WHEN THE STRIP BECOMES A PARK

The Las Vegas Strip is an unlikely place for a new public park. To create the atmosphere of a New York street and to create an "interactive neighborhood environment," MGM Resorts International is connecting the NYNY, Monte Carlo resorts and a new MGM arena with a centrally located park on the Las Vegas Strip. Park benches, restaurants, bars and café's with outdoor seating will be located along this new pedestrian path in the heart of commercial Las Vegas.

According to an announcement published in the Las Vegas Weekly in April, MGM CEO Jim Murren praised this new venture for the re-creation of traditional downtown pedestrian spaces. He announced that "Beautiful public places are highlights of many of the world's finest cities, and Las Vegas shouldn't be the exception...The park will be the first of its kind on the Las Vegas Strip...To create this picturesque outdoor destination, we are literally taking down the walls and opening the doors at our resorts to develop a unique dining and entertainment district that complements its lush new surroundings."[2]

The new parks, as well as the improvements to the NYNY and Monte Carlo frontages are part of a master plan by Cooper Robertson & Partners. The overall project is led by Marnell Architecture with !melk serving as the lead designer and landscape architect of the park public realm—the first public park on the Las Vegas Strip. The landscape architect, !melk, incorporated native and desert-adaptive species of plants and used mature trees as part of their design palette in the frontages along the casino resorts. The project is designed to achieve LEED Gold certification from the U.S. Green Building Council. The success of this design was assisted by the use of paver suspension systems that are designed for the preservation of mature trees, the seamless incorporation of lighting and irrigation systems, and compliance with ADA codes for pedestrian walkways.

The first stage of the renovation of this existing property was to make it walkable. A paver suspension system is used that provides good planting space for new and existing large specimen trees. These openings accept a custom cast iron tree grate, which incorporates "growth rings" that can be removed as the tree trunk thickens as it grows. The paver suspension system is designed to protect tree roots from compaction. Trees are planted with structural soil and planted to encourage healthy growth with little maintenance. Ten feet square paver suspension systems provide plenty of room for the trees without compromising walking space for the busy strip. Custom-designed cast iron tree grates are integrated into the paver suspension system. The iron tree grates were designed and machined at the factory to incorporate uplights from another manufacturer. After installation, the unfinished iron grates were allowed to weather. The grates obtained a uniform rust coating and then rust converter was hand applied on site for a deep aged look. In addition, the design firm !melk created a signature profile for the grates.

The use of mature trees adds character and the appearance of a welcoming, established neighborhood park. Designers working with the hot Nevada climate used the treescape to reduce temperatures in this microclimate, encouraging walking under the shady tree canopy. The larger trees provide more shade for a variety of outdoor eating spaces that open up to the new pedestrian street and to the new park. Developers are choosing to invest in outdoor spaces like the new park in Las Vegas because they know that these amenities will increase business revenue and property values. Healthy trees also contribute to the environment and reduce carbon dioxide in the atmosphere.

Photos courtesy of IRONSMITH

NYC landscape architecture firm !melk incorporated water features, sequenced LED lighting, and mature trees planted in custom paver suspension systems—which provide plenty of room for the trees—into the linear park on the Las Vegas Strip.

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Photo courtesy of Bison Innovative Products

Downtown New York City rooftop putting green gives employees a new way to take their "coffee break."

replant. The disadvantage of this approach is that it may take many years to re-establish the ambience that mature trees bring to a site. In many cases, these new landscapes fail to capture the sense of place that can be developed using more mature trees.

Photo courtesy of Kim Lighting

Different white light can be selected as a light source to effectively highlight flowers and shrubs.

Efficient, Color-Correct Lighting with BUG Ratings

High-quality, architecturally relevant landscape lighting offers a broad array of tools for the architect's lighting palette. LEDs are being installed from large commercial applications, hotels, schools and government buildings to residential homes. LEDs are becoming popular because they not only save energy dollars, they also create a friendly atmosphere. The latest LED technology is a sophisticated system of lighting diodes that provides opportunities to maximize both color and light levels in outdoor environments. They are being used in homes, courtyards, public parks, commercial rooftop gardens as accent lighting or to light a building facade or sculptural detail. An LED light comes in many forms and one of the main advantages is that these lights are energy sippers. A low-voltage LED can save 70 percent more energy when compared to other sources of lighting on the market.

When selecting an LED lighting product it is important to understand the location where it will be installed. The advantage of this energy-efficient lighting is that it can also be adjusted for color correction and intensity. It can also be rated for compliance to Dark Sky ordinances.

Cool, hip, and attractive nighttime lighting is appearing in many downtowns, on urban rooftops, and in parks and event spaces. Product labels for LED lighting include information on lighting efficacy in lumens/watt, color temperature, and its Color Rendering Index (CRI). The CRI is particularly important when specifying a light system for a specific feature. With the wrong choice for color temperature, a cozy warm park bench becomes a forbidding alcove, trees appear to have orange leaves, and the red brick wall appears to be brown and colorless. Sensitivity to color in the environment is a skill and some manufacturers will provide color consultation when the designer is trying to specify the correct Correlated Color Temperature (CCT) and/or CRI. LED diodes do not have special lenses as the diodes are calibrated to provide accurate colors to illuminate the project as designed.

In a recent blog post, Chris Bailey, director of Lighting Solutions Center at Hubbel Lighting, explains the difference between CRI and CCT and provides definitions and explanations as to why the color composition at the source of lighting is important. Because accurate color renditions can greatly affect the appearance of an object, it is key to understand the importance of selecting a complete lighting system rather than just replacement lamps. The advantage of specifying a whole LED lighting system rather than specifying replacement lamps is that the color temperature and lighting efficacy will be maintained over the life of the project.

See endnotes in the online version of this article.

▶ Continues at ce.architecturalrecord.com

Celeste Allen Novak, FAIA, LEED AP, *(www.celesteallennovakarchitect.com) specializes in sustainable design and planning in Ann Arbor, Michigan. She is the author of "Designing Rainwater Harvesting Systems: Integrating Rainwater Into Building Systems."*

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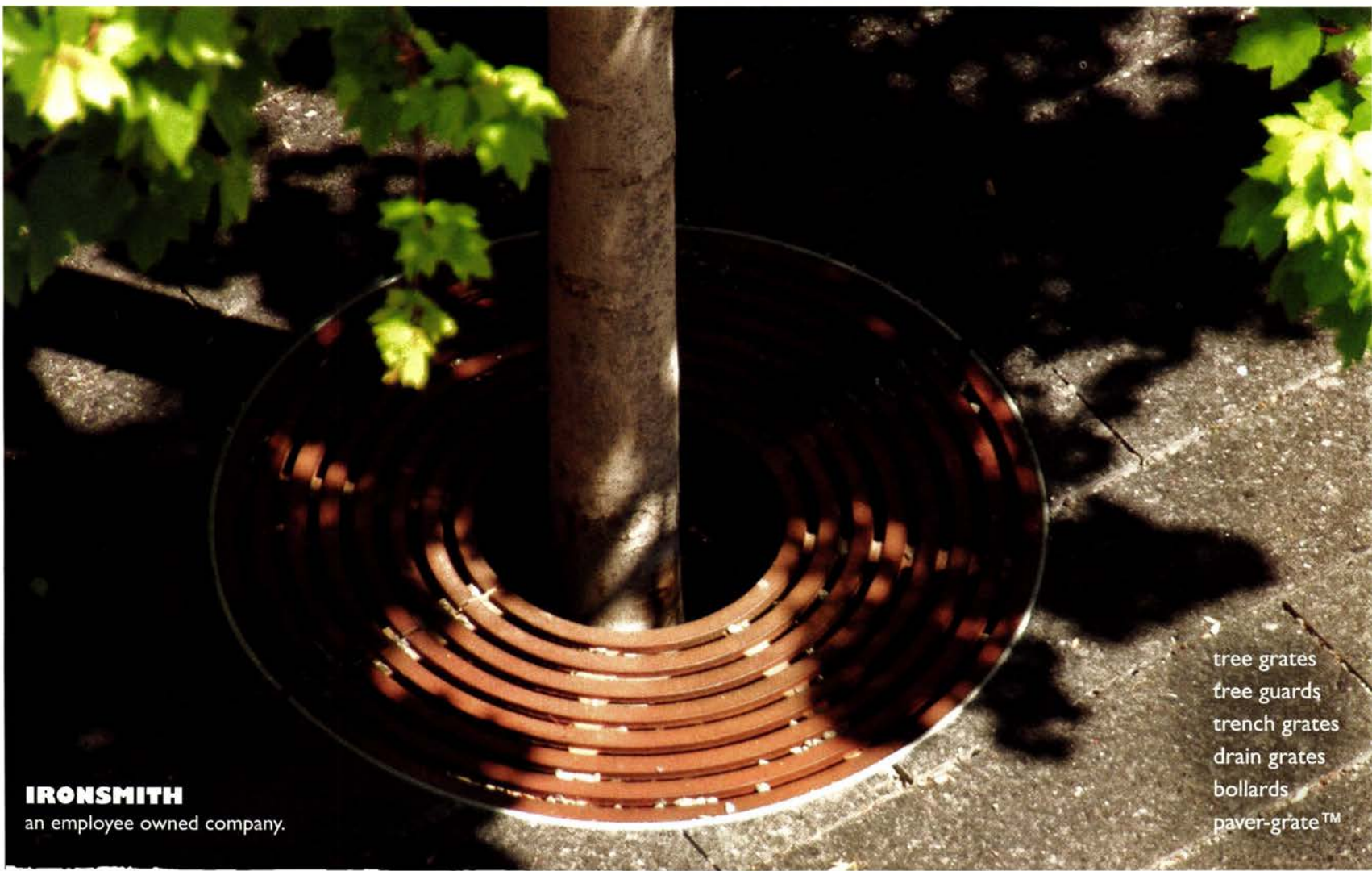

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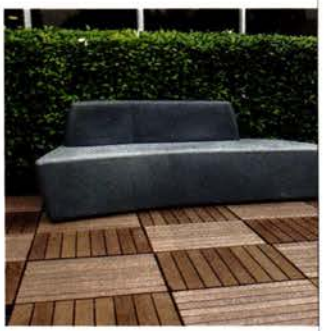

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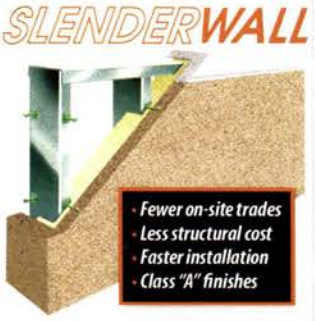

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Ongoing Exhibitions

Hans Scharoun: Architect and Visionary
Cambridge, Massachusetts
Through August 15, 2014
Hans Scharoun (1893–1972) is known today for expressionist architecture of profound humanism. Having gained recognition for his house designs at the German Werkbund exhibitions of 1927 and 1929, his practice before World War II focused on residential projects, the most successful of which were the Siemensstadt Housing Estate in Berlin (1930) and the Schminke House at Löbau in Saxony (1932). This exhibition at the MIT School of Architecture + Planning focuses on Scharoun's graphic art, from his earliest preserved drawings of 1909 to graphics for posthumous projects. For more information, visit mit.edu.

Finland: Designed Environments
Minneapolis
Through August 17, 2014
The first major U.S. exhibition devoted to contemporary Finnish design since the 1990s, *Finland: Designed Environments* presents a holistic overview of the past 15 years in Finland, a period of rapid innovation and design breakthroughs. The exhibition, hosted by the Minneapolis Institute of Arts, pays particular attention to young Finnish architects emerging as major international voices such as K2S Architects, Hollmén Reuter Sandman, Verstas Architects, and others. For more information, visit new.artsmia.org.

Wright Around Chicago and The Pedal Oak Park Guided Tours
Chicago and Oak Park, Illinois
Through August 27 and September 28, 2014
Two popular bus tours allow people to experience the wealth of Frank Lloyd Wright–designed buildings in the Chicago area. The Wright Around Chicago guided bus tour features the best of Frank Lloyd Wright in Chicago and Oak Park, Illinois. The Pedal Oak Park guided bicycle tour stops at 22 Wright-designed structures in the Frank Lloyd Wright-Prairie School of Architecture Historic District in Oak Park through September 28. For more information, visit flwright.org.

Italian Futurism, 1909–1944: Reconstructing the Universe
New York City
Through September 1, 2014
The first comprehensive overview in the United States of one of Europe's most important 20th-century avant-garde movements, *Italian Futurism* features more than 360 works by more than 80 artists, architects, designers, photographers, and writers. This exhibition at the Solomon R. Guggenheim Museum examines the full historical breadth of Futurism, from its 1909 inception with the publication of the first Futurist manifesto through its demise at the end of World War II. For more information, visit guggenheim.org.

Open to the Public: Civic Space Now
New York City
Through September 6, 2014
An exhibition exploring why people gravitate to (or avoid) civic spaces—the places between buildings where people can assemble—the exhibition's 20 case studies are divided into three intersecting thematic categories: congregation, contemplation, and circulation. *Open to the Public* presents the work of contemporary designers, including Snøhetta, Weiss/Manfredi, and James Corner Field Operations along with other almost unnoticed places where people gather. At the Center for Architecture. For more information, visit cfa.aiany.org.

dates&events

Palaces for the People: Guastavino and the Art of Structural Tile
New York City
Through September 7, 2014
At the Museum of the City of New York, this exhibition showcases the architectural beauty and engineering strength of spaces created by Spanish immigrants Rafael Guastavino and his son, Rafael Jr., who immigrated to New York from Barcelona in the late 19th century. Their legacy can be seen in thin-tile structural vaults hidden in plain sight throughout New York, including Grand Central Terminal, the famous Oyster Bar, the Cathedral of Saint John the Divine, the Ellis Island Registry Hall, the Elephant House at the Bronx Zoo, the Boathouse, the Tennis Shelter in Prospect Park, and many others. For more information, visit mcny.org.

Architecture in Uniform: Designing and Building for the Second World War
Paris
Through September 8, 2014
Open to the general public at the Cité de L'Architecture et Du Patrimoine, following its presentation in Montreal in 2011, *Architecture in Uniform* investigates the consequences of the Second World War to the built environment and reveals the immense development undertaken by architecture during those years. Curated by Jean-Louis Cohen, the exhibition features drawings, photographs, posters, books, publications, models, historical documents, and films from all sides of the conflict. For more information, visit cca.qc.ca.

Architecture to Scale
Chicago
Through September 14, 2014
An exhibition at the Art Institute of Chicago, *Architecture to Scale* demonstrates the complex process and vast range of scales in architectural representation through the work of two ground-breaking architects, in adjacent installations, Stanley Tigerman and Zago Architecture. Stanley Tigerman, a major figure in Chicago's postmodern-architecture movement, is largely known for his intricate and inventive *Architoon* drawings. Founded by Andrew Zago in 1991, Zago Architecture employs a rigorous practice of research and experimentation in parallel with its architecture projects. For more information, visit artic.edu.

Konstantin Grcic
Weil am Rhein, Denmark
Through September 14, 2014
The Vitra Design Museum presents the largest solo exhibition on Konstantin Grcic and his work to date. Specifically for this exhibition, Grcic has developed several large-scale works rendering his personal visions for life in the future—a home interior, a design studio, and an urban environment, in which fictional scenarios are staged—confronting the viewer with the designer's inspirations, challenges, and questions. The highlight of these presentations is a 30-meter-long panorama that depicts an architectural landscape of the future. For more information, visit design-museum.de.

Vertical Urban Factory
London
Through September 15, 2014
Vertical Urban Factory explores the potential for manufacturing to be a feature of our cities once again. Curated by New York–based architectural historian and critic Nina Rappaport and held at the Museum of Architecture, the exhibition explores urban manufacturing through historical and present-day examples and contends that since production has become cleaner, greener, smaller, and on-demand, it should play a central role in the revitalization of neighborhoods. For more information, visit museumofarchitecture.org.

Houghton Hall: Portrait of an English Country House
Houston
Through September 22, 2014
For the first time, a collection of paintings, sculptures, and decorative arts from Houghton Hall in England—architect William Kent's 18th-century masterpiece—travels to the U.S. The exhibition brings together more than 100 objects with furniture, some designed by Kent himself, to evoke the stunning rooms at Houghton Hall. At the Museum of Fine Arts. For more information, visit mfah.org.

Hollein
Vienna
Through October 5, 2014
The extensive exhibition *Hollein*, presented at the MAK in collaboration with the University of Applied Arts Vienna, will delve deeper into the universe of Hans Hollein, the only Austrian to have won the Pritzker Prize to date, and present his entire oeuvre from a new perspective, revealing a range of material from his archive that has never before been on public display. For more information, visit mak.at.

Designing Home: Jews and Midcentury Modernism
San Francisco
Through October 6, 2014
The first major exhibition to explore the role of Jewish architects, designers, and patrons in the formation of a new post–World War II American domestic landscape, *Designing Home*

highlights the essential contributions of well-known designers and architects, among them Anni Albers, George Nelson, and Richard Neutra. With more than 120 objects, *Designing Home* is organized around five key areas that include furniture, Judaica, and Hollywood films. At the Contemporary Jewish Museum. For more information, visit thecjm.org.

Louis Kahn: The Power of Architecture
Shad Thames, London
Through October 12, 2014
Louis Kahn (1901–74) was a visionary architect, an expert manipulator of form and light, a creator of uniquely dramatic buildings, and a highly complex individual. This new exhibition at the Design Museum explores Kahn's work and legacy through architectural models, original drawings, travel sketches, photographs, and films, bringing to life his singular career and diverse output. *The Power of Architecture* explores such broad themes as ruins and archetypes, the world as structure, and community. For more information, visit designmuseum.org.

NYC Makers: The MAD Biennial
New York City
Through October 12, 2014
This exhibition spotlights the creative communities thriving across the five boroughs of New York. It showcases the work of approximately 100 makers who have been nominated by a pool of more than 300 New York–based cultural leaders, with final participants selected by a jury. From world-renowned cultural leaders to emergent enfants terribles, every maker selected demonstrates the highest level of skill in his or her respective field, whether architecture, furniture design, fashion, or film. At the Museum of Arts and Design (MAD). For more information, visit madmuseum.org.

Mackintosh Architecture
Glasgow
Through January 4, 2015
The result of a four-year research project led by The Hunterian museum at the University of Glasgow, *Mackintosh Architecture* is the first major exhibition to be devoted to Mackintosh's architectural work, featuring more than 80 architectural drawings, films, models, and rarely seen archival material from The Hunterian and collections across the UK. The exhibition is supported by three special displays that showcase Mackintosh's skills as a draughtsman and designer, including his travel sketches and still-life compositions. At The Hunterian. For more information, visit glasgow.ac.uk/hunterian.

Unsettled Landscapes
Santa Fe, New Mexico
Through January 11, 2015
Unsettled Landscapes will look at the insistent forces, political conditions, and historical narratives that inform the work of contemporary artists across the Americas—from Nunavut to Tierra del Fuego. Through three themes—landscape, territory, and trade—this exhibition at SITE Santa Fe explores the interconnections among representations of the land, movement across the land, and economies and resources derived from the land. For more information, visit sitesantafe.org.

Designing for Disaster
Washington, D.C.
Through August 2, 2015
From earthquakes to hurricanes, flooding, and rising sea levels, natural disasters can strike anywhere and anytime. In light of this reality, the National Building Museum presents the multimedia exhibition *Designing for Disaster*, a call to action for preparedness on the part of design professionals, local authorities, homeowners, and school kids. The exhibition explores strategies local leaders are pursuing to reduce risks and build more resilient communities. For more information, visit nbm.org.

dates&events

Competitions

Mud House Design 2014
Registration deadline: August 15, 2014
Nka Foundation invites students to Mud House Design 2014, an international architecture competition to demonstrate that mud architecture can be well-made and durable. Designs should be for a single-family home, and use local materials and labor. The first-place entry will be built in the Ashanti Region of Ghana. For more information, visit nkafoundation.org.

vision42design Competition
Registration deadline: September 8, 2014
The Institute for Rational Urban Mobility is hosting a design competition to imagine an enhanced public environment for 42nd Street in Midtown Manhattan. Participants should transform the street into a world-class boulevard, complete with public spaces and a light-rail tram. Prizes include $10,000 and a feature in *The Architect's Newspaper*. For more information, visit vision42.archpaper.com.

Guggenheim Helsinki Design Competition
Submission deadline: September 10, 2014
This open international two-stage competition welcomes anonymous submissions from firms and individuals around the world to design a new Guggenheim museum to be built in the Finnish capital. The resulting Guggenheim Helsinki museum will organize and present internationally significant exhibitions of art from the 20th and 21st centuries while specializing in Nordic art and architecture. It will also be distinctive within the Guggenheim constellation of museums by actively including design and architecture in its programming. For more information, visit designguggenheimhelsinki.org.

Breaking New Ground
Registration opens October 2014
Breaking New Ground is an international design and ideas competition that addresses the urgent affordable-housing needs of farmworker and service-worker families in the Coachella Valley in southeastern California. Efforts to improve living conditions suffer from a lack of funding and coordination. The competition seeks to address this by harnessing the power of design to envision new precedents, mechanisms, and policies for affordable-housing implementation and development, with implications for California and the nation. For more information, visit breaknewground.org.

E-mail information two months in advance to recordevents@mcgraw-hill.com.

snapshot

PROJECT PATHÉ FOUNDATION
LOCATION PARIS
DESIGNER RENZO PIANO BUILDING WORKSHOP

IN RENZO PIANO'S Paris office, a picture of an armadillo is tacked alongside a drawing of the studio's latest work in the city—the Pathé Foundation. "It took time to develop the final form, but it was one of the first sketches that Renzo did—this little animal or little creation adapting himself to his environment," says Thorsten Sahlmann, the project's lead architect. Indeed the aluminum-clad structure, which will house a film archive and research center opening September 10, huddles into its narrow urban site like a critter burrowing into a den. But you wouldn't know it from the rue des Gobelins: passersby get a hint of what lies beyond the Foundation's restored historic facade (festooned with reliefs by a young Auguste Rodin) only from a silvery hump overhead. This curved volume, wrapping a steel-and-concrete structure, features a double skin of glass and perforated-aluminum panels serving as a brise soleil. "One of the goals was to get daylight into the building," explains Sahlmann. The archive is sandwiched between sunlit administrative offices on the top floor and a 70-seat theater and other public spaces on the lower levels. To let in additional light, the architects elevated the form on a glazed volume providing views of a courtyard, which will feature a grove of birch trees—cinema verité at its finest. *Anna Fixsen*

View additional images at architecturalrecord.com.

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