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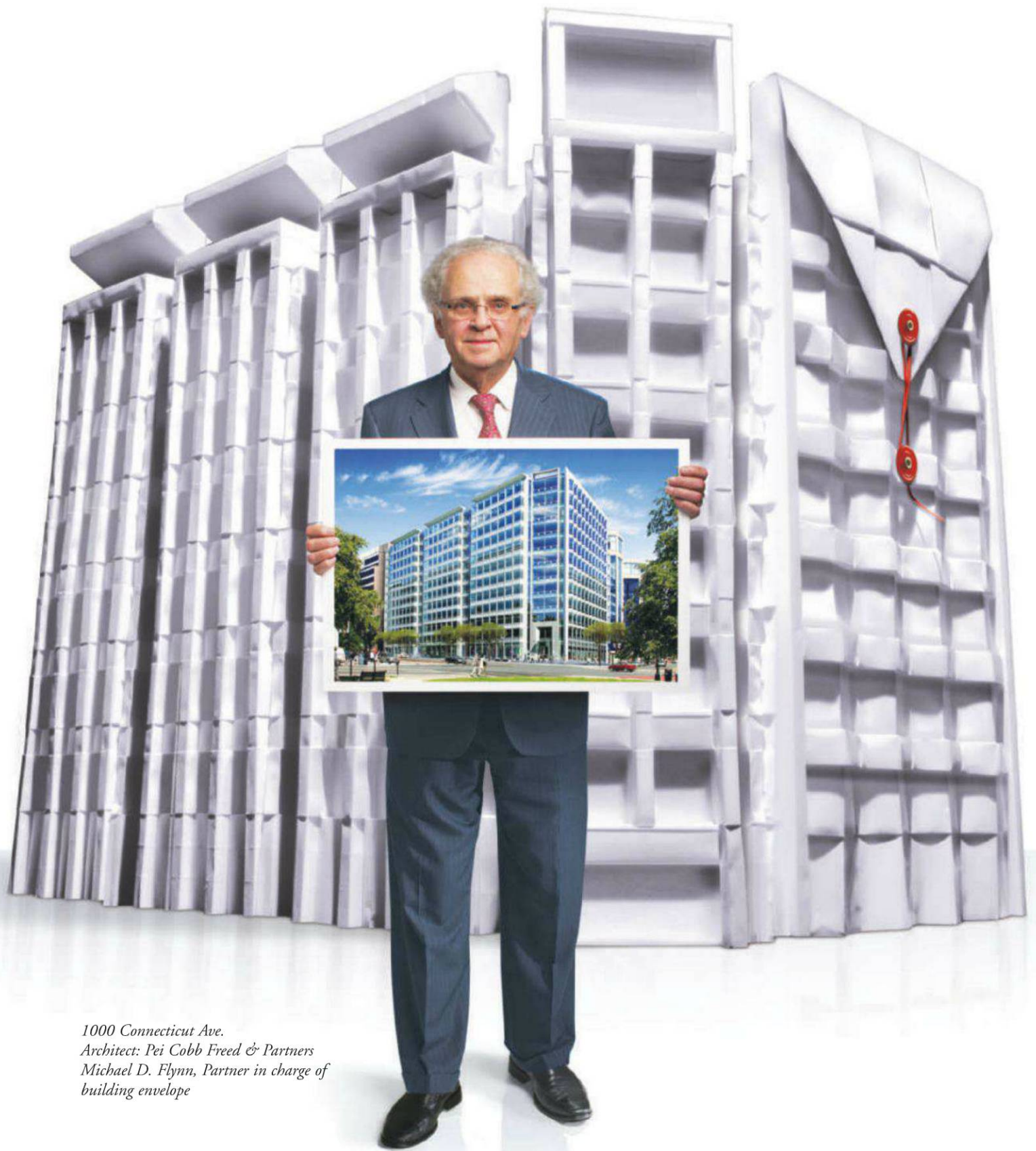
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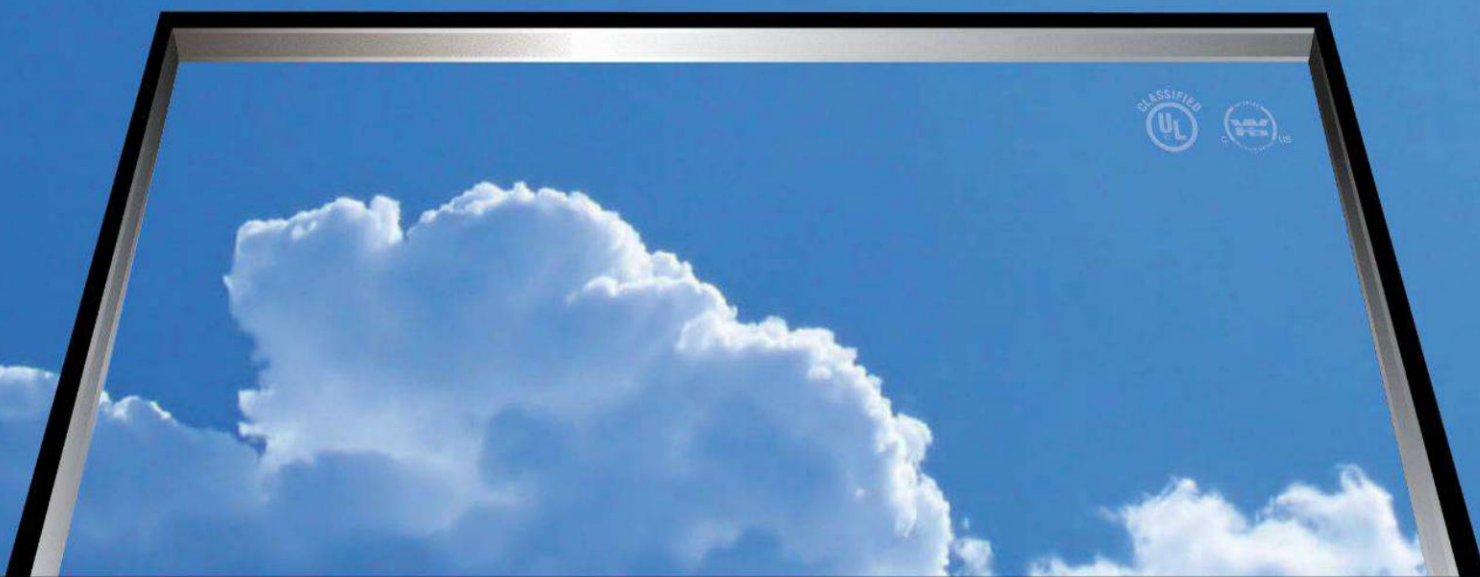


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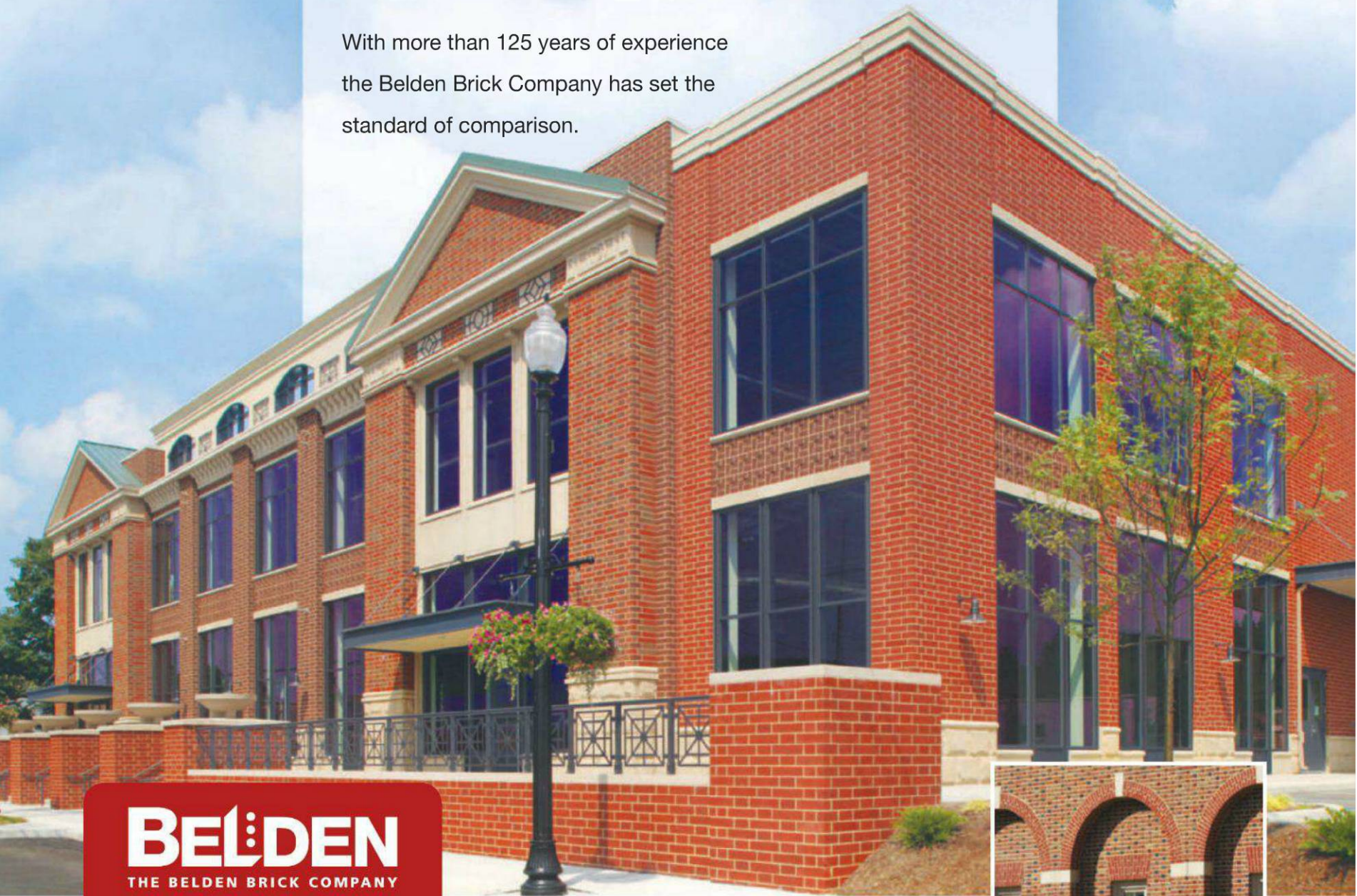
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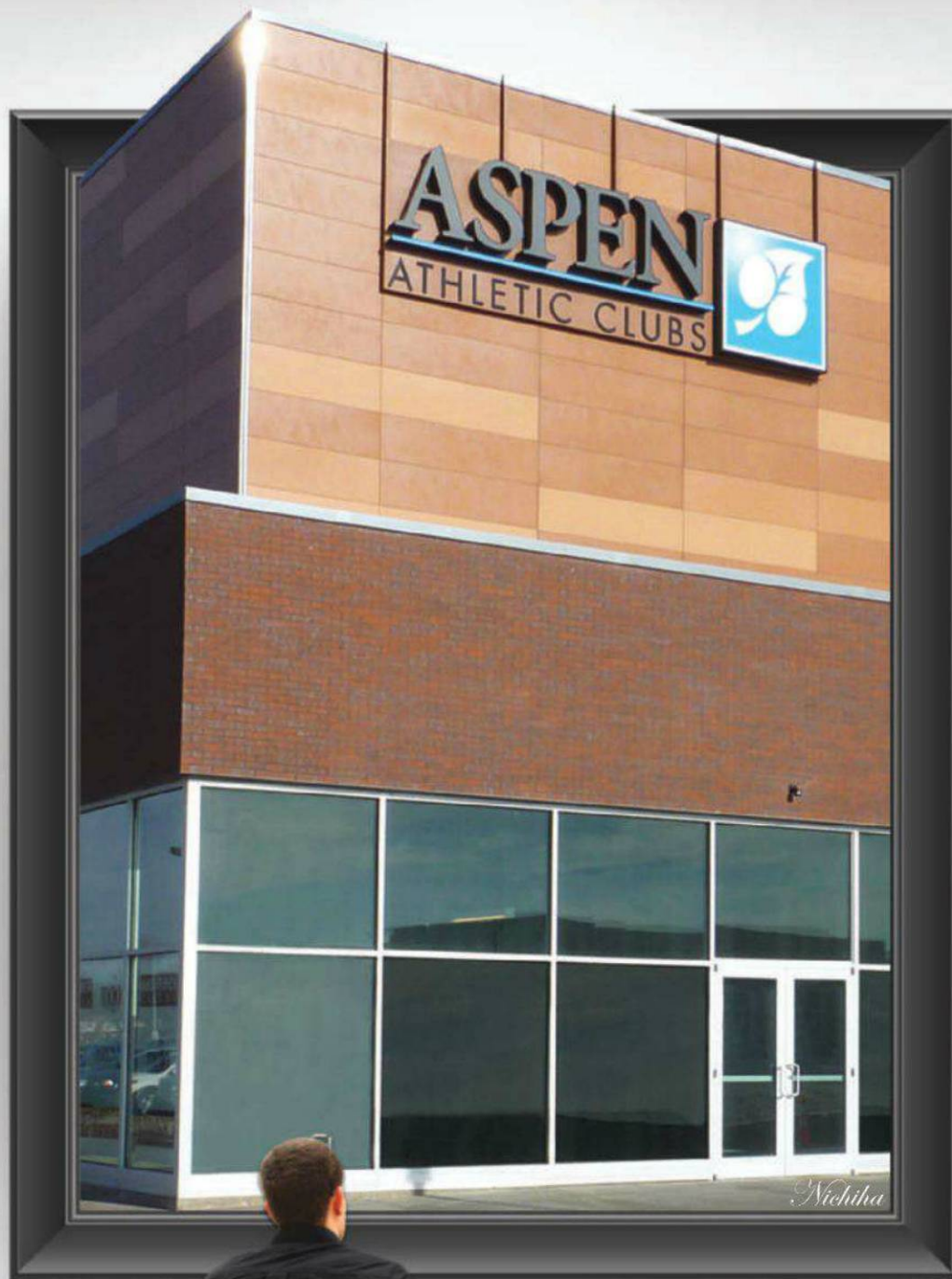
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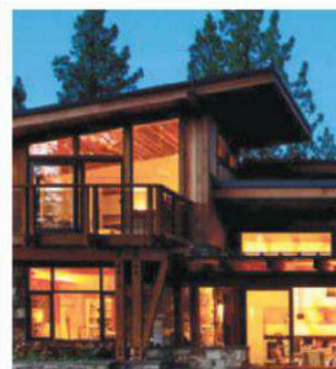
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Commenting on references to early-20th-century painter Kazimir Malevich, many readers responded to our story about Adjaye Associates' Moscow School of Management.

[COMMENTS AND LETTERS]

I loved this as an idea when I interviewed Adjaye at his London office a few years ago and then as a finished structure when I saw it in Moscow in 2010. It is by far the most powerful piece of architecture in Russia and the only one actually built by a "starchitect" so far. It is very clever and it works perfectly with the local climate—it is a vertical Modernist city/campus, and you don't need to go out to get from building to building. The volumes share a giant floating base with an accessible green roof and skylights that admit light into streetlike spaces: public squares, plazas, and residential and leisure facilities. The footprint of the project is absolutely minimized and suspended like a dot over the landscape. So in a way, it is a monastery, similar to La Tourette, with the overall form paying homage to Malevich's work. The interiors (done by a local architect) are terrible but the overall spatial composition and circulation are very strong and successful.

—Vladimir Belogolovsky

[READER PHOTOS]



Adjaye Associates' Moscow School of Management combines the components of a typical campus in a winter-friendly megastructure.



In our January issue, we featured a series of museum projects, and our readers uploaded many of their own photos of cultural buildings—including Thomas Phifer's North Carolina Museum of Art in Raleigh (above) and Tadao Ando's Museum of Literature in Himeji, Japan—to our online photo galleries.



This building reminds me of the first Mac commercial, in which the guy throws the hammer at the screen. Talk about 1984 and Big Brother.

—Anonymous

I get it. Adjaye is trying to create Suprematist-style kinetic energy and motion with inanimate objects. But Malevich's corpse is rolling over in its grave.

—Anonymous

It looks like a fantastic building. The photos remind me of El Lissitzky's skyscraper drawings.

—Anonymous

It looks as if the clients wanted a lot of building for their budget, but the result is quite schematic and garish.

—Anonymous

I know they have cold weather, but this building is too much.

—Anonymous



Derek, 32 years old

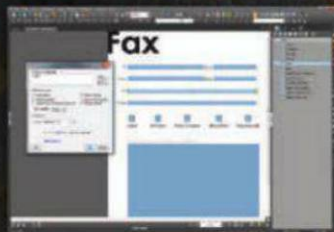
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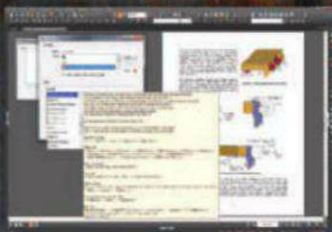
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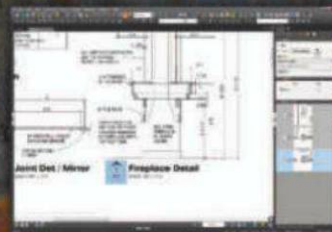
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Back to the Future

Architects and preservationists continue to grapple with old buildings and new ideas.

THIS MONTH'S issue, in which we explore contemporary ideas and projects surrounding historic architecture, is all about raising questions. What criteria make old architecture worth saving? Is it desirable, or even possible, to restore a historic building or neighborhood to its virgin state—or should preservation reflect layers of history? What inspires an architect to successfully adapt an old structure without resorting to the kind of historicist motifs that only cheapen a genuine regard for the past?

Some surprising leading figures from the world of architecture are engaging with historic buildings today, including Herzog & de Meuron, which made its mark with iconoclastic contemporary design. “Modernism had thought of history as an impediment to the goal of creating...a new future,” says Jacques Herzog in an interview (page 59). “If we had been born 10 years earlier, we would have been more profoundly influenced by a still-intact Modernism.” In its native Basel, Herzog & de Meuron has added to the 19th-century Museum der Kulturen (page 54) by building up not out, with a whimsical roof that is sympathetic to yet idiosyncratic in the historic cityscape. In the magnificent 19th-century Park Avenue Armory in New York City—now being reimagined largely as a contemporary art and performance space—the same firm has recreated Victorian wallpaper and other details as a sort of mirage rather than a literal quotation. It’s what architectural scholar Jorge Otero-Pailos calls in an essay (page 42) an “echo of...the lost original.”

That idea of the echo brings to mind last year’s National Book Award-winning book, *The Swerve: How the World Became Modern*, by Harvard historian Stephen Greenblatt. It concerns the 15th-century rediscovery of the lost manuscript of Lucretius’s “On the Nature of Things.” In six books of verse, the philosopher-poet of ancient Rome described a vision of the world made of constantly reconfiguring atoms—the atoms “swerve”—rather than an earth created by the gods. To Lucretius, that meant that man should be at liberty to pursue the pleasures of the here and now, rather than fearing death and a hereafter. Greenblatt argues that the rediscovery of the epic poem helped jump-start the Renaissance and spark Enlightenment ideals. Thomas Jefferson had at least five Latin editions of *De Rerum Natura* (On the Nature of Things) in his library, as well as translations in English, Italian, and French. While reading Greenblatt’s engrossing account, you can’t help but think how different Lucretius’s words must have sounded to the literati in ancient Rome as opposed to those in late-medieval Europe, or to Jefferson—who composed the phrase “the pursuit of happiness”—as opposed to Einstein more than a century later. There’s no content free of context.

In the same way, we see historic buildings through contemporary eyes, though we try mightily to peel back the layers of time to understand what the architecture originally signified.



Unmasking the strata of history is part of Rem Koolhaas’s strategy in working with historic architecture—so in adding onto the architecture school at Cornell (page 44), he and his firm, OMA, retained the undistinguished Rand Hall as well as the more significant Sibley Hall. Rather than glorify one moment in time, Koolhaas is exposing time’s passage. In his master plan for renovating the Hermitage in St. Petersburg, he proposed keeping the old display cases, dust and all.

But Koolhaas also has mounted an attack on the proliferation of preservation, most recently through an exhibition at the New Museum in New York last spring, arguing that the movement can be a crippling force in the development of cities (page 31). He has a point. Given the current power of preservationists in New York City, I doubt that Frank Lloyd Wright could get the Guggenheim Museum built today. All of which raises more questions: How should the past be balanced with the present and the future? And who should decide?

We know many of you have your own ideas in these ongoing debates. Let us know what you think. ■

Cathleen McGuigan

Cathleen McGuigan, Editor in Chief



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[URBAN DEVELOPMENT]

Havana: Bracing for a Boom

FOR DECADES, Havana has charmed foreigners who visited the Caribbean city well-known for its sultry music, world-class cigars, and *cachorros*, the vintage American automobiles imported to the country prior to the 1959 revolution. The urban landscape is like few others: Located on Cuba's northern coast, this city of 2.1 million people is endowed with a range of architectural styles, from Renaissance, Moorish, and Baroque to Neoclassical and Mid-Century modern. In 1982, UNESCO named Old Havana a World Heritage Site.

"Havana was not ruined by overdevelopment or the urban renewal programs of the 1960s," says Julio César Pérez, a 54-year-old practicing architect in Havana who travels internationally to speak about Cuba. "We are proud of our city, our culture, our architectural heritage. We love our country, and we want the best for it."

This devotion is what led Pérez to start developing a master plan for Havana a decade ago while a Loeb Fellow at Harvard's Graduate School of Design. Fearing a future building frenzy that could erode the city's soul, Pérez conceived a multifaceted scheme that calls for historic preservation combined with sensitive new development. His plan emphasizes the retention of Havana's polycentric layout, derived from a pedestrian system of interconnected squares. Waterfront redevelopment would take its cue from local traditions and European cities, with low-rise buildings containing housing and ground-level cafés, galleries, and shops; meanwhile, the port zone would be transformed into a modern commercial and sports center. His plan also includes a new public transportation system, infrastructure upgrades, and an increase in public space. "It's aimed at preserving our heritage while also creating new urban and economic opportunities," says Pérez.



This month, architects from around the globe will meet in Havana to discuss a master plan that aims to preserve the city's rich cultural heritage.

In 2006, Pérez completed his plan and registered it with the U.S. Copyright Office. The following year, with the help of colleagues and two organizations—the Council for European Urbanism and the International Network for Traditional Building, Architecture & Urbanism—he began hosting annual design charrettes in Havana, inviting architects and planners from around the globe, from Australia to Norway, to visit his beloved city and help him evolve the plan. Local architects

also participate. "We don't exclude anyone, even if they disagree with our ideas," Pérez says. This year's event takes place February 19–25.

John Pilling, a Boston architect and professor who has attended the charrettes since their inception, says he first visited Havana in 2001 and was immediately hooked. "It's one of the most memorable cities in the world," he explains, noting that beyond its historical buildings, Havana boasts remarkable works of modern architecture. Given recent changes in govern-

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ment policies, he says, "I have an abiding fear that, all of a sudden, Havana will get overwhelmed by oppressive high-rises."

Indeed, the city seems poised for new construction. Since Raúl Castro (Fidel's 80-year-old brother) became Cuba's president in 2008, he has cautiously initiated economic reforms and private enterprise. Recently, Cuban citizens have gained the right to buy and sell houses and own certain types of businesses. There are talks of loosening travel restrictions for Cubans, too. Some foresee the country eventually following in the footsteps of nations like China, with its state-sponsored capitalism.

Havana's harbor would be particularly attractive to foreign investors, says Jeffrey Heller, principal at San Francisco-based Heller Manus Architects. He has traveled to Cuba on four occasions and, in 2010, attended one of Pérez's charrettes. "Everyone knows the day will come when the doors will open, and it's going to be a land rush," Heller says. His perception is partly based on his experience working in other communist nations. In China, for instance, he currently has 11 projects totaling 71 million square feet. A development boom in Cuba is imminent, he says: "The question is when and how fast, and how do you protect Havana in the process."

Only time will determine if the ideas of Pérez and others to preserve Havana's unique character will hold under inevitable development pressures. Pérez is sanguine about the prospects. "I've done what I considered was my duty," he says of his master plan. "It is a work of love for my city." ■

Additional reporting by Laura Raskin.

BY LAURA MIRVISS

[ADAPTIVE REUSE]

Green Rebirth Planned for Former Fraternity House

SITUATED ON a tree-lined street on the Drexel University campus in West Philadelphia, a stone-clad dwelling circa 1872 served as the Pi Lambda Phi fraternity house for three-plus decades. In the late 1990s, however, the university shuttered the residence following an arson incident. It's sat vacant ever since.

Now, a student-run organization backed by faculty members is working to transform the three-story, 5,000-square-foot building into a hub for testing sustainable design and construction methods. The "Drexel Smart House" would also serve as a dorm that could accommodate 10 residents. In December, the university pledged \$1.1 million toward the \$2.5 million project, giving it a much-needed financial boost. Construction is tentatively scheduled to begin this May.

Plans call for renovating the historic building and constructing a 4,600-square-foot addition. The team has incorporated a bevy of green features, such as energy-efficient lighting, low-flow plumbing fixtures, and a graywater capture-and-reuse system. "This house is in the same style as the rest of the neighborhood, so the technology we test in our house can be transmitted throughout the community," says Kevin Malawski, an architecture student and president of the Drexel Smart House club.

The project was hatched years ago by several students, most of whom have graduated. But momentum hasn't waned. Joan Weiner, a business professor and the club's primary faculty adviser, has been involved since the beginning. As she recalls, an engineering student, Jameson Detweiler, approached her in 2007 after returning from North Carolina, where he had toured a LEED Platinum dorm run by Duke University's engineering school. He recruited students who wanted

to create a similar project at Drexel. Weiner was enthusiastic but concerned that the endeavor would lose steam once Detweiler and his peers graduated. "A student might have a good idea, and it happens during his or her tenure, and then it dies," she says. Regardless, she signed on.

The next step was finding a site. School officials suggested the old frat house and transferred



LEFT: The dwelling, built in 1872, has sat vacant since the late 1990s.

BELOW: Plans call for restoring the stone-clad house and constructing a 4,600-square-foot addition. The building will double as an educational space and dorm.



ownership to the club in 2007. Students have spent the past few years designing and testing systems for the house—and they've made great strides. They conceived a "do-it-yourself" green roof that weighs 9 pounds per square foot, which is considerably lighter than current commercial offerings. "We want to make a system with interlocking trays that a homeowner can assemble himself," says Malawski. In the spring of 2011, the system earned the group a \$75,000 grant from the Environmental Protection Agency.

The team also won a \$20,000 grant from the Pittsburgh-based Green Building Alliance for the invention of an LED that mimics

sunlight over the course of a day, emitting cool light in the morning and gradually changing to yellow and red tints in the evening.

Several local firms have donated services. Mike Witkowski, a Drexel alumnus who works at McHugh Engineering Associates, is serving as a technical advisor; Poulson and Associates donated \$17,000 in geotechnical engineering services; and Sean Christopher, a Drexel alum and senior construction manager at Gap Inc., is spending numerous days helping the team. Moreover, the university is offering courses based on the project. Last spring, for instance, professor Paul Schultz teamed up with Andrew Cronin, an architect

at KieranTimberlake, to teach a class in which students learned how to prepare design proposals.

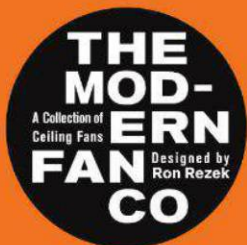
The Smart House has drawn praise. In a speech in April 2011, Drexel president John A. Fry called it one of the most exciting student-led projects on campus. Then, at October's World Green Energy Symposium, the club received a NOVA Award, presented each year to notable sustainable programs. While the group continues to raise funds, they hope to finish the project by 2013. "Everyone wants to see it succeed," says Malawski. "It's a galvanizing project. Once people get involved, they start fighting for it." ■



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ON THE BOARDS



Project **Ourense AVE Station**
 Location **Ourense, Spain**
 Architect **Foster + Partners**

Even in a recession, Foster + Partners continues to win large infrastructure and architecture projects. In December, the firm (in collaboration with engineers G.O.C. and Cabanelas Castelo Architects) prevailed in a competition to design a high-speed train station in Ourense, Spain. The station, which will integrate bus services, includes a new park with pedestrian paths and water features. Lightweight canopy roofs create a streamlined expanse over the elevated tracks.

Project **Windermere Steamboat Museum**
 Location **Lake District National Park, England**
 Architect **Carmody Groarke**

London-based firm Carmody Groarke won an international RIBA competition for their design of a steamboat museum on the shores of Lake Windermere in North West England. The scheme features a cluster of simple pavilions, buildings, and docks, as well as a conservation workshop. Vessels dating from 1780–1980 will be on display.



Project **Delancey Underground**
 Location **New York City**
 Architect **James Ramsey**

The High Line has been New York's number-one urban planning hit since the debut of the first section in 2009. Now architect James Ramsey proposes the opposite: Dubbed the "LowLine," the subterranean park in a 1.5-acre former trolley terminal below Delancey Street would feature a day-lit pedestrian corridor and retail opportunities. Ramsey and his team are conducting a feasibility study and, as of press time, were planning to present designs to the public on January 31.

IMAGES: COURTESY FOSTER + PARTNERS (LEFT); RAAD STUDIO AND KIBUM PARK (CENTER); CARMODY GROARKE AND EXTRUDE MEDIA (RIGHT)

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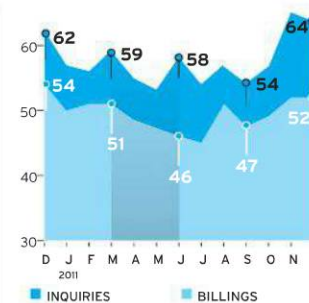
Cornell Wins Bid for Roosevelt Island Campus



On December 20, New York City named Cornell University and the Technion-Israel Institute of Technology winners of its highly touted competition for a new technology campus on Roosevelt Island, located just east of Manhattan. Skidmore, Owings & Merrill's master plan for the 2-million-square-foot campus features eight buildings arranged in a zigzag pattern on the island's south end, where hospital facilities now stand. New buildings will have large interior courtyards and will be linked by aboveground walkways. The 400,000-square-foot first phase is designed to create as much energy as it uses, thanks to a solar array that will generate 1.8 megawatts at daily peak and a 4-acre "deep-earth" geothermal well field.

Gehry House Among AIA's 2012 Award Winners

The Gehry Residence in Santa Monica, California, has won the AIA's 2012 25-Year Award, which recognizes a notable work of architecture between 25 and 35 years old. Frank Gehry designed the distinct dwelling—an old two-story bungalow wrapped in glass and metal—for his family. The AIA has also named the recipients of its annual Honor Awards, among other accolades. Visit us online to read more.



Uptick for the ABI

In December, for the second month in a row, the Architecture Billings Index hit 52.0, pointing to an increase in demand for design services. While the upswing doesn't indicate a full recovery, it's still "very good news for the design and construction industry," says AIA chief economist Kermit Baker. The December inquiries score was 64.0.

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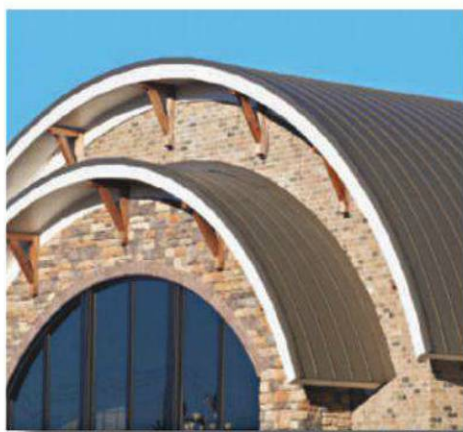
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Preservation Nation

Is landmarking a shield or a sword in the fight against overdevelopment?

AMONG URBANISTS in America, the advent of landmark-preservation laws in the 1960s is usually viewed as an inspiring time in urban planning: Concerned communities, academics, and fans of architecture banded together to protect beloved old buildings from the grand plans of rich developers and powerful politicians. And, remarkably enough, the Davids usually defeated the Goliaths. But have they acquired too much power? So say a growing contingent of critics who believe preservation has gotten out of hand. They include left-leaning economic



The leafy streets of Boston's landmarked Back Bay neighborhood.

“Preservationists believe that central cities are economically successful because of landmark laws, not in spite of them.”

policy wonks, architects, and architectural critics.

Landmarking is under attack on two fronts: architectural and economic. Critics in the first category are not opposed to landmarking, but worry that architecturally undistinguished buildings and neighborhoods are winning landmark status for political or sentimental reasons. The result, they say, is a public that embraces architectural nostalgia rather than innovation. At the same time, some economists and policy experts maintain that cities are limiting their economic potential by constraining the supply of new housing and commercial development through too much landmarking. The outcome: Most desirable cities are too expensive for middle-class families.

This past year, Harvard economist Ed Glaeser, in his book *Triumph of the City*, attacked landmarking, along with such restrictions as zoning that limits density or requires parking lots. Glaeser points to the case of a proposed 30-story addition, designed by Norman Foster, at 980 Madison Avenue on Manhattan's Upper East Side, that was rejected by the Landmarks Preservation Commission even though it would have kept the original 1950 limestone gallery building as well. “The cost of restricted development is that protected areas become more expensive and exclusive,” writes Glaeser. Legions of

urban policy bloggers around the country agree.

The aesthetic critique of landmarking is also gaining currency. Rem Koolhaas mounted an exhibition at New York's New Museum last spring that was a broadside against landmarking. “[Koolhaas] paints a picture of an army of well-meaning but clueless preservationists who, in their zeal to protect the world's architectural legacies, end up debasing them by creating tasteful scenery for docile consumers while airbrushing out the most difficult chapters of history,” reported the *New York Times*.

These issues may be most extreme in New York, where the razing of McKim, Mead & White's Pennsylvania Station in 1963 still stings. But similar controversies have erupted in older cities across the country. What the *Washington City Paper* calls “the weaponization of preservation” includes the efforts of the Tenleytown Historical Society to prevent American University from expanding its campus by pushing landmark status for an entire block to protect the fairly banal 1904 Immaculata Seminary.

In Boston, tradition often trumps the new. “The South End is very restrictive about what you can do to your buildings, in many cases with very good reason,” says architect and preservation expert David Fixler. Yet people can be prevented from making changes just “to keep things the way they are.” Sometimes

officials require new construction be designed in an architecturally contextual manner, even when the building is an inherently modern structure. In San Francisco, on the other hand, the Historic Preservation Commission has responded to criticism that Modernism is underappreciated by seeking protection of such undistinguished modern buildings as the 1959 North Beach Branch Library.

Critics and defenders of landmarking tend to agree on one key point:

that the drive to landmark buildings of questionable significance is caused by a larger problem of communities feeling powerless to stop unwanted development. “Preservation has become an all-functioning tool for all sorts of operations,” says Sarah Williams Goldhagen, architecture critic for *The New Republic*. “It's being used to prevent or to determine the direction of development because city planners are so disempowered, rather than because these buildings or districts are by any objective standards worth preserving.”

Yet preserving historic buildings is important for cultural and even economic reasons. In the 1980s, New York City theater owners near Times Square were tempted to sell their buildings to developers who would put up office towers in their place. An economist like Glaeser might applaud such market efficiency. But New York's historic theaters are part of the city's identity. When the city landmarked the theaters, it allowed owners to sell development rights to adjacent parcels. Today, Times Square has tall office buildings as well as a vibrant theater district. “Tens of millions of dollars go into Broadway, and it's a major economic engine for the city,” notes Simeon Bankoff of New York's Historic Districts Council. “They're only there because they're landmarked.”

Preservationists believe that central cities are economically successful because of landmark laws, not in spite of them. What Glaeser and others fail to appreciate is that there is excess demand to live in Manhattan or San Francisco precisely because of the architectural quality of the built environment. ■

Ben Adler is a contributing writer for The Nation.



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ROBERT GRACE DESIGNS A TRANSPARENT "ORANGERY,"
CREATING A HARMONIOUS LINK BETWEEN A STATELY GEORGIAN
MANSION AND THE LUSH ENGLISH GARDEN BEHIND IT.

ACCORDING TO English Heritage (which oversees historic buildings for the British government), Woodchester House, a Georgian mansion built in 1746 and located on 30 acres of Gloucestershire countryside, is architecturally untouchable and unchangeable. For both the architect, London- and Paris-based Robert Grace, and the client, a financier and author, that was a problem.

Granted, the mansion and its grounds and garden—where the owner's wallabies frolic—are breathtaking. But the link, visual or physical, between the house and the landscape was lacking. After months of discussion, Grace and the owner decided that a 1,500-square-foot glass, wood, and concrete "orangery," or garden room, would solve the problem. It provides a place of contemplation and repose adjacent to, but never touching, the house. "It is shelter," says Grace, "but you can look out at the garden or at the back at the house and feel linked to both."

The new 18-foot-high structure may relate to the house functionally, but hardly stylistically. "It's totally of the 'now,'" says Grace. Two slender reinforced concrete columns support a concrete roof, while expanses of glass diminish the sense of mass. Triple-glazed units enclosing the space are almost nonexistent, especially where they meet at a corner facing the garden: With a push of a button they glide back on an invisible motorized track. Oak plank floors unite the



LEFT: The blocky Georgian mansion, built 266 years ago, and an outbuilding are connected to a remarkable garden by a modern glass-and-concrete pavilion at the rear of the house.

various parts of the retreat, which includes an entry, bathroom, laundry, and living area with a fireplace carved in a stone wall.

A 41-foot gallery links the garden pavilion to an existing outbuilding, used as a kitchen and dining room, that adjoins the main house. To create the linear gallery, Grace placed sections of an old stone garden wall, once part of the house's former orangery, parallel to each other and clad the interiors with white concrete. He then covered the hallway with a glass roof resting on glass beams that in turn hook into the concrete columns.

Grace and his client have collaborated on about 10 projects together, including two homes in London and an office. The close relationship meant the architect had no qualms about giving his client a Royal Institute of British Architects design award he won for the project in 2011. It is now displayed in the orangery, reminding all visitors that design can bring history forward. ■



ABOVE: Limed oak planks extend from the hallway into the orangery's living area. In the distance a wallaby rests in the garden.

LEFT: The fascia of the concrete roof is clad with soft gray aluminum to keep the color palette of the structure consistent when observed from the house's upper windows. The pavilion's corner glass walls facing the garden glide open on a motorized track.

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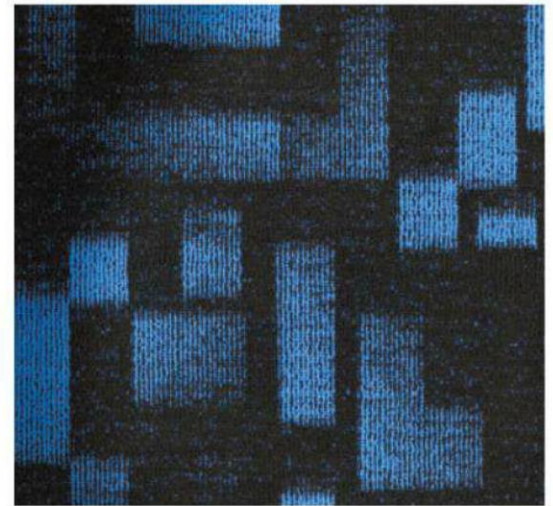
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QR Flooring Line

Mannington Commercial

manningtoncommercial.com

Mannington's partnership with the Korean industrial design firm Ryan Harc has resulted in QR, a new flooring line inspired by square barcodes. The carpet, which comes in bold color combinations and subtle, tonal pairings, is offered with a coordinating 18"-square Luxury Vinyl Tile, making it ideal for health-care facilities, museums, and retail spaces. **CIRCLE 204**

Global Reason Tufted Carpet Collection

Shaw Hospitality Group

shawhospitalitygroup.com

Shaw's Global Reason tufted carpet collection was inspired by the centuries-old art of block printing, ethnic-influenced hues, and vintage batik patterns. The collection features updated geometrics, mixed motifs, and graphic compositions, and coordinates with the Style Tribe Eco Evolution print and computer yarn placement collection for public spaces. Both contain 25% pre-consumer recycled content. **CIRCLE 205**

NO SHADES OF GRAY

Ellsworth Kelly has been collaborating with architects since the 1950s. His latest project with Peter Zellner turns an L.A. gallery into public art. **By Laura Raskin**

WHEN ARCHITECT Peter Zellner first unveiled his design for the new Matthew Marks Gallery in West Hollywood, it was met with enthusiasm from the planning department and the mayor. But the city has strict design guidelines on the books: New buildings must have windows and architectural detail. The gallery was, well, an “ice cube,” says Zellner, and Marks was in uncharted territory, choosing to make his West Coast debut in the scruffy neighborhood between La Brea and Fairfax Avenues rather than the established art scene in Culver City.

But Zellner was able to skirt the guidelines with the addition of Ellsworth Kelly’s 40-foot-long, 5,000-pound, rectangular, black metal minimalist sculpture to the gallery’s facade; now the entire building is considered a treasured piece of public art. “When the Kelly went on, it really felt like it was complete,” said Zellner, founder of the Los Angeles-based firm ZELNERPLUS. “Last week the building seemed naked to me.” Far from feeling protective of his ego or output, the architect describes his afternoon discussing the design with Kelly, “the last standing modern master in the United States,” as “one of the best moments of my life.” Matthew Marks represents Kelly, 88, and he asked the artist for a contribution to his new outpost.

Kelly is no stranger to collaborations or contributing site-specific works to important buildings. His painted aluminum wall sculpture for Renzo Piano’s 2009 addition to the Art Institute of Chicago and a wall sculpture in the lobby of Tadao Ando’s 2001 Pulitzer



Foundation for the Arts building in St. Louis are just two of many such commissions. In fact, his very first public commission and architectural collaboration, *Sculpture for a Large Wall* (1957), made the May 1957 cover of ARCHITECTURAL RECORD. This project originated when lighting designer Richard Kelly (no relation) commissioned Kelly to create a sculpture for the restaurant in Philadelphia’s then-new Penn Center Transportation Building, but when the building’s architect Vincent Kling saw the design, he requested the sculpture for the lobby instead. *Sculpture for a Large Wall* was the result. RECORD wrote about the

building and chose a detail of the 64-foot-long artwork made of anodized aluminum panels for the cover.

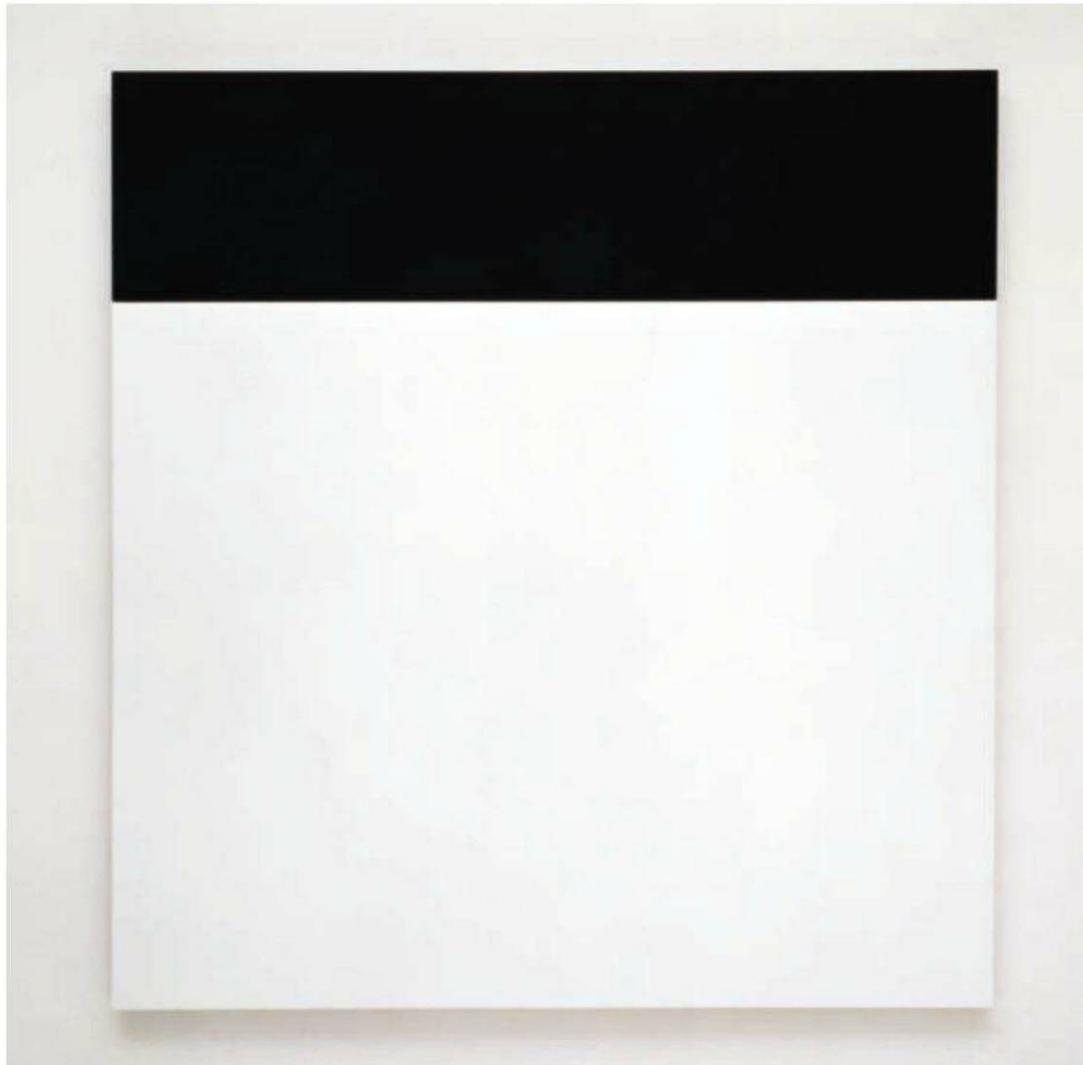
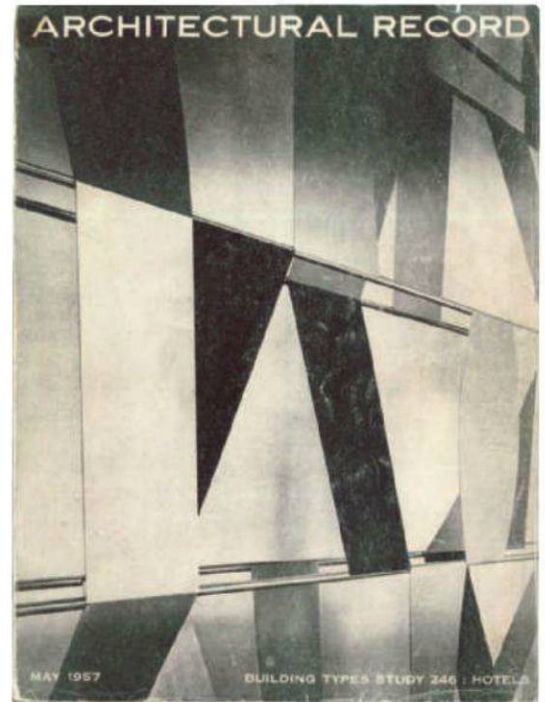
Fast-forward to the late 1990s: Kelly learned that the Transportation Building had been sold. On a visit, he was alarmed at the condition of the building and his creation. “I said, ‘Oh, my god, I’m going to try and get this back. They’re going to destroy it,’” says Kelly. He arranged for its removal, and Marks displayed it in his New York gallery in 1998. That same year, Jo Carole and Ronald S. Lauder purchased *Sculpture for a Large Wall* and gave it to the Museum of Modern Art.

OPPOSITE: The Los Angeles Matthew Marks Gallery in West Hollywood is a case study in minimalism, with an Ellsworth Kelly metal sculpture on the facade its only exterior detail.

BELOW: The gallery looks like a three-dimensional version of Kelly's 1966 painting *Black Over White*.

RIGHT: A detail of Kelly's *Sculpture for a Large Wall*, originally installed in Philadelphia's Penn Center Transportation Building, made the May 1957 cover of *RECORD*.

BOTTOM RIGHT: The artist at work.



PHOTOGRAPHY: © JACK SHEAR / COURTESY MATTHEW MARKS GALLERY (PORTRAIT); © ELLSWORTH KELLY / COURTESY MATTHEW MARKS GALLERY (PAINTING); COURTESY ARCHITECTURAL RECORD (COVER)

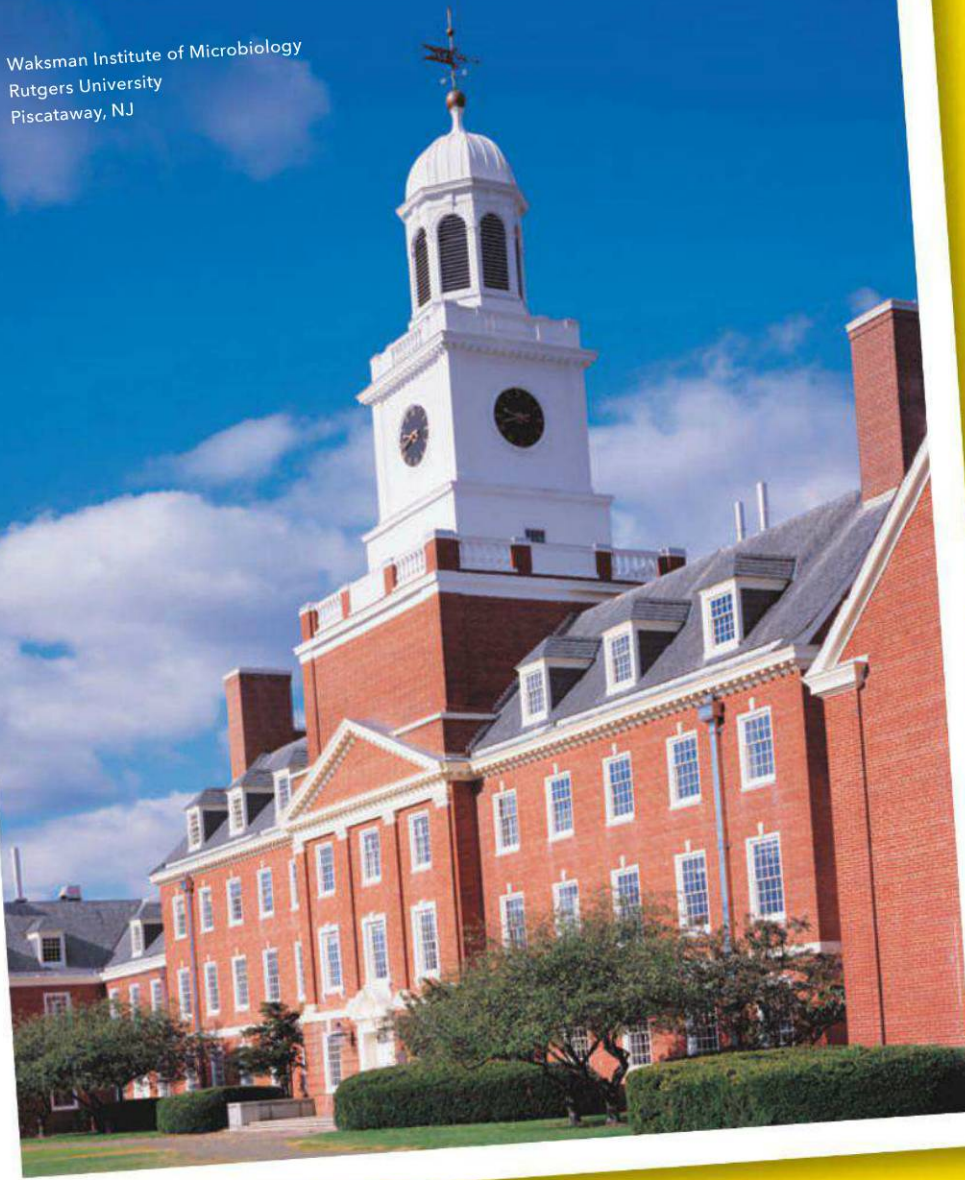
Speaking from his studio in Spencertown, New York, Kelly recalled looking intently at the model of Zellner's Los Angeles gallery design and then having a "flash" of inspiration: "In my work I wait for these flashes." He calls black and white the two "non-colors," but guesses that of the 1,000 or so paintings he's completed since 1949, a quarter of them have been black and white (about 50 were recently on display at the Haus der Kunst in Munich; the show will move to the Museum Wiesbaden in March). "It's always been very important for me, black. It's fundamental. It's like the opposite of a shadow," says Kelly. "If it was

color [on the gallery] it would be too decorative for me." Zellner likes that the black bar can be misinterpreted as signage.

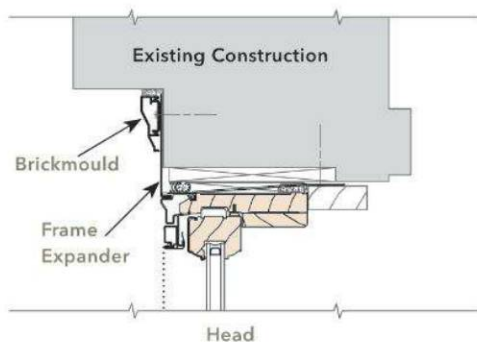
The gallery facade evokes two of Kelly's early works—a 1954 collage, *Study for Black and White Panels*, and a 1966 painting, *Black Over White*. "I've always wanted to design a building that doesn't have a use," says Kelly. "That's probably a definition of sculpture." ■

The Los Angeles Matthew Marks Gallery opened on January 19. Its inaugural show, Ellsworth Kelly: Los Angeles, runs through April 7, 2012, and includes six new two-panel paintings by the artist.

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BUILDING TYPES STUDY 919 *Renovation, Adaptation, Addition*

Top architects are tackling historic buildings in surprising ways.

RESTORATION REDUX

BY JORGE OTERO-PAILOS

PRESERVATION HAS returned to the center of architectural theory and practice, after languishing in the margins for over half a century. Just a decade ago, it would have been impossible to think that the stakes of the field would be set by projects like David Chipperfield and Julian Harrap's restoration of the Neues Museum in Berlin, Diller Scofidio + Renfro's subtle morphing of Lincoln Center and the High Line in New York, Rem Koolhaas's forensic preservation of the Hermitage in St. Petersburg, or Herzog & de Meuron's adaptation of the Park Avenue Armory in New York (page 50). Back then, such figures rarely involved themselves in preservation—not simply because they had defined their careers through new construction, but because they saw it as rather unimaginative work. Now these architects approach preservation projects with anxious care. It is as if preservation were the hardest move, the piked double Arabian with full twist, of architectural gymnastics. If so, then a profound reordering of the criteria for judging architectural excellence is taking place.

What makes the Neues Museum shocking is the level of restraint the architects demonstrated, at a time when it was common to hire world-class designers precisely to intimidate preservation commissions into allowing egregious "adaptations" of historic buildings into contemporary "icons." Against the grain of the grand gesture, Chipperfield and Harrap opted for the precision of discreet interventions. Their design consisted mostly of removing historically insignificant elements. When they did add, they did so to enhance what was there, as one adds salt to bring out the flavor of a dish instead of covering it with sauce. For instance, they added subtle tints to the lacunae in decorative patterns to reintegrate the losses into a complete image. Even the most emphatically new elements, like the grand staircase, echo the form of the lost original.

This echoing approach to situating architecture is a key departure from previous models. An echo is by definition not a facsimile of the original voice, and therefore not a "restora-

tion" in the traditional sense. It is the return of that voice from the future, transformed by the time that separates it from the original. An echo cannot return the original in its pure form. It returns a cleft original, bearing the dividing mark of a split temporality that cannot be easily located as part of the present. The Neues Museum was brought back deceptively intact, but in fact profoundly changed.

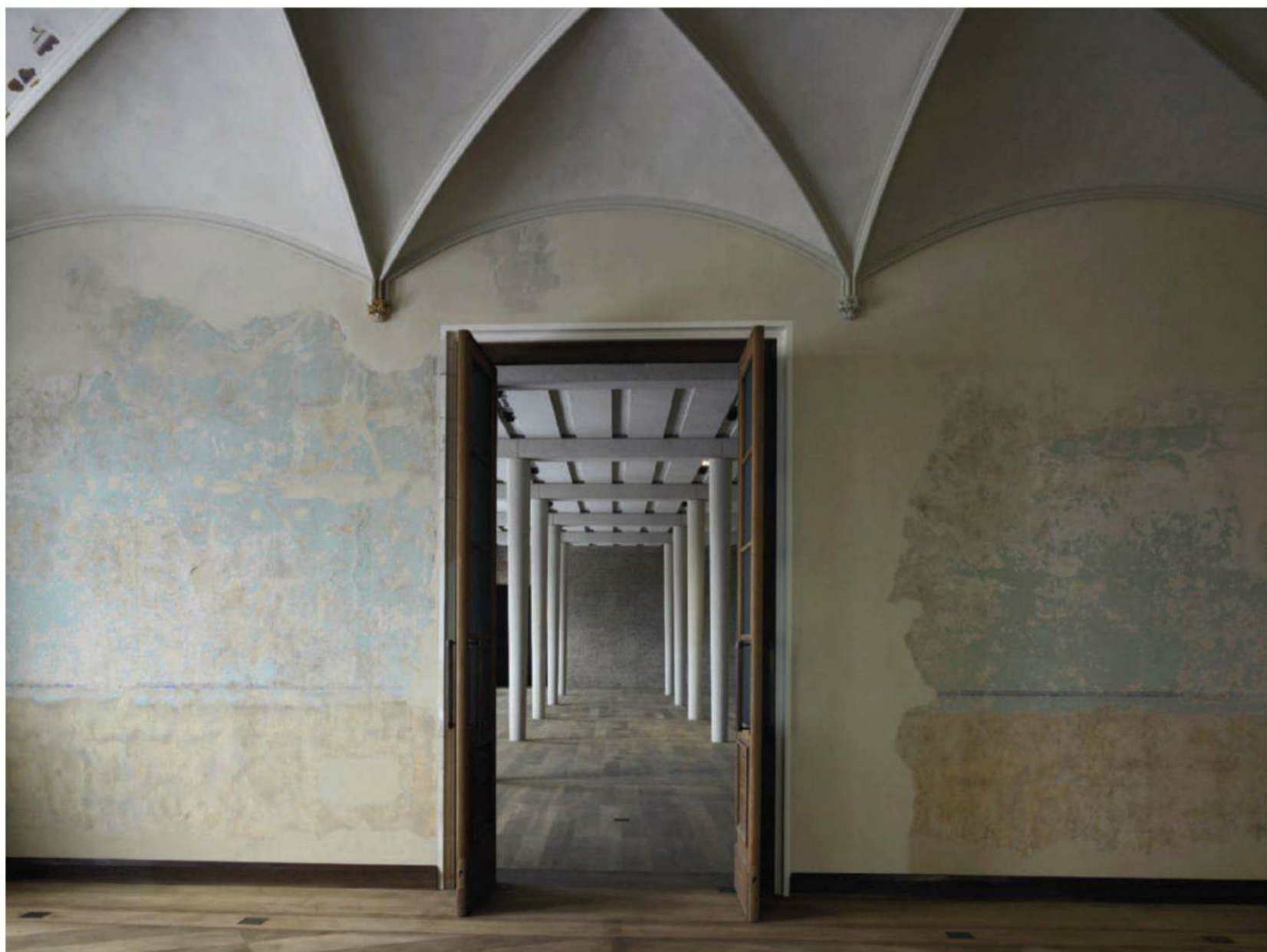
Prior to the High Line, "adaptive reuse" was invariably understood to mean the process whereby an old building suffered changes for the satisfaction of new uses according to a fixed logic of contemporary architecture. With the High Line, the meaning of the term began to shift to signify the mutual adaptation of contemporary architecture and old buildings to each other. The shift is subtle but important because it implies a revision of one of our discipline's foundational ideas: that contemporary architecture comes into existence through its confrontation with building. We had taken it as a given that the word "building" stood for new construction. Now it is clear that contemporary architecture can also emerge by adapting an old construction. The old criterion that new architecture was only possible through a new building is dead.

Koolhaas's master plan to update the Hermitage Museum, in time for its 250th anniversary in 2014, is another example of producing contemporary architecture through (as opposed to next to, or on top of) old buildings. Koolhaas claims to avoid "declarative architectural interventions," and turns to preservation for a new form of expression. His strategy is to forensically retain all traces of the old buildings, even the dusty showcases, but to relocate every object, leaving some rooms empty in anticipation of what the future may bring. So he expresses contemporary architecture as an ephemeral process more than a permanent object, a way of opening (old) buildings to new meanings. The Hermitage signals another important new

direction, away from the past as history and toward questions of temporality. In the wake of Postmodernism, we are more aware and critical of the way the past is constructed. Yet we are beyond the Postmodernist antics of simply denouncing the artificiality of the past, or reproducing it ironically. The past is never delivered pure, but always comes as reconstructed evidence. We know that our answer to what makes architecture emerge within a building will be incomplete. The last word will be delivered retroactively from the future.

This circumspect attitude toward the past makes contemporary architecture not just more open to what the future might bring, but more concerned with temporality, rather than the "imageability" of space and form. The challenge is that our architectural understanding of the temporal is not as sophisticated (yet) as that of the spatial and formal dimensions of building. We are only beginning to develop the critical tools to understand the aesthetic expression of architectural temporality in political, cultural, and ethical terms. So far, time has been explored mostly as a "natural" aspect of buildings, manifested in weathering and other changes in their appearance. Yet it is also the enabling element of "cultural" aspects of buildings. Consider that the role buildings can play in collective practices of remembrance and identity formation is a function of their longevity. Preservation involves designing and formalizing such practices, and as such, it helps people use buildings to imagine themselves as part of local communities, and even larger societies. Perhaps this is partly why contemporary architects have turned with new urgency to preservation, precisely in this historical moment of crisis, when the ethical bankruptcy of banking and the dysfunctionality of politics strain the social contract to the breaking point.

Preservation is our repository of over two centuries of experiments in how to think about the temporal dimension of architecture in political, cultural, and ethical terms. Think of Ruskin's romantic defense of architectural "time-stains," the patterns of dust deposited on



At the Neues Museum in Berlin, David Chipperfield and Julian Harrap saw history as a series of layers, both old and new.

old building stones according to the chisel marks of ancient stone carvers. His championed aesthetic cannot be dissociated from his left-leaning politics, for he saw every modernizing effort to resurface old buildings as an attempt to deny working-class craftsmen their rightful place in the history of architecture. Ruskin's lineage ran through the Arts and Crafts movement, but inverted its political inflection in the American hands of Louis Comfort Tiffany, famous for opulently patterned interiors.

Herzog & de Meuron's attention to pattern is perhaps the closest that any contemporary architect may comfortably come to Tiffany. In restoring the interiors of the Armory (page 50), they deftly adapted their architecture to the old building, in an effort to open it to new political interpretations. The Armory's original, refined

aesthetic reinforced social segmentation within the military, by making uneducated servicemen feel unwelcome. As the army democratized, the interiors were remodeled accordingly. Rather than recreating Tiffany, or imposing a new architectural language, the architects created a contemporary architectural aesthetic by overlaying traces of the pedestrian elements they removed as ghosted outlines, such that their erasure seems incomplete. By keeping the ghosted layers of kitsch added by less refined middle-class officers, they both return the Tiffany originals and change their political charge to reflect the military's long (and imperfect) pursuit of social equity through meritocracy. Herzog & de Meuron return an echo of Tiffany in a palimpsest. Through preservation, they achieve an expression of architectural temporality that

attends to the political ramifications of culture more than they have in any of their other works.

Architects' shift from the pursuit of signature styles to a creative exploration of preservation enables them to deepen the significance of form and space through sharper expressions of temporality. In the process, architects are becoming more critically engaged in the inherited cultural, political, and ethical issues that define our moment, without feeling the need to celebrate or deny them. Our profession's current commitment to preservation will most likely not last long. Its impact on how we think about architecture and how we articulate our commitments through design, however, may well find echoes in the future. ■

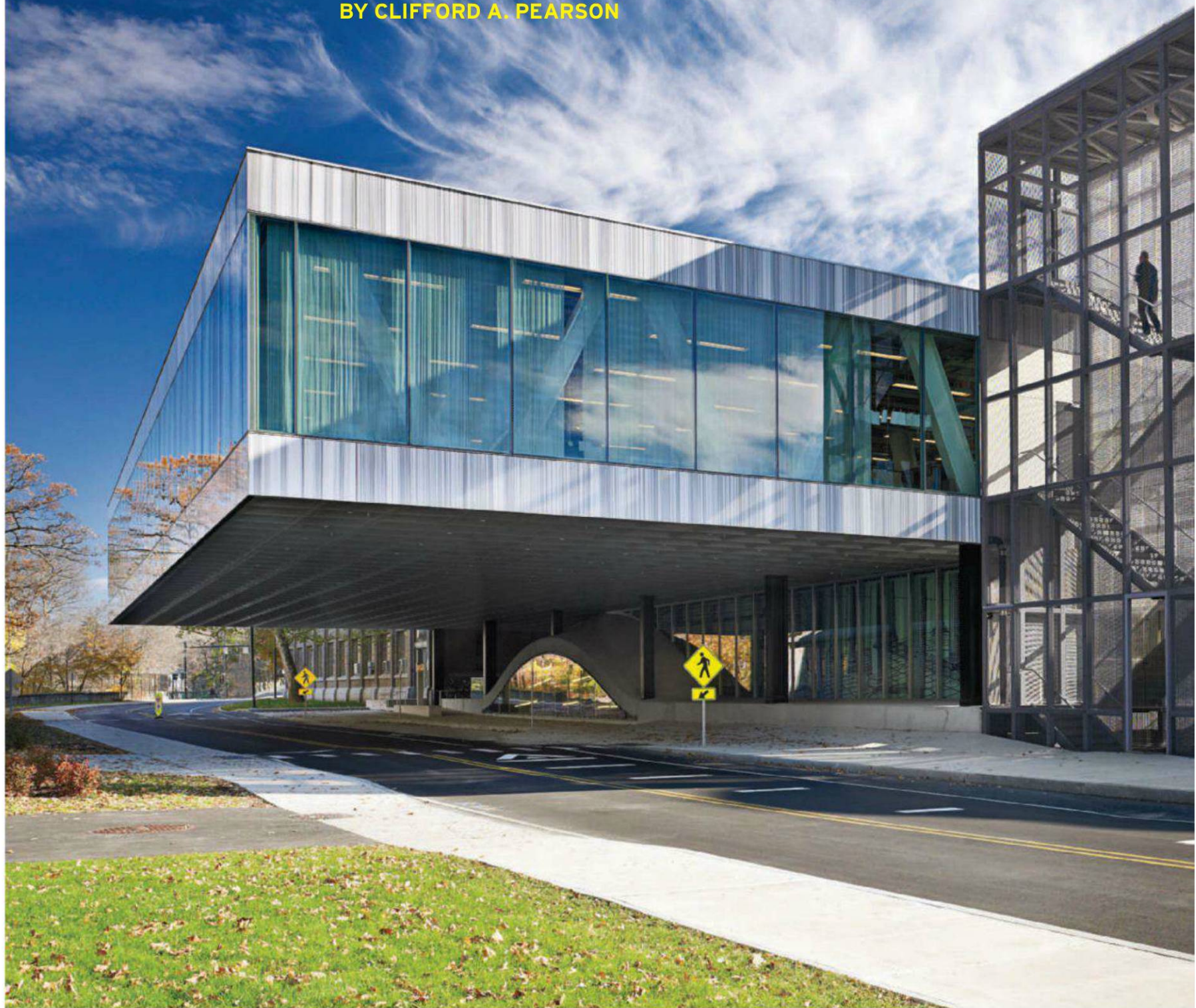
Jorge Otero-Pailos is an architect, artist, and associate professor of historic preservation at Columbia.

Milstein Hall, Cornell University | Ithaca, New York | Office for Metropolitan Architecture

ACADEMIC BOXING MATCH

After a string of unrealized designs by other architects, a firm expands an architecture school with a sprawling box that connects old and new.

BY CLIFFORD A. PEARSON





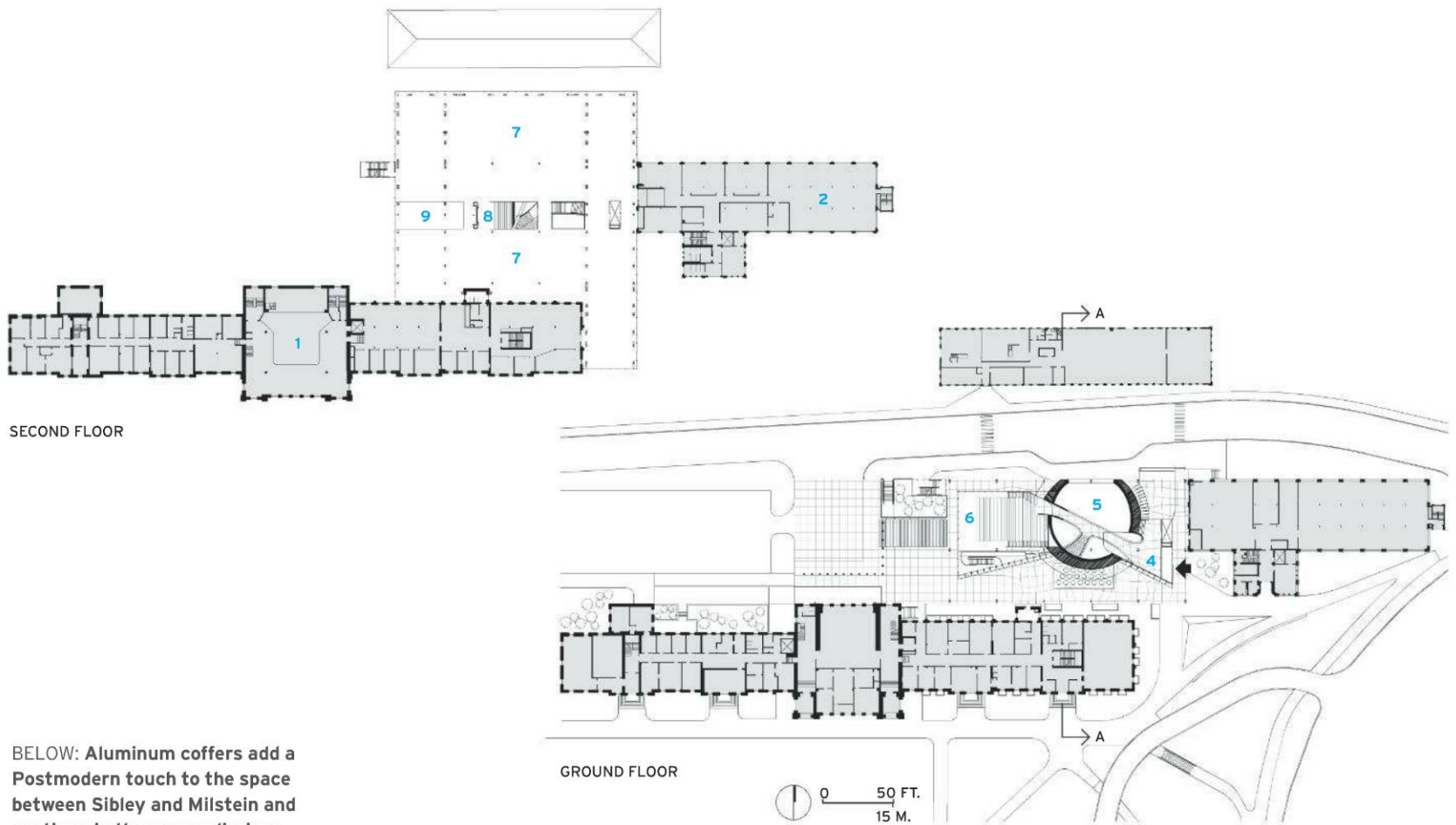
A hybrid truss that combines vertical and angled supports carries the giant "plate" 50 feet over University Avenue. On track for LEED Silver certification, the building features a green roof and 41 skylights that reduce the need for electric light in studios (top).



IN AN EXHIBITION HE ORGANIZED at the New Museum in New York City last year, Rem Koolhaas took the preservation movement to task, arguing that it had become an "empire" all too successful at tying the hands of architects and suffocating daring thinking. Entitled *Crono* and co-curated by Shohei Shigematsu, his partner at the Office for Metropolitan Architecture (OMA), the exhibition displayed projects from the past 35 years, in which the firm has wrestled with issues of preservation, particularly with its unbuilt addition to the Whitney Museum in New York and its ongoing plan for the State Hermitage Museum in St. Petersburg. If you saw the show (or its earlier incarnation at the Venice Architecture Biennale in 2010), you might expect to find OMA's ideas put into action at Milstein Hall, the firm's addition to Cornell's College of Architecture, Art, and Planning (AAP). But the building lacks the intellectual heat of the exhibition, and turns out to be more polite and less polemical than you would think.

Asked to add 47,000 square feet to the architecture school—which already sprawled among an iconic 19th-century pile (Sibley Hall), an early-20th-century industrial building (Rand Hall), and the simple Foundry—OMA had to decide what to keep and what to erase. In typical OMA fashion, the firm did the opposite of what other architects had proposed. Instead of razing Rand, the school's ugly duckling, and creating a glowing Modernist cube for design studios in its place, as Steven Holl envisioned in his competition-winning scheme from 2001, OMA kept both old and new. The Berlin-based firm Barkow Leibinger, hired by Cornell in 2002 after the school split ways with Holl, also called for tearing down Rand while slipping in a long, bar-shaped building behind Sibley. That plan didn't go forward, either, and the school's dean at the time, Mohsen Mostafavi, helped bring in Koolhaas in 2006.

Instead of imagining a freestanding structure, OMA saw its addition as a horizontal box connecting Sibley and Rand and reaching out toward (but not quite touching) the Foundry. "Architects have become obsessed with iconic buildings," states Koolhaas. "But we wanted to create something mysterious." Although his building mostly hides behind its older siblings, flashing just a modest glass corner to the Arts



SECOND FLOOR

GROUND FLOOR

BELOW: Aluminum coffers add a Postmodern touch to the space between Sibley and Milstein and continue in the new auditorium.



- 1 SIBLEY HALL (EXISTING)
- 2 RAND HALL (EXISTING)
- 3 FOUNDRY (EXISTING)
- 4 LOBBY
- 5 CRIT ROOM (BELOW)
- 6 AUDITORIUM
- 7 STUDIOS
- 8 BLEACHERS
- 9 LOUNGE



SECTION A-A

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6 M.



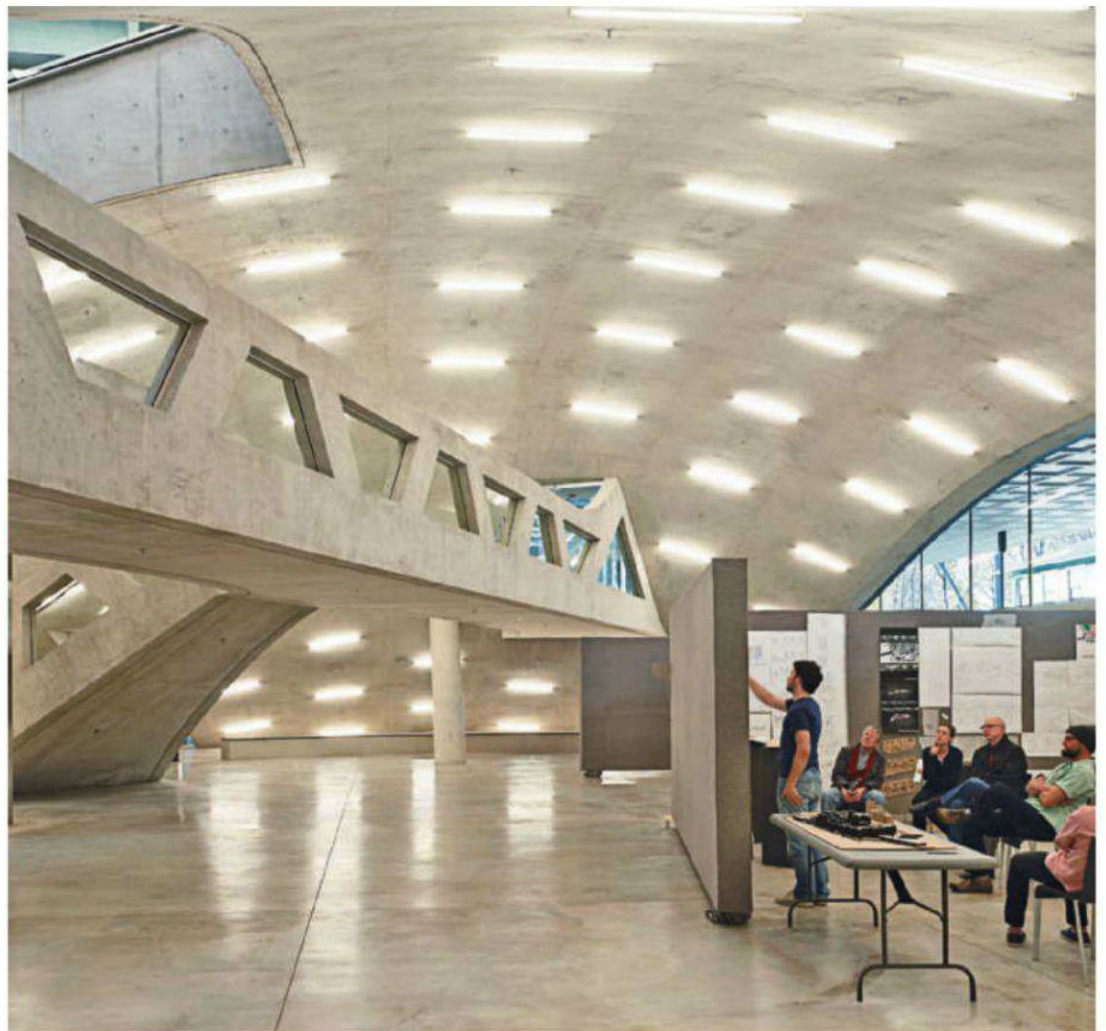
LEFT: Within the building's big steel box, the architects tucked curving concrete elements, such as a bridge leading to the auditorium and stairs to the second floor.

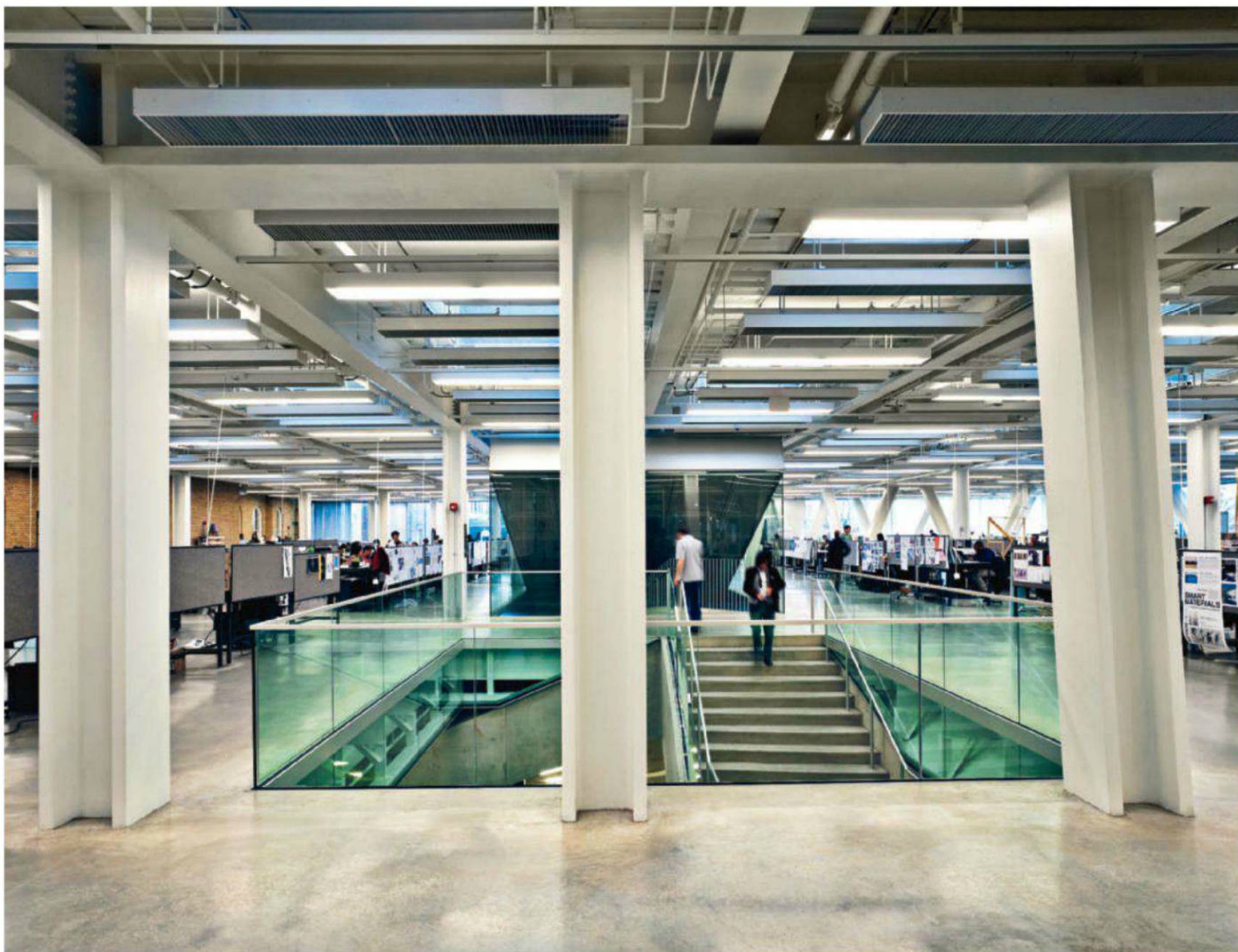
BELOW: An internal dome encloses a 5,200-square-foot crit space and was cast in a single 12-hour concrete pour. Radiant floors heat all spaces, and chilled beams cool them.

Quad, the university's historic heart, it is hardly a shy piece of design. An enormous steel-truss structure that stretches 195 feet by 170 feet on its second floor and cantilevers 50 feet over University Avenue to the north, it creates a new gateway to this part of campus and orients the architecture school to views of Fall Creek Gorge. So Koolhaas may talk big about playing quietly, but his building certainly makes itself heard.

Inside their big steel box, Koolhaas, Shigematsu, and associate-in-charge Ziad Shehab sculpted a poured-concrete dome to enclose a two-story-high crit room. A concrete bridge slices through the 5,200-square-foot space, leading to an auditorium where many of the seats cling to the outer surface of the dome, and a large curtain by Petra Blaisse wraps around a glazed upper level to block daylight when needed. "We talked a lot about the permanent warfare between the box and the blob," says Shigematsu, "so we decided to bring them together in this building."

Visitors enter Milstein on the middle floor and can look into the crit space one level down or go up one flight to the 25,000-square-foot "plate" that provides one uninterrupted space for graduate and undergraduate studios. A covered passage between the new building and Sibley offers students an outdoor place to congregate, park their bikes, and peek into the auditorium, which, like the crit space, is sunk





CREDITS

ARCHITECT: Office for Metropolitan Architecture – Rem Koolhaas, Shohei Shigematsu, partners in charge; Ziad Shehab, associate in charge; Jason Long, Michael Smith, Troy Schaum, Charles Berman, Amparo Casani, Noah Shepherd, project team

ARCHITECT OF RECORD: KHA Architects

ENGINEERS: Robert Silman (structural); Plus Group (m/e/p)

CONSULTANTS: Front (facade); Tillotson Design (lighting); 2x4 (graphics); BVM (sustainability)

GENERAL CONTRACTOR: Welliver

SIZE: 47,000 square feet
COST: \$55 million (including work on adjacent buildings and road)

COMPLETION DATE: October 2011

SOURCES

CURTAIN WALL: Kawneer

GREEN ROOF: Sika Sarnafil

GLAZING: Viracon

OPERABLE SEATS: Figueras

one level below grade. Oversize coffers made of pressed white aluminum adorn the underside of the great studio box that covers the passage, adding a sly Postmodern touch to go along with the new internal dome, which echoes Sibley's exterior one, and Blaisse's curtain, referencing 17th-century architectural prints.

Figuring that more is never a bore, OMA employs three different vocabularies: the Miesian box, the organic blob, and the Postmodern aside. The firm generates some lively conversation among the three, but it never resolves them into a properly integrated building. This failing is most clear just inside the entry, where a steel column from the big box stands smack in the middle of the curving concrete bridge. Koolhaas and his gang clearly enjoy such messy collisions, but these moments reveal a lack of intellectual rigor.

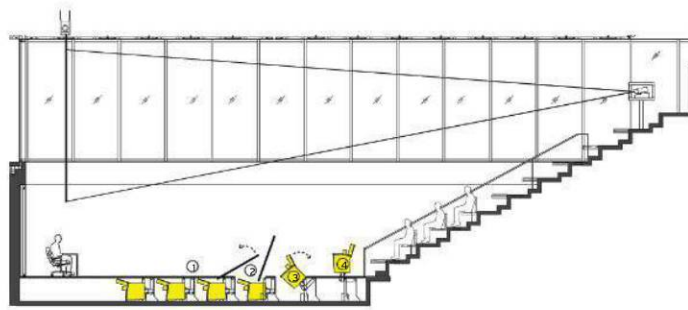
Although it doesn't hold together as a truly

cohesive piece of architecture, Milstein offers a number of wonderful spaces—from the crit room that “occupies the dome” to the auditorium that climbs the outside of it. The enormous studio plate works beautifully in bringing together the school's 16 different studios and opening them up to the views of the gorge. The floor-to-ceiling glazing around the box also opens the architecture school to the rest of the university, providing a degree of transparency that didn't exist before, says Dean Kent Kleinman.

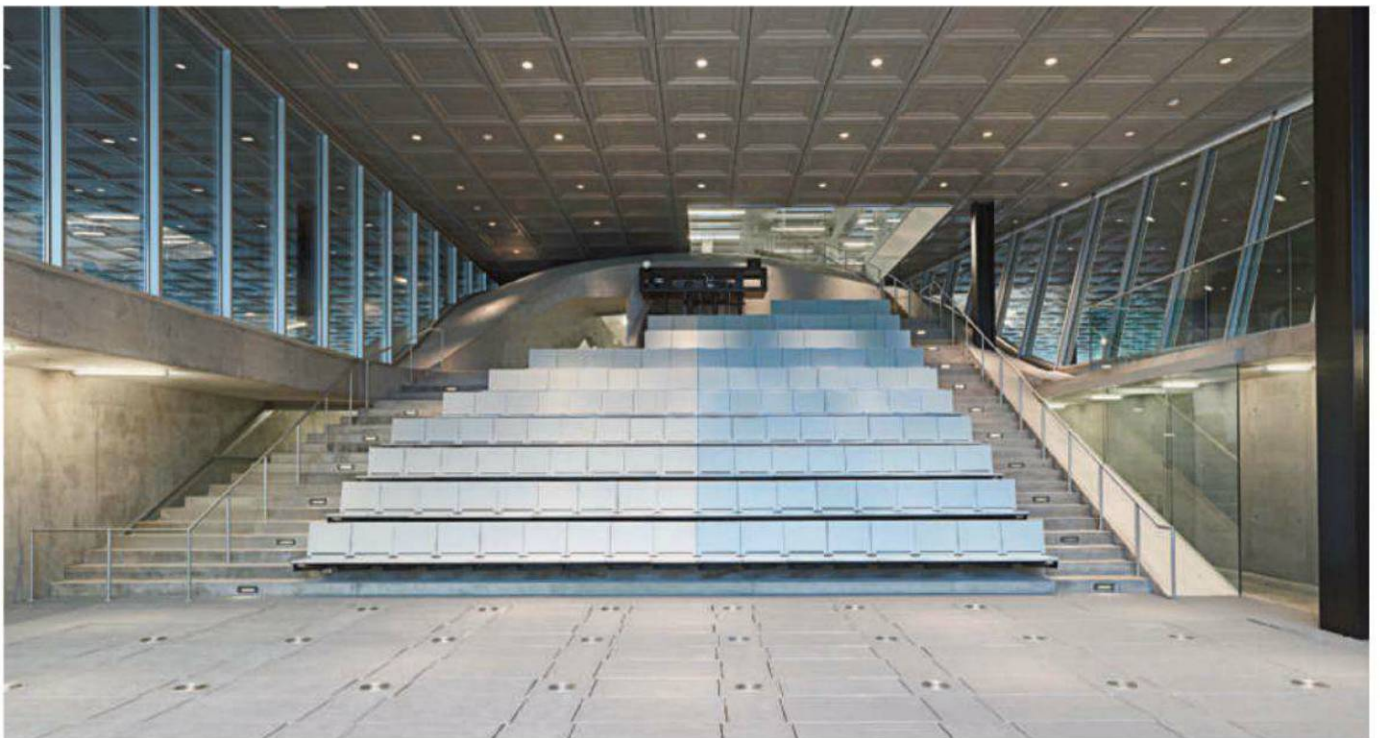
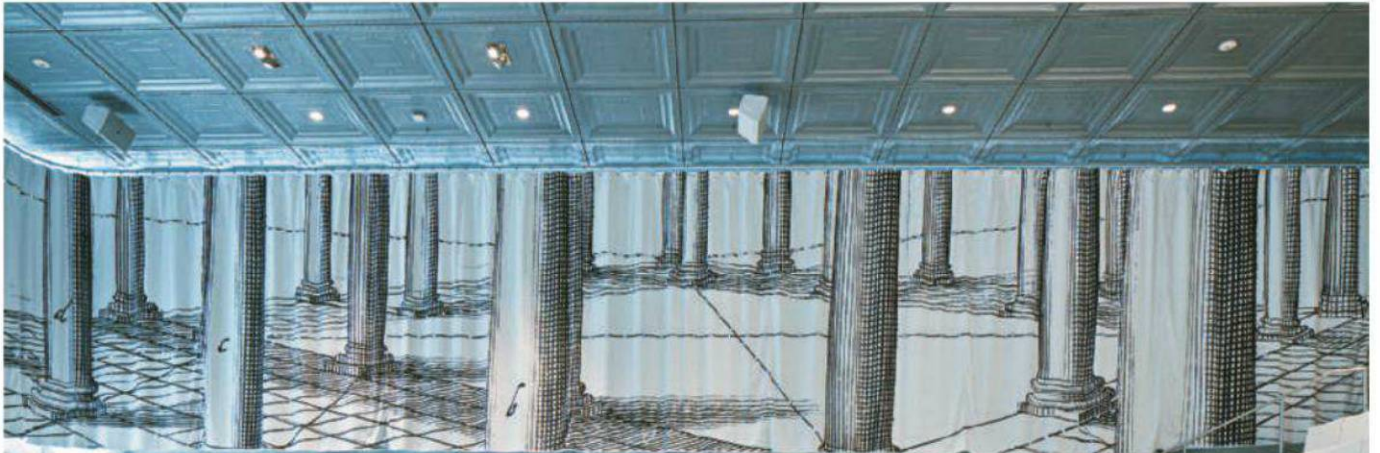
Earlier plans for Milstein juxtaposed old and new buildings, but OMA's design fuses them together with a giant plate that flows from one structure to another to another. This inclusive approach seems to work well for the students learning here, but hardly represents the radical critique of historic preservation that one might expect from Koolhaas and his associates. ■

OPPOSITE: The large second floor provides flexible space for studios for about 200 students, and connects directly to Sibley (left in photo) and Rand Hall (not shown).

THIS PAGE: The 253-seat auditorium also serves as the university's boardroom. Large armchairs can be arranged in different patterns, and even retracted below the flat portion of the floor. Climbing the outside of the concrete dome, OMA-designed seats can fold down to create amphitheater tiers. A Petra Blaisse-designed curtain uses a drawing from a 17th-century architecture book.



BOARDROOM SEATING STORAGE



PHOTOGRAPHY: © PHILIPPE RUAULT (MIDDLE); COURTESY FIGUERAS INTERNATIONAL SEATING (TOP)

Park Avenue Armory | New York City | Herzog & de Meuron

PATTERN LANGUAGE

In an ongoing restoration and renovation of a New York City landmark, the architects bring subtlety and boldness to the process.

BY SUZANNE STEPHENS



IMAGES: © JAMES EWING (EXCEPT AS NOTED); RENDERING: COURTESY PARK AVENUE ARMORY / © HERZOG & DE MEURON (TOP CENTER)

[View additional images online.](#)



ABOVE: The architects propose covering an existing roof addition in green vegetation as part of the restoration of the Armory, which fronts Park Avenue between 66th and 67th Streets.

LEFT AND BELOW: In the recently renovated Company D room on the second floor, the architects delayered, stabilized, and overprinted surfaces in a complex but subtle intervention.

RIGHT: The architects designed a new bronze lighting apparatus for the room for Company E, also on the second floor.



CERTAIN MODERN architects view the restoration of historic buildings like an archaeological dig that exhumes alterations over time and places the resulting evidence on display. Basel-based architects Herzog & de Meuron (with Platt Byard Dovell White as executive architect) approached the restoration of the Park Avenue Armory between 66th and 67th Streets in New York in this manner. The architects also introduce an intriguing process where their own interventions add a new layer to their exposure of the sediments of history.

The Armory, a Gothic Revival brick fortress designed by Charles Clinton in 1880 for the Seventh Regiment of the National Guard, required repair work on the exterior along with requisite infrastructural and code-compliant upgrades. In addition to the revitalization of a 55,000-square-foot drill hall, the team confronted an array of 18 period rooms originally fitted out by legendary designers, architects, and decorators such as Louis C. Tiffany's Associated Artists, Stanford White, and the Herter Brothers. Some of the art-encrusted rooms used by the affluent volunteers to the National Guard remain almost intact; others were shabbily altered.

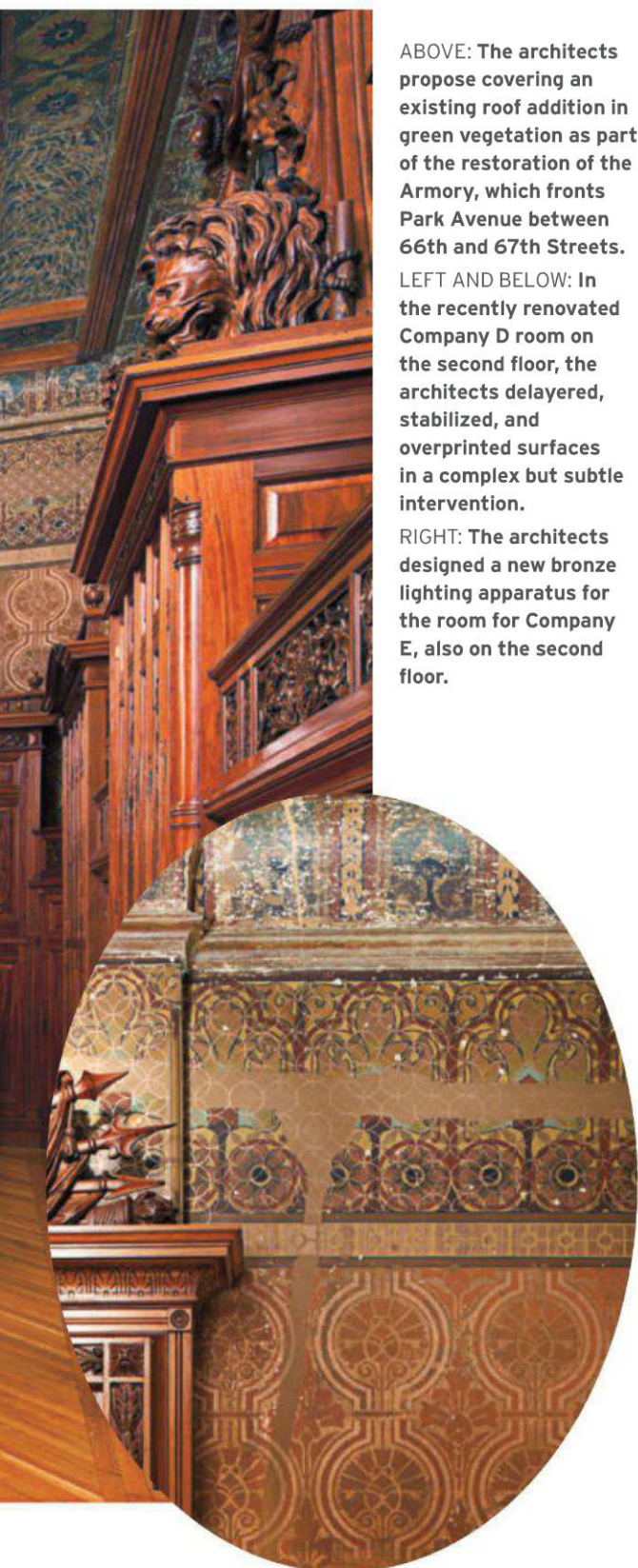
In 2006, the nonprofit Park Avenue Armory Conservancy, with Rebecca Robertson as president and executive director, leased the five-story structure from the state to create an adventurous arts venue for dance, theater, and art performances, plus exhibitions, along with artists-in-residence studios. (And it will still continue to house 100 homeless women in its

upper reaches.) The \$200 million restoration—of which \$84 million has been spent—is expected to be completed in five years.

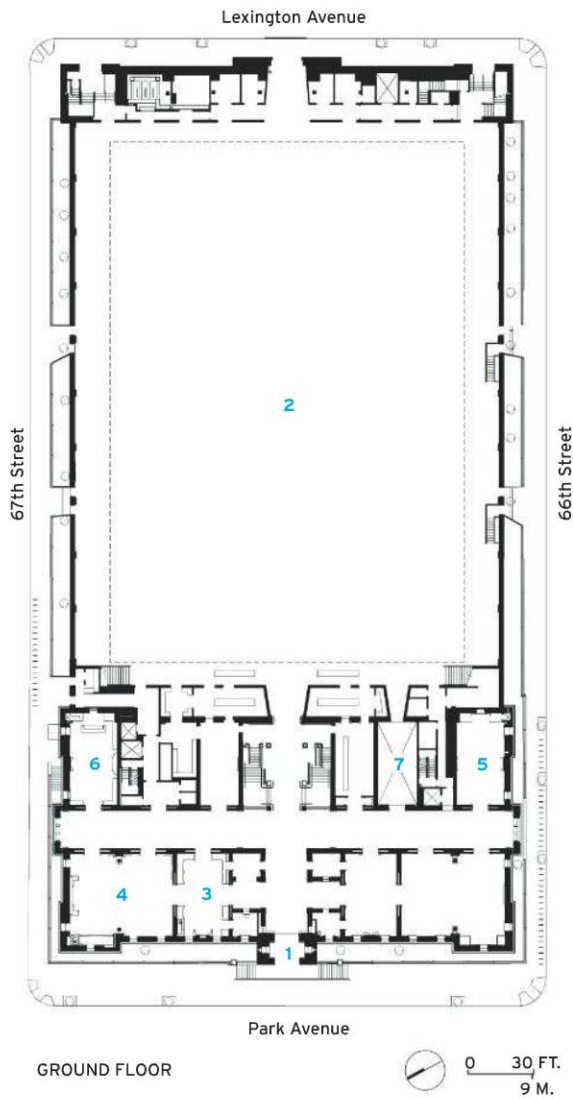
While the Conservancy wanted to keep the lushness of the late-19th-century architecture and design, Robertson feared the stiffness and embalmed quality of meticulous period restorations. She turned to Herzog & de Meuron, impressed by the firm's inventive deployment of materials, surfaces, and craft in its work. "Seeing the copper-clad Signal Box in Basel [1995] was crucial," she says.

In the fall of 2011, two period rooms by Herzog & de Meuron opened to the public. As partner Ascan Mergenthaler explains, the team worked with each room's basic identity, choosing not to eliminate all traces of later modifications. The idea was to show the evolution of the rooms "as a wash of time," in Robertson's words. The tortuous task involved delayering (manually or chemically stripping recent accretions from the surfaces) as well as overprinting (see below), which simulates abstractly underlying patterns—in addition to cleaning and restoration.

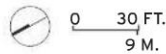
With the second floor's Renaissance Revival room for Company D, designed in 1880 by Pottier & Stymus, the team restored the original mahogany woodwork, plus a herringbone parquet floor that replaced the 1880 one. Originally, the ceilings and walls were stenciled, but later had been covered by Adamesque plaster scrollwork and painted, with other areas concealed by plasterboard. Where areas were damaged by the removal of



- 1 ENTRANCE
- 2 DRILL HALL
- 3 LIBRARY
- 4 VETERANS ROOM
- 5 COLONEL'S ROOM
- 6 FIELD AND STAFF ROOM
- 7 MEGAVATOR



GROUND FLOOR



CREDITS

ARCHITECT: Herzog & de Meuron – Jacques Herzog, Pierre de Meuron, Ascan Mergenthaler, partners in charge

EXECUTIVE ARCHITECT: Platt Byard Dovell White

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

CLIENT: Park Avenue Armory

SIZE: 190,000 square feet

COST: \$84 million to date

COMPLETION DATE: (partial) October 2011

SOURCES

PAINT: Benjamin Moore

LIGHT FIXTURES: Litelab, Ledalite

LIGHT CONTROL: Lutron

HOT WATER RADIATOR: Myson

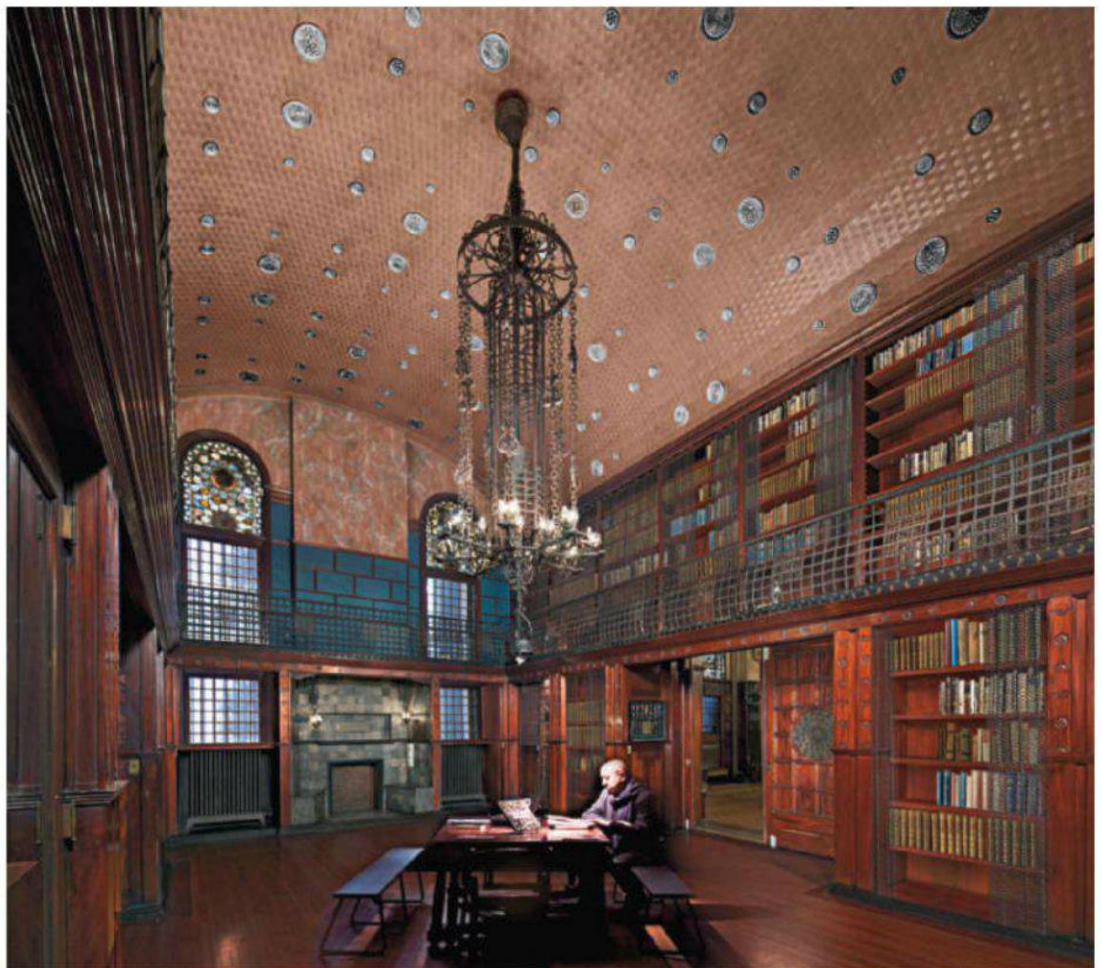
the scrollwork and other scars of use, the team glazed the surface with a reddish field color discovered to be typical of the background's metallic paints. The stenciling under the plasterboard remained intact in the delayering.

In the next part of the process, the architects printed a new pattern on top of the original circular stenciling to create an integrated tracery that picked up the background's copper tones. The stenciled, laser-cut pattern appears distinct from the original stenciling owing to its abstraction of basic geometric shapes, but retains the size and proportions of existing patterns, albeit emphasized with a metallic shimmer. The architects also designed a chandelier similar in proportion to the original gaslit one, but this time with copper arms and tinted-glass globes over halogen lamps. New copper chain-link curtains add a gleam to the room while shielding glare from the windows (aided by window coverings). All of this subtle surgery creates an evocative space for small dinners and receptions and requires more than one keen glance to know that a modern architect was there.

Another room on the second floor, for Company E, also decorated in 1880 by Pottier & Stymus in the Renaissance Revival style, offers an easier setting in which to detect the pres-

ence of the modern architect. A new gridded bronze lighting fixture dominates the space. Here, too, Herzog & de Meuron removed the Tudor Revival plaster strapwork and wallpaper, added in 1892, to reveal the earlier stenciling, and repaired damaged spots with plaster in a copper field color matching the surroundings. Since the room will be used for small theatrical and musical performances, the team wanted a lighting fixture that could be raised and lowered. While the modern fixture seems ungainly in comparison with the firm's more nuanced gestures, it fits in with the raw, austere look of the cleaned oak paneling.

One of Herzog & de Meuron's more daring future proposals concerns the Colonel's Reception Room on the south side of the first floor, originally designed by the Herter Brothers. Its French black walnut paneling has remained reasonably intact, yet almost everything above a certain datum is too far gone to be delayed. So the architects suggest covering upper woodwork—which had been added later—plus walls and ceiling with a removable white paint. Since the space is planned to be used as a conductor's suite and for other events, the mixed time warp arguably would provide an arresting backdrop. Nearby they envision converting a room into a copper-lined



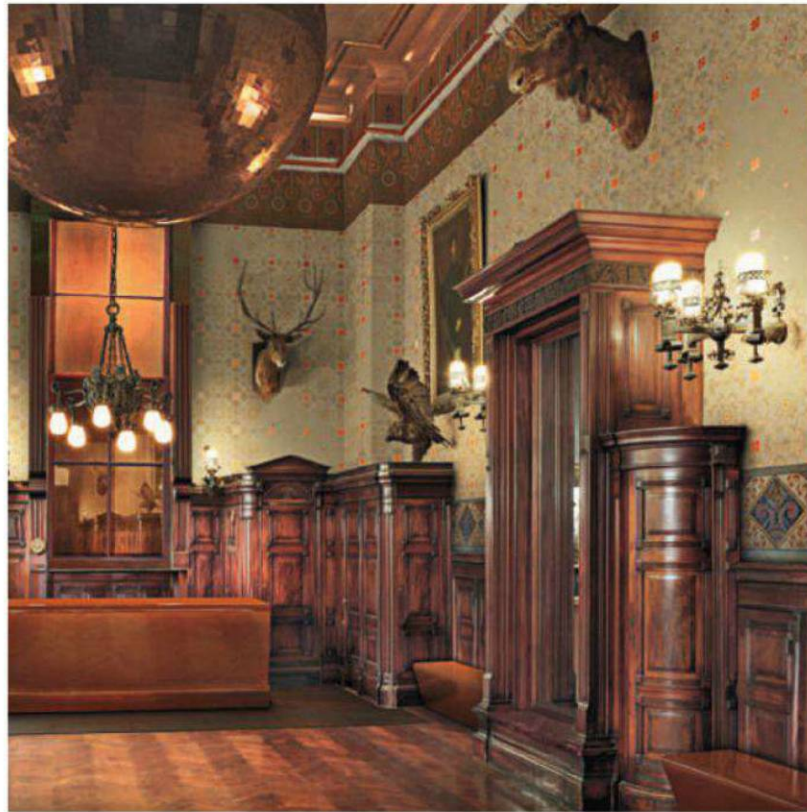
“megavator” to take heavy loads to the second floor, and for a moving performance space.

Not every move is as provocative: Herzog & de Meuron is making few visible interventions in the Wade Thompson Drill Hall, now the arena for a number of theatrical and dance productions. Nevertheless, the firm hopes to strip the lower parts of the hall to reveal the full arc of the room’s barrel-vaulted cast-iron trusses. Then on the first floor, the Field and Staff Room, also designed by Pottier & Stymus, replete with taxidermied animal heads, will be redone as a bar, with a new copper ceiling, chandelier, and fittings. The architects’ proposal for the mostly intact library on the other side of the main corridor involves taking the room originally designed by Louis C. Tiffany’s Associated Artists, with a young Stanford White as consultant, back to its 1880 decorative scheme, lost in part after its conversion to a trophy gallery. For its new use as an archive for the history of the Armory, Herzog & de Meuron plans to repaint the ceiling where the original panels are too far gone, and reinstate bookshelves. The restoration should complement the intact Veterans Room next door, also executed by Tiffany, White, et al.

The architects’ efforts so far have generated a resplendent ambience with a warm coppery

glow, a burnished gleam in the walls and ceilings, and a lustrous sheen of the wood paneling. As Jorge Otero-Pailos states (page 42), Herzog & de Meuron’s work specializes in

echoing the original, transformed by time. The ingenious approach shows that today’s modern architects can still capture a sense of the new, while enhancing and revivifying the old. ■



OPPOSITE: Herzog & de Meuron’s rendered proposals for future work include restoring the library almost to its 1880 state when Louis Comfort Tiffany, Stanford White, and others designed the barrel-vaulted space.

LEFT: The Field and Staff Room on the first floor is planned to be converted to a bar with copper fixtures supplementing the mahogany paneling of the Renaissance Revival decor by Pottier & Stymus.

BELOW: Herzog & de Meuron suggest painting white the upper portions of the first-floor Colonel’s Reception Room.



Museum of Cultures | Basel | Herzog & de Meuron

RAISE HIGH THE ROOF

With sleight of hand, the Basel-based architects built upon an esteemed institution in the heart of their city's historic district.

BY LINDA C. LENTZ



AN ARCHITECTURAL tour of Basel and its environs reveals no fewer than 21 completed buildings by the office of natives Jacques Herzog and Pierre de Meuron, with a major addition to the city's convention center and a 213-foot office tower for Novartis slated for 2013 and 2015 completion, respectively.

This verdant corner of Switzerland, known for its patronage of contemporary art and architecture, has been fertile ground for the architects, allowing them the freedom to hone their exhaustive palette of bold strategies and materials through a range of projects, including the twisted, copper-clad Central Signal Box (1999), built for the Swiss Federal Railway, and the whimsically stacked VitraHaus (2009) in nearby Weil am Rhein, Germany. However, when the firm was tapped to upgrade the Museum der Kulturen (Museum of Cultures) in Basel's medieval historic center, preservation issues nearly compromised its typical design autonomy. A thoughtful tribute to the city the partners grew up in, their surprising solution resonates with a confidence and restraint that pays homage to the past with a clear vision toward the future.

Home to one of the most important ethnographic collections in Europe, the Museum of Cultures dates back to 1849, when it opened in the institution's existing Neoclassical building designed by local architect Melchior Berri, which replaced an Augustinian monastery. Its location, backing onto a private courtyard, accommodated a 1917 annex by Vischer & Söhne, but there was little room for growth when the Museum Foundation and Basel Building and Planning Department called upon Herzog & de Meuron to create a new entrance and large multiuse gallery in 2001. The museum's collection had grown to over 300,000



cultural artifacts and photographs from diverse geographic regions, so an expansion was essential. The administration also wanted to make the building more inviting to the public and academic community with improved facilities.

To retain the existing footprint, the design team devised a playfully gabled volume above the annex for the expansion, creating a higher, larger roof—a scheme that raised red flags among preservationists. According to senior partner in charge Christine Binswanger, “Private heritage associations opposed it because the project would change the roofscape

OPPOSITE: Accessible through an arched passageway on a main square, the museum is a sign of renewal in the heart of the old quarter, with its spectacular addition, inviting new entrance, and curtain of spiraling greenery.

LEFT: The metal substructure of the addition is clad with iridescent convex, concave, and flat hexagonal ceramic tiles that refract daylight—even on a cloudy day.

ABOVE: The new roof speaks to the medieval roofscape and mosaics atop Basel's city hall (Rathaus), upper right, and cathedral (Münster).

RIGHT: The architects sloped the courtyard toward the basement level of the annex, creating a glazed entrance and shop, as well as a comfortable outdoor gathering place.

BELOW: Before the transformation, the original Neoclassical building had an abundance of windows, which were closed.



of the old town.” But, after a protracted judicial battle, the plan was approved. “It just needed patience,” she explains. “Our clients were convinced that the public’s interest in the museum expansion would overrule the resistance.”

The opposition was unwarranted. The ensuing intervention fits comfortably in the quaint urban landscape dominated by traditional timber-frame buildings and the tapered spires of Basel’s red sandstone cathedral (or Münster). As a fond gesture, the jagged gables of the controversial roof are clad in iridescent-green ceramic tiles, to echo vivid mosaics atop the church.

Perched on the 20th-century annex as if dropped from the sky, the lofty addition is a lightweight-steel, space-frame structure that

cantilevers on three sides of the building, providing a 6,500-square-foot column-free gallery within it. This complex construction required substantial support, so the crew reinforced two outer walls with three steel pillars that take the loads directly to the foundations. They also installed a layer of composite steel over the existing ceiling of the former top floor to bear the weight of the new gallery floor.

Previously, the Museum of Cultures shared an entrance with the city’s Natural History Museum. To bolster their client’s identity, Herzog and de Meuron relocated the entrance to the basement level at the rear of the building, opening the cloistered courtyard to the town’s main square, the *Münsterplatz*—a highly

visible location. Now visitors access the museum through an arched passageway, where the architects created a gently stepped and ramped path that leads them to the glazed lobby and gift shop. A curtain of spiraling plants from the underside of the addition introduces an element of life and natural color that animates the architecture.

Inside, the firm tackled the scope of work, which included the installation of elevators, with such subtlety it seems virtually untouched. For the most part, “we cleaned up and organized the technical features of the existing exhibition spaces,” says Binswanger. She and her colleagues also restored the original structure of the old rooms, crafted a double-height gallery from two, and whitewashed the walls, contrasting them with graphic, matte-black elevator alcoves. Their most assertive move was to eliminate windows for wall space and to enhance the building’s weight and elegance.

“It had too many windows,” recalls Binswanger. “There was too much daylight for the exhibitions, and it looked like a school. So we closed the facade and punctuated it with fewer openings.” Enlarged to reach the floor, the remaining windows have deep reveals that frame views of medieval Basel, a metaphorical and physical connection that—like Herzog & de Meuron’s thoughtful renovation—links the museum to the evolving city around it. ■

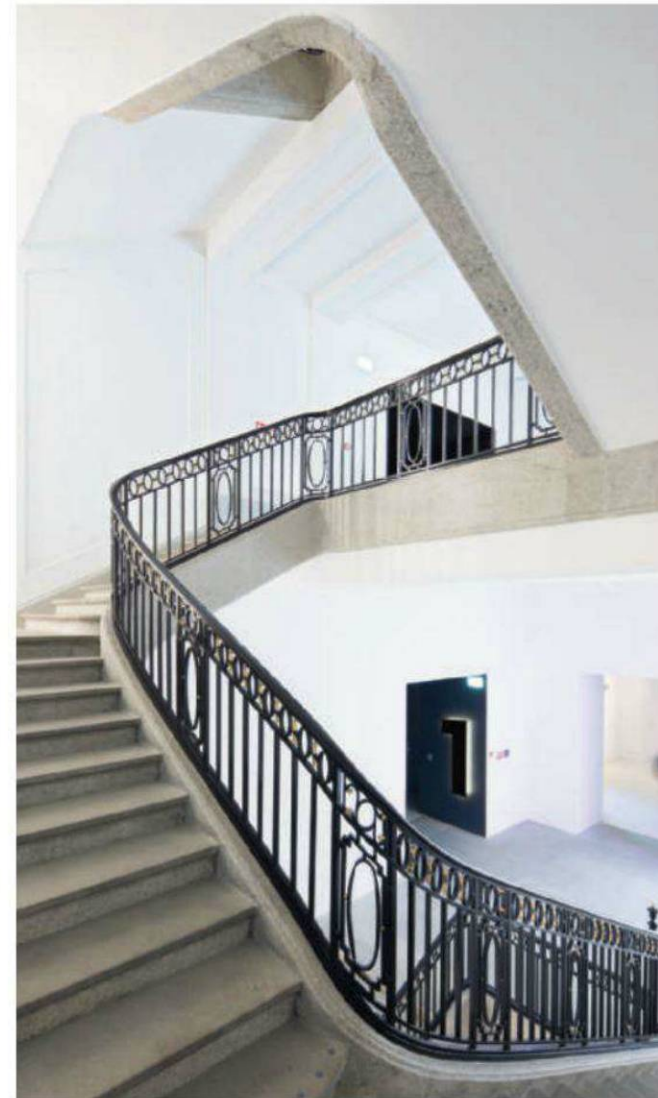


LEFT: The old rooms feature original coffered ceilings. On the second floor, a wall of enlarged windows enables visitors to view the courtyard.

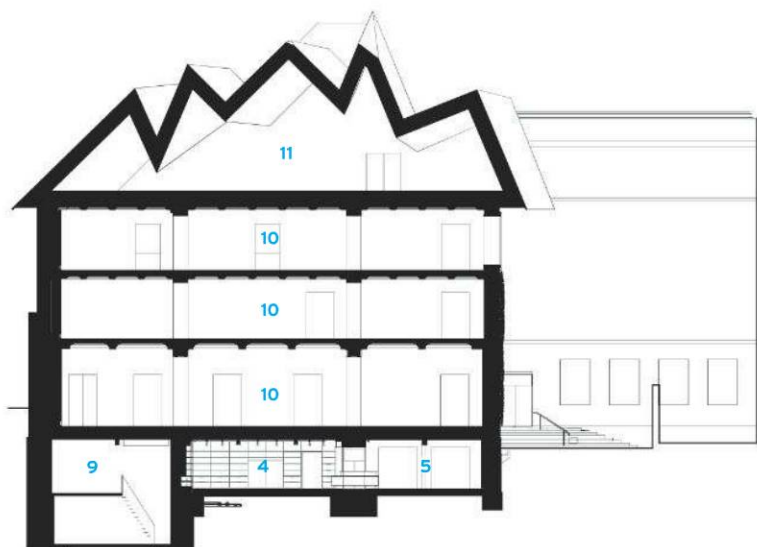
CENTER: The spacious column-free addition under the roof provides room for conferences, performances, and multimedia presentations.

BOTTOM: A double-height gallery facilitates oversized displays.

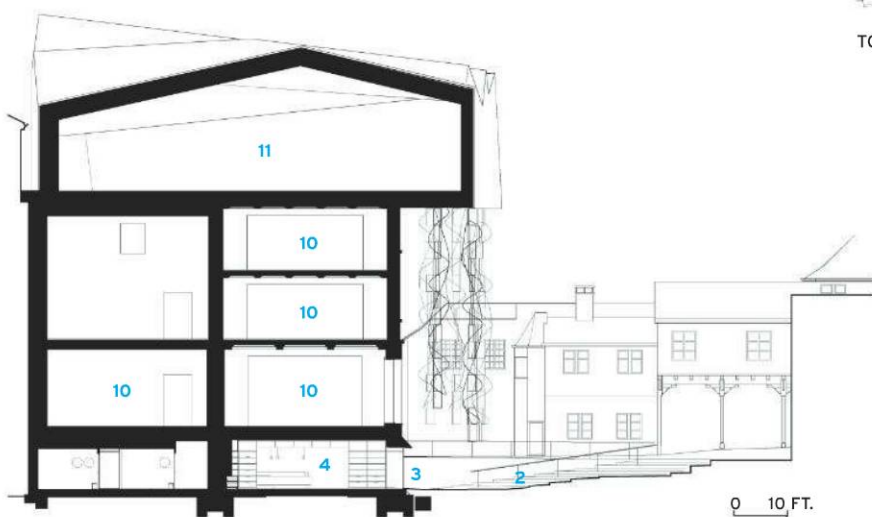
BELOW: The existing stairs were cleaned up and supplemented with new elevators with sleek graphics and matte-black paint.



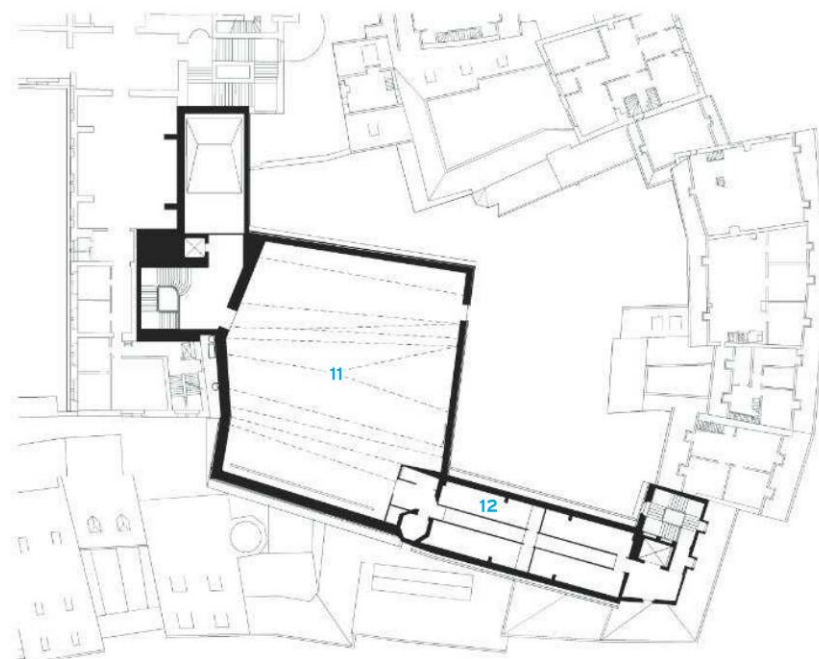
PHOTOGRAPHY: © ROLAND HALBE (TOP AND CENTER LEFT); IWAN BAAN (BOTTOM LEFT AND RIGHT)



SECTION B-B



SECTION A-A



TOP LEVEL

- 1 INFORMATION BOOTH
- 2 LOWERED COURTYARD
- 3 ENTRANCE
- 4 SHOP
- 5 RECEPTION
- 6 CLOAKROOM
- 7 WORKSHOP
- 8 OFFICE
- 9 TECHNICAL AREA
- 10 GALLERY
- 11 NEW COLUMN-FREE GALLERY
- 12 STORAGE

CREDITS

ARCHITECT: Herzog & de Meuron – Jacques Herzog, Pierre de Meuron, Christine Binswanger, partners; Martin Fröhlich, Mark Bähr, Michael Bär, Jürgen Johner, Ines Huber, project architects

ENGINEERS: ZPF Ingenieure (structural); Waldhauser Haustechnik (HVAC); Aqua Planing (plumbing); Herzog Kull Group (electrical); Rapp Infra (civil)

CONSULTANTS: Emmer Pfenninger (facade/roof); Rapp Infra (landscape design); Forster Baugrün, August Künzel (plant project)

CLIENT: Foundation Museum der Kulturen; Canton of Basel City – Building and Planning Department

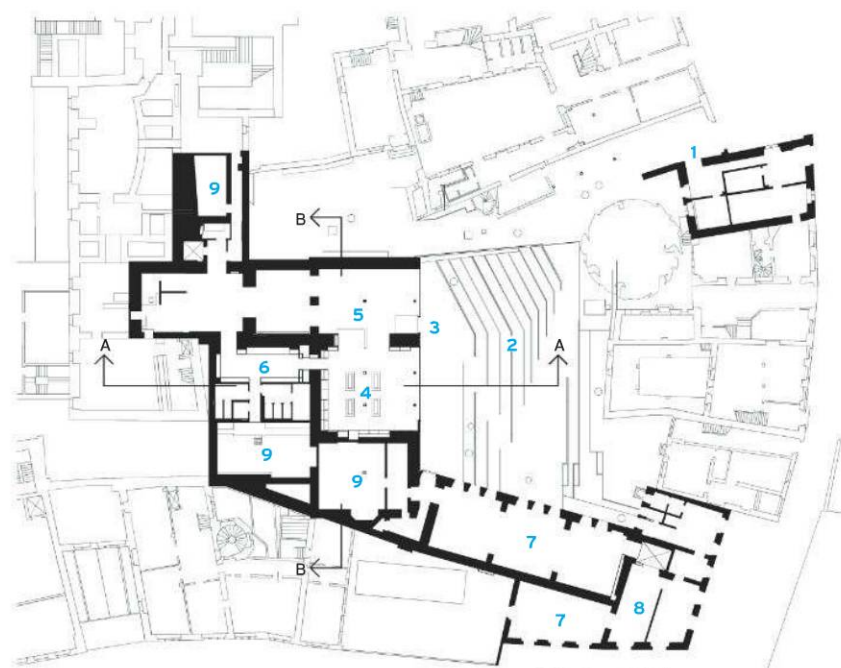
SIZE: 24,811 square feet (including the courtyard)

COST: withheld

COMPLETION DATE: September 2011

SOURCES

ROOF TILE: Deutsche Steinzeug Ceramic



ENTRY LEVEL

[INTERVIEW]

JACQUES HERZOG ON MIXING TENSES

The Swiss architect talks about his firm's take on reworking the past. **INTERVIEW BY GERHARD MACK**

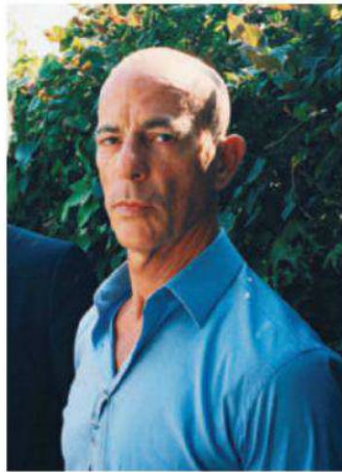
THE FOLLOWING excerpts are from a conversation included in *Park Avenue Armory*, a limited-edition publication edited by Gerhard Mack for the Park Avenue Armory Conservancy.

Gerhard Mack: Working with existing volumes is seminal to your work. Your career actually started in the late 1970s with various refurbishment projects. But you did it in a way that was different from Postmodernism's schematic reaction to Modernism's permanent call for something new.

Jacques Herzog: Our early refurbishment projects really were pragmatically motivated. In the second half of the 1970s, Modernism suffered from a major economic recession, followed by an oil crisis, and the realization that resources are not unlimited. Renovation was almost the only available work, and could be applied to regular buildings that were not necessarily of great historical significance. Modernism had thought of history as an impediment to the goal of creating a new tradition, a new future, a new society. But as a result of the crisis, the advisability of sweeping everything away—creating a tabula rasa—was questioned. If we had been born ten years earlier, we would have been more profoundly influenced by a still-intact Modernism. But as it was, this historical break enabled us to develop our own issues. **How would you describe your approach in general?**

We make people aware of what is already there: the form that we produce brings out the properties and qualities of the world around it. **The Museum der Kulturen (page 54) in the Old Town of Basel shows how you incorporate existing environs into your design. How did you go about giving the building a new visibility?**

To begin with, we turned the previously neglected courtyard in the back into the new entrance. This reversal unites medieval buildings with the rear facades of 19th-century buildings, and we wanted people to experience



JACQUES HERZOG

this area as a space where various components are interrelated. Then we lowered the courtyard so that it is now level with the lowest story of the museum. When you enter the courtyard, you don't have to decide whether to go up or down. Second, we used plants to unify the surfaces in the courtyard. They come as a surprise; they look exotic; and since they change with the seasons, there is also

something temporary and fragile about them. And so there was no need to make any major modifications in the buildings.

You also replaced the roof of the museum.

Our initial mandate was to plan an exhibition space for temporary presentations. We placed this extension on the roof and deliberately made it clearly visible from outside to draw attention to the museum's new entrance. At the same time, we wanted to integrate the new roof into the existing roofscape. That's why we covered it with glazed tiles, similar to those already used in the historical context. On one hand, it's an invasive modification, and on the other, it's an almost tender gesture because it resonates with the shapes and materials of the Old Town.

Is the substance of the building a kind of ping-pong partner that you use to bat your ideas back and forth as they develop?

Ping-pong sounds a little frivolous. But we do, of course, go back and forth, thinking about what to preserve and what to tear down. If that weren't the case, it would mean returning to an approach that breaks off the process before it's been thought through. That doesn't mean that we love it, but we have accepted it as the material of our work.

Your inserts are spaces of absence that brilliantly leave room for a host of ideas about presence, history, and interpretation. Does that imply a certain critique of society?

In our society, the interplay of what exists and what is new has become extremely convoluted. It is easier to pursue particular interests when things can't be distinguished, when issues are

blurred, as they are, for instance, in referendums. This applies even in such a small, straightforward country like Switzerland. In architecture, we always take the singular building seriously as part of a larger fabric, as part of daily life that involves the participation of many people.

You work with what exists and exploit its energy. In the case of the Park Avenue Armory, you practically fade into the wallpaper of the building's history. You opted for a microsurgical approach diametrically opposed to the way monuments are ordinarily reconstructed in the United States.

The Armory is a stunning memorial to American history. In the period rooms, you walk into sacred territory—the creations of the best designers that were to be had in those days. It would be utterly inappropriate for us to force a contemporary spirit on such a monument.

We wanted to revitalize the original concept of these rooms, which cannot be found anywhere else. In this case, consideration and respect have priority over making an authorial statement. Incidentally, simulative, reconstructive models and total restoration are not mutually exclusive, although the complete restoration of a whole room is of no interest to us as architects.

Even in New York, a city of permanent renewal, the Holy Grail of Modernism, you have reacted with almost "unmodern" delicacy and discrimination.

New York is no longer a city of permanent change and hasn't been for a long time. Because of our background, it has always been a crucial concern of ours to pay attention to what is already there—including Modernism. But that's not a moral motivation. It makes for better projects.

We have also begun working where there is nothing for us to tie in with, nothing to be preserved. In those cases, the tabula rasa is a promising strategy. But even in central Europe we have reached a point where there is just too much mediocrity. So we also explore the possibility of destruction instead of extension, in other words, an iconoclastic strategy, to find a new openness and new movement again. The methods may then be different from those of Modernism or from countries like China and India. Modernism wanted to manifest itself as an image, a style. We now try to look at a site from a different point of view, which means trying to institute change through a focus on perception. ■

Gerhard Mack is author of Complete Works for Herzog & de Meuron, four vols. (Birkhauser, 1993–2008).

Favrholm | Hillerød, Denmark | SeARCH



KEEPING 'EM DOWN ON THE FARM

Transforming a national monument into a state-of-the-art conference center for a global health-care company.

BY BETH BROOME

WHILE SATISFYING the stringent requirements for a protected monument in Denmark, SeARCH architects has unabashedly reshaped a historic farm 25 miles north of Copenhagen. The Amsterdam-based firm has converted the estate—called Favrholm, or “beautiful island”—into a corporate conference center for global health-care company Novo Nordisk, balancing an extreme intervention with restoration work on the original building. The design asserts the property’s new identity, bridging the past and the future—an important gesture for an 89-year-old company dedicated to research and innovation.

The site’s history is long and varied, dating back to 1364 when it was pledged to Danish king Valdemar Atterdag. For centuries, the property on the outskirts of the small city of Hillerød belonged to the throne (and was lent to vassals for farming and then used for hunting) before becoming a stud farm and, later, a research farm in 1917. The white-washed brick building with a thatched roof that stands today was built in 1806 and declared a national landmark in 1964. In the 1980s and '90s it housed refugees. And in 1993, it was purchased by Novo Nordisk to expand its Hillerød campus, which includes a production facility and offices across Favrholm Lake. Novo Nordisk, the world’s largest insulin producer and a company with a rich history itself, appreciated the significance of the agricultural connection because of its own

[View additional images online.](#)



beginnings rooted in the use of porcine and bovine pancreases for synthesizing its principal pharmaceutical product.

SeARCH was one of four firms to participate in an invited competition to transform the estate into a training complex that would engage both the mind and body and foster reflection as well as networking. The brief called for a conference center with meeting, dining, and fitness spaces, as well as guest quarters. The goal, says Isabelle Petersen, manager of the Favrholm Campus, “was to create something exceptional”—a dynamic and interactive facility for employees and guests. “They wanted it all—all kinds of styles, a mix of this and that,” recalls SeARCH principal Bjarne Mastenbroek of his client. “They also wished to recreate the historic, formal rectangular layout of the old farm. There were many limitations and ambitions.”

The team, closely overseen by the Heritage Agency of Denmark (KUAS), gutted the existing west wing and fitted it out for guest rooms and a fitness center. Then they renovated the central building to accommodate a lobby,

dining hall, and administration, and converted former haylofts above into lounges and meeting rooms. According to preservation requirements, virtually nothing on the exterior could be altered. The rules also guided interior work, preventing changes that were not historically accurate, like leaving brickwork untreated or opening up the ceiling above the dining area. “Our aim was to maintain the atmosphere of a farmhouse—to keep it rough—to demonstrate that the building had another function before,” says project architect Kathrin Hanf. So the team kept as much original structure as possible and used thin chalk stucco (instead of an opaque version) to emphasize the old masonry’s texture.

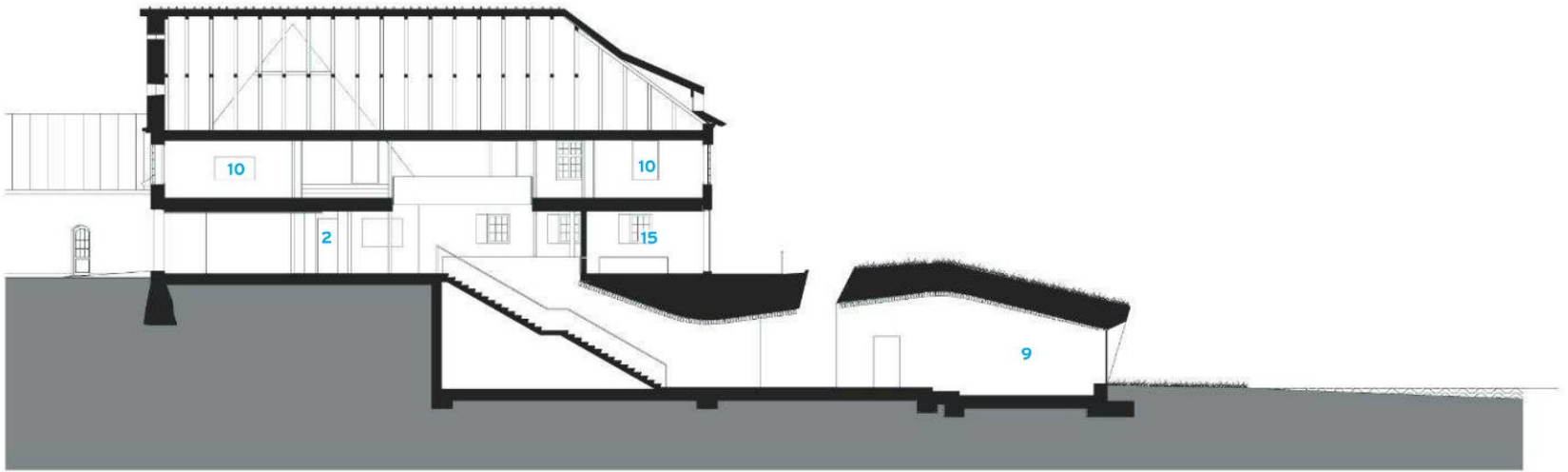
OPPOSITE: Small punched windows on the old building contrast with abundant glazing on the new north wing, which facilitates bird-watching. The property is on a migratory path and welcomes more than 160 species of birds.

LEFT: The farm in 2006. The lake, once a millpond, disappeared for a time and was reconstructed when Novo Nordisk acquired the property. Today it functions as a water catchment system.

BELOW: A camaru wood rainscreen and modern geometry distinguish the new from the old.

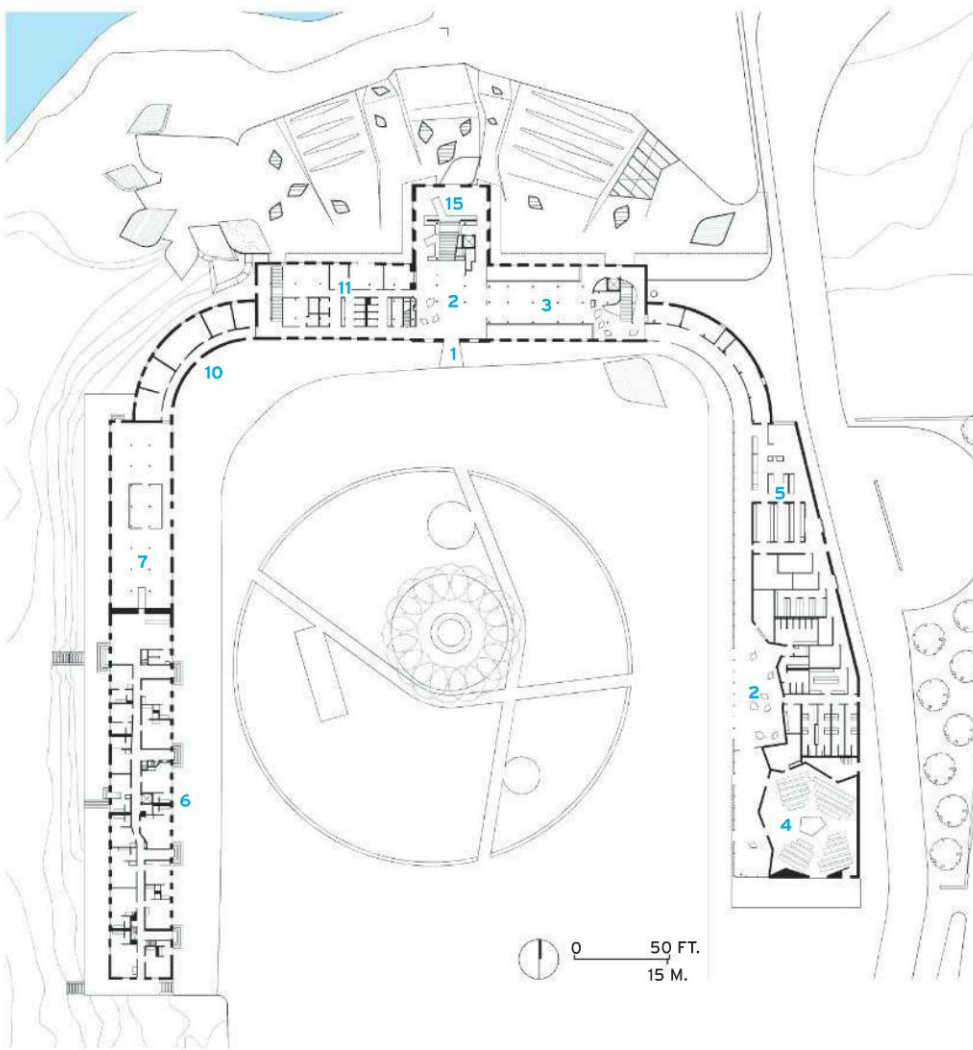
BOTTOM: The new east wing, which replaces stables lost to fire, helps recreate the rectilinear courtyard and shares a friendly tension with the historic building.





SECTION A-A

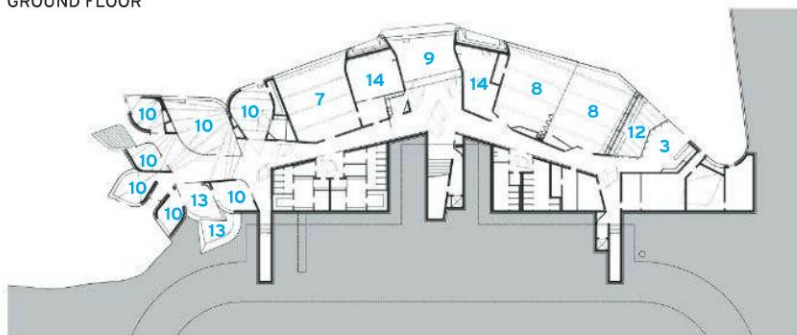
0 10 FT.
3 M.



- 1 MAIN ENTRANCE
- 2 LOBBY
- 3 RESTAURANT
- 4 AUDITORIUM
- 5 KITCHEN
- 6 GUEST ROOMS
- 7 FITNESS
- 8 MEETING ROOM
- 9 BREAKOUT ROOM
- 10 GROUP ROOMS
- 11 ADMINISTRATION
- 12 GREENHOUSE
- 13 PATIO
- 14 TECHNICAL
- 15 INTERNET AREA

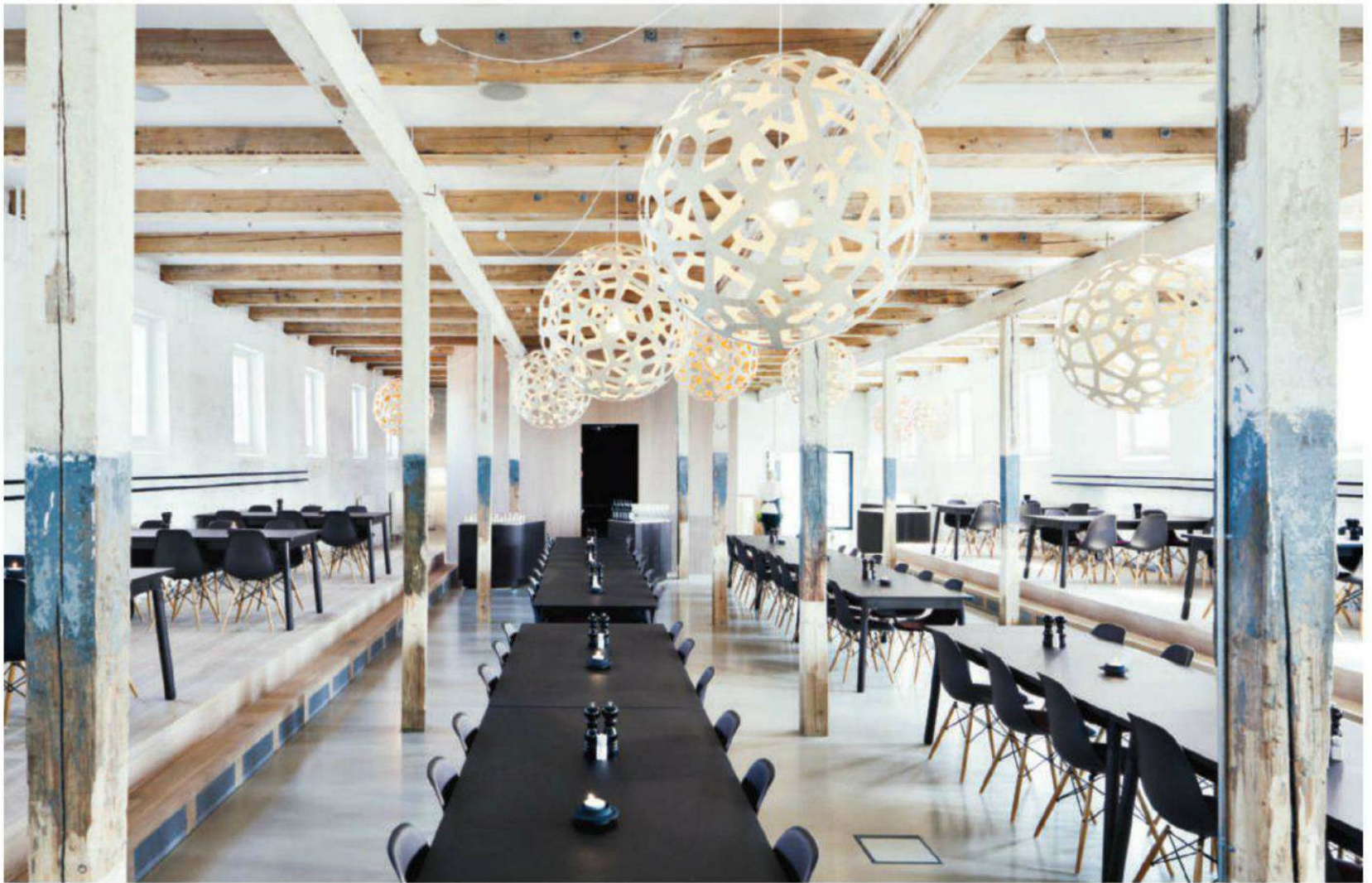
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GROUND FLOOR



LOWER FLOOR

Guest rooms occupy the restored west wing, which originally served as the farm's living quarters. The rooms are all unique, and avoid the anonymity of a hotel by using residential furnishings and finishes.



ABOVE: The client wanted to uniformly paint the columns in the main dining room, but the architects insisted on keeping the original upper portions "as is," while leaving the new low portions (which replace rotted sections) raw. The pinewood replacements, embedded in a poured concrete floor, are slightly rounded, to mimic where livestock once gnawed them.

RIGHT: A stairway brings guests from the lobby in the original central building down to the new meeting rooms below, many of which look out to the lake.





LEFT: One of three stairways connects to the farmhouse above. Cow-ear-shaped skylights mirror the form of the meeting rooms on the lower north extension and emphasize the presence of the old building.

BELOW: The "leaf ceiling," made of laminated birch flaps, carries into a lively photoprint lounge.

BELOW RIGHT: Vibrant hues distinguish the various meeting rooms.

OPPOSITE: The north wing's curves contrast with the orthogonal floor plans in the original building.



While KUAS closely guarded existing components, the architects were free from the shackles of historicism with regard to their additions. They did not want to build one overpowering extension. Instead, they split different functions between two new volumes: a wood-clad east wing, which restores the courtyard's original form and houses an auditorium and kitchen; and a north wing for meeting rooms (Phase II will include more guest rooms at the court's south end). For the east wing, they mirrored the west wing's curve to create symmetry, and then riffed with the roofline, starting with a gable profile and morphing it into a different shape. Referencing barns that once occupied the site, the architects employed wood slats, though they applied them vertically, as a rainscreen that extends up the roofline. While respecting the old farmhouse's scale, geometry, and organization, the extension's modern lines and material treatment emphasize a friendly tension between new and old.

In sync with SeARCH's philosophy of strengthening rather than dominating the landscape, the team nestled the 18,000-square-



foot steel-and-concrete north addition in the hillside, abutting the existing structure. By doing so, they preserved views of the historic building from across the lake, while maintaining the old farmhouse's dignity and standing as the complex's focal point. Extensive glazing renders the new wing as a kind of viewing platform for looking out to the water and the teeming bird life there. To counter ornithological and environmental associations' concerns, the architects limited lakeside activity, minimizing operable windows and providing no entry points on the north facade.

Novo Nordisk requested meeting rooms in a potpourri of styles—from classic to minimalist—but the architects resisted. Such an approach would have been easy to do, says Mastenbroek, but “it doesn't work—it's too banal.” To redirect the client's wish, the architects instead proposed a “family” of volumes. The final design takes visitors down stairs from the original central building to a cluster of meeting rooms, lounges, and patios at grade with the lake. The architects related the meeting spaces to one another by designing all of them in the shape of a leaf (or “cow-ear”), while

varying them in size, relationship to the landscape, and material palette. The scheme creates the diversity and “style with humor” that Novo Nordisk wanted, while maintaining a distinct though cohesive aesthetic. The spaces, with their furniture-showroom-gone-wild decor, are a bit bombastic, but do impart a pleasant frisson. Still, says Mastenbroek, the focus was on opening to the landscape, not playing with forms: “We worked a lot on reshaping the levels of the complex. You are always able to orient yourself—you always know where you are relative to the old building.”

On a recent brisk December morning, Favrholm hummed with activity, and guests used the building as if on cue: holding break-out sessions in small meeting spaces and intent conversations in hayloft lounges. The center is a poster child for an idealistic new brand of corporate labor that is proliferating in privileged enclaves, and is a welcome antidote to soul-killing hotel-conference culture. In line with the values of the company it serves, the building reflects both a deference to the past and a sense of optimism for the future. ■

CREDITS

ARCHITECT: SeARCH – Bjarne Mastenbroek, Kathrin Hanf, design team; Remco Wieringa, Paul Stavert, Geurt Holdijk, Laura Alvarez, Elke Demyttenaere, David Gianotten, assistants; Jimmy Richter Lassen, Torben Pedersen, Rasmus Bjarnov, Jens Rise Kristensen, Niels Max, site supervision

ENGINEER: Moe & Brødsgaard (structural, m/e/p)

INTERIOR DESIGN: Vibeke Brinck; SeARCH

SIZE: 37,167 square feet (existing building); 47,167 square feet (new construction)

COST: withheld

COMPLETION DATE: May 2011

SOURCES

STRUCTURAL TIMBER: Finnforest

METAL PANELS: 3A Composites

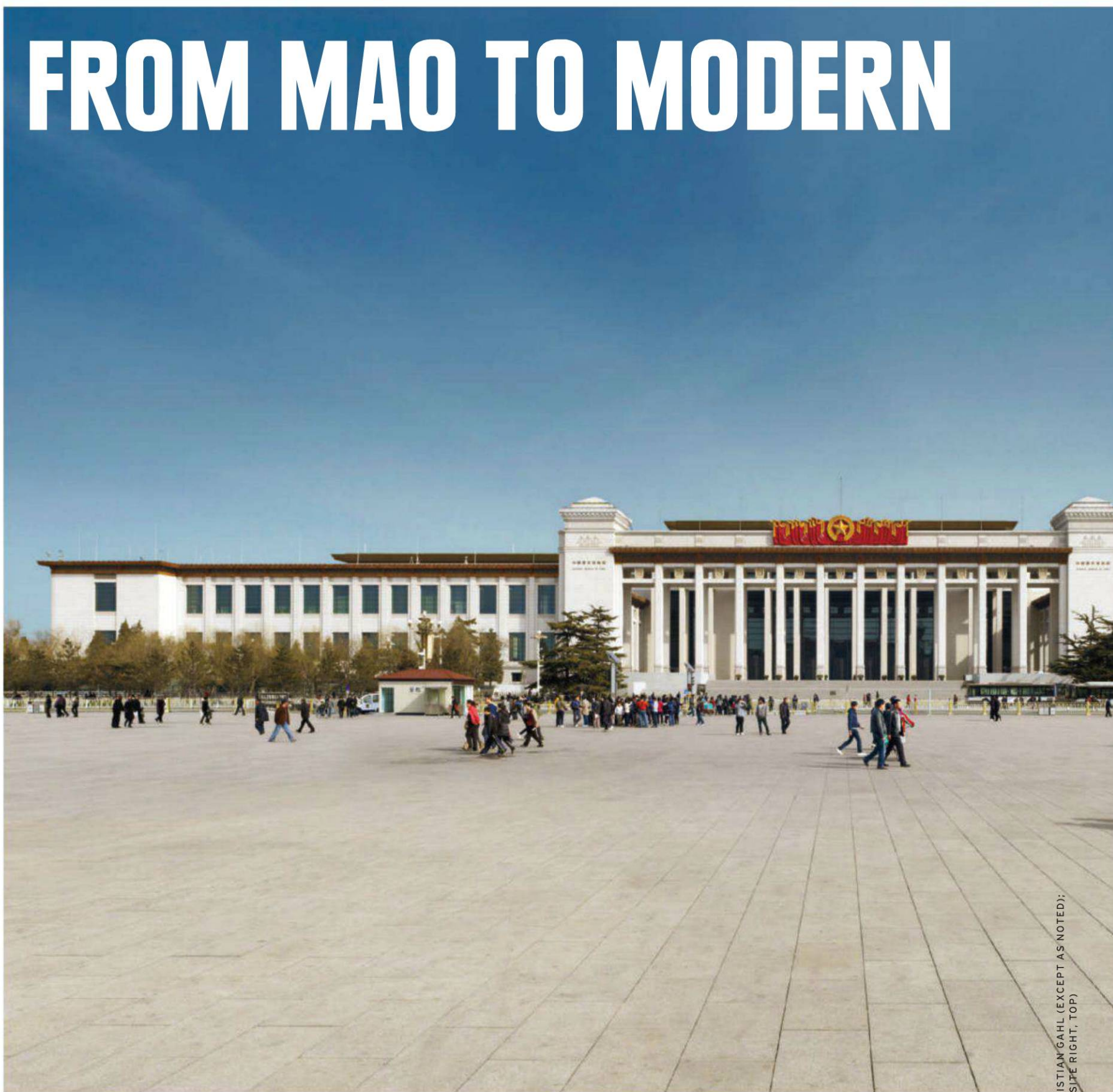
WINDOWS, ENTRANCES: Schüco

RESILIENT FLOORING: Nora



National Museum of China | Beijing | GMP Architects

FROM MAO TO MODERN



ABOVE: The National Museum of China is a gut renovation and expansion of a 1959 building.

OPPOSITE, TOP: The building sits at the northeast corner of Tiananmen Square.

OPPOSITE, RIGHT: GMP partner Stefan Schütz's sketch of the renovation.



On vast Tiananmen Square, one of Mao's "Ten Great Buildings" becomes the world's largest museum. **BY ARIC CHEN**

COMPLETED LAST spring at the northeast corner of Tiananmen Square, the world's biggest museum stands up to the enormity of Beijing's central public space. But the new National Museum of China also points in not so subtle ways to the growing pains of a nation that's striving to become a cultural, as well as economic, powerhouse.

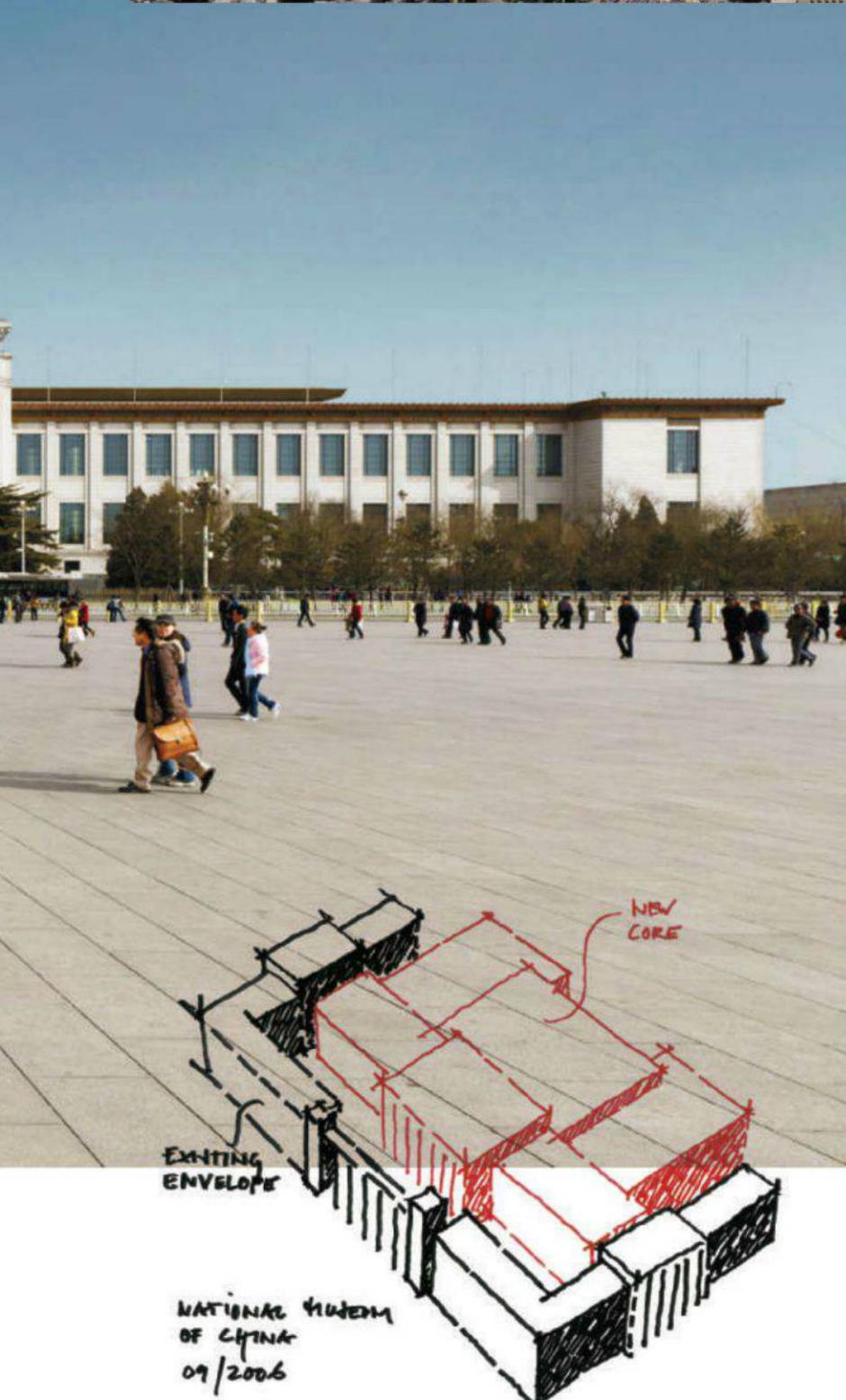
To create the museum, the German firm Architekten von Gerkan, Marg und Partner (GMP) performed a gut renovation of an earlier, historically significant building. Facing the Great Hall of the People across Tiananmen Square, the original Sino-Socialist structure was erected in 1959 as one of Mao's "Ten Great Buildings," commemorating the tenth anniversary of the People's Republic. It was designed by the late Zhang Kaiji (father of well-known architect and MIT professor Yung Ho Chang), and previously housed two institutions: the Museum of Chinese History and the Museum of the Chinese Revolution.

The brief called for a single museum that would preserve most of the existing building's granite exterior, with its imposing colonnades and golden-tiled cornices. It also mandated an extension that nearly tripled its size, from 700,000 square feet to 2 million.

To do so without significantly expanding its footprint, GMP replaced an existing central core with an 850-foot-long "Grand Forum" spanning the building's length to connect the north and south entrances with the western, Tiananmen-facing one. Maintaining the original structure's rigid symmetry, monumental staircases flanking the main entrance now lead up to the Modern Galleries (essentially, the former Museum of the Chinese Revolution) to the north, and an administrative and library wing to the south. Three stacks of rectangular galleries devoted to temporary exhibitions form a new central core.

The Ancient Galleries (formerly the Museum of Chinese History) occupy the 396,000-square-foot basement level, alongside two theaters, a television studio, research areas, and parking. Below this, a sub-basement houses the museum's 200,000-object collection that's not on public view. (It's this storage area that makes the museum the world's biggest; by exhibition space, the Louvre and the Hermitage are larger.)

GMP's initial proposal, which was chosen over Herzog & de Meuron's, OMA's, and Foster + Partners', among others, included a curving "flying roof" over the Ancient Galleries, dramatically juxtaposing old and new construction. But "the client wanted something that was in harmony with the old building," GMP partner Stefan Schütz explains. "They wanted to treat the building with respect, and we understood this."





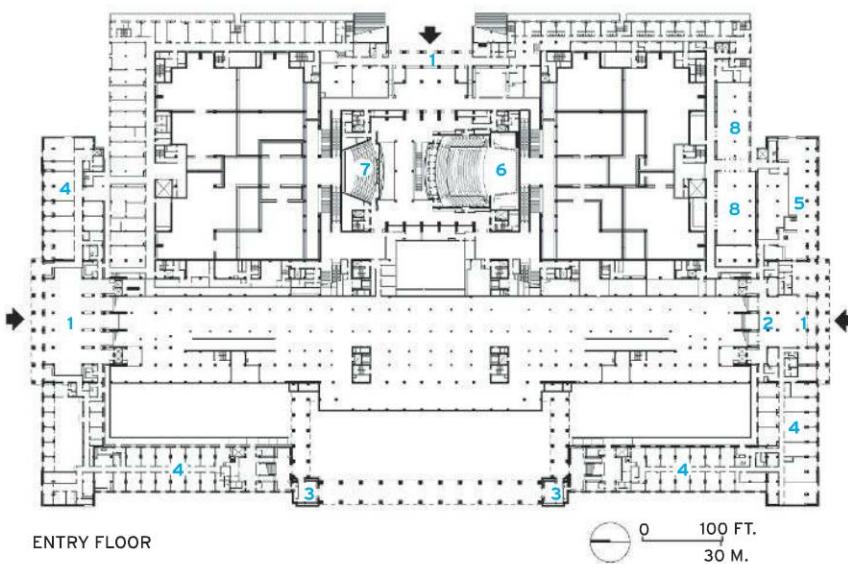
LEFT: The museum's historic and new (at right) facades are separated by a long, outdoor courtyard. OPPOSITE: Coffered ceilings, banks of stairs and escalators, and granite and cherrywood cladding add warmth to the otherwise empty Grand Forum.

The roof was tamed, while the extension's new facade—separated from the 1959 entrance by a long, outdoor courtyard—was given slender pillars topped by modernized takes on traditional *dougang* brackets. Massive perforated bronze doors and coffered ceilings also reference historic Chinese architecture.

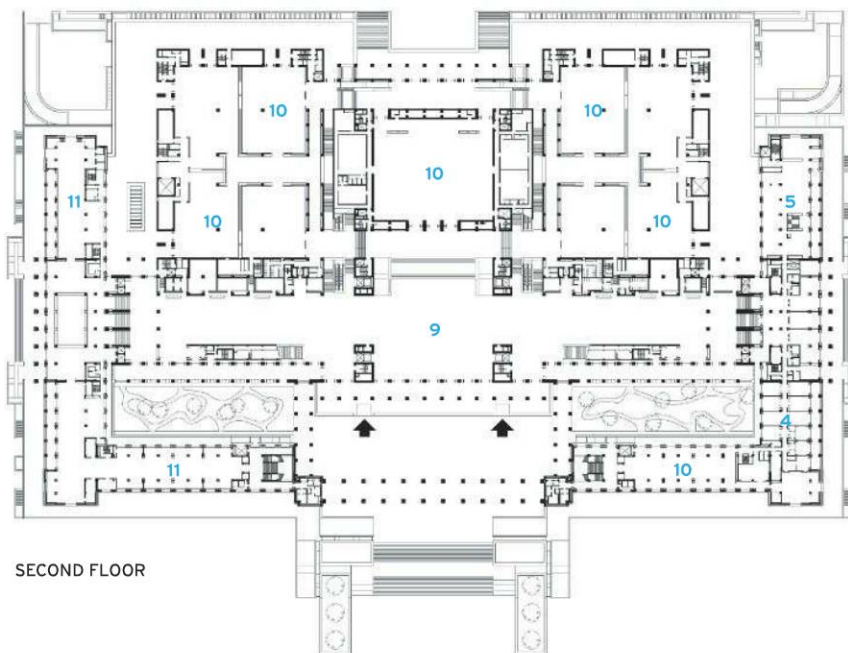
Echoing the void of Tiananmen Square, the more significant nod to contextualism may be the Grand Forum—or, rather, the sheer scale of its emptiness. Though GMP designed it to accommodate art installations, they have yet to be realized. The Forum remains a mostly featureless space, save for its stairs, escalators, granite and cherrywood cladding, and a massive, bas-relief Socialist-Realist-style mural. You might as well be in a hotel conference center.

What's more, the scheme gives pride of place to the temporary exhibition spaces, in the new central core. Yet from the Forum, you can't see what's on display there, and even if you could, you might be disappointed. The inaugural show about art of the German Enlightenment will have been up for a year before it closes. Other exhibitions have promoted Louis Vuitton luggage and Bulgari jewelry. (The museum has been criticized for glossing over the less glorious moments of Communist rule in its permanent exhibitions.) GMP did an admirable job combining old and new. But like many museums in China, this one has a programming infrastructure that lags behind its architectural ambition, and neither seems to have been planned with the other in mind. With its rich history and fertile contemporary art scene, China is anything but a cultural vacuum. For now, it's difficult to say the same of the country's museums. ■

Aric Chen is a writer and curator based in Beijing, and the creative director of Beijing Design Week.



- 1 LOBBY
- 2 RECEPTION
- 3 TICKETS
- 4 OFFICES
- 5 LIBRARY
- 6 THEATER
- 7 CINEMA
- 8 STAFF CANTEEN
- 9 GRAND FORUM
- 10 EXHIBITION
- 11 MODERN GALLERY



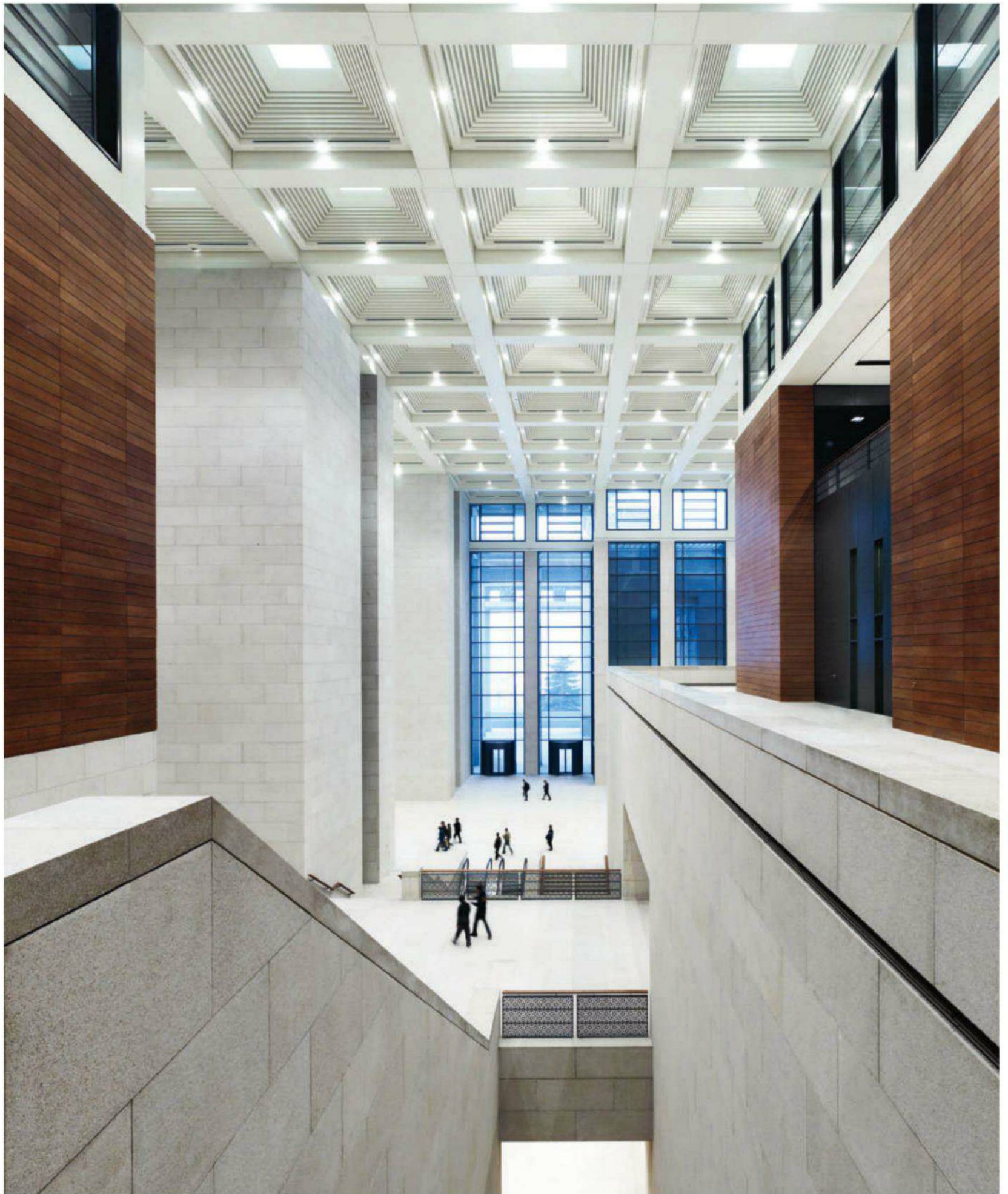
CREDITS

ARCHITECT: GMP - Meinhard von Gerkan, Stephan Schütz, design principals
ENGINEERS: Schlaich Bergemann und Partner, CABR (structural); CABR (electrical)
LIGHTING DESIGN:

Conceptlicht, TsingHua Design Institute
CLIENT: National Museum of China
SIZE: 2 million square feet
COST: \$380 million
COMPLETION DATE: April 2010

SOURCES

FACADE GLASS: Beijing Jianghe Curtain Wall
BRONZE CLADDING: Jinjing Bronze World Ornament Material



Isabella Stewart Gardner Museum Extension | Boston | Renzo Piano Building Workshop

GREEN MACHINE

An extension to a revered museum is never easy, as Renzo Piano found out in a first foray into Boston.

BY SUZANNE STEPHENS





ABOVE: Prepatinated copper, green shades, and a red and white hanging mark the new main entrance facing Evans Way Park.

LEFT: Willard T. Sears designed the Gardner in 1903 to face the Fenway. OPPOSITE: A glass connector links the stair in the new wing to the back (south) side of the old museum.

comes as a stunning surprise for those first entering this unprepossessing structure.

The museum's decision to expand to accommodate crowds and provide a 6,000-square-foot hall for its musical programs, as well as a 1,650-square-foot greenhouse for plantings, plus two artists-in-residence apartments, posed no physical threat to the actual museum itself. Over the years the Gardner had assembled enough property that Piano's L-shaped wing could be inserted 50 feet away from the back of the older building, next to an existing brick apartment house on the southwest. Unfortunately it meant Gardner's 1908 carriage house had to be torn down, which created a severe dispute with the preservation-minded. Only now is the museum applying for city landmark status. In addition, the team, led by director Anne Hawley since 1989, is striving for LEED Gold certification (eight geothermal wells, rainwater for plants, 28 percent reduction in energy use), which might mend some fences.

Despite the distinct separation of new from old, it should be said that the plan underscores an unsettling trend in museum expansions: when high-roller architects add onto a venerable museum, often you find the main entrance is reoriented to the new (architect-designed) wing. As happened with the Piano-designed addition to the Morgan Library and Museum in New York City (2006), the public rarely sees the original entrance elevation, except by accident. True, the Gardner sorely needed more space for ticketing, a coat check, café, shop, and orientation—items

ONCE YOU get past the eye-popping turquoise green prepatinated copper of Renzo Piano's new 70,000-square-foot addition to the Isabella Stewart Gardner Museum in Boston, you discover that the new wing echoes the older museum in its proportions, sleek lines, and taut planes. Piano's glass, brick (and copper) cladding for the \$114 million steel-frame and poured-concrete structure retains, too, the austerity of the beige brick pile designed in 1903 by architect Willard T. Sears facing the Fenway. While Sears's palazzo for his indomitable dowager-client shows an affinity to 15th century Venetian predecessors, its brick expanses and small, plainly rendered windows evoke as easily early Modernist industrial buildings such as Hans Poelzig's Chemical Factory in Luban, Poland (1912). The factory motif shows up in Piano's scheme as well—not surprising for a Modernist vocabulary.

But now we must return to the copper—the elephant in the backyard. Although naturally patinated copper appears in traditional structures nearby, Piano's decision to prepatinate an expansive skin was dead wrong. The corrugated green screen lacks the subtlety, depth, and faded tone of naturally oxidized copper.

And there is so much prepatinated green copper (even if a number of panels bear a yellowish tinge) that it appears flat and homogenous, especially on gray days. In an informal conversation last October, Piano defended the copper covering's "fragility and lightness." But he then mused that the prepatination "does need a little help." The other major exterior material, a fire-engine-red brick, at least approximates the color of surrounding brick buildings and echoes the smooth texture and scale of the horizontal, almost Roman-size brick, with tightly mortared joints, of the Gardner's beige walls. In addition, Piano's glass-sided fire escapes and balconies do bounce light and articulate the new flat facades.

The old museum's coup de théâtre has always been its interior, where the Italian Renaissance skylit courtyard is surrounded by three floors of galleries that are encrusted with centuries-old architectural fragments; filled out with sturdy, stately furniture; and adorned with grandly scaled tapestries amassed by Gardner. And then, of course, there is the acclaimed trove of art, including works by Rembrandt, Vermeer, Degas, Manet, and Sargent. The varied and rich ensemble

PHOTOGRAPHY: © NIC LEHOUX (OPPOSITE); BRUCE T. MARTIN (TOP); POSTCARD COURTESY BOSTON PUBLIC LIBRARY

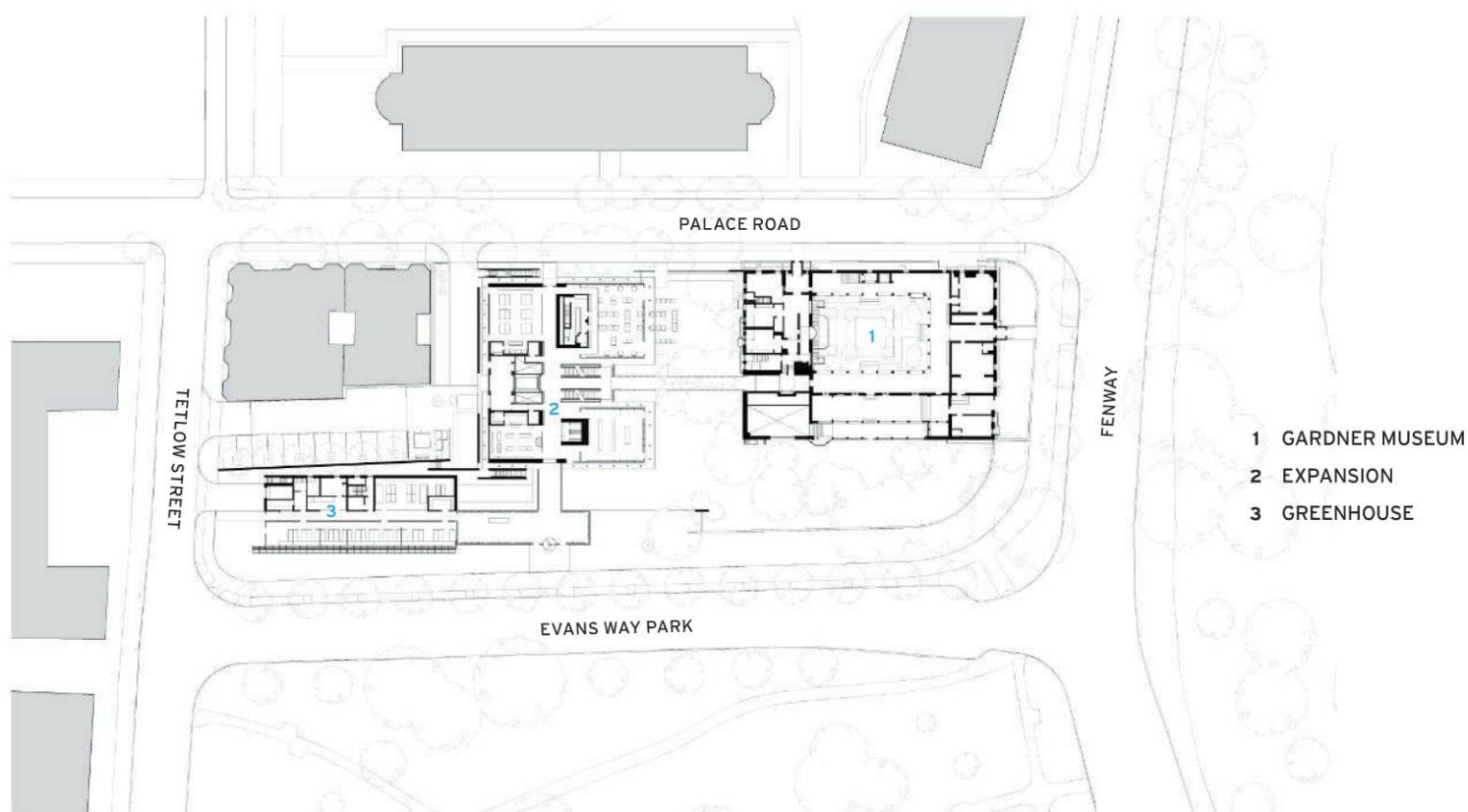


LEFT: In a 36-foot cubic volume, the Special Exhibition Gallery hovers over the Reading Room on the main level.

OPPOSITE LEFT: The glass-walled Special Exhibition Gallery overlooks a garden and the back of the Gardner.

OPPOSITE TOP RIGHT: The Reading Room on the main floor is enclosed on three sides in glass window walls.

OPPOSITE BELOW: The 42-foot cubic space of Calderwood Hall is topped by a skylight. Beside movable seats on the floor, the concert space is edged with three balconies with single-row seating.



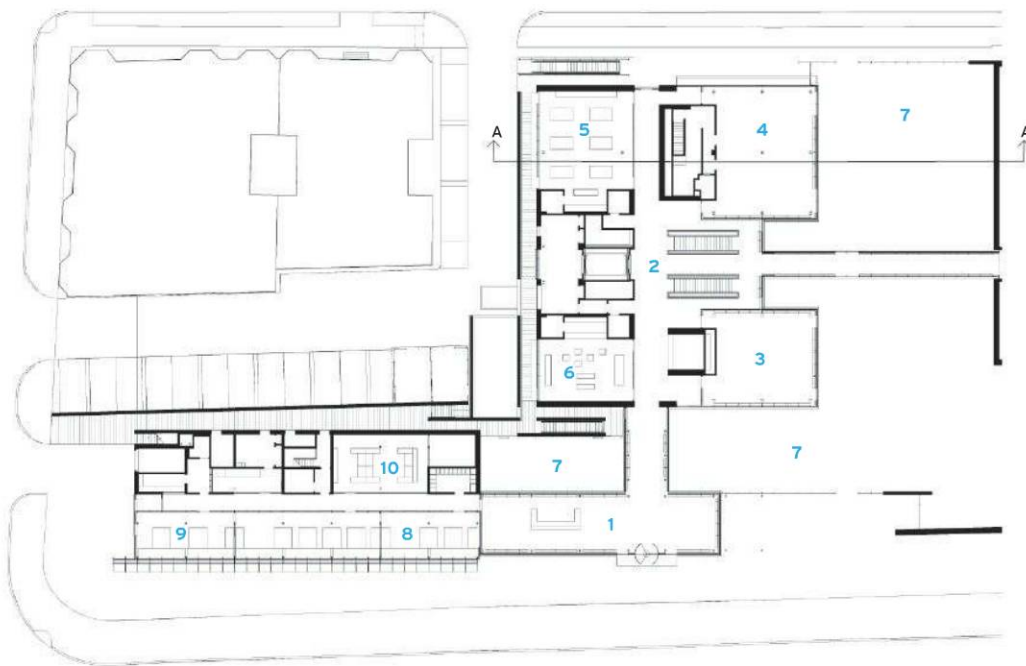


de rigueur in today's museums. (It also includes advanced security, still a sensitive subject after the yet-unsolved theft of 13 works of art in 1990.) Because the Gardner hopes to increase visitors by 15 percent, to 230,000 a year, Piano's decision to move the main entrance from the Fenway on the north to the east side facing Evans Way Park seemed logical. And, true, the former entrance was hardly grand. Nevertheless, to reach the stunning Gardner interior now takes a wee bit longer.

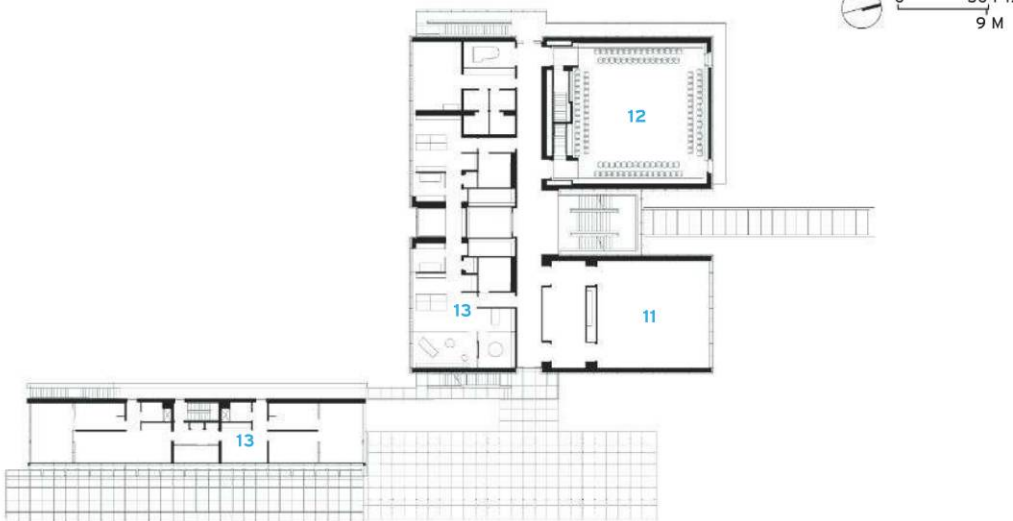
The new Gardner entrance opens onto a glass and steel shed attached to a greenhouse, with Piano's square main building straight ahead. Here you first encounter a comfortable "Living Room" (for orientation and relaxing), and beyond that the café, both occupying pavilion-like glazed enclosures overlooking the back of the old museum. Above, separated by a large stair, are two cubic volumes. One, the Special Exhibition Gallery, 36 feet in three dimensions, has an adjustable-height ceiling for differing display needs, with a glazed wall on the north. The other, Calderwood Hall, is a 42-foot-cubic concert space, topped by a skylight. Both offer crisply majestic ambiances, albeit more understated than the sumptuous galleries and Tapestry Room (where concerts were formerly held) in the palazzo next door.

A cube-shaped space is considered excellent for small concerts (Yasuhisa Toyota of Nagata Acoustics was the consultant): here, three single-row balconies, backed by oak-clad, poured-concrete walls, provide most of the auditorium seating. Of the 296 seats, only 116 occupy the main-floor performance area. One functional observation nags: Seated patrons in the balconies must rise for new arrivals, since space is





FIRST FLOOR PLAN



SECOND FLOOR PLAN

OPPOSITE: The grand stair in the new wing frames the glass connector taking visitors to the back of the Gardner. Its glass balustrades and open risers heighten the sense of transparency.

very tight between the chairs and the wood handrails on which spectators lean to survey the musical offerings below.

One of the most fortunate benefits of the new hall is that the Gardner gets its old Tapestry Room back, which has been restored by the staff to its former magnificence. Also, the (longish) entrance reorientation does create an ultra-dramatic sequence from new architecture to old. The addition's main stair—with glass balustrades and open risers—frames a light-filled, glazed connecting link, which leads in an enfilade fashion to a dark, barrel-vaulted brick antechamber in the old Gardner, before releasing visitors into the east cloister of the resplendent mottled-pink stuccoed courtyard. You have arrived at the heart of the museum, and all else is forgotten. Once the landscaping is fully in place, perhaps the extension will appear more settled and grown-in. If the prepatinated copper does remain disturbing, let's hope climbing ivy can be added to the planting program. ■

- | | |
|-------------------|----------------------------|
| 1 ENTRANCE LOBBY | 10 EDUCATION OFFICES |
| 2 MAIN STAIR | 11 SPECIAL EXHIBITION |
| 3 READING ROOM | 12 CALDERWOOD HALL |
| 4 CAFÉ | 13 OFFICES |
| 5 CLASSROOM | 14 CONSERVATION |
| 6 SHOP | 15 ARCHIVE/OFFICES |
| 7 GARDEN | 16 MECHANICAL/ BASEMENT |
| 8 GREENHOUSE | |
| 9 PLANT CLASSROOM | |

CREDITS

DESIGN ARCHITECT:

Renzo Piano Building Workshop – Renzo Piano, principal in charge

ARCHITECT OF RECORD:

Burt Hill / Stantec

ENGINEERS:

Nitsch Engineering (civil); Buro Happold (structural; m/e/p)

CONSULTANTS:

Paratus Group (owner's representative); Sam Anderson Architects (conservation lab)

CLIENT: Isabella Stewart Gardner Museum

SIZE: 70,000 square feet

COST: \$114 million (construction)

COMPLETION DATE:

January 2012

SOURCES

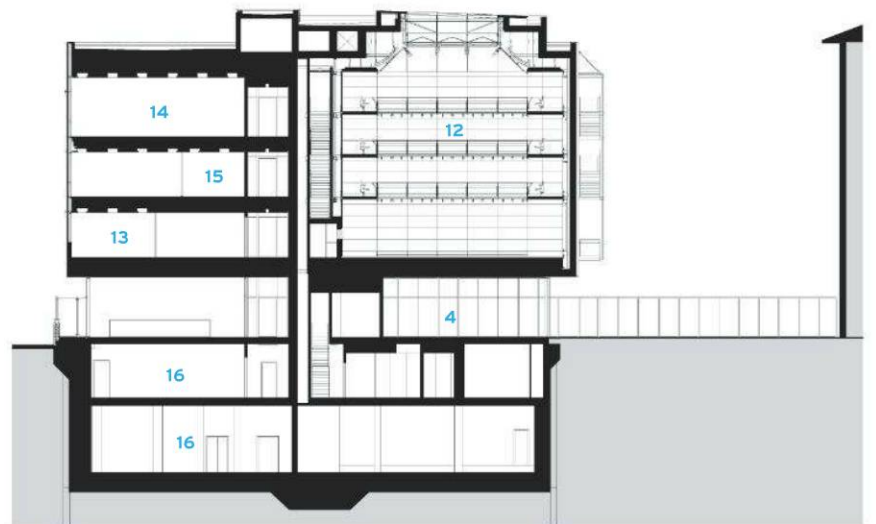
PREPATINATED COPPER AND GLASS: Gartner

BALUSTRADE GLASS: Oldcastle BuildingEnvelope

LIGHTING: iGuzzini

WOOD: Becht Corp

BLUESTONE FLOORS: Kenneth Catellucci & Assoc.



SECTION AA

0 30 FT. 9 M



Iron Market | Port-au-Prince | John McAslan + Partners

RISING FROM THE RUBBLE

The 2010 Haiti earthquake caused severe damage to the bustling Iron Market, a treasured icon. Thanks to a remarkable restoration, the bazaar is back in business.

BY JENNA M. McKNIGHT



ABOVE: Photographer Rex Hardy captured this image in the 1930s for *LIFE* magazine.

RIGHT: Prefabricated in France and inaugurated in 1891, the market was intended to serve as a rail station in Cairo but ended up in Port-au-Prince, according to some reports.

OPPOSITE TOP LEFT: Located in the heart of downtown, the iron structure was heavily damaged by the January 2010 quake.

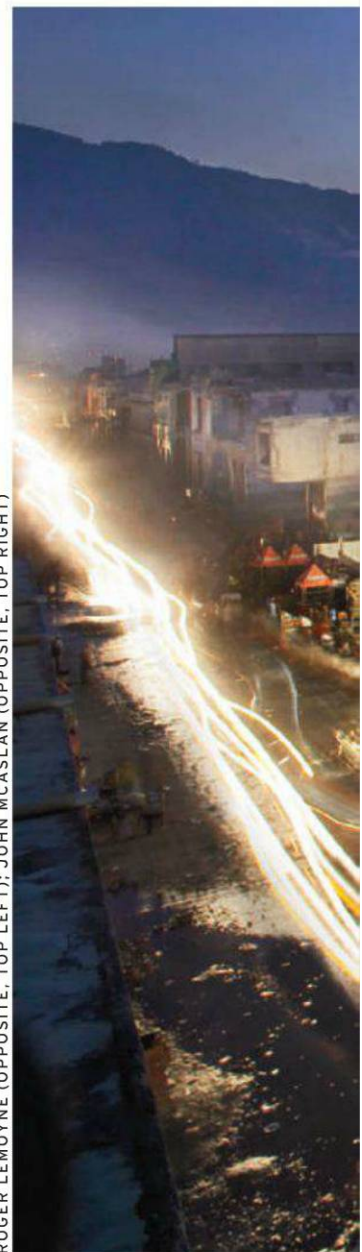
OPPOSITE TOP RIGHT: An elevated concrete deck added within the past 50 years crashed into the south hall and clock tower.

TWO YEARS after a massive earthquake devastated Haiti's capital, Port-au-Prince, signs of the disaster remain, particularly in the dense downtown district. The once regal National Palace sits in shambles; the Cathedral of Our Lady of the Assumption, the country's central Catholic church, is an eerie ruin speckled with trash. While much rubble has been cleared from the streets, the urban core is still dotted with partially collapsed buildings and deplorable refugee camps. To the typical American, the scene feels apocalyptic.

But there is one gleaming structure here: the Iron Market, or *Marché de Fer*, a late-19th-century facility that has been beautifully restored by the U.K. architect John McAslan and a diverse group of Haitian and foreign consultants. The striking landmark comprises two 25,000-square-foot halls filled with an assortment of goods, from fruit to wigs to voodoo potions. Between the halls, a clock tower pavilion flanked by four 75-foot-tall minarets rises from a busy courtyard. Personally funded by the owner of Digicel, one of Haiti's main cell phone providers, the \$12 million project serves as a rare symbol of revival in this destitute metropolis of roughly 3 million people. "Everybody in Haiti recognizes this as something that was almost destroyed and has come back to life," says McAslan.

The distinct red and green market was inaugurated in 1891. Prefabricated in France, the structure was destined to serve as a railway station in Cairo, according to some accounts. But when plans fizzled, the Haitian president Florvil Hyppolite stepped in to buy it. The building was a lively commercial hub for more than a century. A fire in May 2008, however, decimated the north shed; the 7.0-magnitude quake on January 12, 2010, wreaked further havoc and killed several people at the site.

Eager to contribute to Haiti's recovery, Digicel's Irish owner, Denis O'Brien, set out to resurrect the market. "It's one of the most significant buildings in the middle of the city," the entrepreneur explains. "We hoped it would set an example and encourage other people to do projects in the area." Just weeks after the quake, he hired McAslan's firm to direct the endeavor, and he gave them less than a year to



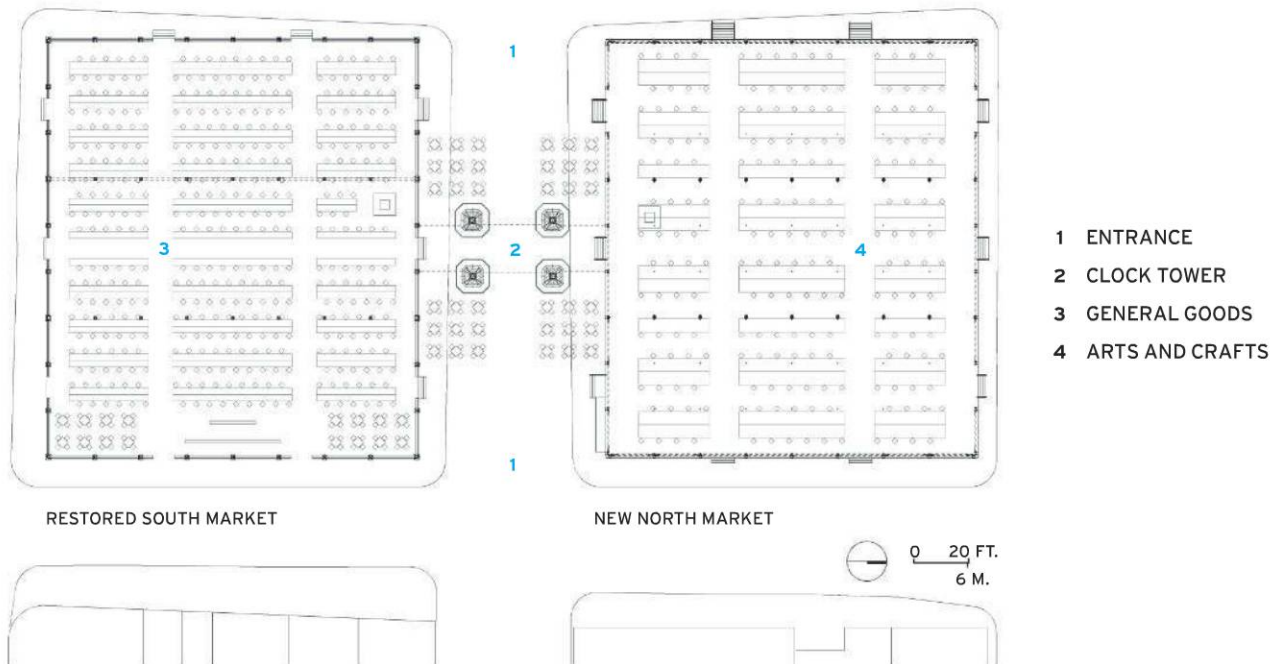
PHOTOGRAPHY: © LIFE MAGAZINE (LEFT); HUFTON + CROW (CENTER); ROGER LEMOYNE (OPPOSITE, TOP LEFT); JOHN MCASLAN (OPPOSITE, TOP RIGHT)





ABOVE: The north hall was completely rebuilt using standard steel, while the south shed's original iron frame was mostly preserved. Both 25,000-square-foot halls received new corrugated steel roofs, along with column anchors and X-bracing to help ensure the market can withstand storms and quakes.

OPPOSITE: Large openings, louvered facades, and unglazed clerestories, plus industrial-size fans, ventilate the large halls. The facility is designed to accommodate 800 vendors, who sell everything from fresh fruit to voodoo dolls.





complete it. “The project was ferocious in speed,” says McAslan, who had been working in Haiti with the Clinton Global Initiative since 2009 and had actually proposed restoring the market prior to the disaster.

Early in the process, Robert Bowles, a British engineer and historic-preservation specialist, was brought in to assess the building’s condition post-quake. To a casual observer, it seemed beyond repair, but he was optimistic. The south hall—expertly constructed using high-quality wrought and cast iron—had performed well, “wobbling like jelly” but staying intact, he says. The destruction was primarily due to an “ill-considered” elevated concrete deck that was added between the two sheds decades earlier; it collapsed and crashed into the south hall. “The weight of the concrete slab chopped the columns in half,” he explains. It also destabilized the clock tower.

The designers, with the support of Haiti’s Institute for the Protection of National Heritage, conceived a restoration scheme that

incorporated as much salvaged material as possible. While the clock tower’s legs were largely refurbished using steel, its upper portion was meticulously restored by Haitian craftsmen using existing materials. The team fully rebuilt the north hall with steel, but preserved most of the south hall’s iron frame. They added corrugated steel roofs to both sheds, along with column anchors and X-bracing to ensure the facility could withstand storms and earthquakes. The market now meets International Building Code requirements, notes engineer Aamer Islam, whose New Jersey firm, Axis Design Group, worked on the project. The team added other modern accoutrements: industrial-sized fans aid in air circulation, and rooftop solar panels help meet the facility’s minimal power needs.

The market reopened on January 11, 2011, one day before the quake’s first anniversary. During a recent visit, the venue was packed with hundreds of sellers and local shoppers. Ronald Edmond, who peddles handmade

souvenirs, says the restored facility is nice, but “tourists don’t come that often.” The market is ringed by tattered tents, dilapidated buildings, and clogged streets—a deterrent for most foreigners. “We are waiting for them,” he says. “One day there will be more activity.” ■

CREDITS

ARCHITECT: John McAslan + Partners – John McAslan, principal; Pauline Nee, building surveyor

ENGINEERS: Axis Design Group (structural); Alan Baxter Associates (historical); OBRIEN Steel Consulting (steel)

CONSULTANTS: National Institute for the Protection of National Heritage; John Milton, George Howard (construction)

CONTRACTOR: GDG
SPONSOR: Denis O’Brien
CLIENT: Port-au-Prince
SIZE: 50,000 square feet
COST: \$12 million
COMPLETION DATE: January 2011

SOURCES
STEEL: Helmark Steel
SPECIAL METALWORK: Arts et Ambiances
PAINT: Sherwin-Williams

Claremont University Campus Center | California | Lewis.Tsurumaki.Lewis Architects

SCREENING ROOM

A college consolidates administration services under one warehouse's roof, gaining light and levity with a sculptural cedar skin.

BY CHRISTOPHER HAWTHORNE



ABOVE AND TOP: LTL adapted a maintenance building at the edge of Claremont's campus into an administrative center. A 740-foot-long cedar screen defines the building entrance and weaves inside to frame a reception area and café.



FOUNDED IN 1925, the Claremont Colleges occupy a connected series of leafy, low-rise campuses about 30 miles from downtown Los Angeles. It's not in the heart of this stereotypically collegiate setting but along its less handsome southern edge, near a commuter rail line and adjacent to a large surface parking lot, that the New York firm Lewis.Tsurumaki.Lewis Architects (LTL) has completed its first West Coast project.

The firm's brief was straightforward: Take the scattered offices of the Claremont University Consortium (CUC)—which is essentially the back-of-house administrative arm of the colleges, responsible for everything from payroll to campus security—and bring them together under one roof. The architects were also asked not to build a new facility from scratch but to reuse an existing steel-framed warehouse.

Only a decade old, the warehouse was no

campus landmark; rather, it was an anonymous and utilitarian structure. That fact, and the building's location far from the center of campus, which is dotted with early-20th-century landmarks by Myron Hunt set into landscapes by the great Ralph Cornell, gave LTL broad leeway in reimagining the structure for its new use. Still, the budget was hardly lavish. Construction costs, according to the architects, were roughly \$7.5 million, or \$180 per square foot, with total costs of about \$10 million.

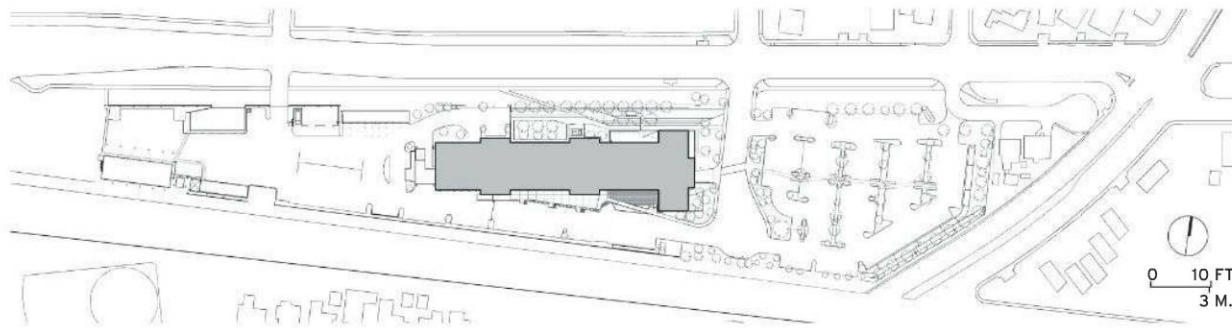
LTL, founded in 1997 by twin brothers Paul and David Lewis and a third partner, Marc Tsurumaki, has made a specialty of such projects in the last few years. In Austin, Texas, the architects restored and expanded an 1851 brick building to house an arts center [RECORD, February 2011, page 52]. At the University of Wyoming they took two levels of open space inside an existing college of education building and created a new student lounge.

For the CUC's 100 employees, LTL pursued a design strategy that is contextual and works against the idea of context at the same time. A ribbonlike cedar screen is the clearest sign of this attitude. It begins outside the building, wrapping a new entrance canopy and following the pitched-roof profile of the structure underneath. It then slips inside the building to frame an information desk and café before heading back outside to cover more of the exterior and a large patio facing south.

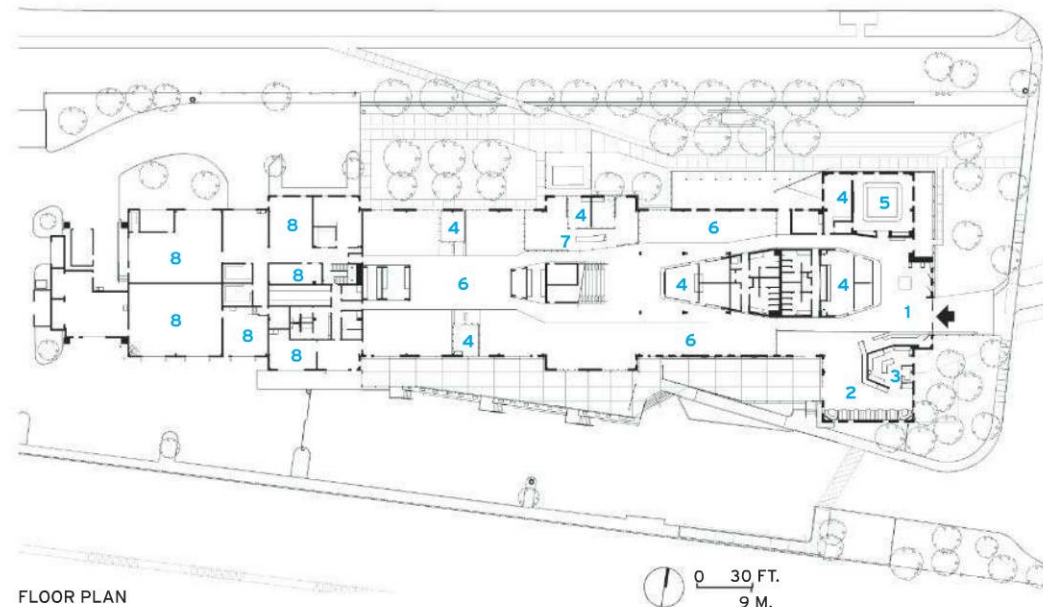
The screen, embedded with vertical LED lights, is a flexible rather than monolithic skin. Its slats are spaced more widely apart

RIGHT: While the original 42,000-square-foot maintenance building (shown here) wasn't particularly pleasing to the eye, reusing it was a major aspect of the sustainability strategy. The cedar screen creates a new image.





SITE PLAN



FLOOR PLAN

CREDITS

ARCHITECT: LTL - Paul Lewis, principal in charge; Marc Tsurumaki, David Lewis, principals; John Morrison, project manager

ENGINEER: John Labib and Associates (structural)

CONSULTANTS: AHBE (landscape); Lumen Architecture (lighting)

CLIENT: Claremont University Consortium

SIZE: 41,050 square feet

COST: \$8 million

COMPLETION DATE: August 2011

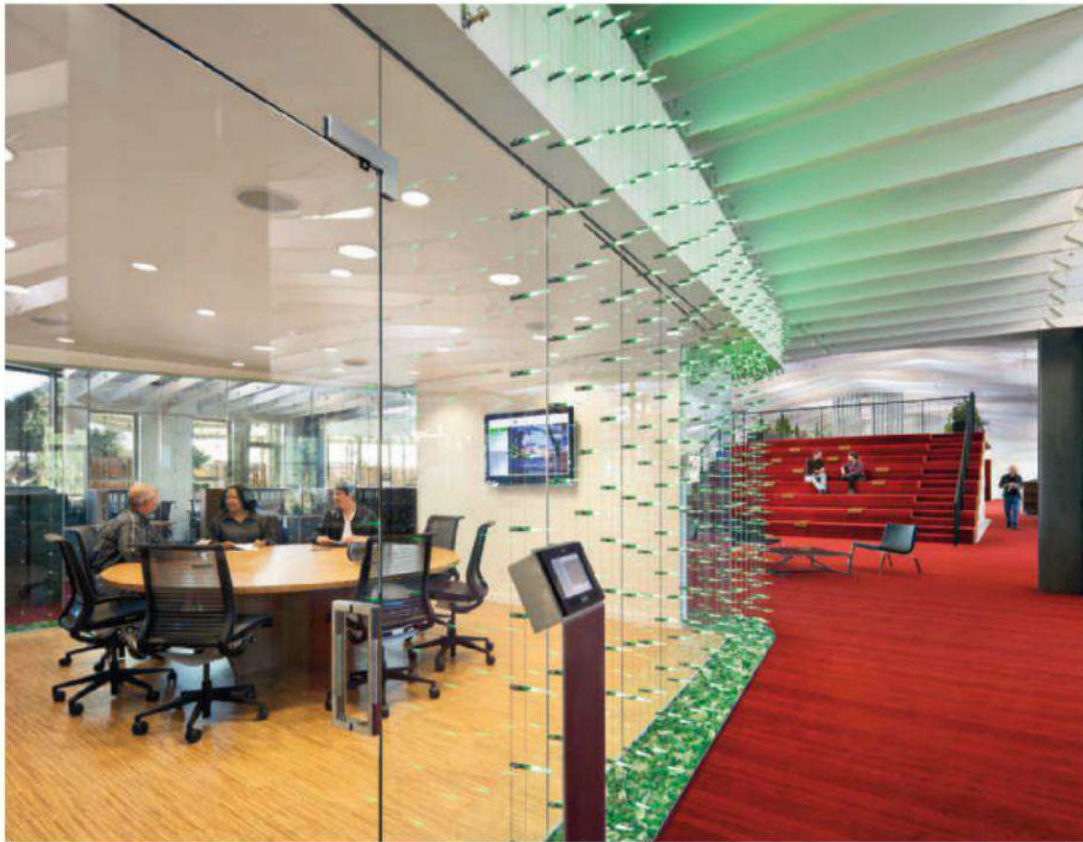
SOURCES

SKYLIGHTS: Solatube

LIGHTING: Lutron

WORKSTATIONS: Plyboo

- 1 LOBBY
- 2 CAFÉ
- 3 KITCHEN
- 4 MEETING
- 5 BOARDROOM
- 6 OFFICES
- 7 EXECUTIVE AREA
- 8 FACILITIES SHOP



side both traces and cloaks the shell of the older building, an undulating suspended ceiling hides and exposes the ductwork overhead. Made of hundreds of small baffles wrapped in recycled white felt, it gives the interior of the building a spatial complexity that the original warehouse likely never had. More than 150 cylindrical skylights bring enough sunlight into the space to make artificial lighting unnecessary on clear days.

There is a long history in Southern California of talented young architects using warehouse conversions as vehicles for architectural experimentation. Frank Gehry, Eric Owen Moss, and Morphosis all used such projects in the 1980s as manifestos for a free-wheeling but economical new style.

The goal at Claremont was less about aggressive form-making than material richness—almost to the point of gluttony—and competing pattern. LTL has skinned the interiors three very different ways: the floor with its red carpet; the walls with the cedar screen; and the ceiling with the white baffles. Each dimension is an aggregation and exploration of a single material.

Set against the design’s obvious interest in economy and frankness, this boldness of color and pattern creates a pleasing architectural dissonance. Call it raucous pragmatism. ■

Christopher Hawthorne is the architecture critic of the Los Angeles Times and the coauthor, with Alanna Stang, of The Green House: New Directions in Sustainable Architecture (Princeton Architectural Press, 2010).

wherever it runs past a window, to allow more light to penetrate. Elsewhere it moves away from the building to form new pockets of contained outdoor space.

The inside of the building trades the crisp, sure forms of the exterior for a brighter and busier aesthetic. Near the main entrance, suspended in front of some glass-walled con-

ference rooms, is a green LED light sculpture by Brooklyn-based artist Jason Krugman. A red carpet runs through the whole space, rising to cover a set of bleacherlike stairs in the middle of the building that provides a gathering place for large meetings and casual gatherings. A small kitchen is tucked away underneath.

In the same way that the cedar screen out-

OPPOSITE: The cedar screen is embedded with LED lights, which are illuminated at night.

ABOVE: Artist Jason Krugman designed a “digital garden” made of over 6,000 motion-detecting LED modules that shift from blue to green and surround the central core.

RIGHT: Recycled plastic baffles form a cloud ceiling throughout the building. Skylights provide natural illumination until the evening, when dimmable fluorescent lights gradually get brighter.



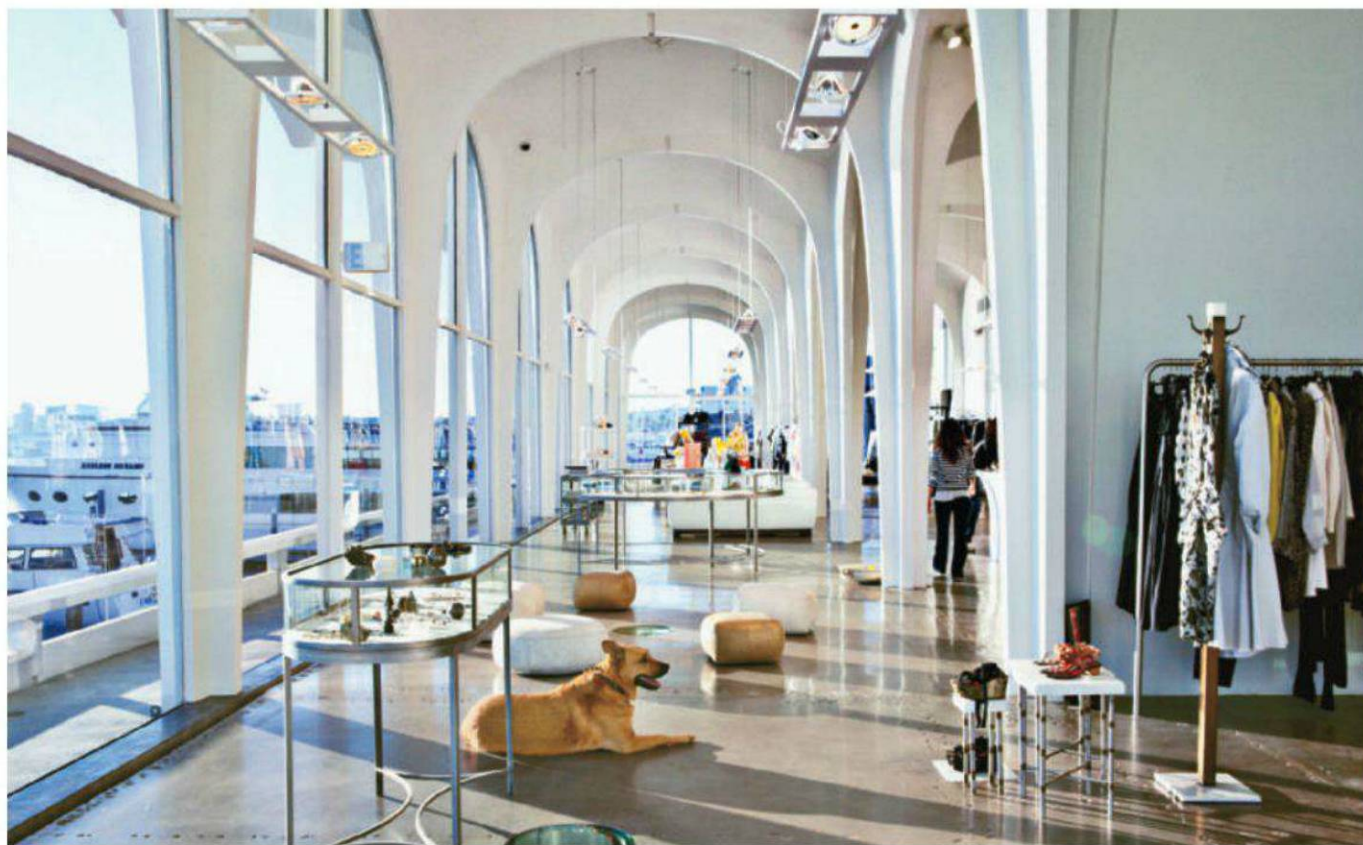
A'maree's | Newport Beach, California | Paul Davis Architects

HAUTE COUTURE

A restaurant with a Modernist pedigree is rescued from the vintage bin, reborn a high-end clothier.

BY SARAH AMELAR





OPPOSITE: Sited between the West Coast Highway and a marina, the structure partially hovers on stilts over the water.

LEFT AND BELOW: On the main selling floor, Davis opened the space to light and views, eschewing the heavy drapery and carpeting of the 1960s occupant.

A 1960S POSTCARD shows a Newport Beach, California, building in its early heyday. Hot-pink letters across the facade spell out “The Stuff Shirt,” the original tenant, in a mod, Summer-of-Love font. But the soundtrack is clearly Sinatra, not rock; and this restaurant’s interior decor is more stuffed-shirt than hip, with Old World drapes and seriously nouveau-riche chandeliers. A succession of restaurants would eventually replace the Stuff Shirt—each more at odds than its predecessor with the structure’s underlying Modernist design.

By late 2009, when Los Angeles architect Paul Davis began transforming the 8,100-square-foot interior into a new home for A’maree’s—an unusually laid-back high-fashion emporium—he found the once clean-lined spaces masquerading as a neo-Aztec-faux-Casablancon extravaganza. After the last restaurant, the discouraged owner, a wealthy real estate investor, left the place vacant for 13 years; maintaining the exterior, he resisted interested parties, awaiting tenants he trusted to value the original design.

With soaring arches, scalloped eaves, slender cruciform columns, and domed vaults, this 1961 confection by architects Ladd & Kelsey is the sort of visually lightweight, exuberant architecture easily lumped together with kitsch Modernism of the 1960s and 1970s. Despite the building’s undeniable period style, however, you’d be mistaken to write it off. Davis’s renovation has unmasked its essential

grace and integrity of structure and materials—but with the clarity and rough-edged directness of a 20th/21st-century sensibility.

“A light-touch renovation, carried out in an art-space-loft-style-guerilla mode,” was how Davis pitched his approach to A’maree’s owners, three sisters whose unconventional style of retailing hip haute couture was pivotal. His idea was to selectively peel away layers and accretions, opening up gallery-like space, accentuating the building’s superb bones, views, and light. “Guerilla” meant retaining gritty vestiges from the building’s past.

Like the sisters, he envisioned creating “the furthest thing from a mall retail store.” Cofounded in 1976 by the owners’ mother, A’maree’s imparts the feeling of being at the home of friends, who share with you fashion, household objects, even cookies fresh from the oven. You’re in the inner sanctum; no space is off-limits. “The opposite of big-box commercialism of a Saks or Barneys,” says Dawn Klohs, one of the sisters. “With the Internet, so much is available to everyone. But this is about one-of-a-kind things, the relationship—and the experience.”

For the retail floor, Davis stripped the dining/bar area of applied ornament, fixtures, furnishings, and carpet, down to the cast-in-place concrete shell, and painted it pristine white. The result is dazzling, with 19-foot ceilings, harbor views through original floor-to-ceiling, arched windows (now with UV-



filtering film), and the column-and-vault grid’s hypnotic, mosquelike rhythm.

Heightened transparency is evident even outside the entrance, the only part of the facade Davis altered. Reclaiming (and enhancing) the original spirit, he ditched the opaque, faux-Aztec portal in favor of frameless glass doors, outshining Ladd & Kelsey’s utilitarian storefront glazing. Now, on approach, a crisp sequence of interior archways appears straight

TOP RIGHT: Davis left the ceiling rough and unfinished, exposing a network of ducts and pipes he felt added to the industrial-chic feel. BOTTOM RIGHT: In a previous incarnation, Morocco-inspired ceiling lamps, leafy murals, and wickerwork abounded.

through to the water. But the building's concrete floors remain exposed and scarred. Seashells plug larger ruts, and old drain holes are now glazed portholes to the bay below. Davis deftly reinterpreted distinctions of front versus back-of-the-house, developing a striking yet well-edited juxtaposition, instead of overly refining the ex-restaurant-kitchen zone. Dispensing with the plenum, he exposed soaring vaults—a unifying rhythm that echoes the main space in a raw way—and a newly reduced “archaeology” of structural remnants, plumbing lines and ducts. In vault openings where cooking hoods once vented, he installed skylights above dressing rooms and a home-scaled kitchen, where customers can hang out “backstage.” Shoppers are also welcome to lounge on selling-floor sofas or at cashier-desk bar seating. The equally casual merchandising style mixes eclectic vitrines with artful clutter, including faux-worn sneakers (\$500) in seemingly random piles on the floor.

Without touching columns or walls, Davis inserted fixed clothes racks, like giant “croquet wickets.” “We tried,” he says, “to introduce new elements, whether vents or lighting, rhythmically, rigorously, and systematically—without impinging on the building’s powerful repetition of pure form.” Modern, minimal, metal halide lamps now hang on center with the column grid. Davis salvaged a previous tenant’s bronze chandeliers, cleverly muting and modernizing them with white paint and exposed, industrial-hip fridge bulbs. The once gaudy “candelabras” suggest a metaphor for the whole transformation—retaining memory’s imprint while distilling latent Modernism to its essence. Most of the ingredients were already present, but now, nimbly extracted, they transcend the original architects’ ambitions and vision. ■

Sarah Amelar is a contributing editor to ARCHITECTURAL RECORD.

CREDITS

ARCHITECT: Paul Davis Architects – Paul Davis, principal in charge; Gabriel Leung, project designer; Sarah Knize, Ken Vermillion, Jennifer Williams, project team

ENGINEERS: Structics (structural); RPM Engineers (m/e/p)

CONSULTANTS: Kaplan Gehring McCarroll Architectural Lighting (lighting)

CLIENT: A'maree's
SIZE: 8,100 square feet
COST: withheld

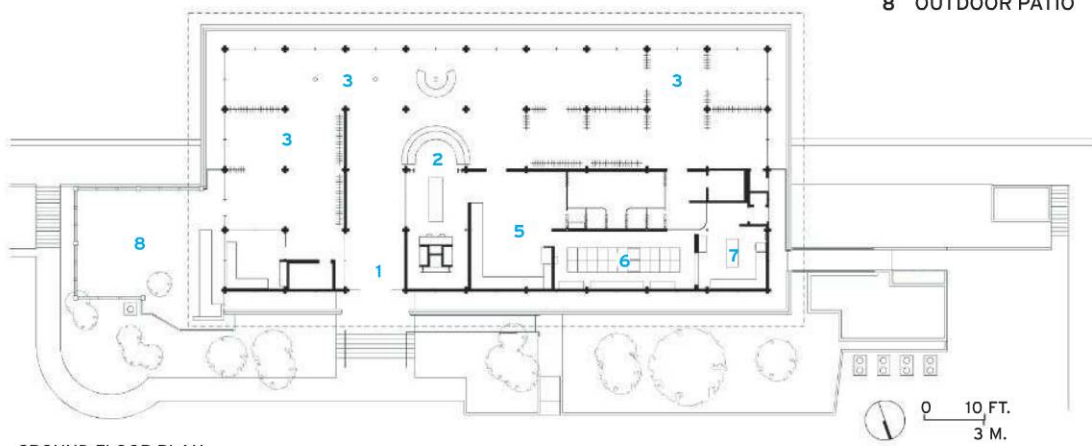
COMPLETION DATE: November 2010

SOURCES

GLAZING: Goodwine Glass
PAINTS: Benjamin Moore
CHAIRS: Knoll
SKYLIGHTS: VELUX



- 1 ENTRY
- 2 STAFF WORK AREA
- 3 RETAIL FLOOR
- 4 DRESSING ROOMS
- 5 EMPLOYEE LOUNGE
- 6 STORAGE
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PHOTOGRAPHY: COURTESY PAUL DAVIS ARCHITECTS (BOTTOM)

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Reported by: Joann Gonchar, Linda C. Lentz, Rita Catinella Orrell

POINTING TOWARD A BRIGHT FUTURE

Stringent energy standards need not diminish the excellent quality of light we're accustomed to. Lighting product manufacturers and designers, in tune with changing requirements, are devising increasingly acceptable substitutes for incandescent lamps, and developing sustainable technologies and design strategies that are as pleasing as they are effective—often improving upon past schemes. The following overview offers illuminating guidelines on the state of efficient lighting, illustrated by brief case studies and a roundup of efficient lamps, fixtures, and controls.

90 CEU: LIGHTING WITHIN LIMITS

99 REPLACEMENT LAMPS

100 EFFICIENT FIXTURES



Lighting within Limits

Tightening energy codes and standards, along with new technology, present design teams with opportunities and challenges. **By Joann Gonchar, AIA**

LIGHTING DESIGNERS can help assure that a project is adequately illuminated, set the tone of a space or a room, or emphasize architectural form. But their role is growing increasingly complex, in part because lighting-related technology is evolving at a breakneck pace, but also because energy codes are becoming progressively more stringent.

One illustration is the standard developed jointly by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) and the Illuminating Engineering Society (IES): 90.1, *Energy Standard for Buildings Except Low-Rise Residential Buildings*. The document, updated every three years, is often referred to in shorthand simply as “90.1.” Most state energy codes are based on 90.1 or the International Energy Conservation Code (IECC) published by the International Code Council.

The latest version of 90.1, released in November 2010, is much more rigorous than its predecessor, says the U.S. Department of Energy (DOE). When comparing 90.1-2010 to 90.1-2007, DOE found an impressive 18.5 percent savings of site energy (the amount of heat or electricity consumed by a building as reflected in utility bills). In contrast, buildings that comply with 90.1-2007 are expected to save about 4.6 percent of site energy when compared with those designed to the 2004 version.

The savings achieved by the latest iteration of the standard can be attributed to several factors, including requirements for more efficient mechanical systems and for better-performing envelopes. However, tougher standards for energy consumption associated with lighting are also a major contributor.

THE QUALITY ISSUE

The 90.1 sets new limits on the amount of lighting that can be installed in buildings. For example, the whole building lighting power density (LPD) allowance for a library in 90.1-2010 is 1.18 watts per square foot, down from 1.3 in 2007, and from 1.5 in 2004. For an office, the limit in the most recent standard is 0.90 W/square foot, reduced from 1.0 in 2007, and 1.3 in 2004. With these guidelines in mind, many prescient lighting-design and daylight consultants aim for the lowest numbers possible.

For instance, Washington, D.C.-based MCLA used 90.1-2007 to plan the illumination scheme for the city’s Watha T. Daniel – Shaw Neighborhood Library (see page 96). But the building is below the LPD set by the 2010 standard. And for the research areas of Princeton’s Frick Chemistry Laboratory, lighting designers from Arup devised a scheme with densities well under code limits (see sidebar, this page).

Even so, many sources worry that this downward trend will be difficult to sustain should it continue in future releases of 90.1. “Lighting power densities can’t go much lower without affecting quality,” says Robert Horner, director of public policy at IES. “People need enough light to read, work, and feel right,” he adds.

The LPD limits in the standard aren’t arrived at arbitrarily, says Eric Richman, senior research engineer at the Pacific Northwest National Laboratory in Richland, Washington, and chair of the 90.1 development team’s lighting and electrical subcommittee. The LPD numbers are a product of a host of factors, he explains, including the efficiency of readily available luminaires and lamps, good design practice, and industry light-level recommendations. However, he does concede that there is little room for further downward adjustment. “There is no more squeeze left,” he says.

Some sources, like Barbara Horton, president of HLB Lighting, New York City, point to developments with the voluntary standard LEED as an important catalyst, prompting designers to carefully consider how they are complying with LPD limits. LEED has recently introduced *Pilot Credit 22: Interior Lighting—Quality*. Its goal is to “ensure that energy efficiency isn’t achieved at the expense of occupant comfort,” explains Hayden McKay, a colleague of Horton’s and HLB principal. According to McKay, HLB plans to seek the credit on a 500,000-square-foot corporate interiors project targeting LEED Gold certification.

If the credit works as intended and is officially incorporated into the rating system, it will encourage the selection of fixtures that do not create glare and of lamps that render color well and are long-lasting. It should also encourage designers to rely on reflective light and increase its effectiveness by specifying materials

FRICK CHEMISTRY LABORATORY PRINCETON, NEW JERSEY

AT PRINCETON UNIVERSITY’S new Frick Chemistry Laboratory, dedicated in April, a highly efficient lighting scheme is one of several tightly integrated strategies that contribute to the building’s ambitious energy-saving goals: Frick is designed to use 24 percent less site energy than allowed by the 2007 version of ASHRAE 90.1 standard.

This building’s configuration is a product of both environmental and programmatic goals, according to its architects, London-based Hopkins and Payette Associates of Boston. The 265,000-square-foot structure has two four-story, largely glass-enclosed wings—one on the east for research and another on the west for offices. The pieces are joined by a 75-foot-tall, skylit atrium topped with photovoltaic panels that provide shading in addition to generating electricity. Along with its transparency, the scheme



ABOVE: Architects Hopkins and Payette devised fixed aluminum shading devices for the laboratory wing’s east-facing curtain wall to mitigate heat gain and glare.

RIGHT: Direct lighting fixtures attached to a suspended raceway provide illumination for the central zone of each lab.

OPPOSITE: Photovoltaic panels top a glazed central atrium, serving as shading devices while generating electricity.



promotes connectivity between individual elements and interaction among occupants, says Robert Schaeffner, Payette principal.

The research wing, organized as repeating modules with lab benches at the center and an open zone for circulation and study carrels at the perimeter, has an average connected lighting load of 1.25 W/square foot—a level that is about 11 percent below the code allowance, says Christopher Rush, senior lighting consultant in the New York office of Arup. Designers provided the required illumination over lab benches while keeping lighting power densities low, with direct lighting fixtures housing T5 lamps. The luminaires, positioned so that researchers will not cast shadows over their own work surfaces, are attached to a raceway suspended below exposed ductwork and other mechanical equipment—a strategy that allowed the project team to place fixtures wherever they were needed and omit them where not. This trunk system should also make it easier for facility managers to move the fixtures if lab equipment is rearranged at a later date.

The lighting in this central zone is controlled by occupancy sensors, but is not connected to daylight dimmers. This differs from the scheme at the perimeter, where indirect pendant fixtures, activated by both daylight dimming and occupancy sensors, bounce light off an uncluttered suspended ceiling. Occupants can control task lights in the study carrels lined up along the glazed wall between the laboratory and the atrium and along the east-facing exterior curtain wall. Here, fixed aluminum shading devices mitigate heat gain and glare. Manually operated interior roller blinds provide additional protection. J.G.

PHOTOGRAPHY: © WARREN JAGGER



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- 4 CONFERENCE ROOM
- 5 LABORATORY
- 6 LABORATORY SUPPORT

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with above-minimum reflectance values for ceilings, walls, floors, and work surfaces. “These are all good practice recommendations, but many design professionals don’t know how to apply them,” says McKay.

CONTROLS IN CONTEXT

Instead of reductions in LPDs, Richman anticipates that future iterations of 90.1 will emphasize the use of lighting control systems as a means of achieving energy savings. He also points to extensive new requirements for such systems in the 2010 version of the standard. For example, although previous versions required occupancy sensors in certain types of spaces, the latest version includes an expanded list of mandatory applications. For spaces with manual controls, multilevel lighting (lighting configured to provide intermediary illumination levels between off and full lighting power) is now required. In addition, there are new stipulations for daylight harvesting controls. The standard offers incentives to designers for going beyond the minimum controls requirements, offering lighting-power adjustments for projects that deploy advanced strategies.

The expanded reliance on controls in 90.1-2010 essentially mandates what had been optional features. “Previously we would sell controls on the basis of their aggressive energy savings, but now their use is mandatory,” says Gary Meshberg, president of the Lighting Controls Association, an industry trade group.

The new version of 90.1 acknowledges what lighting designers with expertise in energy-conserving design have known for some time: A low LPD isn’t always the most effective measure of efficiency. Especially “with the advent of advanced lighting controls and growing use of daylighting, this metric becomes less relevant,” explains George Loisos, principal of Loisos + Ubbelohde, an Alameda, California-based architecture, sustainability, and lighting consultancy. Among his recent projects is a largely daylit exhibition space whose sole power supply for plug loads and sensor-controlled lighting is a 4,440-W photovoltaic array (see page 94). Although the 1,500-square-foot pavilion has a relatively high LPD of 1.83, the lights are on for only short periods of time and typically not at full power, he says.

Scott Guenther, a senior lighting designer at MCLA, Washington, D.C., points out that projects that deploy aggressive daylight-harvesting strategies “need to be designed for the worst-case scenario, which is night.” With the Boston office of Behnisch Architekten, Guenther’s firm is working on a 194,000-square-foot law school facility for the University of Baltimore. The building, due for completion early in 2013, consists of several interlocking volumes housing

YOTEL NEW YORK CITY

LAST JUNE, YOTEL—a U.K.-based hotel chain inspired by Japanese capsule hotels and luxury airline cabins—opened a location on the far west side of Manhattan. It is just one component within a vast, \$800 million, mixed-use complex designed by Arquitectonica. But the hotel, with a facade, public spaces, and 669 rooms by Rockwell Group and lighting firm Focus, possesses its own distinct character. It has a “2001: A Space Odyssey feel,” says Michael Cummings, Focus design director.

The hotel’s public spaces are illuminated almost exclusively with LEDs. The brightness of the source worked well with the sleek, predominately white and gray interiors, explains Cummings. The choice also helped the project achieve a 1 W/square foot lighting power density, part of the larger building’s energy-conservation goals and its bid for LEED Silver certification.

On the exterior, where precast-concrete panels wrap the middle floors of a four-story podium, Focus installed linear RGB (red-green-blue) LED strips. The light is aimed from above and below to highlight the relief pattern in the cladding with the hotel’s signature color purple. At street level, a frosted glass portal, backlit with bright white LEDs, defines the entrance. But inside, along the lobby’s elevator bank wall, the effect is reversed. Here soft purple LEDs illuminate elevator door surrounds and white LEDs wash a textured ceramic tile wall.

For general lobby downlighting, the designers decided on low-voltage recessed ceiling fixtures housing retrofit LED lamps. They decided against LED-integral fixtures because they felt the retrofit option would better allow the client to take advantage of future improvements in lamp technology, explains Cummings.

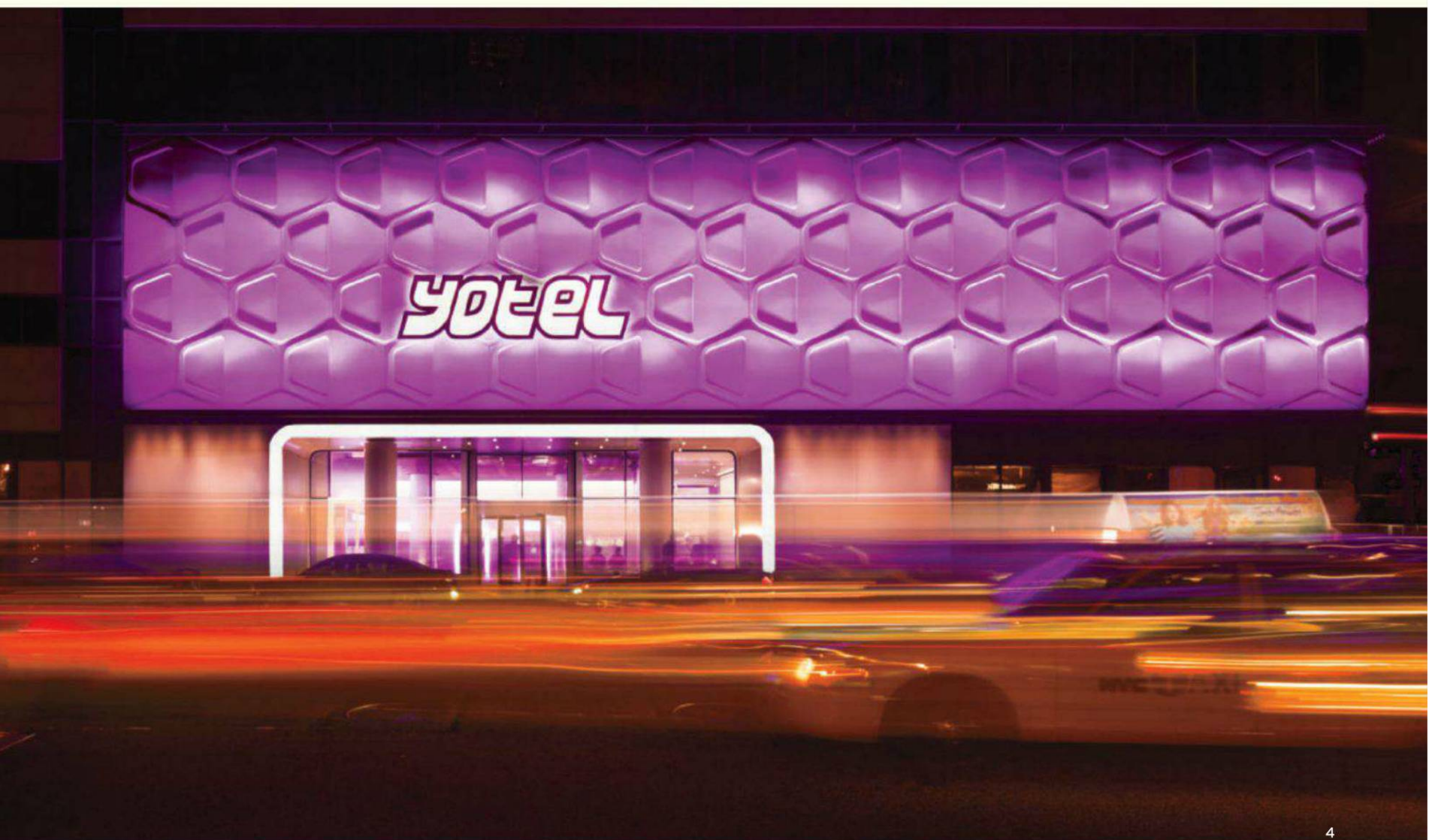
In the compact rooms, the project team opted for linear fluorescent lamps as the most cost-effective primary light source option. Two are hidden behind a wall-mounted television and storage unit. One, which is illuminated when guests first arrive, is covered in a colored gel sleeve to wash the walls in purple. Guests have the option of turning this light off, and relying on a second, bare lamp for general illumination.

The project’s biggest challenges were finding LEDs that offered the desired dimming range, light output, and color rendition, and ensuring that the all-important purple was consistent from application to application and source to source. The selection process involved extensive vetting and testing, conducted mostly in Focus’s Upper Manhattan offices. But the lighting designers, along with the architects, also took advantage of a full-scale room mockup that the general contractor erected in Westchester County, New York, for the study of finishes and furnishings, as well as lamps and fixtures. Although such a mockup is often part of the hotel design and construction process, says Cummings, in this case, its proximity to Focus’s offices allowed frequent trips for tweaking. J.G.





1. The Rockwell Group-designed Yotel has a daytime meeting room that transforms into a bar at night. To accommodate both uses, ceiling panels backlit with color-changing LEDs can fill the space with either white light or the hotel's signature purple.
2. For the compact rooms, linear fluorescent lamps hidden behind a TV-and-storage console provide ambient light. One is wrapped in a purple gel sleeve.
3. In the lobby, white LEDs wash a textured wall. Purple LEDs illuminate elevator door surrounds.
4. A strip of linear LEDs installed at the top and bottom of precast-concrete facade panels emphasize the cladding's relief pattern.



TRISKELION SAN FRANCISCO

LOW ENERGY USE was a particular priority for the Triskelion, a 1,300-square-foot moveable pavilion commissioned by the nonprofit arts organization FOR-SITE. Designed by Ogrydziak/Prillinger Architects, San Francisco, the building consists of three shipping containers arranged at 120-degree angles to define a central skylit atrium. Since May 2010 it has been installed at the Presidio, where it was part of the yearlong *Presidio Habitats*—an exhibition of artist-created animal habitats distributed around one corner of the national park. The pavilion served as a space for the display of sketches and models.

Because Presidio officials required that the building be easily demountable and leave no trace of its existence once removed, the Triskelion could not tie into nearby utilities. It needed to be completely “untethered” from the site, says architect Luke Ogrydziak.

To meet the requirement, the project team devised an off-the-grid lighting scheme largely dependent on daylight penetrating the central skylight, windows at the ends of each container, and side openings. But for those times when daylight is insufficient, the power generated by a rooftop 4,440-W

photovoltaic array illuminates photo-sensor-controlled T5 lamps inserted within fabric-covered coves. The light evenly washes the walls, creating an effect different from that found in most gallery settings, where individual pieces of art are typically highlighted against a dark background, explains George Loisos, principal of Bay Area-based Loisos + Ubbelohde, the project’s lighting and daylighting consultant. The more usual approach would have required track lights, but the containers had insufficient headroom, he says. The chosen strategy also offered the advantage of keeping the ceiling clear of fixtures, making the skylight opening seem like an abstract cut in the drywall plane, points out Ogrydziak.

One challenge was positioning the dimming sensors, since daylight enters the building from multiple directions. To identify the best spots, Loisos’s team moved the sensors within a virtual model and then simulated the response of the electric lights.

The Triskelion will remain at the Presidio through October and will host workshops associated with the 75th anniversary of the Golden Gate Bridge. FOR-SITE is considering options for the pavilion once the workshops end, including erecting it elsewhere in the city for use as its own offices. J.G.

classrooms, faculty offices, administrative space, and a law library. Reliance on daylighting and advanced controls for lighting and other building systems, among other tactics, has put the project on track for LEED Platinum certification. Guenther says the building will have an LPD about 25 percent below code allowances, primarily due to the project’s extensive use of glazing, not only on the exterior, but also the interior, which permits the sharing of electric illumination between adjacent spaces.

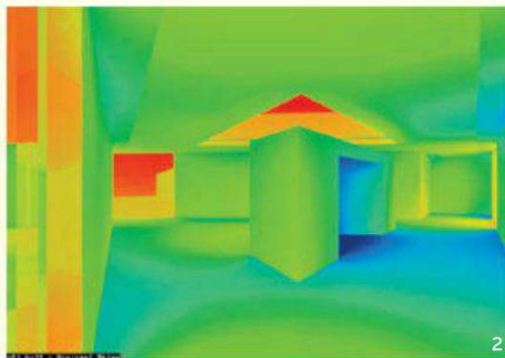
The law school building’s sophisticated lighting controls will be coordinated with automated exterior shading louvers. The system will also give facilities staff the ability to operate and monitor the lighting remotely. Due to their complexity, programming and calibration of the controls will require several weeks, predicts Guenther.

TESTING AND TWEAKING

In 90.1-2010, this pre-occupancy adjustment and inspection step is now a requirement. And to ensure that the systems continue to work as intended, the standard also requires that documents such as a controls narrative and a schedule for recalibration are provided to the owner. However, there is no mechanism for making sure these materials are put to use. “An infrastructure for verification doesn’t exist,” says Richman. “The code official doesn’t return to the building after it is occupied,” he adds.

In addition to the mounting sophistication of controls systems and tougher code requirements, lighting design professionals need to stay on top of the seemingly constant introduction of new lamps, luminaires, and associated equipment. This hardware is changing at such a rapid pace that almost every project offers opportunities to deploy new products that promise longer lamp life, improved color rendition, and extended dimming capabilities. Designers like New York City-based Focus Lighting perform their own testing before specifying new products. They also include a standard notation on contract documents. The note requires that suppliers inform the project team if the most current version of a product is not the one specified so it can be thoroughly vetted before installation. Among Focus’s recent projects is Yotel, a hotel in New York City with public spaces illuminated almost exclusively with LEDs (see page 92).

The rapid rate of product development, the growing capabilities of control systems, and the increasing stringency of energy codes are all conspiring to make a carefully conceived illumination strategy more critical to the success of an architecture project than ever before. As Horton points out, her discipline “is no longer just about painting with light.” ■
(Continued on page 96.)



1. Ogrydziak/Prillinger’s Triskelion is made of shipping containers. It is now installed in the Presidio, but will likely be disassembled and relocated.
2. Consultants studied the effect of relying on only daylight for illumination in myriad atmospheric conditions, including overcast skies.
3. For those times when daylight is insufficient, sensor-controlled linear fluorescent lamps housed in fabric-covered coves wash the walls.





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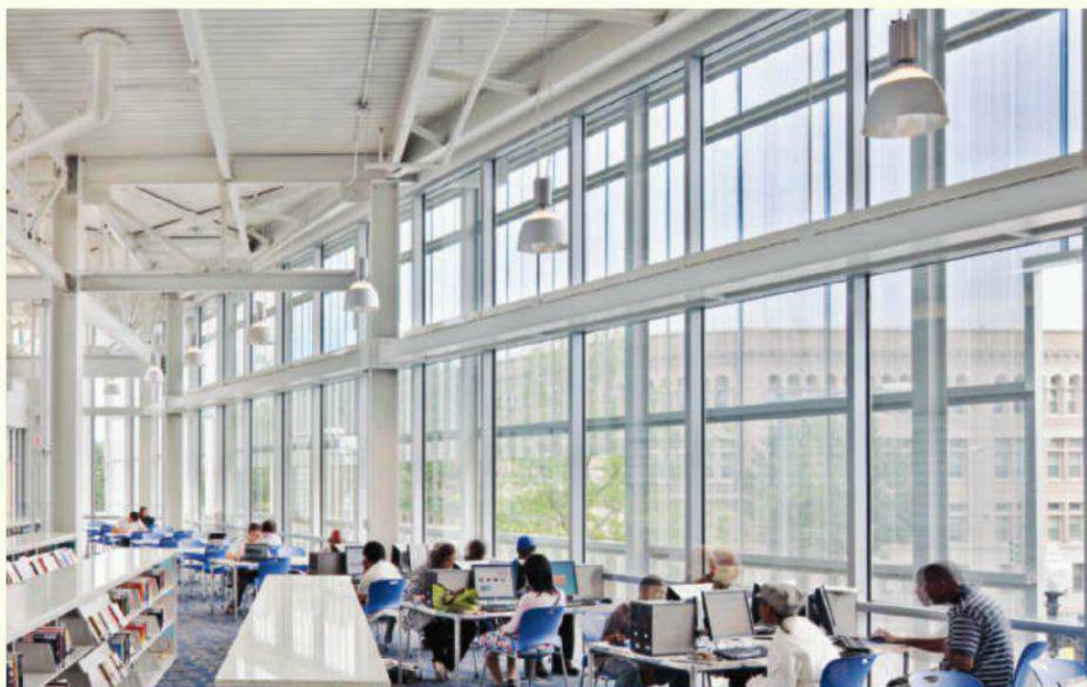
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WATHA T. DANIEL - SHAW NEIGHBORHOOD LIBRARY WASHINGTON, D.C.

LIKE A BEACON, the dynamic glow of the illuminated corner building on Rhode Island Avenue points to a bright future for area residents. The Watha T. Daniel – Shaw Neighborhood Library (Shaw) was one of the first projects in an ongoing D.C. Public Library initiative to build new facilities with community-friendly spaces and state-of-the-art information technologies. The mandate also stipulates that the buildings meet or exceed LEED Silver certification.

According to Peter Cook, Davis Brody Bond principal in charge of the Shaw Library project, light—in particular daylight boosted by electric light and controls—was a significant part of their energy-saving design strategy. The architects took advantage of the unobstructed, triangular site's potential for daylight by



devising a three-story, 22,000-square-foot steel-frame structure with a 3-foot-deep overhang and perforated aluminum screen to shield the glazed, double-height reading room on its south side. Clerestory windows and translucent, insulated fiberglass panels on the north assure ample illumination from the sun on all sides, minimizing the need for electric light in the main reading room by day.

"The screen satisfies an important need to control the glare," says project manager Christiane deJong. "Lighting a reading space with mostly daylight is somewhat unusual." The architects collaborated with the D.C.-based lighting design firm MCLA to validate what might be perceived as excessive light levels in the large, open room through a detailed analysis. Once the lighting designers determined there was no cause for concern, they developed an electric lighting system based primarily on

the T5 linear fluorescent with a 3500-Kelvin color temperature—the lamp preferred by the client for energy and maintenance efficiency.

"The advantage of the T5 is, because it is narrower in diameter [than a T8], you can build a smaller reflector around it, which allows you to do smaller fixtures," says MCLA senior designer Frank Feist. So, using T5s, they cantilevered special fixtures from the tall stacks for vertical illumination on the books, and suspended luminaires over reading tables and workstations. Then they installed slim T5 fixtures on top of exposed girders and the carrels under the clerestory windows for ambient uplighting that provides a luminous lantern effect and also reduces excess exterior lighting.

The D.C. Public Library is now specifying translucent structures for future projects, notes deJong—a clear indication that the Shaw measures up. *Linda C. Lentz*

ABOVE: As a decorative note, architects Davis Brody Bond and the lighting designers at MCLA installed industrial-style pendants in the daylight-filled reading room. Openings in the perforated aluminum screen provide views through fritted glass.

LEFT: T5 uplights inside the building on top of exposed beams and carrels beneath clerestory windows provide well-balanced, ambient illumination inside and also create a glowing, lanternlike effect for passersby on the outside. As a result, the building has been nicknamed the "Jewel of Rhode Island Avenue."



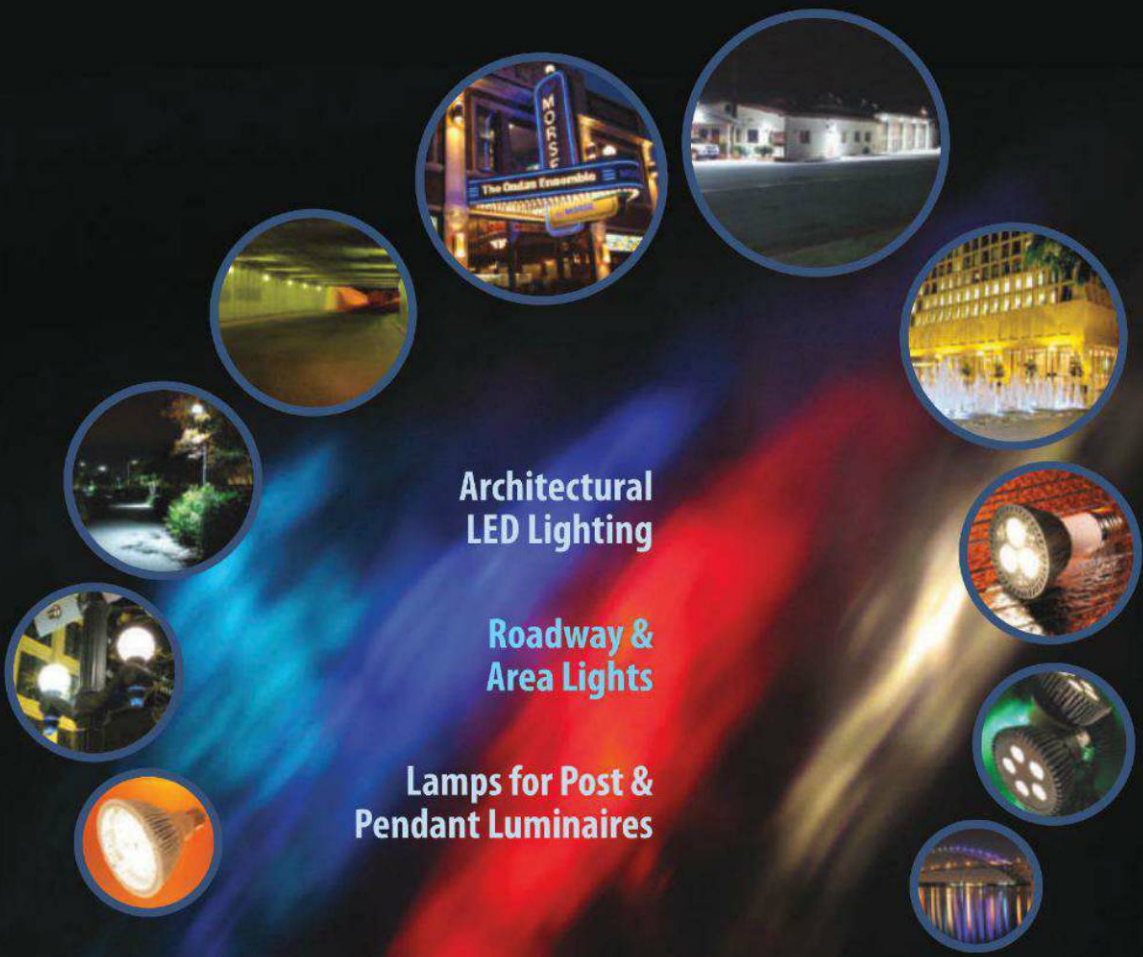
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Learning Objectives

- 1 Discuss recent changes in energy codes as they pertain to lighting design.
- 2 Describe strategies for energy-efficient lighting design that satisfy occupant comfort needs.
- 3 Explain the relationship of advanced lighting controls systems and energy efficiency.
- 4 Define terms and identify metrics relevant to lighting design.

AIA/CES Course #1202A



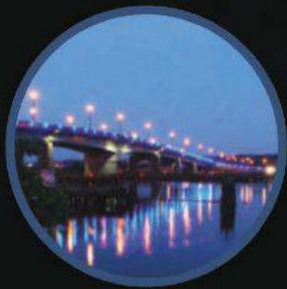
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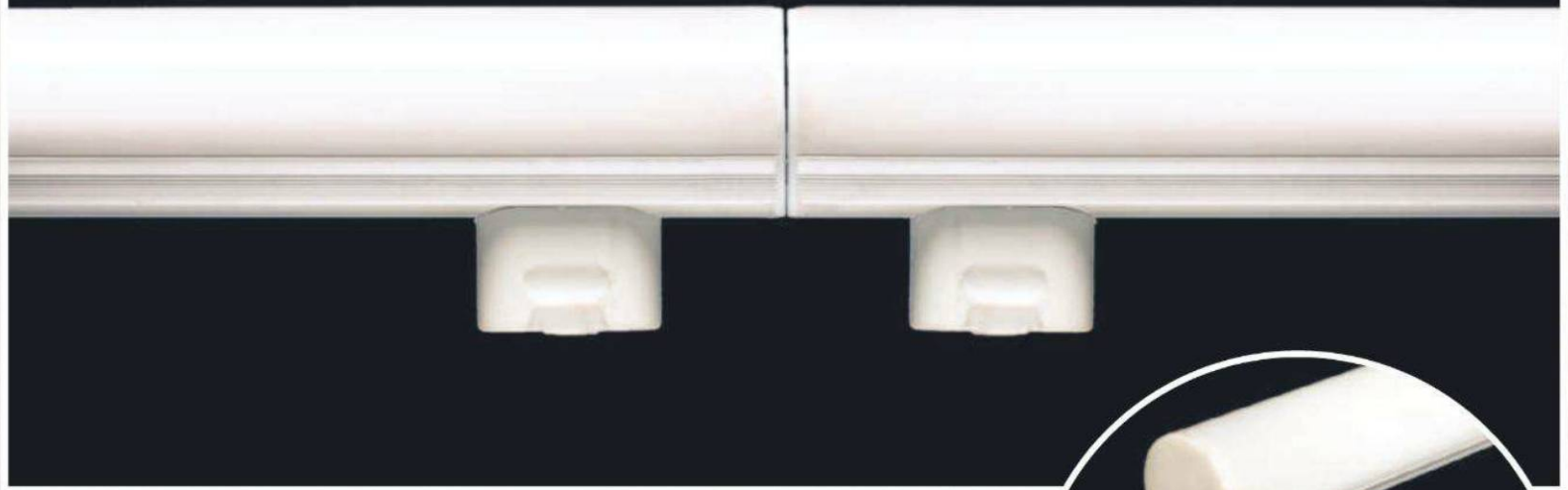


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Legislation Sparks Innovation

Just before Christmas, Congress passed a \$1 trillion spending bill to keep the government running for the rest of the fiscal year. Tucked within was a rider that defunded enforcement of the so-called "bulb ban"—new energy-efficiency requirements that effectively phase out the general service incandescent lamp. But the standards, signed into law in 2007, remain in place. They started going into effect January 1, requiring that lamps as bright as a traditional 100-watt bulb use no more than 72 watts of electricity. New requirements for 75-, 65-, and 40-watt equivalents will follow over the next two years. Despite the lack of enforcement, however, "manufacturers have not changed their plans," says Jeffrey Harris, senior V.P. for programs at the Alliance to Save Energy. Soon, Harris predicts, "it will not be possible to buy inexpensive bulbs that are expensive to operate."

By Joann Gonchar & Rita Catinella Orrell



Switch

Inside of the new Switch Lighting LED replacement bulb, a special liquid creates a self-cooling environment that allows for maximum brightness with fewer LEDs.

According to the manufacturer, they offer the first 100-watt equivalent (We) A19 incandescent replacement bulb as well as other standard A19 LED lamps in 40We, 60We, and 75We versions (shown).

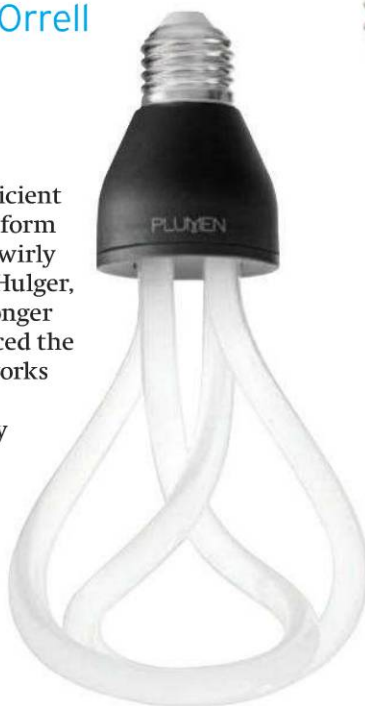
In addition to the special cooling fluid, Switch bulbs use a small, energy-efficient driver that fits right into the screw base of the bulb, which takes in high levels of input power and fuels the LEDs intelligently to regulate the heat. The manufacturer intends for the bulb to be on the market early this year, with the first shipment available for \$35 to \$45.

switchlightbulbs.com CIRCLE 206

Plumen

The producers of the award-winning and energy-efficient Plumen hope that the lamp's unusual yet appealing form will be a more attractive option than the standard swirly CFL. Designed by Samuel Wilkinson and U.K.-based Hulger, Plumen uses 80% less energy and lasts eight times longer than incandescent bulbs. Last May, Plumen announced the availability of the Plumen 001, a 110-volt bulb that works in the U.S., Canada, Japan, Mexico, Brazil, and other countries. Selling for \$29.95, Plumen screws into any standard bulb fitting, gives off a warm white light, and works with or without a shade.

plumen.com CIRCLE 207



Energy Smart LED Bulbs

GE Lighting's full line of LED Energy Smart incandescent replacement bulbs are anticipated to be on store shelves by the end of the year. GE scientists collaborated to design an LED bulb that provides all-around "omnidirectional" light similar to incandescent light sources, rather than just pushing light out of the top of a lampshade. The LED bulbs also feature an incandescent size and shape, and a design that allows for a soft-white appearance when turned off, a consumer preference GE discovered through research. The bulbs will deliver light for over 20 years based on three hours of use per day.

geconsumerproducts.com CIRCLE 208



World Bulb

Lighting Science Group's new low-cost World Bulb, an omnidirectional 60-watt-equivalent A19 LED bulb, was selected as a 2012 International CES Best of Innovations Design and Engineering Award Honoree. Using 9 watts of electricity, the bulb gives off a clean, bright light claimed to be equivalent to that of a 60-watt incandescent, while using 85% less energy and providing a 35% lower total cost of ownership as compared with CFLs. Planned for launch in early 2012 in India, the bulb will roll out to other countries throughout the remainder of the year and will sell for less than \$15.

lsgc.com CIRCLE 209



PAR20 LED Bulb

Samsung's 7W PAR20 LED lamps consume up to 85% less energy than a 50W halogen bulb, will save over \$189 in energy cost over its lifetime, and will last 36 years (based on three hours a day, 11 cents per kWh). They are dimmable, light up instantly, and are ideal for track lighting as well as general downlighting in hallways and corridors.

samsung.com CIRCLE 210

Fixtures of Efficiency

From an LED module designed to replace high-wattage halogen and metal halide lamps, to a classroom-friendly indirect/direct fixture for T8 lamps, these new technologies are designed to help increase lamp life, dissipate heat, and reduce maintenance, while saving energy in the process. [By Rita Catinella Orrell](#)



Vertex

Vertex is a ceiling-mounted indirect/direct fixture sized for T8 lamps that is optically designed to provide efficiencies over 90%. The rectilinear sides and angled lower housing create a fixture ideally suited for classroom and other school and university applications. Comes with a choice of white-blade baffle or soft-glow lens; integrated daylight harvesting solution available. [litecontrol.com](#) CIRCLE 211

MB1600 Track Light

Utilizing LED array technology, MB1600 is the next generation in track lighting from Anaheim, California-based Intense Lighting. With input wattage at 25 watts, the MB1600 boasts a 15 percent wattage reduction and 30 percent lumen increase compared to previous product generations. Listed for dry locations, the fixture comes with a five-year limited warranty. [intenseighting.com](#) CIRCLE 212

3000lm & 4000lm XLM Modules

Xicato's new 3000lm and 4000lm XLM LED modules provide light levels that replace high-wattage halogen and metal halide lamps that often have color stability and controllability issues. Offered in 3000K, 3500K, and 4000K, the Xicato XLM is an energy-efficient and low-maintenance solution for wall washing, high-ceiling accents, indirect up lighting, and architectural flood lighting. [xicato.com](#) CIRCLE 213

Fraqtir Point

The Lighting Quotient's LED technology combines principles of refraction and total internal reflection to produce an asymmetric distribution ideal for illuminating surfaces uniformly from one edge. Available with adjustable and lockable aiming, the new Fraqtir Point fixture is offered with or without a visor in surface, pendant, cantilever, or track-mounting options. [elliptipar.com](#) CIRCLE 214

Lumenbeam LBX Pendant

The Lumenbeam LBX Pendant from Lumenpulse is an IP66-rated luminaire designed for lobbies, atriums, convention centers, and other high-ceiling applications up to 100 feet high. Available in four color temperatures, the fixture utilizes a dual-chamber technology that helps dissipate heat, creating an unmatched L70 lifetime of 120,000 hours, the longest in the industry. [lumenpulse.com](#) CIRCLE 215

AeroScape

The AeroScape area, site, and wall-mount series features Philips Widelite's Ledgine technology, which combines high-efficiency LED performance with a modern design. AeroScape's pass-through convective cooling system achieves a minimum-rated system life of up to 80,000 hours. The fixtures offer efficacies of up to 87 lumens per watt and full-range dimming capacity. [widelite.com](#) CIRCLE 216

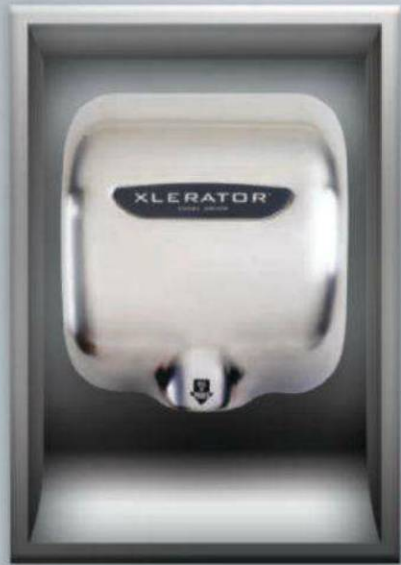


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The USGBC, SLOAN and Excel Dryer have combined forces to develop a new Continuing Education Specification Course. The Next Generation Green Restroom Design CEU course (NGGRD) demonstrates how high-efficiency hand dryers and plumbing fixtures reduce maintenance needs and costs while minimizing

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Use the learning objectives below to focus your study as you read **Next Generation Green Restroom Design**. To earn one AIA/CES Continuing Education Hour (CEH), including one hour of health, safety, welfare and sustainable design credit, answer the questions on page 107, then follow the reporting instructions or go to ce.architecturalrecord.com and follow the reporting instructions.

Learning Objectives

After reading this article, you should be able to:

- Recognize the general characteristics of a green restroom including the definition of the high-efficiency factor in restrooms.
- Verify the current facts about water consumption in the U.S. and assess the range of water-saving products available to help reduce consumption in green restrooms.
- Analyze the cost, energy and environmental impacts that can be reduced by using high-speed, energy-efficient hand dryers instead of paper towels in both new and retrofit applications.
- Determine the elements of green restroom design that contribute to successful outcomes in green building programs.

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

Restrooms have been receiving increased attention recently in response to the need for greener and more efficient buildings, both new and existing. Architects, engineers, facility managers and others have become increasingly engaged in the need for high-performance design in restrooms which minimize energy use, reduce water consumption and decrease waste all while controlling both initial and maintenance costs. Fortunately, the manufacturing community has responded with a full range of new products that can be specified to achieve all of these objectives. While these products are often thought of for new construction, the latest offerings are also designed specifically for retrofit applications with integral handicapped accessibility compliance and features.

GREEN RESTROOMS OVERVIEW

In virtually all building types, restrooms are a cost center, not a profit center. This means they generate costs to operate and maintain but don't typically have the ability to produce any revenue or profits. Water, electricity, paper, maintenance and waste removal expenses add up quickly, impacting the bottom line. A building owner or manager will naturally want to find ways to minimize those expenses associated with restrooms. This is important in new construction of course, but there is also a huge opportunity in existing buildings where outmoded restrooms commonly use more energy, water, materials, and cost more money to operate than necessary.

In general, efficient design and planning of the restroom is usually the first place that a designer starts. Economizing the space used for restrooms is important, but equally so is the best determination of the quantity of fixtures, products and accessories located in the restrooms. Some will design to minimum code requirements while others will seek to expand beyond that for programmatic reasons. Either way, the goal is to match the right quantity of items to the quantity of people that are anticipated to use the restrooms. From there, the focus is all about efficiency, and in the case of next generation green restroom design, achieving high efficiency in all respects is critical.



Photo courtesy of Excel Dryer, Inc.

Figure 1

Green restrooms address all aspects of good design.

Upgrading existing restrooms or designing new ones with high-efficiency products will immediately save the building owner or manager time, money, energy, and help the environment as well.

Green restroom fixtures can be categorized as fixtures that use water and fixtures used for hand drying. Those that use water such as toilets, urinals and faucets can be specified as high-efficiency, low-flow fixtures meaning they operate as fully intended, except with notably less water consumed than their conventional equivalents. While this obviously conserves potable water, which is becoming increasingly precious, it also has an energy impact. It takes a considerable amount of energy to transport, treat and pump water which means that energy is directly reduced as water usage is reduced. Less water used in a restroom also means reduced drainage, which equates to less energy for treatment and discharge. Moving on to fixtures used for hand drying, there are two types – those that use paper towels and those that use air. Paper towels obviously generate waste, even if the paper is recycled. Electric hand dryers that blow air obviously use energy. However, next generation high-speed, energy-efficient (HSEE) hand dryers have been shown to use 80% less energy than

conventional hand dryers and deliver a 95% cost savings compared to paper towels by eliminating their consumption, waste and maintenance while creating a more hygienic restroom environment. Further, high-speed, energy-efficient hand dryers have been shown to lower the hand drying carbon footprint up to 70% versus conventional dryers and even 100% versus recycled paper towels.

An additional consideration for many designers is the ability of high-efficiency restroom products that can help buildings and facilities qualify for a range of independent green building rating systems. A number of LEED® credits, for example, have been attained directly through attention to the design and specification of green restrooms. This is also true in other green building, waste reduction and water conservation programs.

REDUCING WATER USE

People around the world are becoming increasingly aware that water availability and supply is a quantifiable and even finite essential resource. Nonetheless, demand in some areas has steadily increased, at times exceeding the ability of a local area to meet that demand. It should be noted

that a very substantial amount of water is used first for farming irrigation and food supply operations and then the balance is made available for use elsewhere such as in buildings. Globally, it is predicted by the U.S. Central Intelligence Agency (CIA) that by 2015, drinking water access could be a major source of world conflict. Within the U.S., the Environmental Protection Administration (EPA) reports that at least 36 states are anticipating local, regional or statewide water shortages by 2013, even under non-drought conditions. Accordingly, they have identified our limited supply of water accompanied with growing demand as “the biggest environmental issue that we face in the 21st century.” Legislation has been adopted all around the country at the regional, state and local levels which attests to the ongoing need to reduce water use in buildings.

While different building types use water for different purposes, restrooms typically account for 30 to 60% of water use in most buildings. Figure 2 shows a breakdown of typical indoor commercial water use for different building types. Toilets and faucets typically consume the most amount of water, followed by laundry and washing/sanitation. A similar

trend occurs in residential domestic water use, with toilets and showering using the majority of the water. Clearly, the plumbing fixtures specified for restrooms will have a significant impact on the overall water use in virtually all buildings.

In response to the recognition of the importance of water conservation in restrooms, the U.S. EPA has developed a program known as WaterSense. Similar to the EPA ENERGY STAR program for appliances and other energy-consuming devices, the WaterSense program helps consumers and designers identify water-efficient products and programs. Products that meet the water efficiency and performance criteria are authorized to carry the WaterSense label. It should be noted that this program is entirely voluntary, but products that apply for and earn the WaterSense label use at least 20% less water than comparable conventional products. They also have been tested to perform in all other ways comparable to their conventional counterparts. WaterSense has completed criteria for high-efficiency toilets, high-efficiency urinals, high-efficiency lavatory faucets, and high-efficiency showerheads all as described further below.

High-Efficiency Toilets (HET)

An HET is defined as a single- or dual-flush fixture that has an average flush volume of 1.28 gallons per flush (gpf) or 20% less water than most toilets on the market today, which are generally rated at 1.6 gpf. Dual-flush devices are also considered HETs since their flush volume can be operated at either 1.6 or 1.1 gpf. In addition, a HET must meet the performance requirements of ASME 19.2/CSA B45.1, and pass 350 grams in maximum performance testing (MaP).

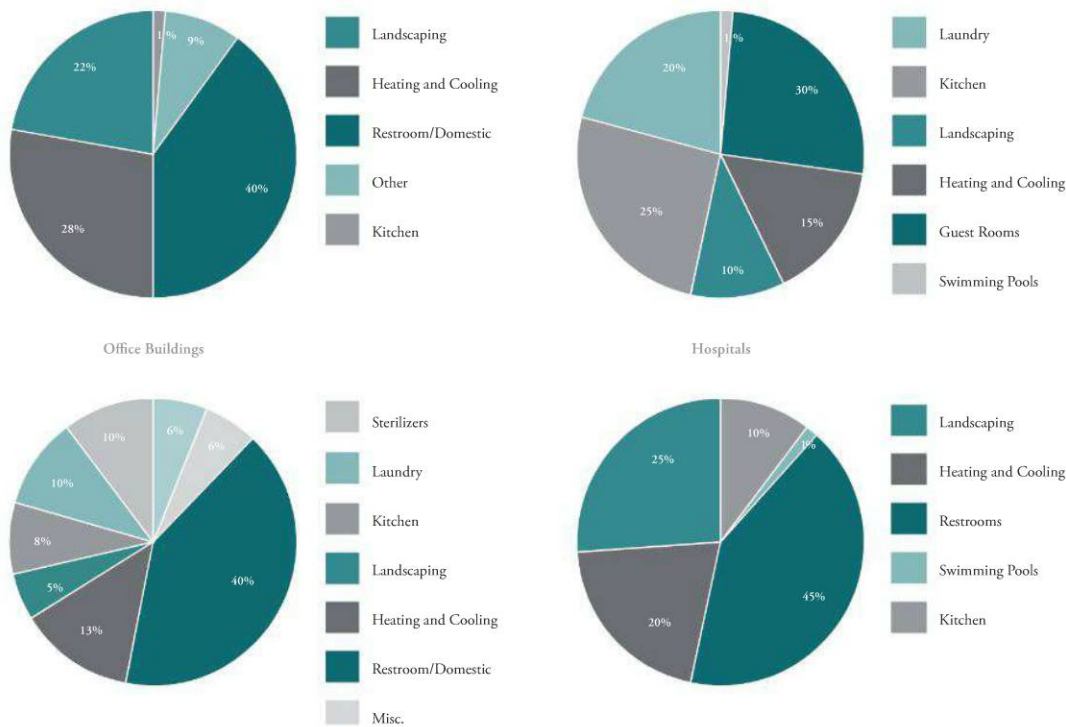
Single-flush 1.28 gpf HET models are available as manually operated, battery-powered or hardwired products. Electronic products have become popular because they are more hygienic and cleanse the fixture after the user leaves. Nonetheless, manually operated devices are still widely used. Manual dual-flush products require high-efficiency toilet bowls such as later generation 1.6 gpf bowls or 1.28 gpf single-flush HET bowls. The manual dual-flush handle is available to retrofit onto existing valves, and they are also available as a complete valve for use with 1.28 or 1.6 bowls. Solar-powered flushometers are available in a single-flush electronic product or in dual-flush electronic products. The key advantage with the solar products is that they use less battery power and have their power source augmented by the light in the room. The battery life is extended two to three times the normal battery life of a regular battery-powered product. Another method of achieving a high-efficiency toilet is to use a pressure-assist toilet. These products use compressed air as a medium to increase the flush velocity. These are available in 1.6 gpf, 1.28 gpf and 1.0 gpf. All but the 1.6 gpf units qualify as HETs.

High-Efficiency Urinals (HEU)

An HEU is a urinal with a maximum flush volume of 0.5 gpf or less including waterless urinals. These fixtures must also meet the performance requirements of ASME 19.2/CSA B45.1. Accordingly, a typical HEU uses no more than 0.5 gpf or at least 50% less water than the standard urinal which uses about 1.0 gpf. Obviously, the most efficient choice is a waterless unit that does not flush at all but uses a self-draining design and integral odor control to achieve its high performance.

Figure 2

Image courtesy of Excel Dryer, Inc. and Sloan Valve Company



Typical water consumption in different building types.

High-Efficiency Lavatory Faucets (HELF)

To qualify as a HELF, a lavatory faucet must have a maximum flow rate of 1.5 gallons per minute (gpm) and a minimum flow rate of 0.8 gpm, and it must meet the performance requirements of ASME 112.18.1/CSA B45.0. Since the current lavatory faucet standard is 2.2 gpm, a HELF is at least 32% more efficient in its water usage. Note that electronic faucets are not necessarily qualified as a high-efficiency lavatory faucet, but they are certainly another method that will conserve water, primarily in a commercial environment. These are faucets that turn on when they're used and off when they are not. Electronic faucets are usually essential to achieving LEED points because they can be shown to help achieve as much as 70% water use savings and eliminate the corresponding amount of waste water. Further, they generally offer vandal resistance and increased hygiene due to the electronic, "no touch" controls.



Image courtesy of Excel Dryer, Inc. and Sloan Valve Company

Figure 3

High-efficiency water conserving products are available in a variety of styles and technologies for toilets, urinals, lavatory faucets and showerheads.

High-Efficiency Shower Heads

High-efficiency showerhead product specification is the newest product standard from the EPA's WaterSense program. The maximum flow rate is 2.0 gpm. In addition, there are very specific performance requirements associated with how the showerhead functions, such as the ability to rinse, the pattern that the showerhead gives off, and the overall efficiency of the showerhead itself. These requirements ensure the limited flow does not hamper the shower experience. With a low-flow

showerhead, hot water use for an average shower can be reduced from 50 gallons to 20 gallons or less. A wide variety of low-flow showerheads are available, including the popular pulsating or "massage" type. Some of these showerheads incorporate a valve or push-button that interrupts the water flow while "soaping up," saving even more water.

HIGH-EFFICIENCY HAND DRYING

Since one of the major water use activities in commercial restrooms is hand washing, it follows logically that the next is hand drying. The two common choices have been to use either paper towels (whether virgin paper or recycled paper) or electric hand dryers that blow air to dry wet hands. Differing opinions have certainly been offered by many people on preferences and perceptions of "green" related to each. Many would presume that recycled paper towels are certainly better than using virgin paper towels. However, electric hand dryers don't lend themselves to such an obvious assessment. Historically, conventional electric hand dryers have not been popular because they take too long to dry hands completely. It takes about 8 to 10 seconds to dry hands with paper towels, and with a traditional dryer it can take about 30 to 45 seconds. As a result, traditional electric hand dryers are installed in only 10% of restrooms. In response, the new industry standard has become high-speed, energy-efficient (HSEE) electric hand dryers that have notably changed the effectiveness of electric hand drying.

Research has identified that wet hands are covered with water in two forms: loose droplets of water and a residual moisture layer. A scientific white paper set a value for "dry" hands at .2 grams of moisture left on hands. The traditional electric hand dryer only removes the droplets of water, not the residual moisture, leaving hands feeling damp above the threshold for "dry." By comparison, blowing droplets off with a HSEE using a focused high-velocity airstream first eliminates water droplets in 3 to 4 seconds. (Note that not all high-speed dryers have a focused enough airflow and thus take longer to blow off excess water; 18,000 linear feet per minute (LFM) or above is optimal.) Next a stream of heated air at 135 °F (57 °C) rapidly evaporates

Image courtesy of Excel Dryer, Inc.

Figure 4



High-speed, energy-efficient hand dryers are more efficient and effective than traditional restroom fixtures.

the remaining residual layer of water. (Note again that not all high-speed dryers heat the air, and therefore, they leave the residual moisture layer on hands.) Compared to 30 to 45 seconds for a traditional electric hand dryer, the high-speed dryer with hot air typically dries hands completely in 10 to 15 seconds.

Curious about how to compare all of the different characteristics of hand drying, the Environmental Building News (EBN) commissioned a group of life-cycle analysis experts to perform a comparison of the four common methods of drying: 1) virgin paper towels, 2) recycled paper towels, 3) traditional electric hand dryers and 4) high-speed, energy-efficient hand dryers. For paper towels, the study considered embedded energy such as that used to harvest raw materials and manufacture the towels and assumed two towels were used for each hand drying. The study did not include energy for the disposal of the paper towels nor the administrative and maintenance costs for paper towel use. For the electric hand dryers, the study assumed the U.S. average of 11,470 Btu/kWh and 8¢/kWh to calculate the energy to produce and transmit electricity.

► Continues at ce.architecturalrecord.com

Peter J. Arsenault, FAIA, NCARB, LEED-AP, is a practicing architect, sustainability consultant and freelance writer.

See Quiz on the Next Page or
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Program title: "Next Generation Green Restroom Design" (02/12, page 103). AIA/CES Credit: This article will earn you one AIA/CES Continuing Education Hour (CEH) of health, safety, welfare/sustainable design (HSW/SD) credit. (Valid for credit through February 2014). **Directions:** Refer to the Learning Objectives for this program. Select one answer for each question in the exam and fill in the box by the appropriate letter. A minimum score of 80% is required to earn credit. **To take this test online and avoid handling charge, go to ce.architecturalrecord.com**

1. Within the U.S., the U.S. Environmental Protection Administration (EPA) reports that at least 36 states are anticipating local, regional or statewide water shortages even under non-drought conditions by what year?
 - a. 2013
 - b. 2015
 - c. 2020
 - d. 2030
2. Products that apply for and earn the WaterSense label use at least how much less water than comparable conventional products?
 - a. 10%
 - b. 32%
 - c. 70%
 - d. 20%
3. Dual-flush devices are also considered HETs since their flush volume can be operated at either 1.6 or 1.1 gpf.
 - a. True
 - b. False
4. To qualify as a HELE, a lavatory faucet must have a maximum and minimum flow rates of:
 - a. 0.8 gpm maximum and 1.5 gpm minimum.
 - b. 1.5 gpm maximum and 0.8 gpm minimum.
 - c. 1.6 gpm maximum and 1.28 gpm minimum.
 - d. 1.0 gpm maximum and 0.5 gpm minimum.
5. Research has identified that wet hands are covered with water in what two forms?
 - a. dampness and residual water droplets
 - b. loose droplets of water and skin saturation
 - c. loose droplets of water and a residual moisture layer
 - d. None of the above
6. The results of research studies overwhelmingly support the HSEE hand dryers for:
 - a. total cost.
 - b. energy efficiency.
 - c. reduced carbon footprint.
 - d. All of the above
7. The variety of findings from sanitation studies showed that HSEE dryers exhibit all of the characteristics below EXCEPT:
 - a. warm air penetrates all the crevices in the skin versus towels that may not reach such areas.
 - b. air dried hands harbor germs due to hands being damp.
 - c. there has been no evidence for the actual growth of bacteria or fungi inside the dryer.
 - d. bacteria counts are often 2 to 4 times lower inside the dryer than on other surfaces in the restroom.
8. Some HSEE hand dryer manufacturers offer models with a sound reduction nozzle option that lowers the decibel level by 9db and eliminates almost all of the air deflection noise without sacrificing the speed and efficiency.
 - a. True
 - b. False
9. Options for retrofitting restrooms for the replacement of towel dispensers with HSEE dryers include:
 - a. direct replacement of the towel dispenser with a HSEE dryer.
 - b. replacement of towel dispensers with integral trash receptacle with HSEE dryers with full panels.
 - c. full ADA compliance for all options.
 - d. All of the above
10. Next generation green restroom design can contribute to the well-known LEED® program of the U.S. Green Building Council (USGBC) only in the credit of water efficiency.
 - a. True
 - b. False

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Excel Dryer, Inc. manufactures the patented high-speed, energy-efficient XLERATOR® hand dryer. Please contact them to request a copy of their LCA study and additional information on XLERATOR at P. O. Box 365, 357 Chestnut Street, East Longmeadow, MA 01028 (800) 255-9235, at www.exceldryer.com, or by logging onto their new CEU Education Resource Center at www.exceldryer.com/education.php

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DATES & EVENTS

Ongoing Exhibitions

Landscape Futures: Instruments, Devices and Architectural Inventions

Reno

Through February 12, 2012

This exhibition travels the shifting terrains of architectural invention, where new spatial devices on a variety of scales—from the inhabitable to the portable—reveal previously inaccessible dimensions of the built and natural environments. Guest-curated by Geoff Manaugh, the imaginative futurist behind BLDGBLOG, the exhibition is on view at the Nevada Museum of Art. For more information, visit nevadaart.org.

No Object is an Island: New Dialogues with the Cranbrook Collection

Bloomfield Hills, Michigan

Through March 25, 2012

This exhibition reopens the expanded and renovated Cranbrook Art Museum at Cranbrook Academy of Art. Inside and around the landmark building, designed by Eliel Saarinen, the exhibition will pair the work of 50 leading contemporary artists and designers with an equal number of objects from

Cranbrook's permanent collection of 20th- and 21st-century art and design. For more information, visit cranbrookartmuseum.org.

Lectures, Conferences, and Symposia**Strategies in Light**

Santa Clara, California

February 7–9, 2012

This conference will focus on the developments in LED applications, technology, and manufacturing that will drive the market forward over the next five years and beyond. A parallel “LEDs in Lighting” track will examine some of the most pressing issues regarding the adoption of LED lighting. A “Solid-State Lighting Investor Forum” will take place on February 7. Visit strategiesinlight.com.

Is Drawing Dead?

New Haven

February 9–11, 2012

Since the early Renaissance, drawing has been the architect's primary instrument of investigation and expression. However, the sophisticated methodologies offered by digital technology over the past decade have chal-

lenged the practice. This symposium, organized by the Yale School of Architecture, will explore the historic role of architectural drawing practice and illuminate the challenges it confronts today. Mario Carpo, Massimo Scolari, Sir Peter Cook, and Stanislaus von Moos will present. Preregistration is requested. Visit architecture.yale.edu/symposia.

Juan Herreros: Dialogue Architecture

Los Angeles

February 15, 2012

In a recession, architects have to interpret, describe, and activate an increasingly imperfect reality, which, at the same time, is full of potential. This is the theme to be discussed by Juan Herreros, director of the thesis program at the Madrid School of Architecture as well as a visiting professor at Columbia University. Held at SCI-Arc. Visit sciarc.edu.

Wang Shu

Los Angeles

February 27, 2012

Wang Shu is an architect and professor in Hangzhou, China, where he established the Amateur Architecture Studio with his wife, Lu WenYu, in 1997. His work focuses on the

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DATES & EVENTS

reestablishment of contemporary Chinese architecture and includes the Ceramic Houses, Vertical Courtyard Apartment, the Ningbo Contemporary Art Museum, and the Tengtou Pavilion for Shanghai Expo. At UCLA. For more information, visit aud.ucla.edu.

Coverings 2012

Orlando

April 17–20, 2012

Coverings is the global show and conference for ceramic tile and stone. With nearly 1,000 exhibitors from more than 50 countries, this expo is the most comprehensive marketplace of its kind, featuring the newest products, technology, innovations, machinery, supplies, and tools. At the Orange County Convention Center. Visit coverings.com.

AIA Europe: International Conference and Chapter Meeting

Tel Aviv

April 19–22, 2012

In the throes of realizing itself as a uniquely cosmopolitan society based on deep roots in ancient history, Israel has become a complex and modern place, the source of many technological, artistic, and cultural inventions. This conference will consider the ways architecture connects the past with the present and the role of public architecture. Anticipated tours include the Tel Aviv Museum of Modern Art, Holon Design Museum, Bauhaus White City, the Israeli Supreme Court, and the Peres Center for Peace. Visit aiaeurope.org/telaviv.

LEducation 6

New York City

March 21, 2012

LEducation 6 is the largest single-day exhibition and educational event dedicated solely to the ever-evolving LED market and technology. Attendees are able to participate in a variety of accredited educational seminars held throughout the day with industry experts addressing the latest issues, development, and hot topics of LED lighting industry. At Hotel Pennsylvania. Visit leducation.org.

Competitions

The Architectural League Prize for Young Architects + Designers

Deadline: February 15, 2012

Young architects and designers are invited to submit projects of all types, theoretical or real, and executed in any medium. The jury will select work for an online installation, podcasts, and for an exhibition in June 2012. Winners will receive a cash prize of \$1,000. A catalogue of winning work will be published

by the Architectural League and Princeton Architectural Press. This year's theme is "No Precedent," in honor of a self-defining generation of young architects driven by the desire to create, be heard, keep busy, and fulfill untapped niches. Visit archleague.org.

Ceramics of Italy 2012 Tile Competition

Deadline: February 17, 2012

Sponsored by the Italian Trade Commission and the Association of Italian Ceramics, the free competition is open to North American architects and designers who have used Italian ceramic tiles in their institutional, residential, or commercial/hospitality projects completed between January 2007 and January 2012. Winners in each category will receive a \$4,000 cash prize and a five-day trip to Bologna, Italy, to attend Cersaie in the fall. Past winners have included Bernard Tschumi and Pentagram Architects. Visit tilecompetition.com.

Shaw Contract Group: Design Is...Award

Deadline: February 24, 2012

This annual competition asks architects and interior designers to continue to redefine what design is and its impact on our lives. Visit shawcontractgroup.com/designIs/entry.

AIANY Medal of Honor Redesign Competition

Submission Deadline: March 15, 2012

This award is open to any architect, sculptor, artist, or student, and asks for a redesign of the current medal of honor. The specifications of the proposed medal will be the same as the existing design: bronze, bas-relief, and reverse-side text (text should be centered). For more information, visit aiany.org.

2011 Open Architecture Challenge

Registration Deadline: March 31, 2012

Decommissioned military installations leave their marks on the global landscape—symbols of triumph, pride, pain, and the unforeseen consequences of military aggression. This design competition seeks to reenvision the future of decommissioned military space. The design-and-construction community is asked to identify retired military installations in their own backyards; collaborate with local stakeholders; and reclaim these spaces for social, economic, and environmental good. For more information, visit openarchitecturenetwork.org/competitions/unrestrictedaccess.

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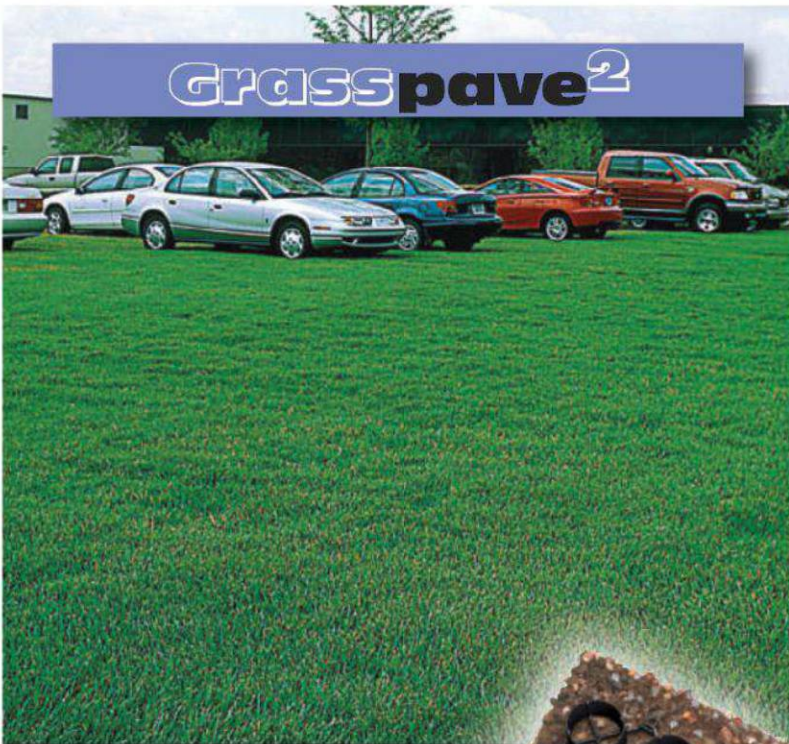
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Division 7 Thermal and Moisture Protection Specification Section 07411 - Manufactured Roof Panels

The Overly *Evolution* metal wall and roof system is without raised batten or standing seams and exposed fasteners. The system consists of a hidden drain channel, compression bar, cover cap and cladding sheets. The smooth, contemporary design appears monolithic when viewed from just a short distance. It's an 'Evolution' to all the standard metal wall and roof systems available throughout the history of the industry.

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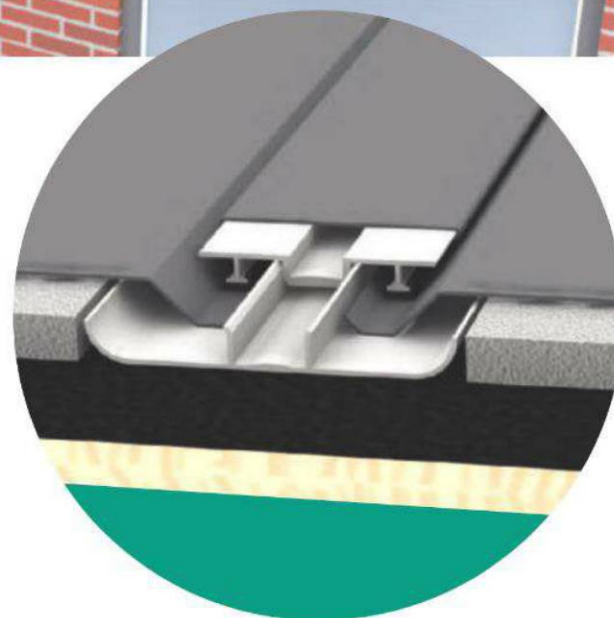


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- Titanium Grade 1, gauges .018"–.024" available in standard mill or matte finishes
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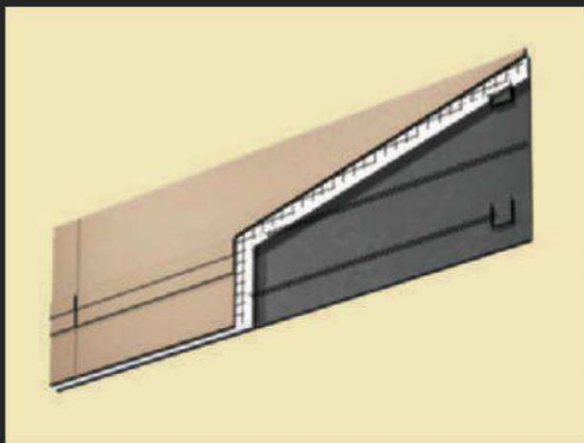
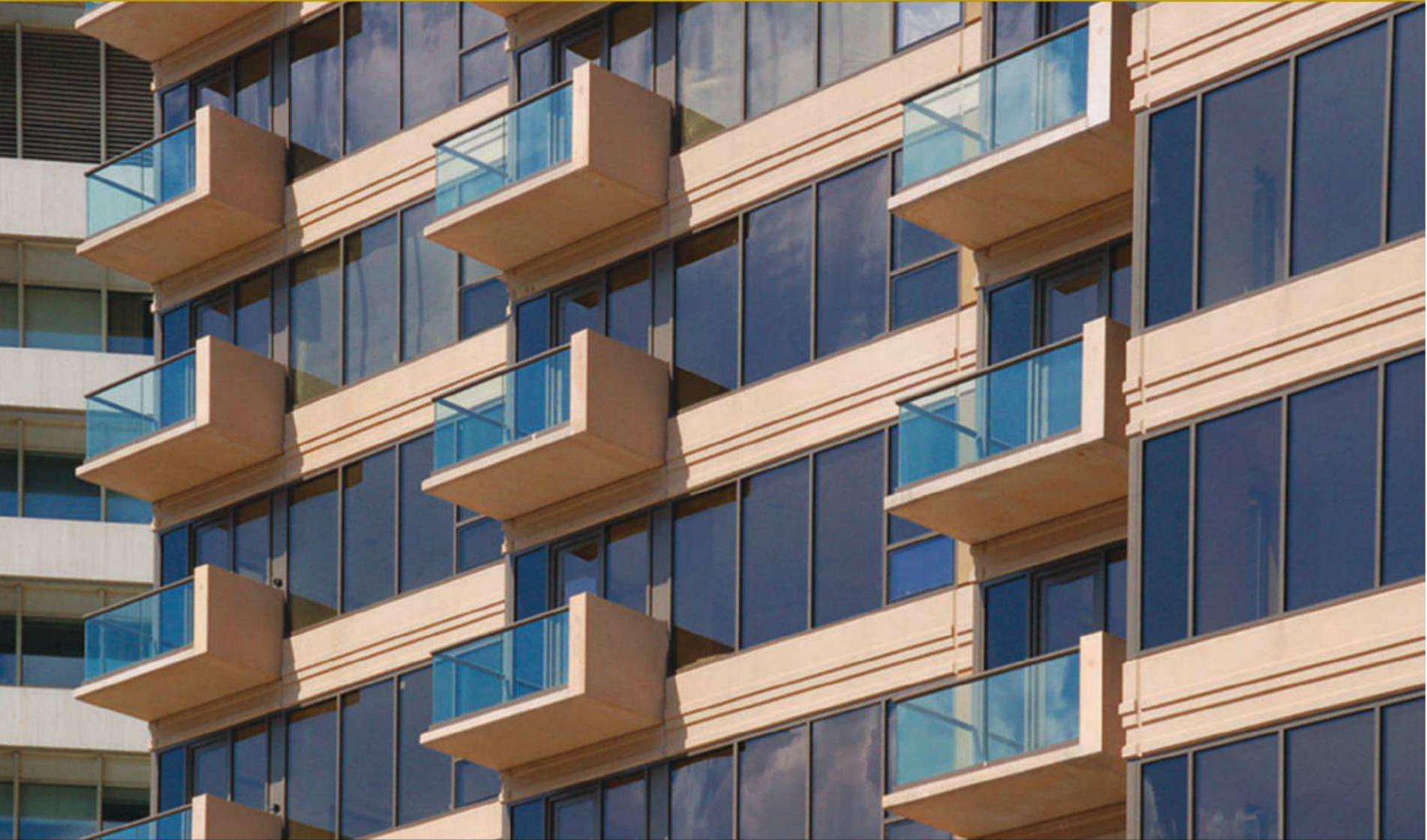
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“WHEN I was six, man was going to the moon, and I swore this was a space pavilion,” says Michael Chesler, who grew up exploring this R. Buckminster Fuller geodesic dome in Russell Township, Ohio. The dome is a marvel, but as an adult, Chesler was more struck by the Mid-Century modern building beneath it, designed by Gropius protégé John Terence Kelly. The two were built in 1959 to serve as the headquarters of ASM International, a member-led society for the materials science and engineering professions.

A few years ago, Chesler, now president of the Chesler Group, a Cleveland-based historic property developer, learned that the building was in serious disrepair and an economic drain. ASM was ready to move to a Chicago office park. “No, you’re not,” Chesler told them. He campaigned to get the property listed on the National Register of Historic Places and used the resulting tax credits to disassemble and renovate the building, removing more recent ad hoc office walls and asbestos, recaulking and reglazing all 260 windows, and restoring the stainless steel solar shades, among other things. ASM’s operating costs have been reduced by half, says Chesler. The dome itself was in excellent condition. Aside from its needing better grounding—“it gets hit by lightning quite a bit”—its bolts get tightened every so often.

At Black Mountain College in the late 1940s, Fuller developed German engineer Walther Bauersfeld’s geodesic dome. The spherical, hollow-shell structures made up of many interconnected triangles were strong but lightweight. Although the domes were adopted and adapted by hippies and the U.S. State Department alike, Fuller saw them as mass production for the greater good: How could geometry cure the world’s ills? The ASM headquarters remains a vibrant symbol of that exploration. *Laura Raskin*



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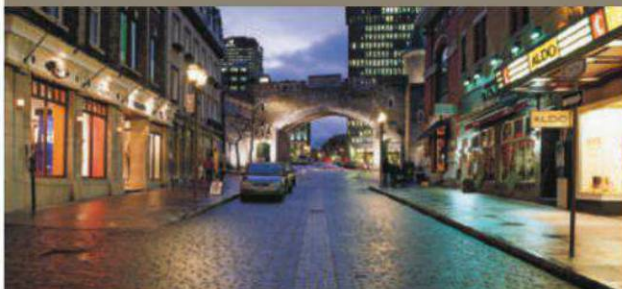
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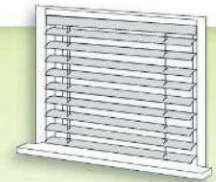
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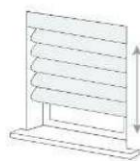
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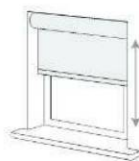
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