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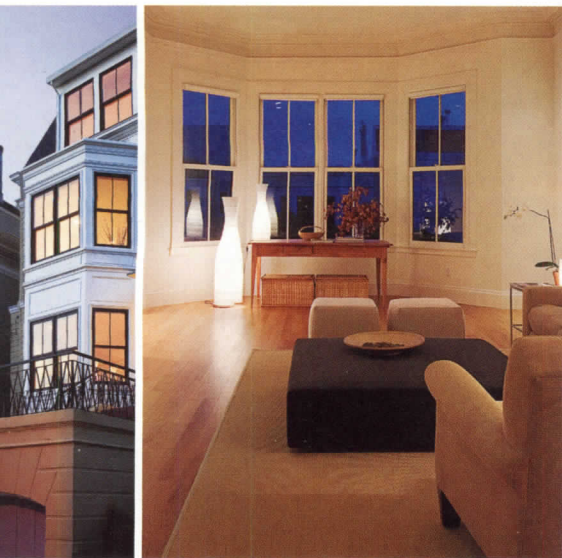
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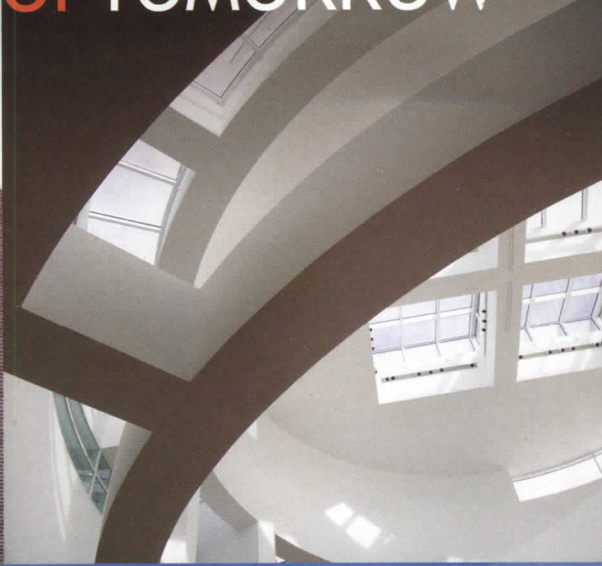
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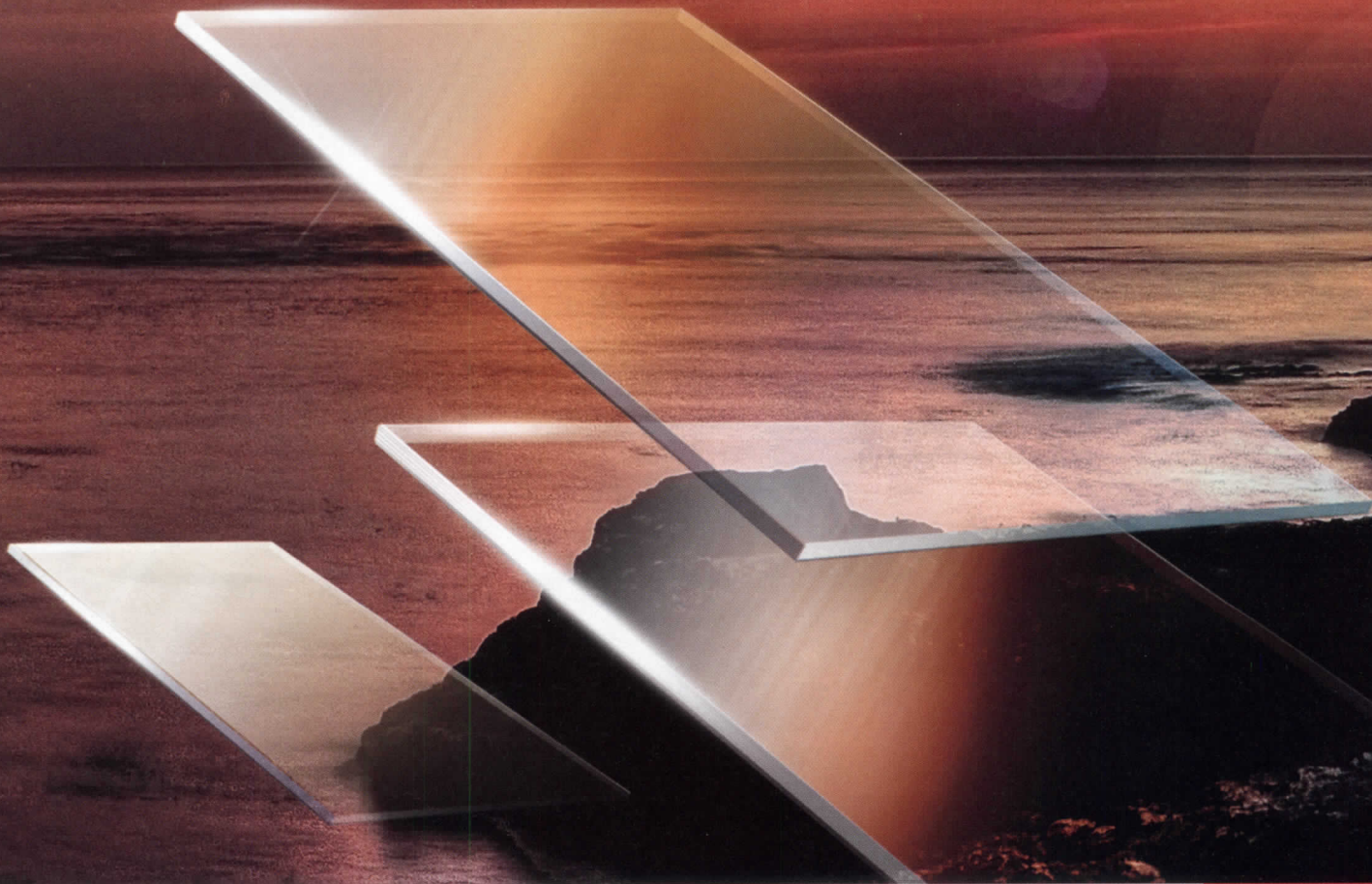
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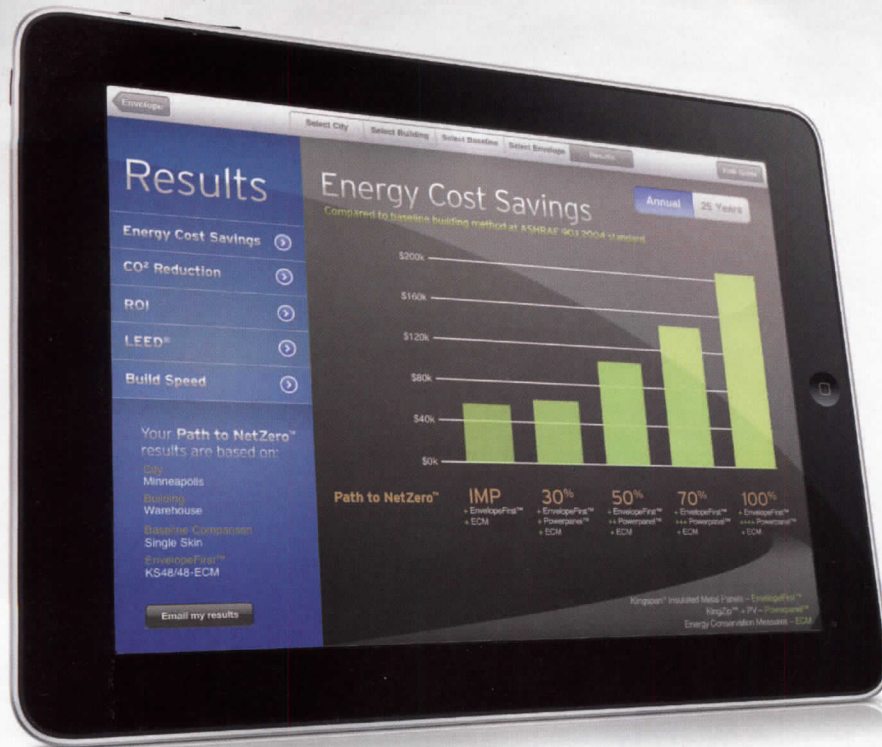


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ABOVE: Teshima Art Museum, Teshima Island, Japan, by Ryue Nishizawa and Rei Naito. Photo by Iwan Baan. (See Snapshot, page 136.)

ON THE COVER: Musashino Art University Museum & Library, Tokyo, by Sou Fujimoto. Photo by Daici Ano.

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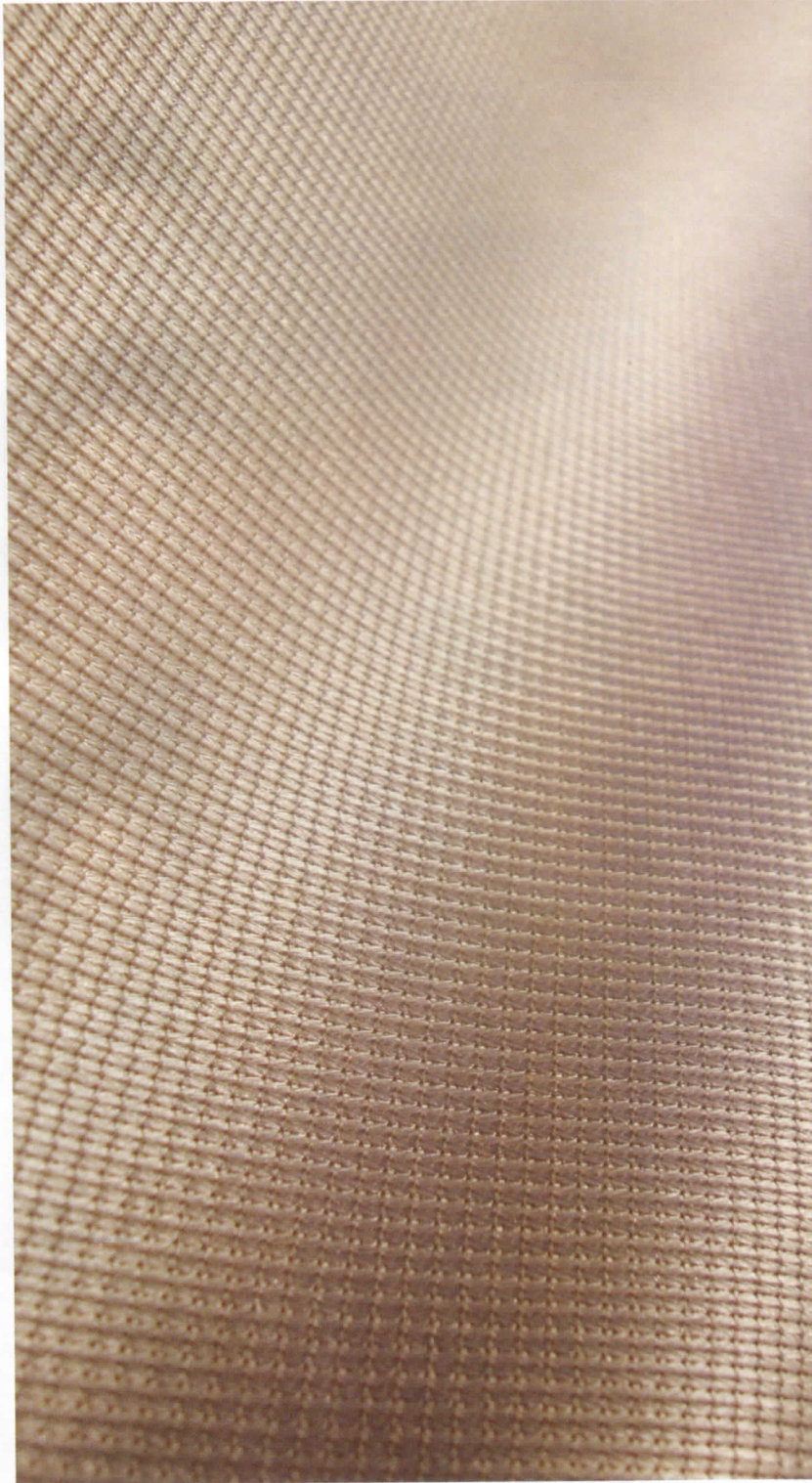
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Under Concrete Slab Vapor Barriers: Essential Protection from the Ground Up

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First in Their Class: Innovative Design Solutions for Schools of the Future

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William J.R. Curtis's critique of Steven Holl's plans for an expansion to the Charles Rennie Mackintosh-designed Glasgow School of Art continues to generate debate. Join the discussion on our website.

[COMMENTS AND LETTERS]

William J.R. Curtis originally wrote:

"...The unsatisfactory state of Holl's proposal perhaps reveals what may happen when a star architect drops in from another planet and blinds a building committee with the 'smoke and mirrors' of popularized phenomenology. Some good old Scottish common sense would have been in order to insist on greater rigor and a more appropriate response to the context..."

Steven Holl responded with this letter to the editor:

"...We welcome criticism as long as it's based on an accurate understanding of our design. Unfortunately, William Curtis's article is not knowledgeable about our design. First, the new building will not reflect light onto the Mackintosh building since its skin is matte glass (as has been confirmed by extensive computer modeling). This material is almost like alabaster. It is soft, without reflection. The clear glass portion is set back behind a green landscape. Only about 15 percent of the facade glows, so this will not alter the glowing quality of the original building.

The concept of the new building, a 'complementary contrast,' is expressed in a silent matte facade which picks up the changing Glaswegian sky as a complement to the rich detail of stone and steel elements of the Mackintosh building. It would not be possible to replicate that building's intricacy, and it would be a travesty to imitate it. The rich detail of the original will dominate the new urban space without interference from the silent contrast of the new neighbor. The existing 1970s 10-story tower, which will be replaced by our lower five-story building, is certainly out of scale with Mackintosh's architecture. To retain urban history and scale at the corner, the 1936 Assembly building in stone is retained and incorporated into the new building.

Our team has worked diligently with all the great people at the Glasgow School of Art in a very rigorous process. Every aspect of the design and its relationship to the Mackintosh building has been carefully developed to extend the GSA's capacity to be the premier education facility in the U.K.

The spurious argument by William Curtis is revealed in his closing remarks about two of our other celebrated works. The historical importance of the Glasgow School of Art is enormous, and the school deserves to have this great new facility to extend its educational mission. As Spinoza said, 'All noble things are as difficult as they are rare.'

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Critic and frequent RECORD contributor Martin Filler joined the comment thread:

"I could not agree more with William Curtis, both on Holl's potentially disastrous Glasgow School of Art design in particular and his career in general. But I am not at all surprised by the architect's indignant response. After I negatively reviewed his prisonlike MIT dormitory in *House & Garden* (July 2004), I received a letter from Holl claiming that my piece was full of errors (even though it had been rigorously fact-checked) and demanding that I come to his office for 'reeducation.' I replied that the last time I had heard that term was in conjunction with Mao Zedong's persecution of intellectuals."

Professor David Porter, head of the Mackintosh School of Architecture at the Glasgow School of Art, came to Holl's defense:

"...Holl's empathy for Mackintosh's masterly manipulation of light was at the heart of his winning proposal, but it was not a singular concern, more the binder for other strands of architectural invention. From the outset was the desire to take a route up through the building as a hybrid between an architectural promenade and an atrium that promises an extraordinary spatial richness. The proportion of rooms, walls, and materials is being crafted to bind the building together into a whole that is infused by an approach to environmental control and sustainability that emanates from the physique of the building. He experiments with the different qualities of glass as the means to articulate the implied depth of a surface, exploring its qualities as a surface and as a subtle reflector and refractor of light in and around the building, taking care to let any reflections sit gently on Mackintosh's facade opposite. Each of these strands of invention is unified through a subtle and complex weave of light and shade. His interpretation of light and reflection is not generic or falsely optimistic, but tuned to Glasgow by an architect brought up in Seattle, a city of Glaswegian dampness and clouds, and as something of a closet Scandinavian with buildings in Finland and Norway, he knows and loves gray skies and wet surfaces...I was part of the team that selected Steven Holl for the project, a team comprising an equal number of architects and nonarchitects. The choice was unanimous. The School of Art did not need to choose a star architect, for it was obvious that, whatever was built on this particular site and whoever designed it, it would receive publicity. We chose the architect we wanted."



A rendering shows Steven Holl Architects' planned expansion facing the famed building by Charles Rennie Mackintosh.

Correction

The image of 300 New Jersey Avenue on page 92 in the Lighting section of our February issue was attributed to the incorrect photographer. The credit should have read: Photo © Chuck Choi.



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No Exit: Manhattan's Black Hole

The Penn Station saga says a lot about our failed public realm.

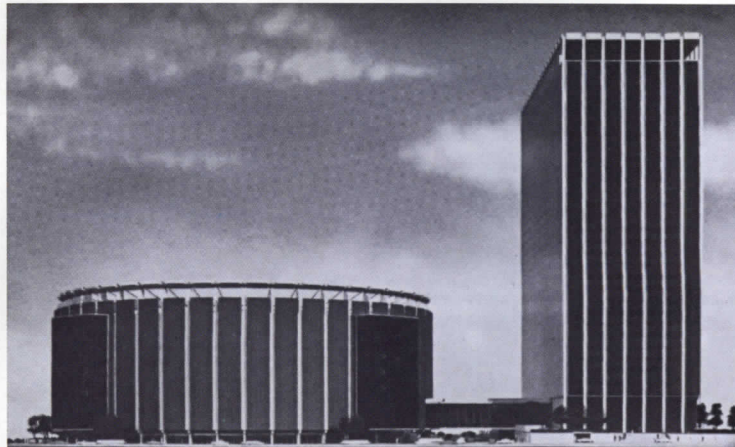
What a mess! Every day as we head to and from our offices atop Penn Station, we push through swarms of harried commuters, disoriented tourists, and fast-moving New Yorkers in the multilevel, underground purgatory that serves Amtrak, the Long Island Rail Road, New Jersey Transit, and six different lines of the city's subway system. As nearly everyone knows, this artificially lighted, soul-sapping labyrinth replaced the soaring architecture of McKim, Mead & White's Pennsylvania Station, which opened in 1910 and fell to the wrecking ball 53 years later. It's ironic that the offices of ARCHITECTURAL RECORD reside in a dreary building on the site of perhaps the greatest architectural crime of the 20th century.

For more than a decade, an evolving cast of public and private players has been hashing out schemes to redevelop Penn Station and bring back some of the old wow. First proposed by Senator Daniel Patrick Moynihan in the 1990s, the project would move Amtrak to the James A. Farley Post Office Building, which McKim, Mead & White designed as a Beaux-Arts sibling facing Penn Station across Eighth Avenue. While the post office's grand colonnaded facade on Eighth Avenue would still welcome people looking to buy stamps and mail packages, the rest of the enormous, block-long (and block-wide) building and many levels below it would be converted into space for an intercity train station, retail, and all sorts of improved rail infrastructure.

In 2005, New York State brought in a pair of developers – Vornado Realty Trust and the Related Companies – to build what was now named Moynihan Station. As the local and national economies boomed, ambitions for the project grew, too – with one plan envisioning Madison Square Garden moving a block west to the Ninth Avenue portion of the Farley Building, a cluster of new skyscrapers rising in the area, and lots of shopping places appearing throughout. We had hoped the plan would include razing Two Penn Plaza, the insipid, Charles Luckman-designed building in which we work, but learned that it would, alas, involve only recladding it. Our reaction was: C'mon, guys, tear the damn thing down and give us something we can be proud of!

Keeping all the various pieces and players in alignment, however, proved increasingly difficult. And after New York Governor Eliot Spitzer's administration fell from grace and the financial crisis hit in 2008, the grand scheme collapsed. Funding for the project dried up, and the Dolan family, which owns Madison Square Garden, decided to spend \$850 million to renovate the sports and entertainment venue instead of moving it.

So now, in addition to navigating the daily migrations of 550,000 people in the bowels of Penn Station, we find ourselves funneled through an



In the September 1968 issue of ARCHITECTURAL RECORD, a rendering showed Madison Square Garden and Two Penn Plaza, which now sit atop Penn Station.

armada of construction trailers and blocked from sidewalks as the Garden gets fitted out with new luxury boxes and a pair of sky bridges for the pleasure of Knicks and Rangers fans. After the Garden gets its expensive makeover, it will surely remain as ugly as ever: a black hole sucking out street life from behind a phlegmatic office tower. Instead of improving the flow of pedestrians or the way the Garden engages its neighborhood, the Dolans are focusing on amenities for rich customers. What a wasted opportunity!

Last year, the federal government allocated \$83.3 million in stimulus funds to get Moynihan Station moving again, and the Port Authority of New York and New Jersey chipped in the rest of the \$276 million needed to pay for phase one of the project. Although scaled back and less architecturally ambitious than the original 1990s scheme, the project – designed by Skidmore, Owings & Merrill – still promises a more attractive Amtrak station in the Farley Building, a new concourse under the post office steps along Eighth Avenue, and major improvements in train platforms, rails, and other infrastructure. But only 25,000 of Penn Station's daily commuters take Amtrak trains, so 525,000 people will continue to suffer the indignities heaped on them by the existing transit facilities, even after phase one is completed in six years or so. We need to transform the travel experience for passengers buying nine-dollar tickets to Nassau County, not just those with \$186 seats on the Acela to Washington.

We support constructing Moynihan Station, because it represents a critical improvement in our nation's transportation system and at least a token investment in New York's public realm. But we wish it could deliver spaces that inspire the way the old Penn Station did and expand its reach to people traveling to Long Island and New Jersey and around New York City. At a time when China is about to open an 820-mile high-speed line taking travelers from Beijing to Shanghai in just under four hours, we can no longer sit back and say our fraying infrastructure is good enough. Nor can we ignore the imperative to provide *innovative architecture* as the public face of a modern transportation network. — *The Editors*



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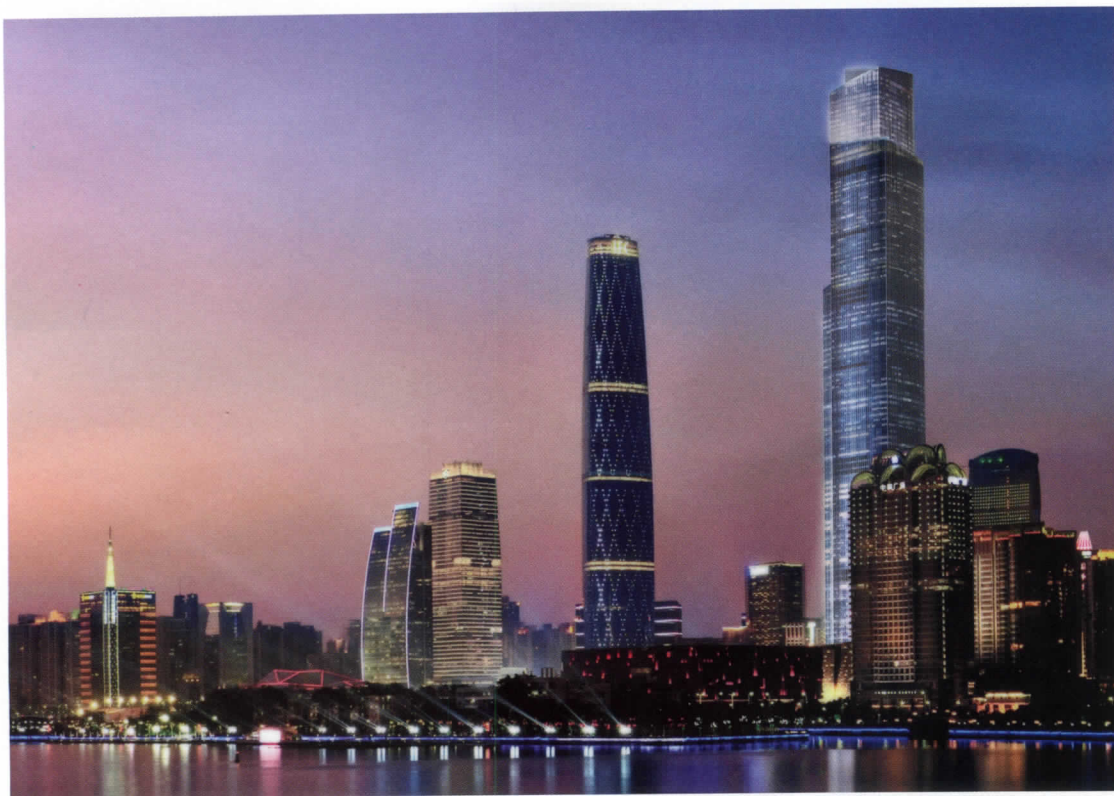


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KPF's Chow Tai Fook Centre, pictured at right, will rise 1,740 feet over the Chinese city of Guangzhou.

[SUPERTALLS]

Skyscrapers Climb Ever Higher

AS MIGHT BE expected during a prolonged downturn, plans for new record-setting skyscrapers have been delayed or flat-out scrapped, from the 91-story Dubai Towers in Qatar to the 84-story Faros del Panamá in Panama. Here in the United States, Santiago Calatrava's Chicago Spire, which at 2,000 feet was to be the world's tallest apartment building, was nixed last year.

But despite ongoing global economic woes, many "supertalls," which stretch at least 1,350 feet (about the Empire State Building's height), are chugging along and seem poised to be completed on schedule, according to the Council on Tall Buildings and Urban Habitat (CTBUH), which keeps tabs on them. "In many cases, it's about sheer need for housing," says Antony Wood, executive director of the Chicago-based organization, of the supertall phenomenon. He adds that these towers are, for the most part, cropping up in Asia.

Indeed, five of the top 11 supertalls

now under construction are located in China. Just one, One World Trade Center, has a U.S. address. Of course, that doesn't mean Americans aren't benefiting: Six of the 11 supertalls were designed by domestic firms.

Among the soaring Chinese edifices is Gensler's 121-story Shanghai Tower, on track to be the world's second-tallest building when completed in 2014. Only Burj Khalifa in Dubai, which has 163 stories, is taller. In early December, 10 floors of the Shanghai Tower, which will have galleries, offices, and hotel rooms, had been completed, says Dan Winey, a Gensler managing principal. As for its twisting form, "we wanted it to look like it's emerging from the ground, a symbol of China's future," he says.

While China isn't known for its strict environmental controls, many of its supertalls are being touted as green. The Shanghai Tower, for instance, will draw power from wind turbines and store rainwater; the

skyscraper is expected to use just 65 percent of the energy of a conventional office building, Winey says.

Kohn Pedersen Fox Associates (KPF) has also been busy overseas, as two of the 11 towers on the council's list were designed by the New York-based firm. In Guangzhou, KPF's 116-story, mixed-use Chow Tai Fook Centre will sit atop three planned subway routes and will have a tunnel connected to a rail line that whisks people between cities on the Pearl River, says Forth Bagley, a firm principal.

Tied to the same rail system, in nearby Shenzhen, is KPF's Ping An International Finance Center, a 115-story office tower. Like many supertalls, the dartlike Ping An has a narrow, faceted top, which is intended to lessen sway from wind, says David Malott, the project's design director. Excavation ended in November 2010, and floors are scheduled to start rising this fall.

A mix of homes and businesses may be the best way to make the economics of a supertall work, as developers have to be creative about filling all that space. Yet Dubai's

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Pentominium, from Davis Brody Bond Aedas, will only have condos – 172 of them. In early December, four of the tower's 122 floors were out of the ground, says Andrew Bromberg, the firm's international design director. He adds that the Pentominium will be the tallest residential building in the world when finished in 2013.

While China's supertalls may be fueled by swelling populations, the Middle East's versions stem more from the desire to forge national identities, says Gary Haney, a partner in the New York office of Skidmore, Owings & Merrill. His firm's 77-story Al Hamra Firdous Tower is set to open in Kuwait City in March. City officials relaxed a 40-story height cap to allow the limestone-and-tile-clad building to proceed. "Tall buildings tend to be an expression of civic pride, that a place has arrived," Haney says, citing New York in the 1930s and Chicago in the 1970s.

The largest of the planned supertalls is, paradoxically, the one most shrouded in mystery: the India Tower of Mumbai, designed by Norman Foster. The CTBUH calculates its planned height as 2,362 feet, though a spokeswoman for Foster + Partners said she couldn't discuss dimensions.

If the economy nosedives further, some of these projects could be canceled. Then again, analysts say, others now in the blueprint stage seem to have legs, like RMJM's Okhta Centre, with 77 stories, in St. Petersburg, and Pelli Clarke Pelli's 15 Penn Plaza, with 68, in New York. Wood thinks his skyscraper-centric Chicago hasn't heard the last of Calatrava's Spire, either. "I wouldn't rule it out just yet," he says.

C.J. Hughes

[CONFERENCE]

Plotting a New Course for Architecture

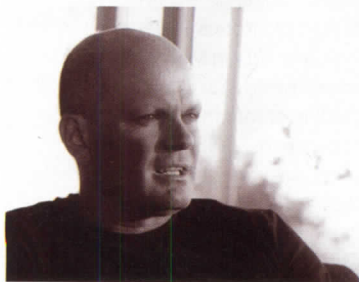
A forum organized by Brian MacKay-Lyons aims to push locavore design to the forefront.

IN THE SUMMER of 1994, Nova Scotia architect Brian MacKay-Lyons and a teaching colleague, Richard Kroeker, took their students at Dalhousie University in Halifax to MacKay-Lyons's farm and taught them how to build a structure with their own hands. It was the first "Ghost Laboratory," so named because the land's rocky ruins mark the ghost of a village, a European settlement from more than 400 years ago.

Since then, as MacKay-Lyons has gained an international following for his "plain modern" architecture, his hands-on Ghost Lab has grown into a kind of elite and magical summer camp. Architects and critics from as far as Australia have made the pilgrimage to the roughly 60-acre farm, spectacularly sited along the rugged Nova Scotia coast, where they join



In lieu of his annual "Ghost Lab" workshop, MacKay-Lyons (left) will host a summer conference at his Nova Scotia farm.



two dozen students, who collectively design and construct a building using the vernacular materials and techniques of the local barns, boats, and fishing huts. The idea isn't to ape the past but to embrace the venerable notion of the master builder, along with the ethics of good craftsmanship and sensitivity to the land and the community.

Now Ghost Lab is opening up to a larger audience, though anyone who would like to attend this summer can leave his or her tool belt at home. From June 14 to June 17, MacKay-Lyons will host a conference instead, for 200 people, to explore the ideas that have emerged from the design-build workshops – "the connection to place, to craft, to community," says

the architect. Parts of the conference will take place in Ghost Lab structures, including a 90-foot-long studio clad in corrugated metal and a reconstructed 1880s octagonal barn.

For MacKay-Lyons and the like-minded architects who have become his colleagues and friends, the conference, called "Ideas in Things," was a natural evolution from Ghost Lab. "We always talked about having this," says MacKay-Lyons. "There's a clubhouse effect of the site, where every year people congregate." The idea took hold three years ago while the architect was on a trip with four of his Ghost Lab buddies to see the ancient Dogon dwellings in Mali, Africa. That posse of architects – Rick Joy and Wendell Burnette (both from Arizona), Tom Kundig (Seattle), and Marlon Blackwell (Arkansas) – will speak at the conference, along with critic Kenneth Frampton and a roster of others. Pritzker Prize-winner Glenn Murcutt, whom MacKay-Lyons calls "the James Brown of this movement,"

may turn up, too.

And make no mistake: MacKay-Lyons and his cohorts do see this as a movement – or, as critic Peter Buchanan puts it, "the resistance" – to counter the numbing effects of globalization and a design culture that seems to favor theory over craft and spectacle over place. A part of the group's mission is to take on architectural education, which, says MacKay-Lyons, has "become flakier and flakier, and less about making things." In contrast, he credits the work of Dan Rockhill at the University of Kansas, whose students annually design and build an affordable prefab house. Rockhill will speak at the Ghost conference.

Like the organic food movement, the ideals of this "locavore" architecture may seem a bit romantic on a planet where 50 percent of the population lives in cities, many in deplorable conditions. But MacKay-Lyons believes his and his colleagues' ideas could have a meaningful impact.

"I know we're from wealthy industrialized countries," he says, "but we're all committed to the idea of making architecture out of local materials and local labor and making it affordable." (The new Canadian embassy in Bangladesh that his firm designed used what that impoverished country had in abundance: bricks and bricklayers.)

But can a small summer conference like Ghost, tucked up in Nova Scotia, really make waves? "We're all operating on the periphery of the fashion discourse," MacKay-Lyons freely admits. "We're all boonies architects. But when we come together as a group, there is a strength in numbers."

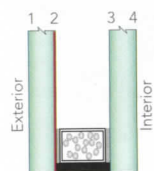
The conference will generate a book and possibly a film. And doubtless there are many practitioners around the globe who share their convictions. So the goal of the conference isn't small. "We hope," says MacKay-Lyons, "to change the conversation in architecture." *Cathleen McGuigan*

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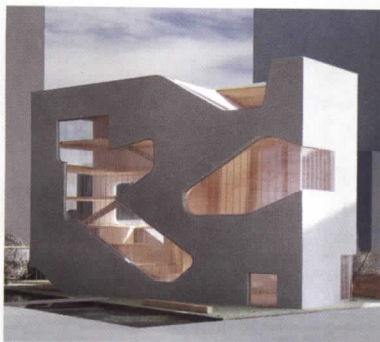


Project Japanese Garden Expansion
Location Portland, Oregon
Architect Kengo Kuma

Renowned architect Kengo Kuma has been tapped to design an expansion for the 5.5-acre Portland Japanese Garden, which opened in 1967. While funding is not yet in place, the plan calls for new garden spaces, an education center, a gift store, and a tea house. Groundbreaking is targeted for 2013. No modifications will be made to the existing grounds, created by landscape architect Takuma Tono. Located near downtown Portland, the garden draws more than 200,000 visitors per year.

Project BSA Headquarters
Location Boston
Architect Höweler + Yoon

The Boston Society of Architects is moving from its current location to a roughly 15,000-square-foot, two-story space inside Atlantic Wharf, a new skyscraper in the Fort Point Channel district. In January, the BSA selected Höweler + Yoon Architecture to design its new home. Standout features of the plan, dubbed Slipstream Public Exchange, include a "cloud" ceiling with an LED ticker and a grand central stairway, which draws visitors to an exhibition area on the second level. Completion is slated for fall 2011.



Project Hunters Point Library
Location Queens, New York
Architect Steven Holl

Steven Holl and firm partner Chris McVoy have unveiled the design of the Hunters Point community library in Queens, New York. The 21,000-square-foot building will sit on a prominent waterfront site along the East River, just across from Manhattan. Clad in recycled foamed aluminum, the concrete building will feature large, irregularly shaped windows that offer expansive views of the city skyline. A reflecting pool will flank the west facade. The library is expected to open by November 2013.

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Long Accent on Architecture Awards

On February 4, more than 400 architects, planners, developers, and journalists attended the 22nd annual Accent on Architecture Gala in Washington, D.C. The black-tie dinner hosted by the American Architectural Foundation (AAF) will likely be remembered as the Night of a Thousand Speeches. Actually, there were only 15 speeches, but it seemed as if most of the presenters were under the impression that audience members had come to get AIA CEU credits and desired long disquisitions. On the program were representatives from government, the private sector, the AIA, and the AAF.

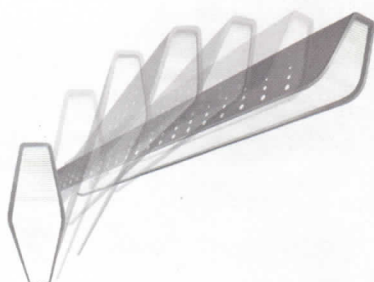
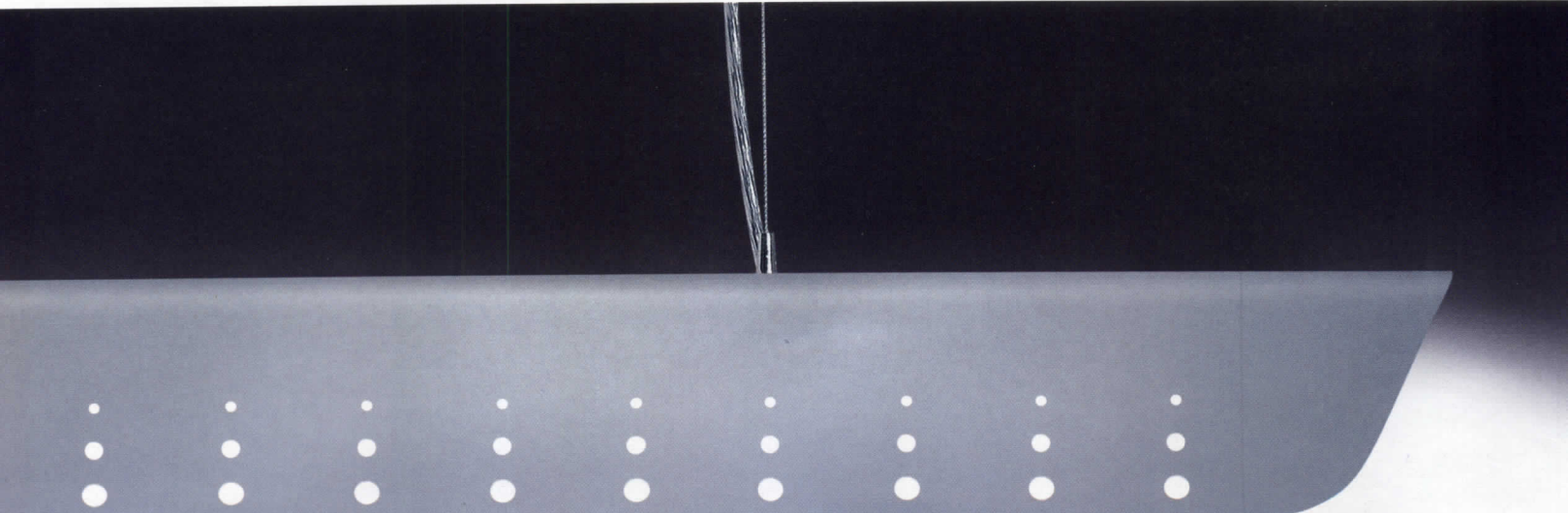
There was one speaker who realized that timing was everything: the New York City planning commissioner Amanda Burden (right), who received the Keystone Award. Bestowed each year by the AAF, the award honors those outside the architectural discipline who have helped improve architecture and planning through their leadership. Upon stepping onto the stage, Burden, who spoke last, gracefully put aside her notes and simply thanked a few people important to her efforts, including her mentor William H. Whyte, the late urban critic and sociologist. Her succinct comments reflected sound judgment and even respect for her listeners, who had been sitting reasonably still for several hours. With this kind of perspicacity and pragmatism, it's not hard to see why Burden has successfully spearheaded New York City planning efforts since her tenure began in 2002. She helped realize the highly successful High Line Park (2009) by creating zoning that facilitated air-rights transfers to developers. Currently, she is undertaking the rezoning of the New York City waterfront, such as the East River Esplanade in Lower Manhattan.

During the evening, the AAF also recognized Chicago Mayor Richard M. Daley, who was unable to attend the gala. Daley received the first Joseph P. Riley Jr. Award for Leadership in Urban Design. The dinner, which followed the AIA's three-day Grassroots conference, was held in the Andrew W. Mellon Auditorium (designed by Arthur Brown Jr. in 1931). Although the night was long, it did allow those in the audience to soak up the august, classical architecture. *Suzanne Stephens*



Billings Index Drops

The Architectural Billings Index slipped to 50.0 in January, down from 53.9 the month prior. The inquiries score also fell, hitting 56.5 in January after rising above 60 for four straight months. Says AIA chief economist Kermit Baker: "We've been taking a cautiously optimistic approach for the last several months, and there is no reason at this point to change that outlook."



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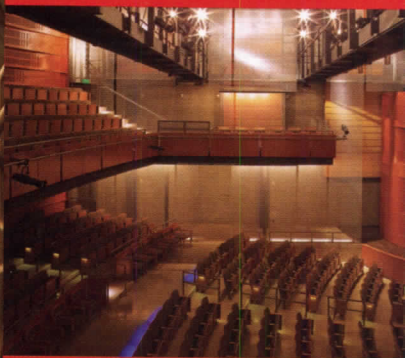
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Oeuvre kaput: Is the architect's monograph our latest endangered species?

LIKE MOST OTHER architecture critics, I'm often asked to write essays for monographs on living architects. However, unlike some of my colleagues – especially the king of introductions, whom I dub the Grand Old Laureate and Dispenser of Bland Encomiums, Ramblings, and Gallingly Equivocal Reviews – I always decline such requests, even from those whose work I admire and despite the temptingly high honorariums. My blanket excuse is that if I agree to one I'd have to say yes to all, and because the requisite positive introduction is tantamount to a wholesale endorsement, my objectivity would be suspect when assessing the subject's future designs.

That wariness stems from the fact that no great architect is great every day, or every year, for that matter, and it's dishonest to pretend otherwise. But whereas the reputations of long-dead titans like Wright and Kahn are so secure that discussing their flaws cannot diminish their standing, current (and lesser) contenders fret that even mild critical reservations might harm their job prospects.

Contrary to the grand posthumous summations that determine artistic rankings, it is customary for monographs about practicing architects to be adulatory to the point of sycophancy. Perhaps the unprobing nature of such productions has had something to do with the steady devaluation of the contemporary architectural monograph. Certainly the Great Recession has been a major factor. Not only is the book-buying public now more cautious in its purchases – what with so much free information instantly available on the Internet – but it is no secret that except for the starriest architects, monographs on contemporary firms are heavily subsidized or wholly underwritten by their subjects, who must agree to buy the lion's share of a print run or all of it.

Yet in spite of the financial return guaranteed by those terms, several New York publishers have spoken privately of late about drastically reducing the number of architects' monographs on their lists. (It remains to be seen whether this cutback will include books on Classicists, New Urbanists,

and the few remaining aged Modernists who continue to sell in a much-diminished field.)

Were the monograph to disappear completely, it would be a terrible blow to those of us who grew up enraptured by classic self-supervised tomes through which 20th-century masters presented themselves (especially during recessionary periods when underemployed professionals reflexively turn to writing about buildings rather than erecting them). The granddaddy of modern architects' monographs was Le Corbusier's *Oeuvre complète*, an eight-volume series issued between 1929 and 1970, which sequentially chronicled his seminal output in a seemingly objective manner that masked its highly polemical nature.

Corbu's influential compendiums served as the template for *James Stirling: Buildings and Projects, 1950-1974*, the wildly popular "Black Book" that mimicked the *Oeuvre complète* in its horizontal format, mix of monochromatic illustrations with terse copy blocks, and deceptively neutral air of scientific detachment. Quite the opposite in its explosive visual impact and brazen attitudinizing was Rem Koolhaas's 1996 blockbuster *S,M,L,XL*, which, with its six-pound doorstop heft and anarchic but compelling layouts (by graphics guru Bruce Mau), reinvented the concept as audaciously as Koolhaas has reconceived urban design itself.

But just as Le Corbusier, Stirling, and Koolhaas are exceptional figures, so their automonographs are hardly representative of what the genre has devolved into – little more than glossy hardcover promotional brochures to entice an uninformed and impressionable lay clientele. To be sure, Corbu hoped to drum up business by the same

means, but you don't have to be in the market for a machine à habiter to find his *Oeuvre complète* endlessly absorbing more than 80 years after its first installment appeared. In contrast, today's typically luxurious but vapid overviews – imagine *The Collected Houses of Pecksniff + Partners* – barely hold one's interest until the last double-page color spread of a glowing structure at twilight in the snow.

Do the harsh economics of a battered print industry spell inevitable extinction for architects' monographs? Not necessarily. Doubtless a few diehard firms will keep the vanity-book tradition alive even if they have to issue these seductive sales tools themselves, a task now easier than ever thanks to online programs, though still quite a costly proposition nonetheless. But similar to the way computer-aided design has revolutionized the architectural workplace, the career survey should be radically transformed in the years ahead.

We can surely anticipate far fewer examples from mainstream American architectural publishing houses, which already look to successful cut-rate formulas devised by more-bang-for-the-euro art book presses like Assouline, Taschen, and teNeues for models of how to put out glamorously illustrated editions at a good retail price and healthy profit margin. But all it will take is the emergence of the next once-in-a-generation architectural prodigy for the monograph to suddenly revive, like Sleeping Beauty awakening from her apple-induced snooze. ■

Martin Filler writes for the New York Review of Books.



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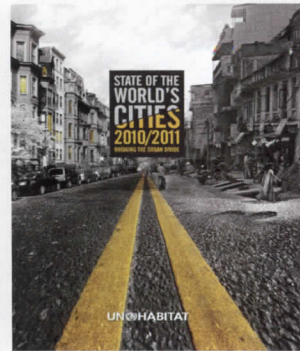
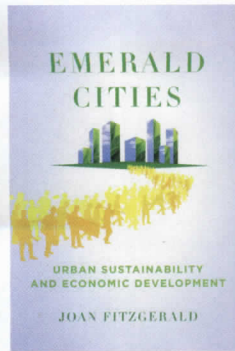
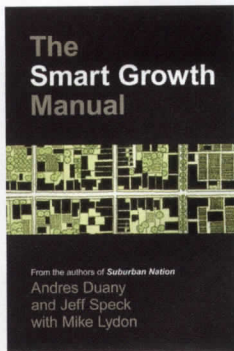
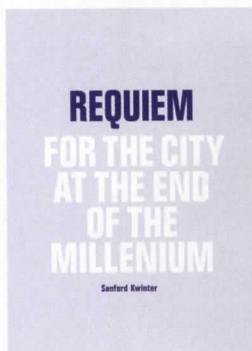
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Urban Theory Meets Urban Reality



Requiem: For the City at the End of the Millennium, by Sanford Kwinter. Actar, 2010, 112 pages, \$15.

The Smart Growth Manual, by Andres Duany and Jeff Speck with Mike Lydon. McGraw-Hill, 2010, 240 pages, \$25.

Emerald Cities: Urban Sustainability and Economic Development, by Joan Fitzgerald. Oxford University Press, 2010, 242 pages, \$30.

State of the World's Cities 2010/2011: Bridging the Urban Divide, by UN-Habitat. Earthscan, 2010, 220 pages, \$40.

ANYONE WHO KNOWS cities should also know by now that they can't be pinned down. As cultural and economic trends clash and coincide, the only constant is change.

But as these four books show to varying degrees, writers and theorists still want the last word; there's a determination to define the ailments and cures to their own satisfaction, even if the result comes off as irrelevant to anyone not already inclined to agree.

This disconnect is especially vivid in a slender set of related essays by Sanford Kwinter, *Requiem: For the City at the End of the Millennium*. A professor of architectural history and criticism at Harvard's Graduate School of Design, Kwinter grasps the dynamics of today's urban condition as "a perpetually organizing field of forces in movement" charged by "unstable, creative chaos" where even something as ephemeral as rumor "knits us to cities like figures woven - not printed, not dyed - into a moving fabric."

Yet Kwinter shows an overly academic detachment in all this, less interested in what he sees than in what rhetorical end it might serve. When he sets out to define a city's infrastructure, the result is an 86-item checklist including "handgun regulations" and "epidemiological algorithms." The intellectual provocation might draw a pleased nod from Rem Koolhaas - whose work is referenced on several occasions - but outside the salon it's meaningless flash. Architecture itself is dismissed as little more than form-making aimed at magazines like this one: "Architecture must undergo an explosive and disfiguring transformation . . . toward a necessary, if slightly cold cosmopolitanism" or it "will face the prospect of mediocrity, provincialism and even irrelevance."

That's hardly the view of Andres Duany, top-billed author of *The Smart Growth Manual* - which calls itself a "unified field theory," arguing that "the form of our communities is the fundamental determinant of so many things that matter."

Many of the book's 148 illustrated single-page points echo those long made by the organization Duany helped found, the Congress for the New Urbanism: Growth can be beneficial if it comes in orderly waves, with transit-friendly job centers surrounded by traditionally detailed neighborhoods compact enough to support a corner store. There's also a fresh layer of environmental sensibilities, such as the virtues of solar orientation and bioswales.

The book has value, especially

for architects and planners trying to make urban infill resemble something besides the built equivalent of a developer pro forma. Ultimately, though, this manual isn't nearly as definitive as it wants to be. It's aimed at a quasi-suburban world where regions are planned holistically, where endemic poverty is not an issue, and where jobs just naturally appear - a world that in 2011 seems far, far off.

By contrast, *Emerald Cities: Urban Sustainability and Economic Development* treats the metropolis as a machine that, with a few leftward twists of the knobs, can be put to the use of the planet: "If cities are the source of most carbon emissions and economic activity," author Joan Fitzgerald writes, "it makes sense to harness the innovative capacity of cities to solve the climate problem."

The book is organized around case studies, such as streetcar manufacturing in Portland, Oregon, and Chicago's efforts to find local users for recycled waste materials. Not all come in for praise, especially if they fall short of Fitzgerald's second goal, "linking environmental, economic, and equity objectives." Fitzgerald's benchmarks are her progressive ideals; you may agree that cities can do only so much, barring more assertive national policies, but there's no hint of how that high-minded scenario will occur.

While Kwinter, Fitzgerald, and Duany et al critique the details of Western cities, UN-Habitat's *State of the World's Cities 2010/2011* suggests the extent to which 21st-

century urbanization is a whole new game. The study comes after a decade in which the urban population grew by an annual average of 58 million people and, as of 2008, more than half the world's population lived in cities. And even though 227 million people moved upward from settlements classified as slums - mostly in China and India - the picture remains bleak in such regions as sub-Saharan Africa, where 61.7 percent of city dwellers live in slum conditions.

In that context, there's a strong case that change must come from the bottom up, as well from as the top down. *State of the World's Cities* shows tested small-scale initiatives along the lines of "conditional cash transfers" that reward families who enroll their children in school and get medical checkups, but it also makes a case for the need for societal acknowledgement of basic human rights. Stripped of dogma, the basic theme is all the more stark: "The urban divide is the face of injustice and a symptom of systemic dysfunction."

So let Duany and his coauthors call for rural-to-urban transects. Let Kwinter delight in the "clumsy paradox" that "although the city has disappeared, it is nevertheless here to stay." In the real world, the cities spilling outward in Africa and Asia are likely to elude any categorization that Western thinkers can impose. ■

John King is the urban design critic of the San Francisco Chronicle and writes its *Cityscape* column.



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BACKSTORY LINDA C. LENTZ

Director Robert Lepage orchestrates an architectural feat for a new Metropolitan Opera production of Wagner's *Ring* cycle.

Building a Valhalla That Links Generations

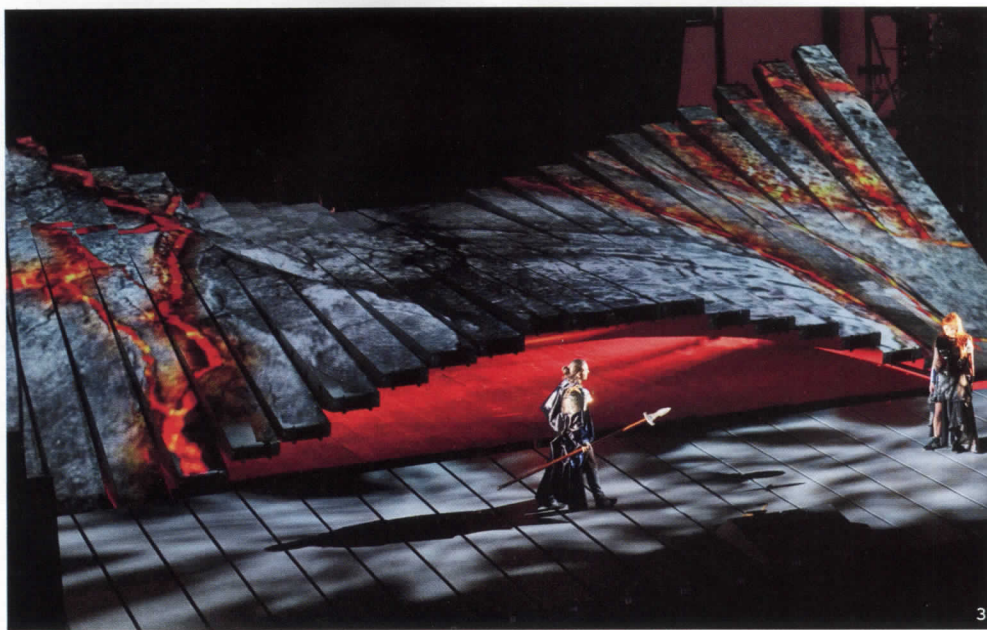


STAGE DESIGN IS typically an ephemeral art. Environments appear substantial, but they are often masterful imitations of the real thing made with lightweight, durable materials capable of continual setups and breakdowns. Enter Canadian director Robert Lepage, whose new production of Richard Wagner's *Ring* cycle for New York City's Metropolitan Opera literally revolves around a singular architectural conceit.

Conceived by Lepage in collaboration with Montreal-based set designer Carl Fillion, this structure comprises 24 triangular 2-foot-wide, 30-foot-long aluminum planks mounted to an axis that spans two 26-foot-high offstage steel towers. It serves the entire *Ring* cycle – a 16-hour series of four operas based on Norse myth. But, notes Fillion, the operas – *Das Rheingold*, *Die Walküre*, *Siegfried*, and *Götterdämmerung* – will each be different, never static or boring.

This is largely because the structure is “painted” with ever-changing streams of interactive video. It is also due to the incredible versatility of the device itself, which is controlled both manually and by computer. Hydraulic pistons in the towers facilitate the raising and lowering of the axis, which rotates within the planks. Fitted with a redundant brake system (for safety and positioning), the individual planks can either turn automatically with the axis or be configured independently. “You can’t imagine the number of positions we can achieve with 24 planks,” says Fillion. This allows countless iterations, he explains – without the projections.

It is the projections, however, that animate the pale gray planks – a neutral palette surfaced with fiberglass resin-topped plywood and coated in a pale gray epoxy – further transforming them into



1. During the fall performances of *Das Rheingold* (repeating in March), acrobats stand in for singers to traverse the planks that are raised up above the stage and rotated by computer into fanlike steps.
2. The 45-ton structure, which prompted the Met to reinforce the stage, morphs into countless iterations.
3. *The Ring* will roll out into 2012. April brings *Die Walküre* with new set configurations and fiery projections.

other worlds. Motion- and sound-detecting equipment, along with a special encoder to correct perspective distortion, distributes the imaging in a natural, lifelike manner across the stage.

Remarkably, Lepage is close to realizing the German composer's original concept. According to the Met's general manager, Peter Gelb, when Wagner envisioned his *Gesamtkunstwerk*, he wanted to create a new theatrical technology that would realistically represent its mythological

wonders, from swimming Rhine maidens to flying war goddesses. This was a tall order when the work premiered at Bayreuth in 1876.

To Fillion, “Wagner’s work is like a film, an amazing thing for his time.” Even now, adds the set designer, some of his ideas are difficult to stage. Yet, says Gelb, “Wagner would be impressed with the cutting-edge theatrical technology that Lepage has harnessed to serve the story today.” ■

FILM DONNA PAUL

Sam Wainwright Douglas, the director of a film about Samuel Mockbee and the Rural Studio, explains his intentions.

The Making of *Citizen Architect*

SAM WAINWRIGHT DOUGLAS

was eight years old when he met architect Samuel Mockbee. The impression Mockbee made on Douglas was indelible.

Mockbee, affectionately called Sambo, was an iconoclastic figure in the field of architecture, best known for the Rural Studio, which he founded in 1993 in Hale County, Alabama – one of the state's most impoverished areas.

Today, Douglas, 34, is a filmmaker whose recent documentary, *Citizen Architect: Samuel Mockbee and the Spirit of the Rural Studio*, has gotten favorable reviews for its candid portrayal of Mockbee's commitment to the people of Hale County. The 60-minute film highlights the humanitarian role of architecture in education, communities, and social change.

How is it that you came to make a film about Samuel Mockbee and the Rural Studio?

My father was an architect, and Sambo would come from Mississippi to our house in Houston to see him when I was a kid. I got to spend time with Mockbee and we connected.

What did you think was so special about Sambo?

He had these sketchbooks that he would show me. They had magical creatures and fantastical-looking buildings that he had drawn. He was playful and clever, and he would encourage me to look at those books. I thought a lot about them. **You are now married to Sambo's daughter, Sarah Ann. How did that happen? Did he have a hand in that, too?**

Yes, he did. He was very intuitive. One day when I was still living in New York, Sambo called me and said, "You dating anybody? My daughter's up there. Take down her number." That was in 2001. We got married in 2007.



Director Sam Wainwright Douglas stands in front of the house built by the Rural Studio for Music Man (Jimmie Lee Matthews) and featured in the film.

This is your second film as a director, and your first about architecture.

How did it come about?

In 1996 I went down to the Rural Studio, which Sambo had started a few years earlier. Seeing the architecture in that setting blew me away. The students working on projects there were so charged and confident, and the architecture was so beautiful. Plus I knew what a great guy he was, and I thought, this could make a really moving documentary. **How did this independent film come to fruition?**

I was in film school at New York

University, and I kept thinking about the idea, and so in 1999 I interviewed Mockbee. He sat under his painting studio shed roof and just talked. I wasn't a very good cameraman in those days, but I shot three hours of film. That is all I ever got of him.

What happened?

When Sambo died in 2001, I was just starting out in the film world, and I wasn't anywhere with the project. Yet I felt motivated to do it. At his funeral I met Jay Sanders, an architect who was mentored by Sambo at the Rural Studio. We said right there, we gotta do this film for Sambo.

Given that you had lost the central character of your film, how did you proceed?

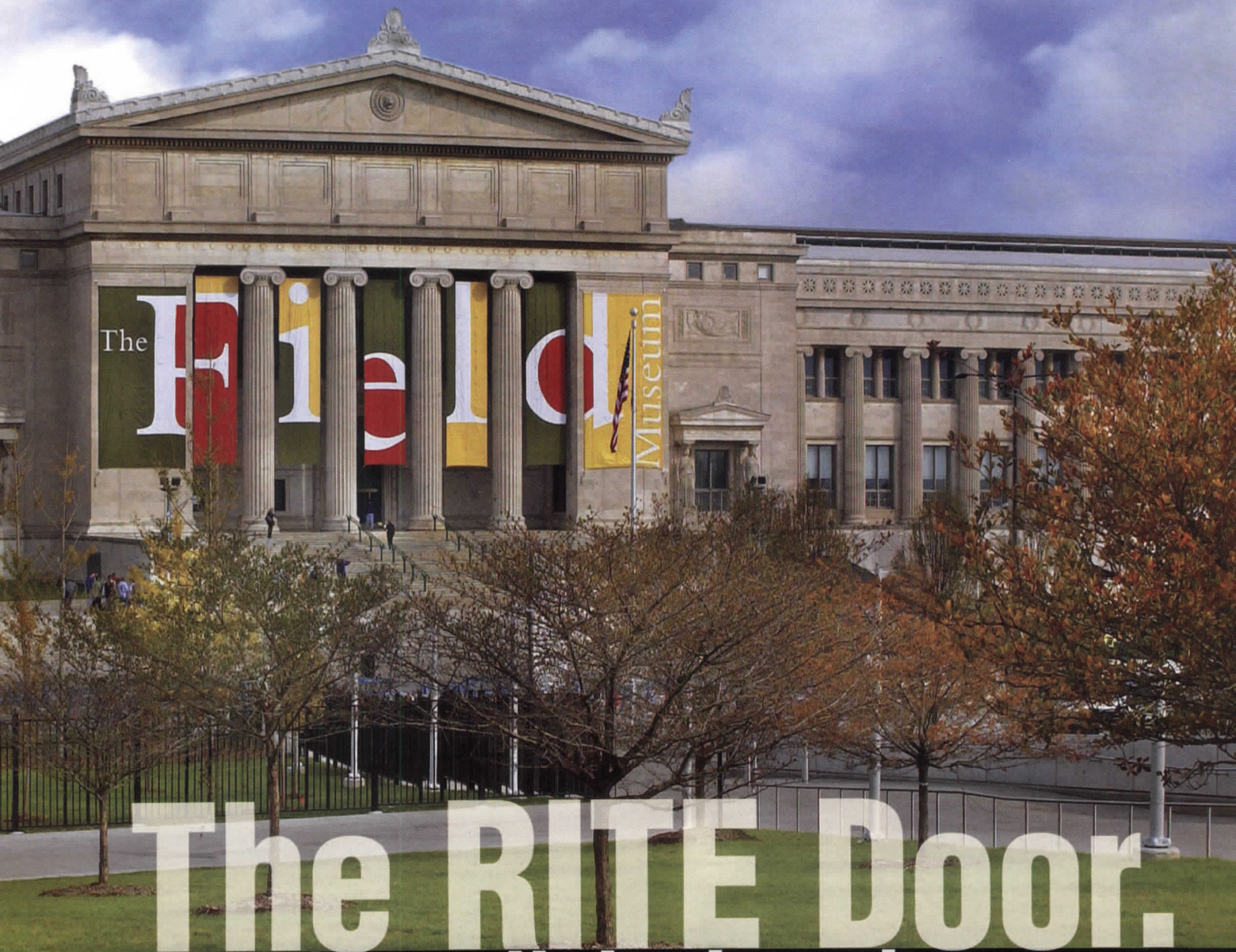
First I was incredibly grief-stricken: He had introduced me to his daughter only three months earlier. When I got back around to thinking about the film, I felt that the three-hour interview was substantial enough to give a sense of his presence. It would be a way to have him explain his motivation and tell his story in his own words.

In the film, you focus on the building of the house for Music Man [Jimmie Lee Matthews]. Why did you choose that house?

During filming, in 2002 and 2003, Jay Sanders's class was working on this project. And yes, Music Man is an affable, generous, and charismatic guy with an extremely engaging presence on film. I knew he'd be great to be work with, and I could tell that a bond between him and the students was quickly forming. It was a perfect combo. **What did you hope that people who know little about architecture, and nothing about the Rural Studio, would take away from your film?**

Many people who see the film have nothing to do with architecture, but they leave inspired. I hope they think about how they can affect their community or solve a social problem with their gifts and talents. That's what really attracted me to making this film in the first place: I was inspired by an architect who, in the face of seemingly overwhelming problems that challenge our world, found a place where he could use his skills and talents to do something about it in the best way he could. ■

Donna Paul writes about architecture and design for numerous publications, including the New York Times, Preservation, and Interiors.



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HOUSE OF THE MONTH **INGRID SPENCER** QB3'S SPLIT-LEVEL HOUSE IN PHILADELPHIA

THE NORTHERN LIBERTIES neighborhood, just north of Center City in Philadelphia, used to be a decrepit Rust Belt remnant, but it now attracts the artist crowd. Over the past decade that crowd has come, stayed, become organized, and turned the neighborhood into a vibrant community that honors its local history while allowing a modern sensibility to permeate new design. Architect Kevin Angstadt, principal of Qb3, has completed three projects in the neighborhood, and he says his latest, Split-Level House, could not have been accomplished without the forward-thinking neighborhood association of Northern Liberties. "The people on the board are artists, architects, contractors, and others who have an interest in maintaining the integrity of the area while encouraging investment," he says.

For Split-Level House, built on a small corner lot where a hotel was located some 30 years ago but which has been vacant since, Angstadt, his client, and the board wanted a design that would give a respectful nod to that long-gone building and its curved facade, and would reaffirm a relationship to the two streets meeting at the corner. Angstadt's client had minimal demands – a three-bedroom house that could accommodate a future family while also providing a garage.

The neighborhood board agreed to 100 percent lot coverage, and Angstadt designed a three-story brick building with a sod roof to modulate groundwater runoff. He decided on gray brick for the bullnose facade to offset the mahogany windows and sapele wood cladding – a modern treatment that still defers to the surrounding redbrick and stone buildings. The wood cladding turns the corner from east to north: In front, the corner under the overhanging bullnose is glazed, giving passersby hints of the many levels within.

The name "Split-Level" refers to the parti, an elaboration on a typical suburban split-level house. Angstadt wanted to transform the mundane split-level by creating a series of platforms where spaces within each room would expand vertically as well



as horizontally. Inside the house, structural support is evident only in the six skinny steel columns on each floor – columns that serve to stitch together the varying levels and allow living spaces to open up to each other on the bottom two floors.

The third level is the only space not readily visible from another room in the house. The homeowner's private sanctuary, this master suite is lower than the surrounding outdoor terrace/green roof, which wraps around the house and is sheltered by the brick parapet. Anthracite zinc clads the exterior walls of the master suite, marking it as a private pavilion separate from the rest of the house.

With views from the rooftop garden of Center City, the Ben Franklin Bridge, and the bustling neighborhood all around, the house allows its inhabitants to feel part of its urban surroundings. This is brotherly love at its finest. ■



TOP: The interior of the Philadelphia townhouse spirals around a sparely designed open stair with patinated steel railings and bleached oak treads.

ABOVE: The facade, with a bullnose corner, presents a striking contrast of masses and voids: Gray brick and sapele wood cladding are punctuated by glass expanses with mahogany frames that seem to defy structural loads.

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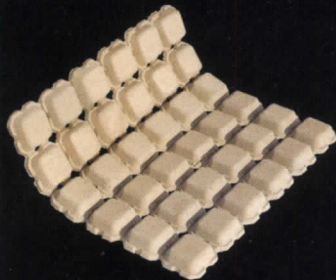
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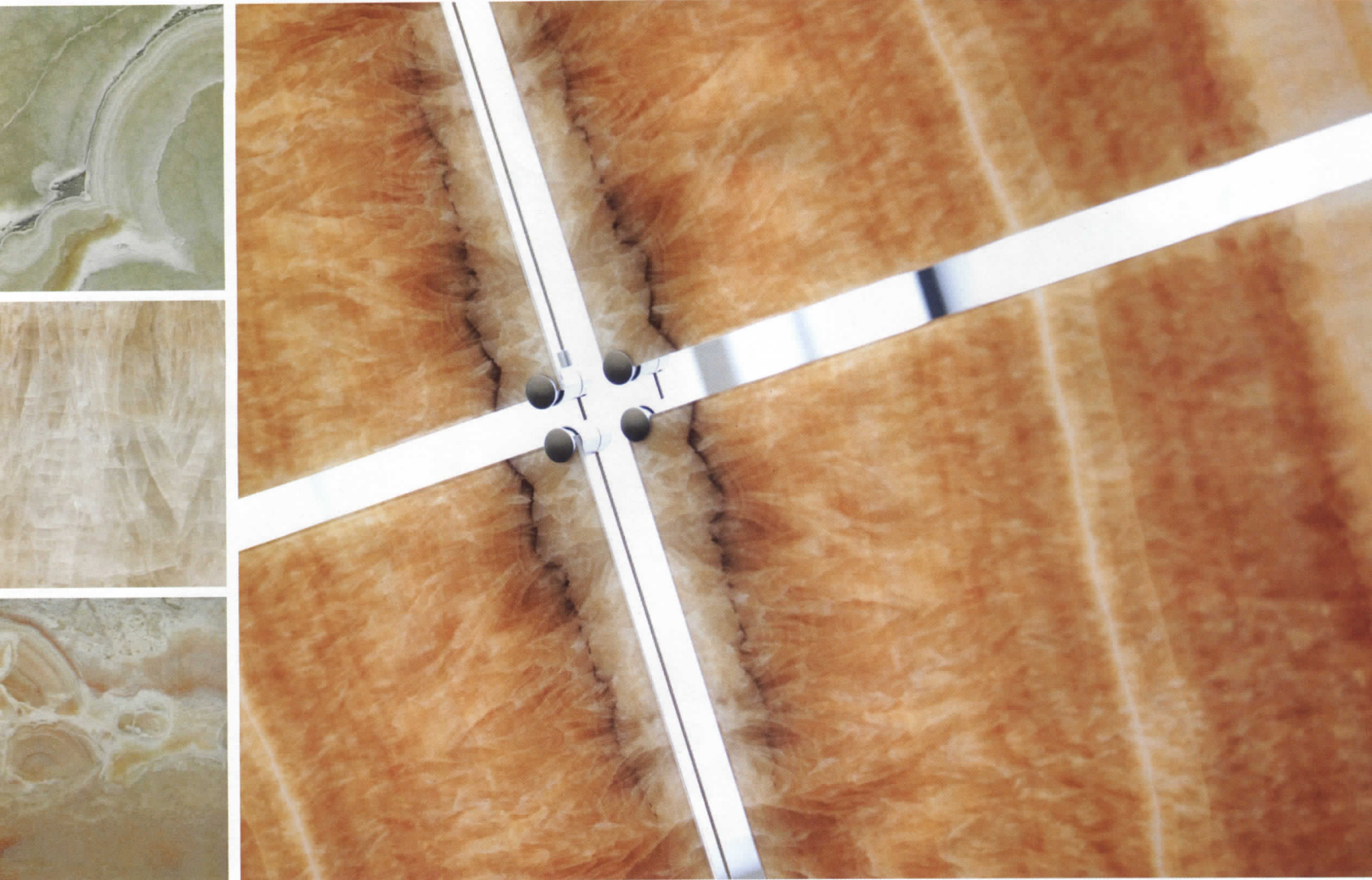
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left, top to bottom: Abalone Onyx, Cream Onyx, Sierra Onyx; room divider in Honey Onyx

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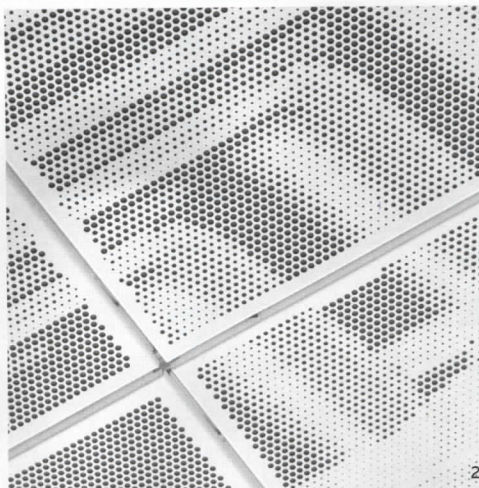
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Whether intended to stand out as a design element, such as the new panel system below, or integrate seamlessly without much fanfare, the following ceilings all aim to work on a higher plane. RITA CATINELLA ORRELL



Pixels Metal Panel System

IF HE WERE alive today, the French Postimpressionist painter Georges Seurat, known as the father of pointillism, might feel a certain affinity for USG's Pixels panel system. Pixels utilizes a unique perforation process to replicate photographs, art, or logos onto the surface of wall and ceiling metal panels including USG's Celebration, Panz, Curvatura, and Libretto systems. For a more dramatic effect, designs can be reproduced as a negative image that becomes a positive image when backlit by artificial or natural light.

The system offers three levels of resolution based on budget, aesthetic vision, and ceiling height; holes can also be punctured at two angles. "The contractor pricing on this starts at \$15 a square foot," says Mark Miklosz, manager, specialty ceilings, USG. Miklosz cites a ballet-slippers ceiling for the Lisa Wilhelm Academy of Dance in Rocky River, Ohio (right), as a good example of a low-resolution option that would fall

in this price range. He estimates a very high-resolution image that takes up a majority of the panel surface would bring contractor costs as high as \$45 a square foot.

The process begins when the architect's image is approved by USG. A few days later, the company produces a rendering of the image in a Pixels ceiling. Once the architect approves the rendering and design, there is a six-week turnaround.

The manufacturer is seeing interest in projects including high-end retail, K-12 schools, and higher education. "Almost anyone we have shown this to has thought of an application," says Richard Murlin, architectural services manager, USG.

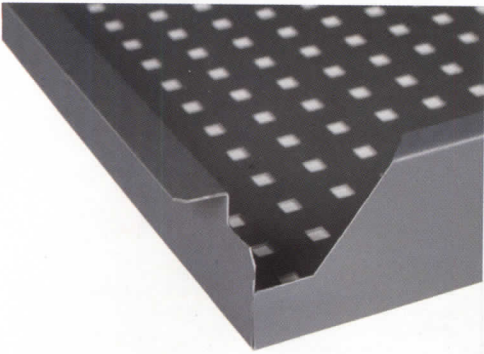
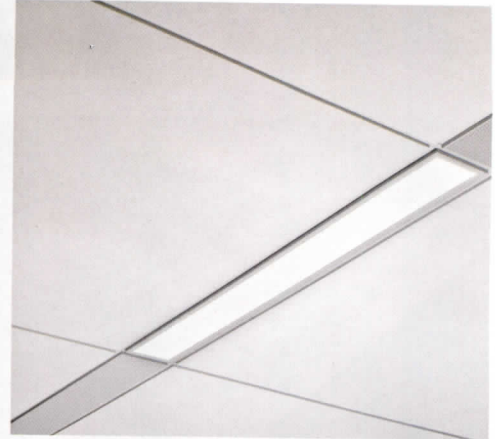
Pixels was an ideal solution for Laguna Beach, California-based, PDF Architects, who, as project managers for Paul Mitchell the School, were looking for innovative ways to communicate franchise branding. An installation of Pixels in the Charlotte branch of the franchise

was created in collaboration with fixture design team Wadsworth Design. "The piece is a 6-by-8-foot backlit image that took the place of our standard wall-mounted colored images. These images would have been diluted by other architectural features of the space," says Jennifer Hamner, LEED AP, a project manager with PDF Architects who worked closely with USG on the design and installation. Wadsworth Design's in-house machinists incorporated the panels into custom furniture pieces, retail fixtures, and backlit wall-mount panels. "Pixels lends

itself to far more applications than a standard metal ceiling panel," says Hamner. "[Wadsworth Design's] ability to fabricate components of the light cabinet that worked with the USG track made for an easy fabrication and installation process."

Murlin adds that Pixels goes beyond the conventional application of metal walls and ceilings "to combining artwork and a sense of architectural pattern and rhythm that is fairly unique." Pixels turned into art? *Mais oui*, Georges Seurat would be pleased. USG, Chicago. www.usg.com **CIRCLE 200**

1. A rendering that shows the potential for wayfinding in an airport application.
2. A detail showing the high-resolution perforation option.
3. A ceiling on the upper level of a two-story staircase at the Lisa Wilhelm Academy of Dance in Rocky River, Ohio.



SpanAir Ceiling Panels

Chicago Metallic chicagometallic.com/spanair
Designed for ceilings in wide, spanning spaces, SpanAir ceiling panels are suspended using conventional T-bar-based grid components for fast installs. Available in custom or standard versions, SpanAir Planks (detail above) are manufactured with EZ-Hook-in tabs that allow the planks to nest easily in the web of the T-bar-based suspension grid. SpanAir Clip-in panels are designed for new or retrofit applications in $1\frac{5}{16}$ " T-bar suspension components and nest in the grid while concealing it from view. SpanAir Torsion Spring panels have an EZ-Spring feature that nests the springs for ease of shipping and job-site installation. They are suspended from a slotted $1\frac{3}{8}$ " T-bar-type grid. **CIRCLE 201**

Squareline Metal Ceiling Tiles

pinta acoustic pinta-acoustic.com/twins
Approximately 13,000 square feet of Squareline metal ceiling tiles were added to the original design of Target Field in Minneapolis in order to help hide exposed pipes and provide a more finished look in areas with open ceilings. Installed in various areas of the LEED Silver-certified ballpark, the panels were customized to assure a greater than 70% open-area rate required to meet code and allow the sprinkler heads to remain hidden, yet functional. **CIRCLE 202**

Fully Integrated Ceiling System

Ceilings Plus ceilingsplus.com
To save time and money, Los Angeles-based TFO Architecture selected one supplier to integrate the various design elements of the curvy ceiling at Roll International's Orchard Commissary in Los Angeles. Ceilings Plus provided Radians ceiling panels with integrated lighting, skylights, and air diffusers as part of the system. The panels feature a carbonized bamboo real wood veneer with a slotted perforation and 100% recycled sound-absorbing backer. **CIRCLE 203**

5400 Series for TechZone Ceiling Systems

Lunera Lighting luneralighting.com
LED lighting fixture manufacturer Lunera Lighting has partnered with Armstrong Ceiling and Wall Systems to provide the 5400 Series, an edge-lit LED lighting fixture compatible with Armstrong's TechZone Ceiling Systems. The sleek, energy-efficient, linear fixtures create a clean ceiling visual and provide voluminous light when installed in the 6"-wide TechZone system. The fixture is offered as a $\frac{9}{16}$ " tegular as well as a $\frac{9}{16}$ " and $1\frac{5}{16}$ " lay-in. **CIRCLE 204**

Adagio High CAC Hybrid Ceiling Panel

CertainTeed certainteed.com
This Class A-rated composite ceiling panel offers superior acoustical performance by combining the sound absorption of high-density fiberglass with the sound containment qualities of mineral fiber. The panel features an industry-leading NRC of 0.80 and a CAC of 40-42, which helps building occupants comply with privacy regulations. Made of 62% recycled content, they also feature a treatment for added mold and mildew resistance. **CIRCLE 205**

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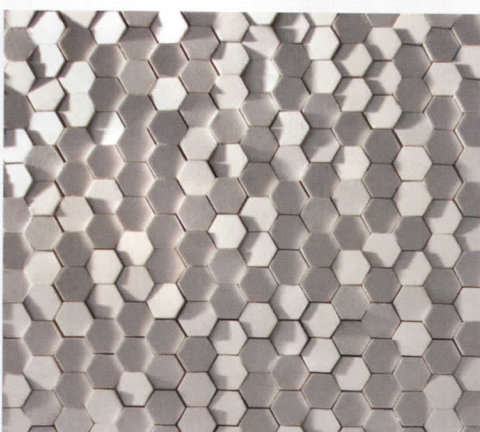
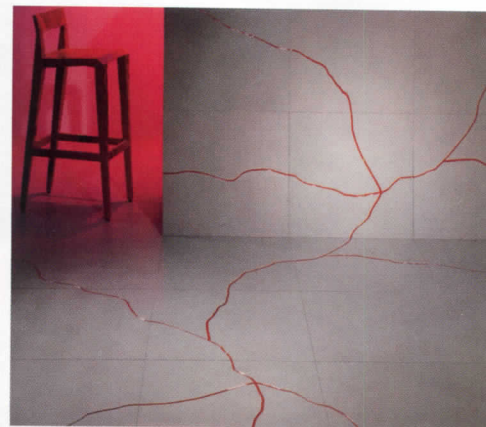
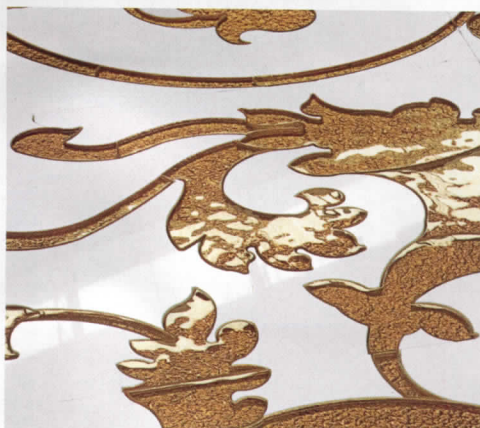
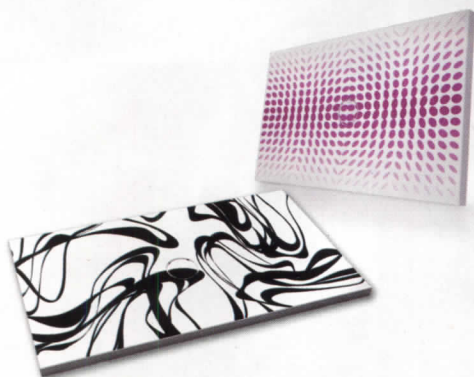
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TRADE SHOW IN BRIEF **CERSAIE**

A showcase of art, industry, and technology, the 2010 International Exhibition of Ceramic Tile and Bathroom Furnishings, held in Bologna last autumn, featured a new generation of 21st-century materials that raise the bar for performance and design. **LINDA C. LENTZ**



The Tatoo Collection by Karim Rashid

Ceramica Cielo ceramicacielo.it

The graphic black waves of Kaos and 3-D pink splashes of Rain (shown) are just two of six hand-applied patterns designer Karim Rashid created for this innovative fixture manufacturer located just north of Rome. Made of white-body ceramic, the line includes both washbasins and a series of shower trays available in up to 18 different sizes ranging from a neat 35.4" x 35.4" to a generous 31.5" x 55.1". **CIRCLE 206**

The Advance Collection

Atlas Concorde atlasconcorde.it

Designed to satisfy the demands of rigorous hospitality projects, this Modena-based manufacturer's Advance collection features a contemporary range of rectified, through-body porcelain tile in five stone looks: Black Basalt, Gray Lipica, White Brera, Mocha Creme, and Golden Aral. Slip- and wear-resistant, this versatile group comes in 18" x 36", 24" x 24", and 12" x 24" tiles suitable for both floors and walls. **CIRCLE 207**

Pietra Contemporanea

Cottoveneto cottovenetogroup.it

Based near Treviso, in Italy's Veneto region, this forward-thinking company is known for the artisanal quality of products developed through the use of state-of-the-art manufacturing processes, tradition, and classic materials. Precisely cut by water-jet, the Arabesque pattern of the Pietra Contemporanea Gold Collection combines a pristine, polished marble and glass-encased gold leaf insets in a variety of formats. **CIRCLE 208**

Phenomenon by Tokujin Yoshioka

Mutina mutina.it

This nature-inspired collection by Japanese industrial and interior designer Tokujin Yoshioka expresses the compositions, textures, and motifs of such common occurrences as snow, rain, and honeycombs. The unglazed, through-body porcelain collection not only mimics the environment, it is sustainable; it's toxin- and VOC-free, as well as recyclable. Available in white, gray, and mocha hues, in floor- and netted-mosaic-tile versions. **CIRCLE 209**

Terraviva by Massimiliano Adami

Ceramiche Refin designtalestudio.com

This Reggio Emilia-based company's Design Tale Studio challenges the potential of ceramic as a surface and building material. Designed for residential and light commercial floors and walls, the northern Italian designer's Terraviva series explores the idea of age and natural imperfection by fabricating man-made cracks – water-jet-engraved and hand-filled with epoxy resin – in through-body porcelain. **CIRCLE 210**

Energia

Laminam laminam.it

The collaborative effort of a Modena-based maker of 0.12"-thick, color-through porcelain sheets and neighboring solar-tech company System Photonics, this photovoltaic tile system integrates into the architecture of a building as a roof or ventilated facade material. Comprising superthin layers of ceramic, cell arrays, and tempered glass, each tile measures about 1/3"-thick and comes in numerous hues. **CIRCLE 211**



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MERGER MANIA



IN TOUGH ECONOMIC TIMES MANY ARCHITECTURE FIRMS ARE BEING SWALLOWED IN A MERGER AND ACQUISITION FRENZY, SOMETIMES WITH UNEXPECTED RESULTS. BY C.J. HUGHES

FOR AS LONG as firms have felt the need to branch into new markets, mergers have been a viable option. But those corporate marriages seemed to have hit a fever pitch in the last few years, giving the architecture industry the feel of an Elvis wedding chapel, with practices large and small, local and international, specialized and generic, all rushing to the altar.

Whether the trend is real is debatable. The American Institute of Architects (AIA) does not track merger activity. Yet in an AIA survey of 700 firms conducted last spring, 57 percent expected merger activity to pick up this year, versus 35 percent who said it would stay the same. And even if 86 percent in the same survey did not see themselves merging, interviews show that the possibility is increasingly being discussed among designers, who are looking to expand, diversify, fortify, or cash out.

Mergers can lead to better economies of scale for services for the day-to-day workplace; an increased worldwide presence; and better bargaining power for projects where total assets are an issue. Those facts seem indisputable. But mergers, like marriages, are not all happy. Designers who have fused their firms note that culture clashes can result in the transition from a mom-and-pop shop to a boardroom-heavy office.

Plus, critics say, promises that an acquired firm will stay autonomous don't always come true. In many ways, that loss of identity is epitomized by phone greetings that initially emphasize the hyphenated name of the joined firm for a few months before dropping it in favor of one monolithic brand.

Last, they add, mergers can often be just thinly veiled acquisitions, where squeezing every last drop of cash out of a business is the primary concern, instead of an equal meeting of the minds. In any event, it might be too soon to foretell the upshot of the current merger mania. "We are running a humongous chemistry experiment here," says architect Paul Nakazawa, a professor at Harvard's Graduate School of Design who also works as a business consultant to firms, a number of which have recently merged. "Some will end badly," he says, "and others will turn out to be quite good." Yet the current allure for many firms seems undeniable, as the entire nature of the profession changes. For one thing, clients themselves are consolidating, as in the medical field, which today is made up of huge hospital networks, meaning architecture firms with a range of expertise under one roof may be well suited to serve them. Plus, a multidisciplinary "issues-driven" approach that combined firms can excel at may serve other large clients well, too, Nakazawa says. Indeed, techniques for lowering carbon emissions on hospital campuses, he explains, can be applied to college and corporate campuses. "Classes of problems are common to certain spatial environments," he says.

Sometimes adding new firms can broaden a practice's international reach, whether that means cross-pollinating to China – like RTKL's adding of Beijing-based AHS International – or expanding the other way, into the United States. Indeed, after years of acquiring many Canadian firms, with about 80 deals in the last decade, Stantec, based in Edmonton, Alberta, began making a strong push in 2009 into the U.S. market, especially by snapping up design groups like Granary Associates, Anshen + Allen Architects, and Burt Hill.

Merging can also give a firm a key foothold in a new region, on a smaller scale. In 2010, Seattle's NBBJ, a 650-employee firm, joined with Chan Krieger Sieniewicz (CKS), based in Cambridge, Massachusetts, with just 30 employees. It was the first time NBBJ had merged since 1991, when it acquired Wyatt Architects. For Steve McConnell, an NBBJ managing partner, a three-year experience working with CKS to design a new \$1 billion wing for Massachusetts General Hospital was pleasantly "synergistic" enough to spur the merger. But he admits that it allowed the nine-office NBBJ a key New England berth, adding, "Boston is a very attractive place for the nature and characteristics of our firm."

While some firms, like NBBJ and CKS, wanted to augment their shared health-care focus, others, like Los Angeles-based AECOM, want to head out in different directions. The poster child, along with Stantec, for the merger mania of recent times, AECOM shelled out about \$1 billion for firms last summer to make a transition from engineering to design.

In some ways, this trend has played out for decades, ever since some engineers at Ashland Oil broke away in 1990 to strike out on their own. Since then, they've assiduously added other small firms, under the banner of a holding company, which allowed new arrivals to work independently and keep their brands. But in fall 2009, AECOM – whose initials are an acronym for Architecture, Engineering, Construction, Operations, and Management – reincorporated as an operating company, blending those different divisions while picking up a slew of other businesses, including Minnesota architecture firm Ellerbe Becket.

While big firms are usually doing the seeking out, smaller firms can be excited to have the opportunity to boost their profiles, says Adrian Cohen, president of WWCOT, which last spring merged with DLR Group. Interested in gaining access to the California market, where WWCOT, which designs schools and police stations, was deeply rooted, DLR broached the idea of a merger in 2008, Cohen says. "We were not looking for this, but it seemed like an interesting way to become a national firm," he adds. WWCOT had five offices at the time, pulling in \$30 million in revenue, to DLR's 14 offices.

MERGERS, LIKE MARRIAGES, ARE NOT ALL HAPPY. DESIGNERS WHO HAVE FUSED THEIR FIRMS NOTE THAT CULTURE CLASHES CAN RESULT IN THE TRANSITION FROM A MOM-AND-POP SHOP TO A BOARDROOM-HEAVY OFFICE.

WHILE BIG FIRMS ARE USUALLY DOING THE SEEKING OUT, SMALLER FIRMS CAN BE EXCITED TO HAVE THE OPPORTUNITY TO BOOST THEIR PROFILES... BUT PERSONALITIES NEED TO MELD FOR THE MERGER TO WORK.

Battling for commissions against the Stantecs and AECOMs of the world and their marketing muscle, "it was becoming increasingly difficult to get the kinds of projects we wanted to get," Cohen notes. Now, by tapping DLR's accounting, IT, human resources, and marketing departments, "I've improved my competitiveness," Cohen says of the deal, whose terms were not disclosed.

But that competitive edge doesn't just have to come from an established national player. In an anecdote that might reassure tiny firms worried about the future, Vern Remiger, of St. Louis's Remiger Associates, merged with Suda Architects last year after its founding principal, Larry Suda, died. The nine-employee firm is now known as Remiger/Suda.

Still, that type of merger presents its own hurdles: While all fees received for former Suda projects will go to Suda's estate, Remiger had to assume the liability for anything that could go wrong with those projects. Rather than expand on his own, Remiger thought it would be better to "get a firm that was up and going" and already had an established network of contacts, especially some with ongoing work, he says.

The most tempting targets for mergers are the midsize firms, like Ellerbe, which has about 400 employees, since they usually don't have the capital reserves of the Perkins + Wills and Genslers to weather downturns. At the same time, they have more overhead than boutique firms – like, say, Gehry Partners, says Thomas Fridstein, who until January was the head of global architecture for AECOM. Those midsize firms "are having a hard time," he says. While unable to comment specifically about AECOM's acquisition philosophy in light of his departure from the firm, Fridstein would say that, in general, demographic factors are driving the merger trend; that is, baby boomers want to retire.

Boomers, who are part of a generation of architects that contributed to a surge in new firms in the decades after World War II, "are looking for ways to monetize their investment in the firm," Fridstein says. "They want to get their equity out."

Also casting a wary eye to the future was J. Robert Hillier, of Princeton, New Jersey, who sold his four-office, 350-employee firm to RMJM for \$30 million in 2007, when he was 69. At the time, the other principals did not want to pay him what he thought the firm was worth, and they didn't want to borrow any money to do it, either. "Those principals know the vicissitudes of the business," Hillier says.

But in an indication of what can go wrong when firms merge, RMJM was supposed to pay retention bonuses – a year's salary – to Hillier principals if they stayed, but only forked over half that, so the principals sued last fall, says Hillier, who is a plaintiff in the case. A spokeswoman for RMJM did not return a call for comment.

In a twist, firms that are hoping to escape the crush of debt may not be ripe for a takeover, according to architects who throw water on the theory that the sour economy is somehow fueling the merger trend.

Bob Gomes, Stantec's president, says that Anshen, Burt Hill, and Granary were profitable when he merged with them. "They were not distressed companies," he says. And struggling firms often know better than to try to find buyers when they can't bring much to the table, says architect Rich Barbis, whose firm, Varvitsiotis Architecture, of Eugene, Oregon, closed last year after a 14-year run. A few years ago, when the economy was humming, Barbis had talked briefly with his former employer, the firm Lionakis, of Sacramento, California, about possibly joining forces. But, after a luxury-home subdivision project dried up and an office building was cancelled, Barbis knew the end for his six-employee firm was nigh.

In any case, architects who think that a merger will be instant salvation from their woes might be unrealistic about the bumps that can come along when two businesses are brought together. Cohen, of WWCOT, says he noticed the difference straightaway after the DLR merger in terms of health benefits. With a national, more formal system, it becomes very hard "to bend the rules a bit here and there" on a case-by-case basis, he explains. Moreover, combining two architecture firms is not like joining two factories; personalities need to meld for the merger to work, says AECOM's Fridstein. "Architecture is a service industry. The only asset it really has is the people," he says.

Architect Alan Chimacoff was at Hillier in the 1990s, when it began a series of acquisitions, and takes an even darker view. "They always say the culture will stay the same when a merger happens, but it's all a lie, pure platitudes," he says. The way it seemed to him, bringing less talented architects into Hillier created an imbalance, contributing to an erosion of quality in the firm as a whole. Chimacoff left in 2002 and eventually founded the firm ikon.5, also based in Princeton.

That idea that design quality can suffer as a result of mergers is always refuted by firms on the brink of getting hitched. But it was enough of a concern for Cambridge Seven Partners that it rebuffed an offer by Stantec to merge last year. Yes, the company did shed employees last spring, from 70 down to about 40, at the end of "the worst 18 months of our practice," says Timothy Mansfield, a partner at Cambridge Seven, which has designed aquariums, museums, and hotels.

But even with assurances that Cambridge Seven's identity could be preserved within Stantec, the partners at the 49-year-old firm weren't so sure. Mansfield says he and others were worried that "we would lose our design voice." After a couple weeks of serious deliberations, the principals "politely said that we were not interested at this time," says Mansfield, adding that "we did not close the door." In the meantime, with signs the economy is rebounding – the firm has picked up three projects in Riyadh, Saudi Arabia, while hiring eight new employees in December – Cambridge Seven will grow the company the old-fashioned way: organically. "We are going to become the biggest design firm we can be," Mansfield says. ■

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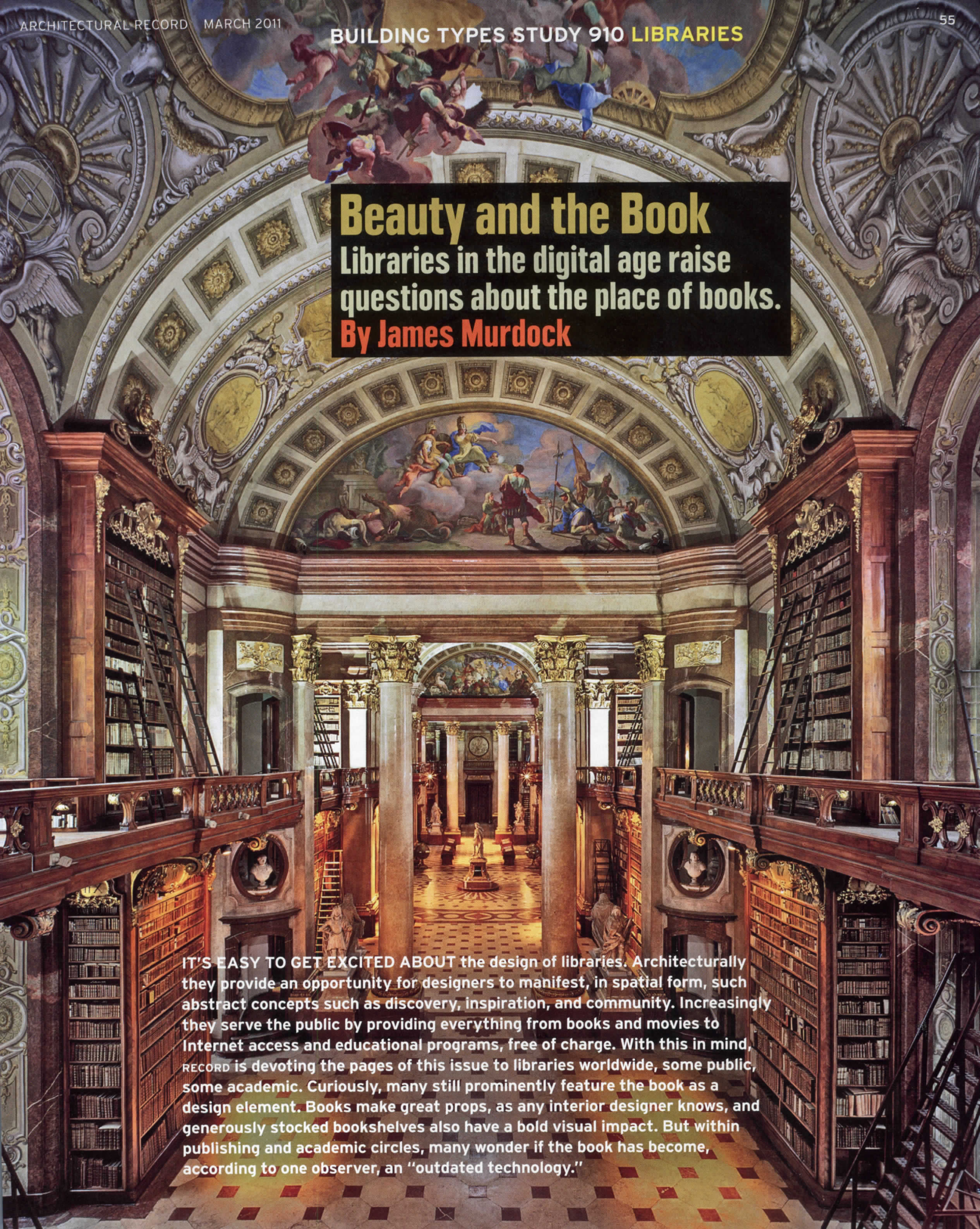
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Beauty and the Book

Libraries in the digital age raise questions about the place of books.
By James Murdock

IT'S EASY TO GET EXCITED ABOUT the design of libraries. Architecturally they provide an opportunity for designers to manifest, in spatial form, such abstract concepts such as discovery, inspiration, and community. Increasingly they serve the public by providing everything from books and movies to Internet access and educational programs, free of charge. With this in mind, RECORD is devoting the pages of this issue to libraries worldwide, some public, some academic. Curiously, many still prominently feature the book as a design element. Books make great props, as any interior designer knows, and generously stocked bookshelves also have a bold visual impact. But within publishing and academic circles, many wonder if the book has become, according to one observer, an "outdated technology."

The prototype for modern libraries was Michelangelo's Laurentian Library in Florence. Rows of desks dominate a navelike main reading room.

Didn't the 1957 movie *Desk Set* first raise the question about whether or not librarians and, by extension, libraries, are still needed in a world of computers? Although it begins on a note of suspense, this romantic comedy starring Katharine Hepburn and Spencer Tracy showed that computers and librarians could work together.

And yet, more than a half-century later, apprehension lingers about what technology is doing to reading, research, and libraries. This shouldn't be the case. After the number of people in the United States who spend their leisure time reading dropped for decades, from 2002 to 2008 their ranks rebounded astonishingly, rising 7 percent among adults and 9 percent, the biggest growth, among teens, according to the National Endowment for the Arts. Moreover, public libraries in the United States have seen record usage, up 23 percent between 2006 and 2009, according to the American Library Association (ALA), partly due to the job-seeking resources they offer. So the future of libraries in a computerized world is potentially bright – if they can survive a slow economic recovery where state and local municipalities keep cutting services.

The brutal economic climate poses an obvious challenge for architects. It also creates an opportunity for them to help libraries make a transition to an increasingly digital world. Computers affect architecture differently than they did just a few years ago, let alone during the days of *Desk Set*. EMERAC, the fictional machine custom-built to assist Hepburn and her busy reference staff, occupied the better part of an entire room. The integrated circuit board was invented a year after the movie came out and, with its development, computers began doubling in speed every two years with a corresponding shrinkage in size. Instead of taking up space, computers now liberate it. Google has undertaken an effort to digitize practically every book ever published – an endeavor not without its critics – while academic journals and other periodicals are increasingly available only in electronic form.

Just what to do with the shelf space created by digitization is another matter entirely. At one extreme is Cushing Academy, a prep school in Ashburnham, Massachusetts, whose library got rid of nearly all its 20,000 books in 2009 and replaced them with Kindles. This choice might have been prescient. E-book sales led a resurgence in overall book purchases during 2010, according to the Association of American Publishers, with an astonishing 165.6 percent growth over 2009.

But of course it's not just e-books that transformed Cushing's library from one of its least used spaces to among the campus's most popular – it was the installation of new couches, a café, and the social environment they nurture. To similar acclaim, these features are appearing in libraries of all sizes and types. Librarians at California Polytechnic State University, San Luis Obispo, weeded so much of their reference and periodicals collections that they opened two entire floors of their five-story building, replacing stacks with a café and comfortable seating, as well as whiteboards and other tools to facilitate group study sessions. "Creating community space for students meant they had the physical space to come together as people," observes Michael Miller, dean of library services.

Public library users have the same need. Although digitization means that anyone, anywhere can access pretty much anything from home, people still tote their laptops and smartphones into a library to do work. The modern library has always been something of a community center – a place where people gather to learn, whether in a story hour or a craft workshop, in the presence of others. Many observers contend that this role, often referred to as an "information commons," must now take center stage.

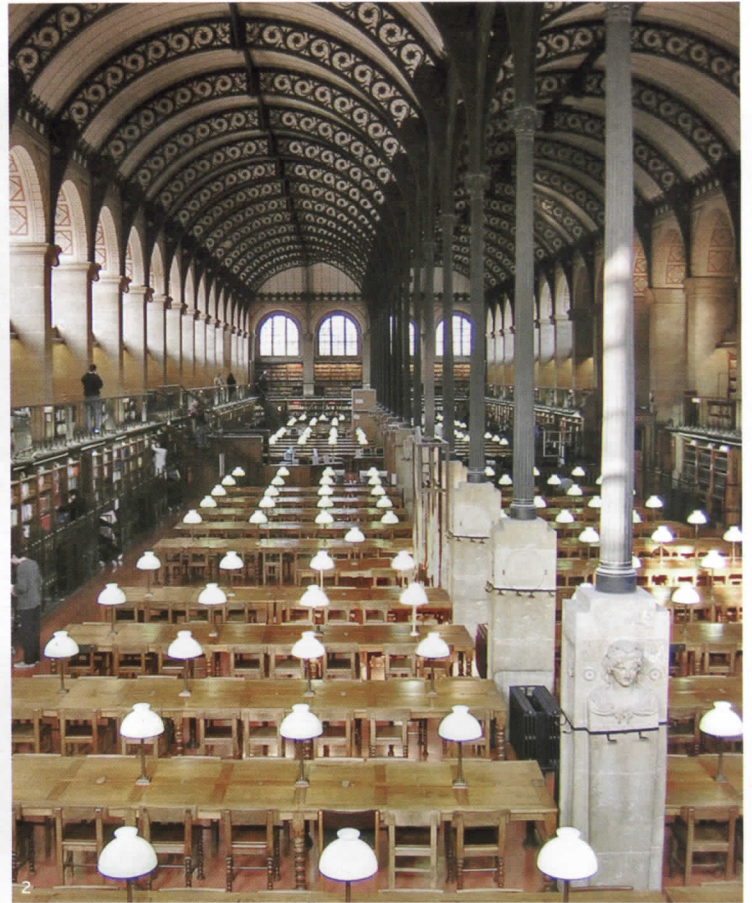
The contemporary librarian, as Linda Braun, a lecturer at Simmons College Graduate School of Library and Information Science, points out, is part reference specialist, part social worker, and part community organizer. Accordingly, cutting-edge libraries are providing users with the tools to create their own stories – content creation in the form of videos, theater, and self-published books.

How should architecture address this change? It's more than providing meeting rooms, or installing raised floors to accommodate abundant electrical outlets, although these features offer a good starting point. Addressing the library's future involves overcoming a mind-set entrenched since the Renaissance, when books emerged from underneath monks' desks to become symbols of power and the most prominent design element.

The prototype for modern libraries has been Michelangelo's Laurentian Library, in Florence. Rows of desks dominate a navelike reading room whose construction became a political statement that the merchant Medici family – who commissioned it in 1523 – had ascended into the ruling and religious classes. Johann Bernhard Fischer von Erlach's Hofbibliothek, now the Austrian National Library at the Hofburg Palace in Vienna, underscored the relationship of books and power in a *more lavish, baroque* style. Charles VI, Holy Roman Emperor, commissioned this opulent space in 1721 to house spoils that the Hapsburg empire had acquired over centuries. About the same time, Thomas Burgh created a stunning library for Trinity College in Dublin, a testament to the increasing significance of academic institutions.

Although the Enlightenment introduced the notion that libraries could be a vital organ of democracy, their design changed only to reflect new construction materials and techniques. In Paris, Henri Labrousse's iconic Bibliothèque Nationale (1854-75) and Bibliothèque Sainte-Geneviève (1838-50) celebrated ferro-vitreous architecture with impossibly thin iron columns supporting vaulted ceilings. And in the United States, McKim, Mead & White gave Labrousse's scheme a neoclassical twist in its Beaux-Arts masterpiece Boston Public Library, completed in 1895. Books line the walls of these buildings' vast reading rooms, while tables and carrels occupy most of the floor space. Edward Tilton and other disciples copied the formula in smaller, Carnegie-funded neighborhood libraries nationwide, each representing a temple to learning that encouraged immigrants and the working classes to better themselves.

It was at this moment, often considered a golden age of library design, that dissention emerged. William Poole, a cofounder of the ALA, complained in 1881 that library design was "yoked to ecclesiastical architecture." Navelike reading rooms, with their vaulted ceilings, wasted space



PREVIOUS PAGE: Austrian National Library, Hofburg Palace, Vienna, J.B. and J.E. Fischer von Erlach, 1722-30.

1. Laurentian Library, Basilica di San Lorenzo, Florence, Michelangelo Buonarroti, 1524-34.
2. Bibliothèque Sainte-Geneviève, Paris, Henri Labrouste, 1838-50.
3. The Old Library, Trinity College, Dublin, Thomas Burgh, 1712-33.



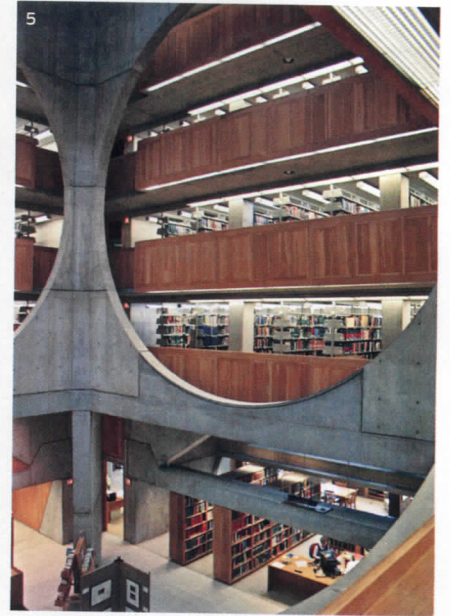
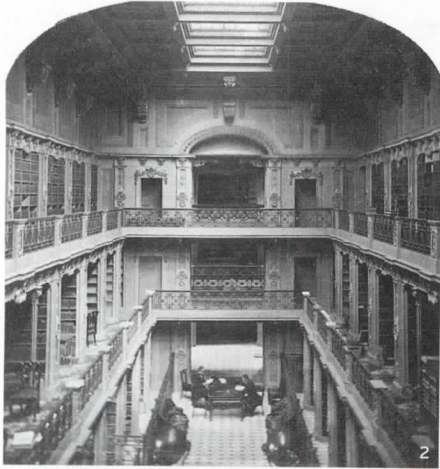
that could be better used for extra floors of book storage. Their lofty heights trapped heat, an enemy of paper. Worse, Poole wrote in a government report, these showy cathedrals rendered quiet study impossible amid a promenade of “tramps and sightseers... asking each other in audible tones if they suppose the librarians have read all these books.” With his love of books, Poole would have appreciated one contemporary design trend: a celebration of books that borders on fetishization. Gordon Bunshaft, of Skidmore, Owings & Merrill, may have established the Modern version of the precedent in 1963 with his Beinecke Rare Book and Manuscript Library at Yale University. Its marble exterior walls shelter an internal glass tower that showcases 180,000 volumes like treasured museum pieces. This same celebration is apparent in Sou Fujimoto’s Musashino Art University Library (page 60) – and Alberto Kalach’s Biblioteca José Vasconcelos, in Mexico City, which features a central atrium in which steel girders dizzyingly suspend multiple levels of book stacks above the heads of readers.

A new trend in contemporary library design is sustainability. Like other clients, libraries are pursuing green designs to lower their operating expenses and provide better spaces for users. They’re also going green to promote environmental

literacy: to teach users, through example, about environmental stewardship. It wasn’t couched in these terms, but Louis Kahn’s library at Phillips Exeter Academy, opened in 1971, is a masterpiece of daylighting – a popular sustainable strategy for reducing electricity use that is evident in many of the libraries profiled in the following pages.

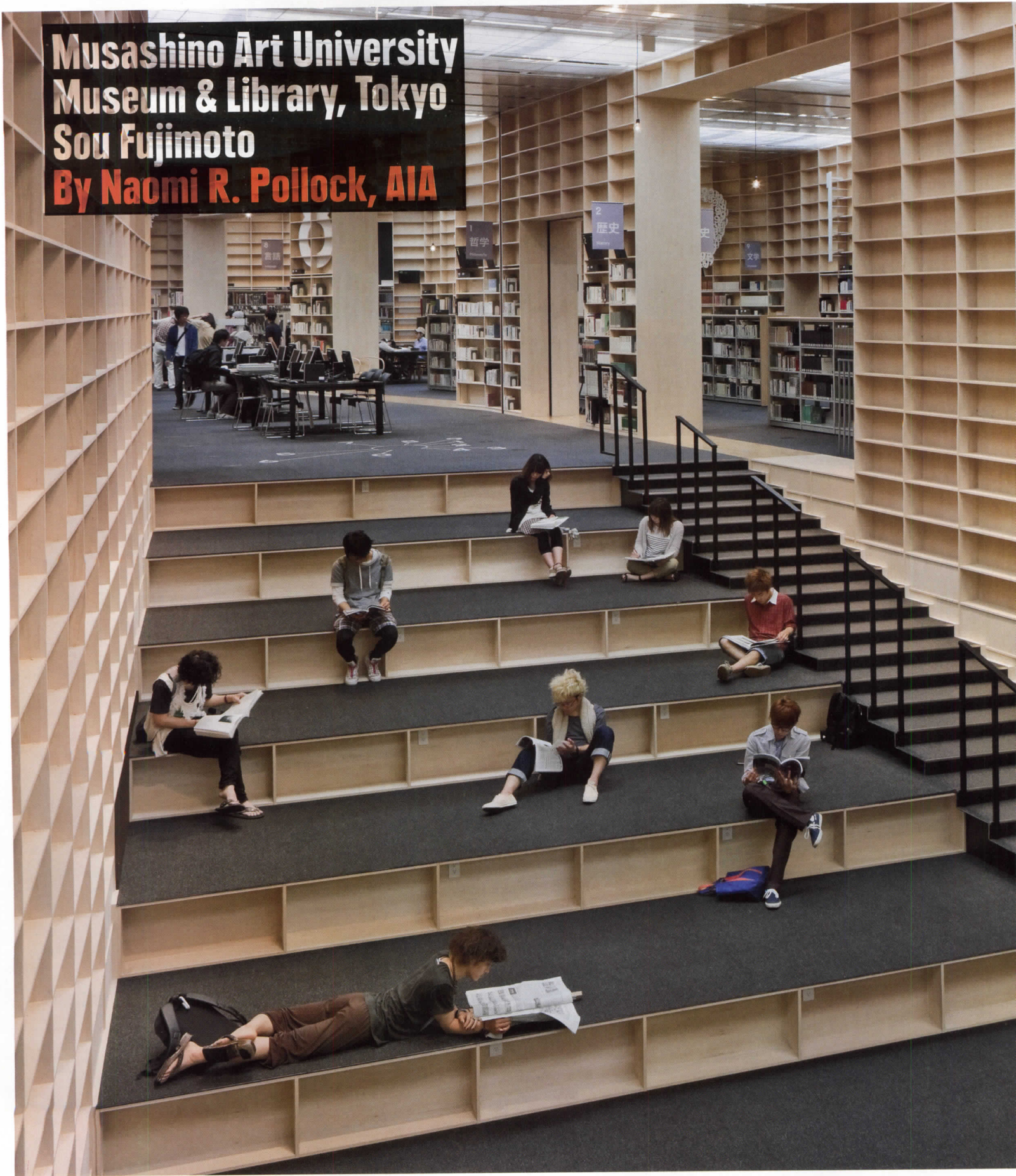
The noise level in libraries has only increased since Poole’s day, but this observation underscores a point vital to the institution’s survival. Libraries must satisfy as many different user needs as possible with a range of flexible spaces: some quiet, some active. In the past, a central aisle offered the only way to navigate through these buildings. In the future, users must be allowed to make their own paths. But rest assured, books will always be there in both paper and digital form. In a world where everything is digitized, there is knowledge to be gained from the simple, tactile act of holding a printed work. (Not to mention that computers crash, as in *Desk Set*.) The library’s future rests with its ability to be a comfortable space where people come together to tell their own stories and discover new ones. ■

James Murdock, a filmmaker and journalist, is a video producer for the New York Public Library.



1. Beinecke Rare Book and Manuscript Library, Yale University, New Haven, Connecticut, Gordon Bunshaft of Skidmore, Owings & Merrill, 1963.
2. Boston Public Library (Boylston Street), Boston, Charles Kirk Kirby, 1858.
3. Boston Public Library, Boston, McKim, Mead & White, 1895.
4. Biblioteca José Vasconcelos, Mexico City, Alberto Kalach, 2006.
5. Library, Phillips Exeter Academy, Exeter, New Hampshire, Louis Kahn, 1971.

**Musashino Art University
Museum & Library, Tokyo**
Sou Fujimoto
By Naomi R. Pollock, AIA





BUILT IN 1962, Musashino Art University's combined gallery-library is one of the school's treasured original buildings. Designed by architect Yoshinobu Ashihara, the Modernist concrete edifice occupies a prominent position amid the school's 27-acre campus, a checkerboard of solids and voids 25 miles west of central Tokyo. But even treasured architectural gems have a shelf life. And after 40-plus years, the building had become cramped and outdated.

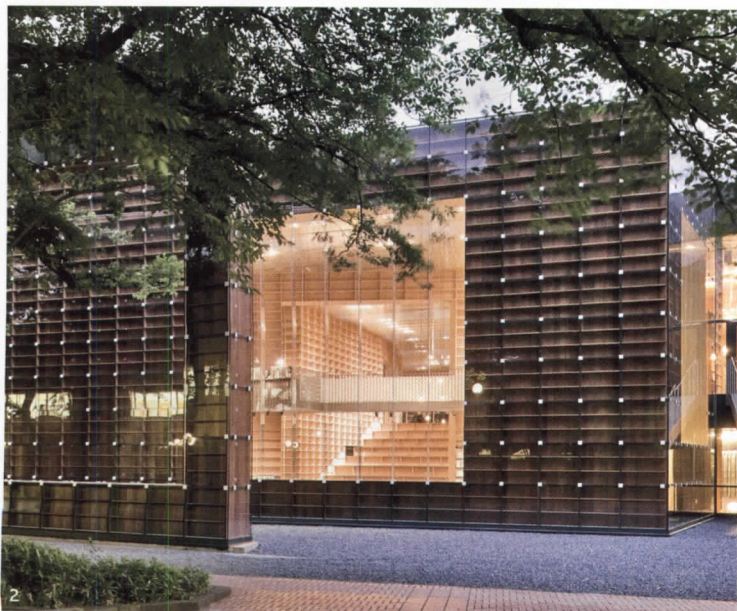
Dividing the gallery-library's program in two, the school administration decided to turn the historic building into a museum and erect a new library on the adjacent site. It then held an invited competition for the dual commission. Sou Fujimoto trumped the five other contenders and wowed the jury with a single, spiral-shaped bookshelf encased in a glass box. Evoking the atmosphere of a traditional reading room, this geometry resolved the two conflicting goals common to many libraries. While the labyrinthine paths between book-lined walls inspire the unguided exploration of the library's sizable collection, the radial organization system cutting through the shelves enables the beeline search for a specific book.

Abutting the existing building, whose renovation will finish this spring, the new, 69,000-square-foot library fills what was one of the only open plots left on the now-congested campus. Though the site is surrounded by a variety of academic buildings and the main cafeteria, it had few constraints, since many of these older structures are slated for redevelopment in the near future. The broad pedestrian thoroughfare to the north, lined with flowering cherry trees, was the logical place to enter the building and start the spiral wall.

Composed of wooden bookshelves enclosed with glass, the spiral begins as a freestanding, 28-foot-high wall that rings the building perimeter and then curls in to define concentric layers of space inside. Visible from multiple directions on the campus, this wall immediately identifies the building's function as a place of books. Students enter through a large opening in the wall into a small vestibule that serves as the three-story library's primary entrance. Nestled between the new and existing buildings, exterior stairs ascend to the second floor, where an ancillary entrance connects the two structures and leads to a covered terrace at the rear of the library.

Back at grade, the tunnel-like vestibule opens onto a dramatic, double-height periodicals section followed by a circulation desk, rare book room, catalogue gallery, and offices on the ground floor. While private study carrels line one wall, rooms for meetings, research, and exhibits separate the secured book-storage area. Upstairs, a reading room and open stacks fill almost the entire upper floor. Additional shelving and storage occupy the basement. With room for 300,000 volumes, the new facility has over twice the capacity of the old library.

Lined with towering bookshelf walls – whose empty shelves represent the library's potential as a place to use and house books for years to come – an integrated cascading stair and series of stepped shelves serve as a connection between the two main levels and provide plenty of room for students to sit or recline as they read, sketch, or catch up on text messages and e-mail.



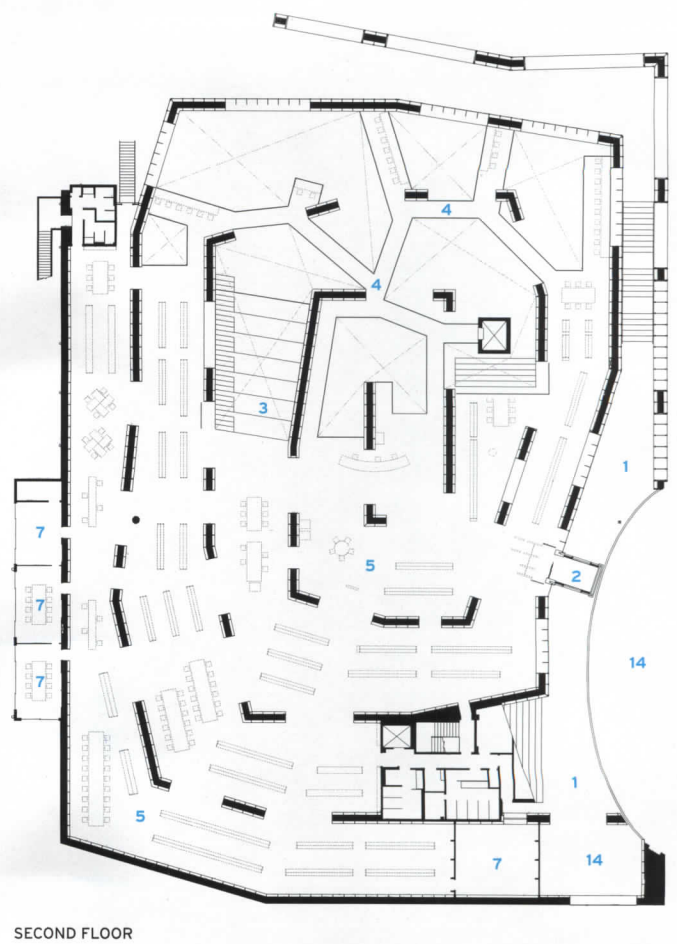
"The whole space is continuous but on two levels," says Fujimoto of the library's main floors. In the spirit of a fantastic Piranesi etching, the architect blurred the boundary between upper and lower levels with tiers of stepped shelves big enough for sitting, vast void spaces puncturing the second floor, and a web of narrow catwalks winding their way among the colossal shelves. And while a run of gentle risers graciously leads up to the reading room, elevators and enclosed staircases offer alternate routes at either end of the building.

Though the enclosed programmatic elements partially obscure the spiral downstairs, it is clearly legible upstairs, where the floor-to-

ceiling bookshelf winds repeatedly around the reference desk in the middle of the room.

Between the spiral's 16-foot-high shelves, furniture and lighting designate functional zones. Carefully positioned for easy access, low bookcases fill the layered rings of space, while communal tables, individual desks, computer-lined counters, and select designer chairs from the school's substantial collection clearly define seating and study areas.

The lighting scheme also helps orient library users as they navigate the mazelike space. Rows of task lights dot the balconies, and a cluster of pendant fixtures hovers above the reference desk. "It is like



FIRST FLOOR

SECOND FLOOR

- 1 ENTRANCE
- 2 AIRLOCK
- 3 GRAND STAIRCASE
- 4 CATWALK
- 5 STACKS/READING ROOM
- 6 PRIVATE CUBICLES
- 7 READING/STUDY ROOMS
- 8 MEETING ROOMS
- 9 PERIODICALS
- 10 CATALOGUE GALLERY
- 11 OFFICE
- 12 EXHIBITION ROOM
- 13 LOUNGE
- 14 EXISTING BUILDING

1. A glazed freestanding bookshelf wraps the perimeter of the library.
 2. At the front of the building, a soaring picture window frames a view of the stepped shelves inside.
 3. A second-level terrace connects the new library and the existing soon-to-be-museum structure. An opening in its wall provides views of the old building.





walking through a forest," explains Fujimoto. "Bright lights invite you to go here or there." During the day, sunshine boosts the installed ambient light, gently illuminating the entire room.

In addition to expansive picture windows, skylights interspersed with opaque panels stripe the roof and fill the room with muted rays. Directly beneath, a dropped ceiling made with double panels of polycarbonate honeycomb disguises the overhead ducts and beams while diffusing the daylight from above. Mirroring the shelves below, the surface of the glossy panels reflects the rows of books, making them appear to go on forever.

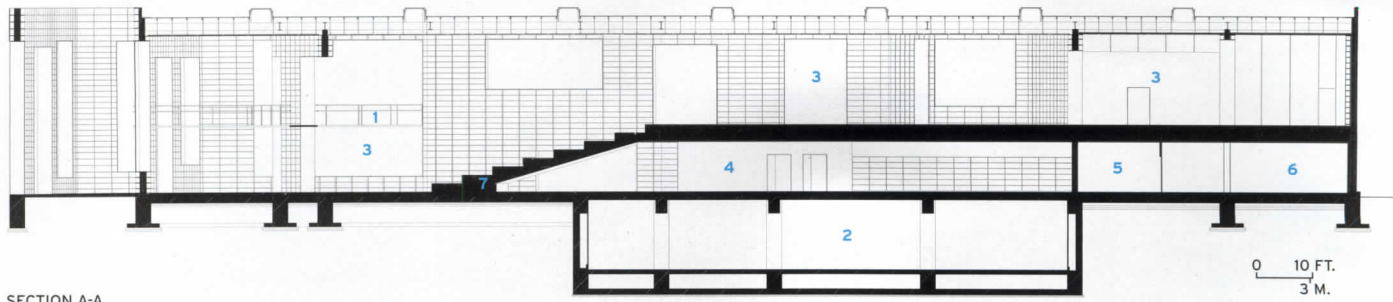
Cutting across the three-foot-thick bookshelf walls are sequences of rectangular openings of varying proportions and sizes, each one determined by multiple model studies. They alleviate the concentric geometry, framing views within views and creating a sense of depth in the space. At the same time, these breaks in the walls facilitate the library's book classification system. Physically, this system is manifest with wedge-shaped sections that radiate out from the reference desk. These sections correspond to different numbered subject categories. White, plastic supersize graphics affixed laterally to the shelves identify each section.

Made of lightly stained, laminated basswood, the double-loaded interior shelves straddle the line between architecture and furniture. Their partitions and backing boards conceal and are pinned to the library's steel structure: a rigid frame system of beams and oblong columns supporting a fire-rated substrate. "The columns are really more like small braces," explains Fujimoto. Due to the walls' quirky shape and irregularly spaced openings, the columns could not stand in grid formation. But the voluminous bookcase wall provided plenty of room for alternative positioning, and extra beams ensured stability.

At the building's exterior, the

ABOVE: An oversize picture window expands the impressive periodicals area to the tree-lined walk and campus outside.

RIGHT: Openings in the spiraling bookshelf wall create views within views and a sense of depth. Designed by graphic designer Taku Satoh, supersize white numerals affixed to the shelves identify different subject categories and help orient library users.



SECTION A-A

- 1 CATWALK
- 2 BASEMENT
- 3 OPEN-STACK LIBRARY
- 4 CATALOGUE GALLERY
- 5 MEETING ROOM
- 6 OFFICE
- 7 GRAND STAIRCASE

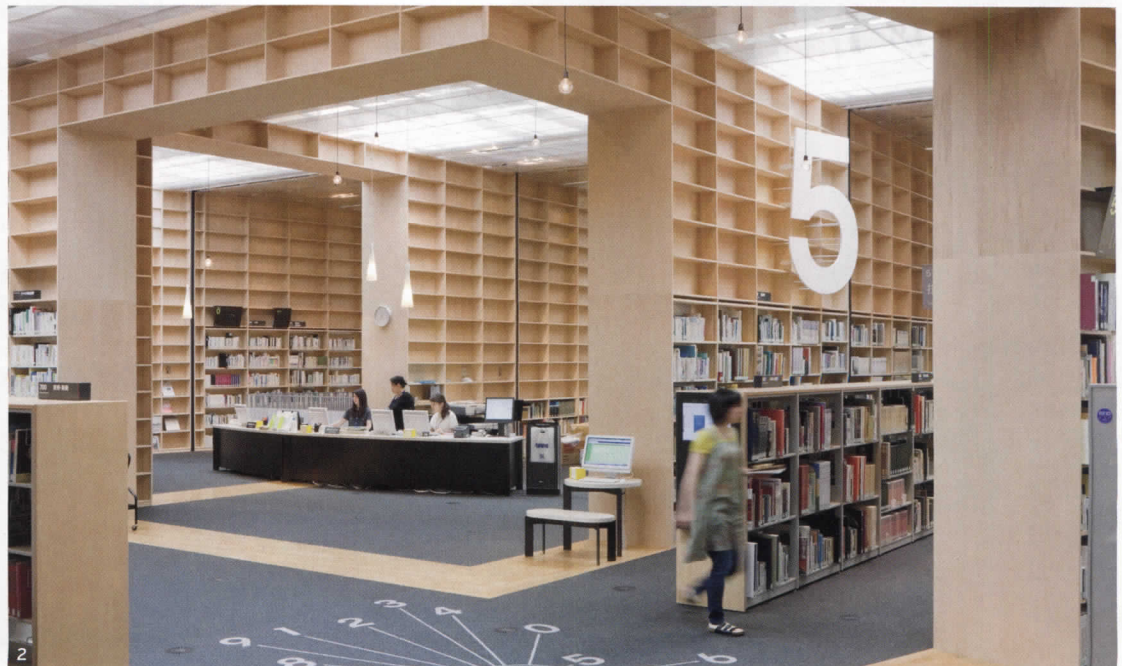




1. Low bookcases and seating areas delineate space amid the continuum of bookshelf walls. Overhead, playful hanging lamps complement the daylight that filters down from the strips of skylights.

2. Designed by Taku Satoh, a gently curved reference desk receives ample daylight beneath the expansive skylight on the second floor. A cluster of pendant fixtures above it identifies the desk from across the room.

3. At the front of the library's second level, a web of catwalks replaces the floor. Each one is lined with counter-like workstations equipped with computers and task lights.





shelves are stained dark brown and have been chemically treated for fire protection. Moreover, along with concealing the insulation, these shelves hide the steel hardware that secures the exterior glazing. Though the 3-foot-square panes appear to float in front of the wood cases, square metal fasteners affix the 0.3-inch-thick glass sheets together and anchor them to the building's structural frame.

Beyond reinvigorating Musashino Art University's aging campus, Sou Fujimoto's library champions books – an especially noble achievement at a time when the printed word is facing an uncertain future. "Anyone can read at McDonald's," says the architect. "But enjoying, concentrating, and relaxing in a library surrounded by books is a special

experience."

Yet the building is curiously longing for books. Both inside and out there is an abundance of empty shelf space. Initially Fujimoto envisioned walls of books filled up high to the ceiling. But in the end only the first seven rows are actually in use, since shelves above six feet require extra measures for earthquake protection and stepladders for access. "After completion, I found that emptiness is better," reasons the architect. "If you fill up all the shelves, it is just a bookcase. But if you leave it part empty, it is full of potential." ■

Tokyo-based Naomi R. Pollock is a special international correspondent for RECORD.

CREDITS

ARCHITECT: Sou Fujimoto Architects – Sou Fujimoto, principal in charge; Koji Aoki, Naganobu Matsumura, Shintaro Homma, Tomoko Kosami, Takahiro Hata, Yoshihiro Nakazono, Masaki Iwata, project team

ENGINEERS: Jun Sato, Masayuki Takada (structural); Kankyo Engineering – Takafumi Wada, Kazunari Ohishima, Hiroshi Takayama (m/e/p)

CONSULTANTS: Sirius Lighting Office (lighting); Eishi Katsura (media/library adviser); Taku Satoh Design Office (signage); Inoue Industries (furniture design)

GENERAL CONTRACTOR: Taisei Corporation – Tsukasa Sakata

CLIENT: Musashino Art University

SIZE: 69,095 square feet

COST: Not available

SOURCES

CURTAIN WALL: Showa Lead Fu

WOOD: Arliss

WATERPROOFING: SANTAC (elastomeric)

SKYLIGHT: Tokteck

FURNISHINGS: Inoue Industries (signage/furniture fabrication)

RAISED FLOORING: Kirii (barrierless floor system)

Sunrise Mountain Library

Peoria, Arizona

Richärd + Bauer

By Jenna M. McKnight



ABOVE: A band of 14-foot-high by 12-foot-wide concrete slabs on the north provides a counterpoint to the building's wavy roof, whose form was inspired by a nearby lake.

RIGHT: On the west, an overhang shades the library's recessed main entrance. Circular cutouts in the roof plane and concrete slabs evoke ship portholes.

IN THE POLITICAL realm, Phoenix generally toes the conservative line. Fortunately, when it comes to civic architecture, the city takes a more progressive stance. A case in point: In 1995, residents celebrated the opening of Will Bruder's colossal Burton Barr Central Library, which quickly earned icon status in the Valley of the Sun. In the following years, as Phoenix expanded at breakneck speed, prominent Southwest architects were tapped to design a string of branch libraries, many of which have appeared in ARCHITECTURAL RECORD.

The Sunrise Mountain Library, conceived by the local firm Richärd + Bauer and finished in 2009, marks yet another example of the city's willingness to embrace singular architecture. Constructed for \$7.7 million, the 22,000-square-foot building rises from a partly developed swath of land in Peoria,

a municipality in northwestern Phoenix. Surrounded by rows of bland, beige homes, the library adds some much-needed pep to a suburban neighborhood.

This is familiar territory for Richärd + Bauer. In addition to the Sunrise project, the 14-member practice has designed four other libraries on its home turf, including Desert Broom Library [RECORD, January 2006, page 96] and Arabian Library [RECORD, June 2008, page 96]. The firm, paired with Haydon Building Corp, won the Sunrise commission in February 2006. "We were rooting for them from day one," says David Hunenberg, Peoria's library manager. "Our residents had put up with a branch library in a high school for 10 years, and we thought they deserved the very best."

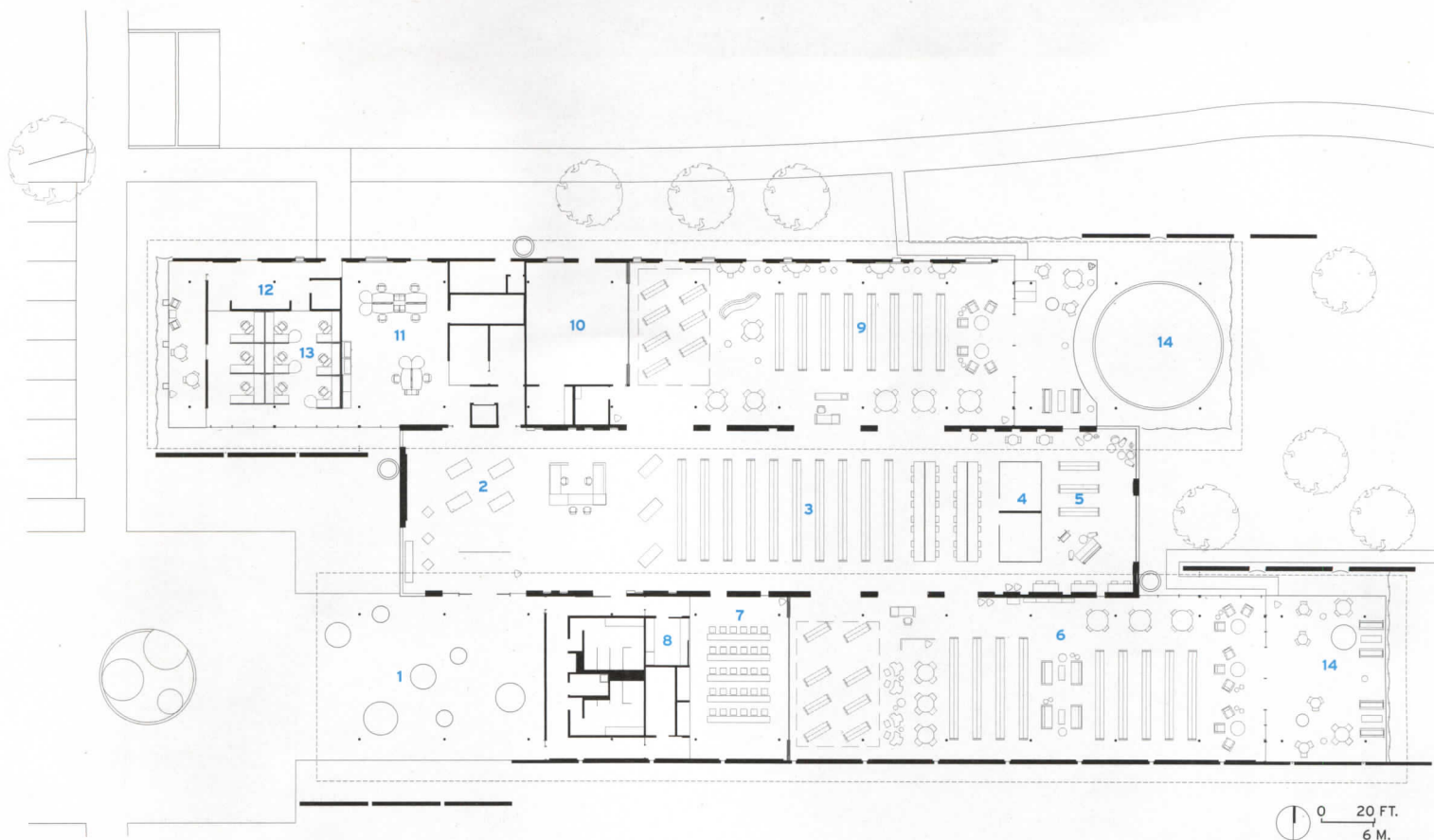
The design team was handed a blank slate: a flat, 4-acre dirt lot in a sprawling development still in the

blueprint phase. A park was planned for a site bordering the library. In terms of existing reference points, the architects didn't have much to work with. "We were faced with this denuded piece of desert," explains James Richärd, firm principal. Also, the budget was tight. "This was a design-build project," he says, "which tend to be cost-driven and very sensitive to constructability."

In the end, the firm created an economical, distinctive landmark. The low-slung building comprises three shifted bars clad in glass and concrete. On the north, self-supporting 14-by-12-foot tilt-up slabs are spaced several feet apart, permitting views. In contrast, the southern facade, which fronts a road and drainage area, features a band of tightly stitched panels. All of the slabs have an attractive rough-hewn surface – a clever manipulation of a prosaic material.



PHOTOGRAPH BY © STEVE HILMERT



- 1 ENTRY COURTYARD
- 2 LOBBY
- 3 NEW BOOKS
- 4 QUIET ROOM
- 5 TEEN AREA
- 6 ADULT AREA
- 7 MULTIPURPOSE ROOM
- 8 KITCHEN
- 9 CHILDREN'S AREA
- 10 STORYTIME ROOM
- 11 BOOK PROCESSING
- 12 STAFF LOUNGE
- 13 OFFICES
- 14 COURTYARD

CREDITS

ARCHITECT: Richärd + Bauer – James Richärd, design architect; Kelly Bauer, project manager and interior design; Stephen Kennedy, principal project architect; Will Craig, construction administration; Andy Timberg, Ben Perrone, project architects

ENGINEERS: PK Kland (civil); Schneider (structural); OMB (electrical); Kunka (m/p)

CONSULTANTS: Haydon Building Corp (general contractor); C.F. Shuler (landscape)

CLIENT: City of Peoria

SIZE: 22,000 square feet

COST: \$7.7 million

COMPLETION DATE: January 2009

SOURCES

GLASS CURTAIN WALL: Arcadia

CONCRETE: Riggs Contracting (tilt panels); Trenwyth Mesastone (masonry)

GLAZING: 3form

FURNISHINGS: Steelcase, Herman Miller, Nienkämper, Wausau, Geiger, Hickory Business Furniture, Landscape Forms

STACKS: Estey

CARPET: Shaw

SUSPENSION GRID: Armstrong



ABOVE: The southern facade, which overlooks a road and drainage retention area, features a band of textured concrete slabs. A large clerestory brings daylight into the facility.

LEFT: Covered, Wi-Fi-enabled courtyards on the east side of the building offer visitors a pleasant area to chat, read, and surf the web. In the summer, misters cool the outdoor space.

The library's most striking feature is its undulating roof, which extends slightly beyond the exterior walls. The roof actually consists of three parts. Two rolling planes, supported by steel columns, float above the outer bars. A flat roof, held up by concrete masonry walls, covers the central bar and accommodates mechanical equipment.

The roof's wavy form was inspired by Lake Pleasant, a popular nearby attraction. This aquatic theme is evident in other parts of the building. Evoking boat port-holes, circular cutouts are found in roof overhangs and concrete slabs. The designers also used blue-tinted glass throughout. Richärd notes that the library's cool color palette – charcoal, azure, sage – is a departure for his firm. "It's very different from our traditional Southwestern response," he says.

The building's layout is relatively straightforward. A recessed main entrance leads into the central volume, where visitors find just-released books, computers, and, at the rear, a teen zone. The south bar houses the adult area and multipurpose room, while the children's zone and administrative functions occupy the north volume. Shaded, Wi-Fi-enabled courtyards provide pleasant areas for retreat.

The facility has a hip vibe, due in large part to funky lounge chairs and bold artwork. It also boasts a number of green features, and its LEED Silver certification is pending.

Hunenberg says the library's new home is a hit with residents. Circulation is up 108 percent, and thousands of additional patrons are streaming in each month. "I've not heard one negative comment, not even from people who don't like contemporary architecture," he adds. The sole downer: The recession has stalled development in the area, and it's unclear when the planned park will be built. For now, the library overlooks a depressing vacant lot.

Despite the lackluster view, Sunrise Mountain Library is an exuberant landmark that serves a vital public function in a budding community. Richärd + Bauer has succeeded in creating another civic gem for the expansive Valley of the Sun. ■

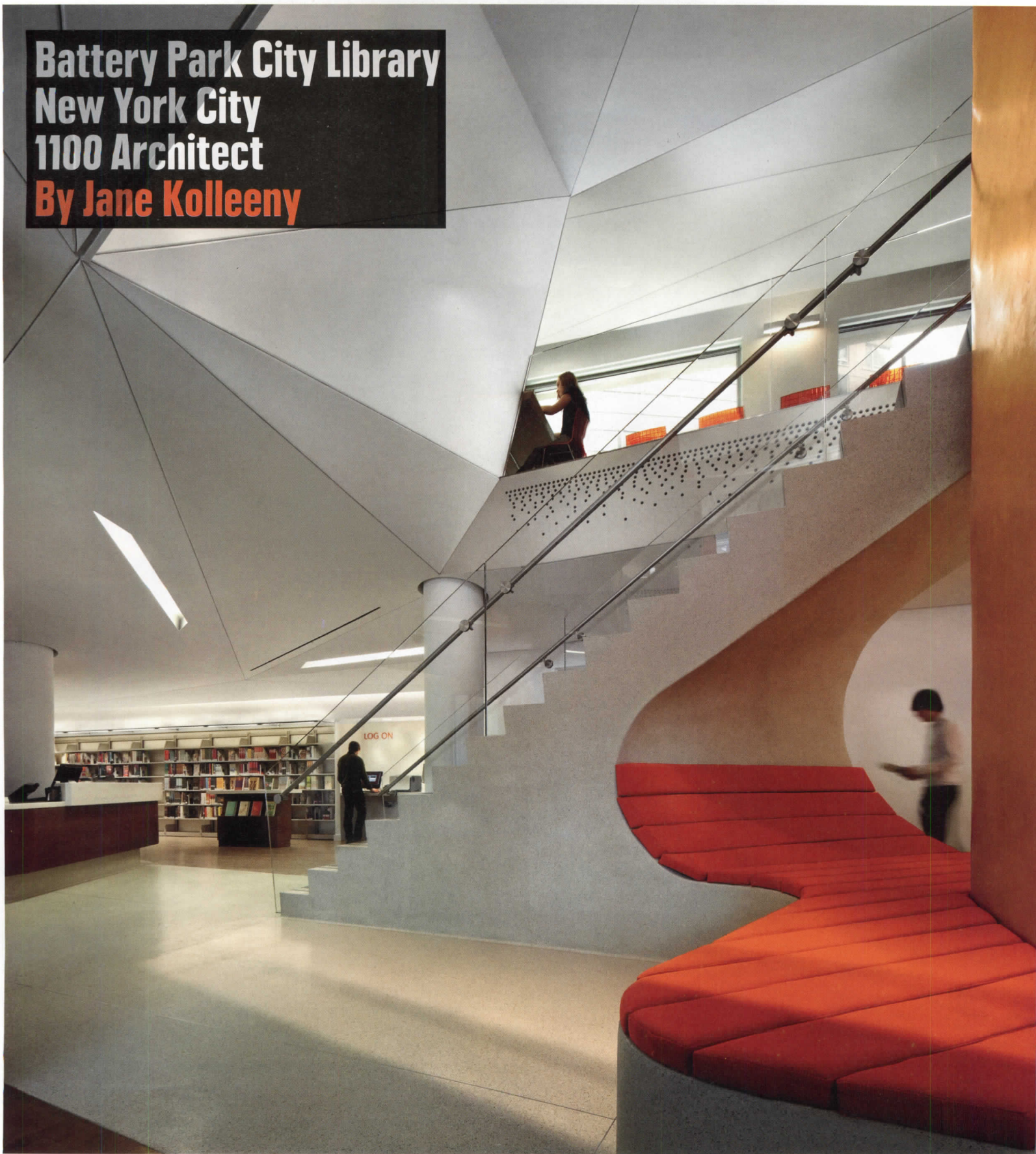




3

1. The library's central "bar" contains a reception desk, computers, and a teen area. A dropped metal ceiling not only conceals mechanical equipment, but also accentuates the high ceilings (16 to 18 feet) in the neighboring two volumes.
2. In the children's zone, oculi of varying sizes frame outdoor views and add a whimsical touch to the space. The library's cool color palette is evident in the sage-colored wall panels and blue-tinted glass.
3. The adult zone, like other areas, features modish lounge chairs and bookshelves on rollers. A concrete block wall provides structural support.

Battery Park City Library
New York City
1100 Architect
By Jane Kolleeny



ABOUT 40 YEARS ago, bedrock and dirt were excavated to build the World Trade Center in Lower Manhattan. That soil established the foundation for a 92-acre swath of land where the mixed-use neighborhood of Battery Park City was built. Landfill reuse is a fitting beginning for a planned community that today has become one of the greenest in America, due to stringent environmental guidelines developed in 1999 and implemented by the Battery Park City Authority (BPCA). It is appropriate that the most eco-friendly branch of the 89 public libraries of the New York system would be built here. While the residents in this surprisingly leafy neighborhood have their share of parks, offices, restaurants, and water views, they sorely needed a library.

Designed by 1100 Architect and completed in 2010, the Battery Park City Library occupies the bottom two floors of the northeast corner of a 32-story residential tower called Riverhouse, completed the same year by Polshek Partnership (recently renamed Ennead Architects). In addition to the library, two other nonprofits – Poets House and Mercy Corps – occupy portions of the ground floor of the horseshoe-shaped building. As part of an “amenity program,” the BPCA leases space to nonprofits for \$1 a year, a bargain by any measure. Still, the nonprofits have to raise money for construction. “Commitments by councilmen and City Hall, and a substantial donation from Goldman Sachs, were the tipping points that allowed the library to move forward,” says Juergen Riehm, who, along with David Piscuskas, is a partner at the 37-person, 28-year-old 1100 Architect.

Fortunately, the design of Riverhouse was still underway when the library project began. “We were able to convince the developer to modify the facade design to have the library’s frontage wrap around the corner as a



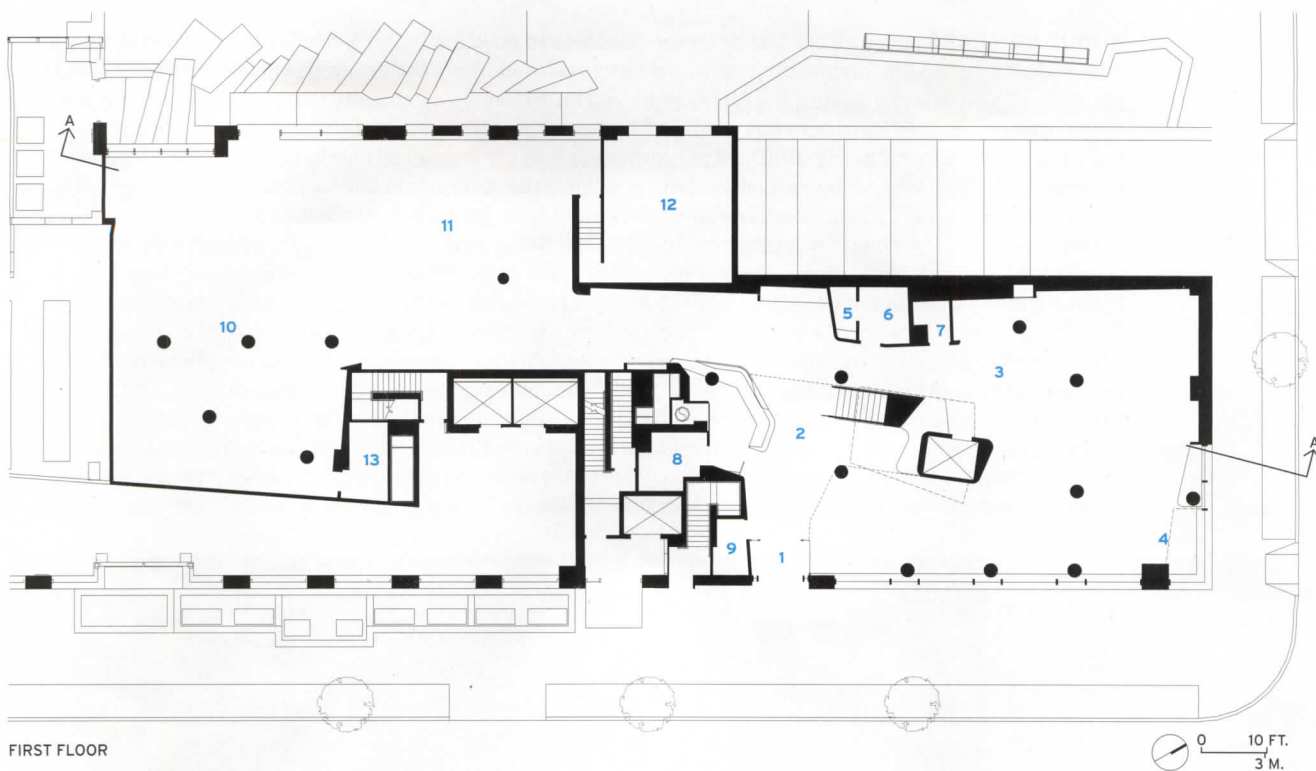
OPPOSITE: The entry sequence is characterized by a geometric vaulted space. Here the architect combined functionality with design by using the vacant underbelly of the stair as an undulating seating area and rendering the air returns (visible on the wall above the stair) as a pixelated decorative pattern.

ABOVE: From the outside, the double-height glazed elevation presents an invitation to passersby, drawing them into the space.

double-height glass element, making it really visible and maximizing light coming in and views going out,” says Riehm. This vaulted space became the defining feature of the 10,500-square-foot library, soaring above the street corner to establish a distinctive and inviting presence.

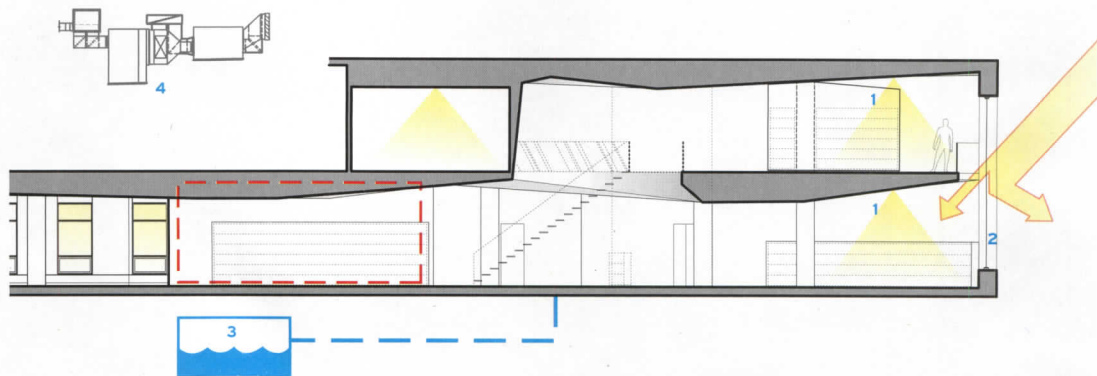
Once inside, visitors discover how the library wraps around an outdoor courtyard, an extension of Michael Van Valkenburgh’s Teardrop Park, which opened a few years before. Windows that overlook the landscape create a link to the outdoors, while the curved plan establishes two main areas on the library’s first floor. The area to the left of the entry accommodates the adult and young adult collections, multimedia, and computer stations, tucked behind a welcoming information and checkout area. To the right, the children’s section occupies the brightly lit double-height street frontage.

A dramatic winding stair serves as a modern sculptural element in the main library space and connects the ground floor to the mezzanine level, where the architects located an event space and reading rooms. Under the sweeping belly of the stair, an intimate seating area covered in orange fabric defines the edge of the children’s library and introduces a touch of color that is picked up in other spaces. Color and navigational



FIRST FLOOR

- 1 ENTRY
- 2 LOBBY
- 3 CHILDREN'S READING ROOM
- 4 TODDLERS' READING ROOM
- 5 JANITOR CLOSET
- 6 ADA RESTROOM
- 7 RECYCLING
- 8 WORKROOM
- 9 BOOK DROP
- 10 ADULT READING ROOM
- 11 YOUNG ADULT READING ROOM
- 12 MECHANICAL
- 13 IT



SUSTAINABLE ATTRIBUTES

- 1 LIGHTING OCCUPANCY SENSORS/DAYLIGHTING CONTROLS
- 2 HIGH-PERFORMANCE INSULATED GLAZING WITH GLARE REDUCTION
- 3 GRAYWATER SYSTEM, LOW-FLOW FIXTURES
- 4 FRESH-AIR VENTILATION MONITORS

CREDITS

ARCHITECT: 1100 Architect – Juergen Riehm, FAIA, principal in charge; Phil Schmerbeck, project manager; Tim Furzer, project manager; Stefan Gzyl, designer

ENGINEERS: Robert Silman Associates (structural); Buro Happold Consulting Engineers (m/e/p)

CONSULTANTS: Atelier Ten (LEED consultant and lighting)

CLIENT: The New York Public Library

SIZE: 10,500 square feet

COST: \$4.4 million

COMPLETION DATE: June 2010

SOURCES

GLAZING: Guardrail – Empire Architectural Metal and Glass

HARDWARE: Best, Sugatsune, Alkco, Bommer, Rakks, Stanley, Häfele, Delt-Rex

LIGHTING: Translite Sonoma, RSA Lighting, Edison Price, Alkco, Fail-Safe, Neo-Ray, IO Lighting, Delray, Paramount, inter-lux, AtLite, Elements West

LIGHTING CONTROLS: Lutron

PLUMBING: Kohler, Sloan, Duravit, Toto

ELEVATOR: ThyssenKrupp

PAINTS: Benjamin Moore

CERAMIC TILE: Daltile

Additional Sustainable Project Attributes

- 91 percent certified sustainable wood
- 90 percent Energy Star equipment
- 28 percent recycled content in all materials
- 83 percent of construction waste diverted
- 39 percent of materials manufactured in the region
- 23 percent of materials extracted regionally
- 98 percent of regularly occupied spaces have daylighting
- Green-certified power source
- Green housekeeping
- Low-VOC finishes
- Green education

cues establish easy-to-follow circulation patterns for people visiting the library for the first time. "The architecture intuitively suggests wayfinding systems through visual connections," says Riehm.

Since the apartments above the library required space for plumbing lines, 1100 Architect devised an irregularly vaulted ceiling over the two wings of the library that radiate out from the central core like an asymmetrical umbrella. "To accentuate this dynamic we designed a ceiling with a topography that becomes a unifying element throughout the space," explains Riehm. "We inserted off-the-shelf fluorescent fixtures into 'slash cuts' in the triangulated ceiling, turning a design element into a functional one."

Today's libraries cannot simply contain stacks and reading rooms. They must also address the vastly different ways people receive and view information. The Battery Park City Library provides automated checkout, Wi-Fi, computer workstations, an area fit out for multimedia presentations, and a digital dashboard that monitors and displays the facility's real-time energy performance. The architects employed a number of sustainable design elements including energy-efficient lighting, low- and non-VOC finishes, dual-flush toilets, waterless urinals, and numerous recycled materials. They also specified floors made from gray-stained reclaimed fir end-grain discarded from window manufacturers and carpet made from recycled tires. When Riverhouse completes the paperwork, both the library and building will be on track to receive LEED Gold certification.

An area of contrasts, Lower Manhattan serves as home to numerous financial institutions, a mixed-use residential community, and a place where tourists come to pay respects to Ground Zero, the former site of the World Trade Center. This indelible reminder of the fragility of buildings – and the people who occupy them – is an apt juxtaposition to the optimism and resilience evident in Battery Park City's new community library. ■

1. Multiple computer workstations in the adult and young adult area of the library provide Internet access for users.

2. The fanciful children's and toddlers' space occupies the most visible area of the library where abundant daylight enters in and views are available to the street. Bright orange furnishings carry out the color scheme introduced at the entry in the intimate lounging bench tucked under the stair.



Westmeath County Library
Mullingar, Ireland
Bucholz McEvoy Architects
By Raymund Ryan



To reach the library, visitors walk past a set of early-20th-century buildings and remnants of a 19th-century prison, then cross an exposed concrete bridge to a second-floor entrance.





THE WESTMEATH COUNTY

Buildings and Library, in the town of Mullingar, express the ambitious political and social agenda that held sway in Ireland in the first decade of the 21st century, before the country's economic bubble collapsed. In those years, fueled by a rapidly growing economy and a belief in governmental decentralization, Ireland built a series of new administrative and cultural centers across the nation's 26 counties with the goal of making state facilities more accessible and visible to the public.

Bucholz McEvoy Architects, a Dublin-based firm led by American Merritt Bucholz and Dubliner Karen

McEvoy, has designed three of these complexes – in Fingal/North County Dublin [RECORD, August 2001, page 98], County Limerick [RECORD, March 2007, page 140], and now Westmeath, which opened in June 2009.

At Mullingar, Bucholz McEvoy had to incorporate some not particularly significant 19th- and 20th-century buildings into a plan that would include a new boomerang-shaped office block and a 25,000-square-foot public library extending out from a central atrium “like a pulled-out drawer,” the architects say. By placing the library at a strategic junction in the 100,000-square-foot

complex, the architects used it as a pivot in a collage of old and new elements. The library fans out laterally, away from the atrium and its views of the old buildings, and looks out through generous floor-to-ceiling glazing to a small public park to the east, with trees and a stream. “The library had to address the park,” says Bucholz.

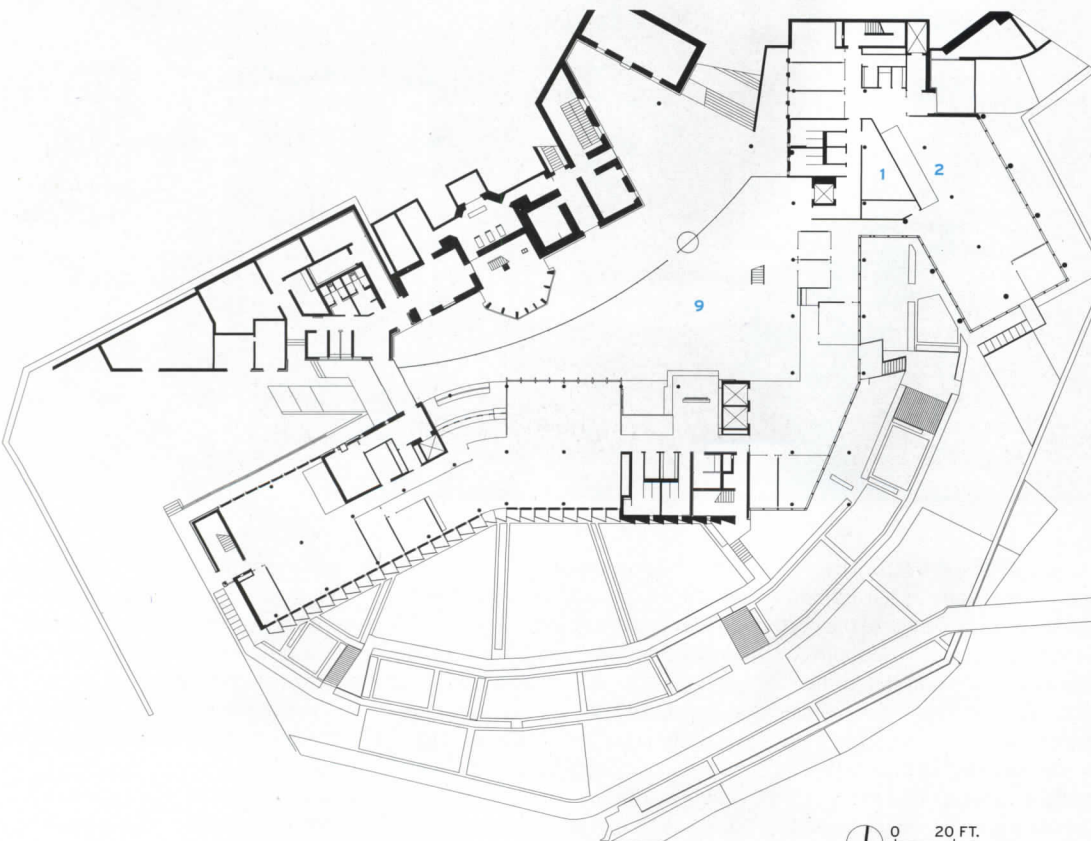
The site drops from north to south, taking visitors from the stone-faced county building, constructed before Ireland won independence in 1921, down between surviving fragments – described frankly by McEvoy as “unloved” – of a prison built by British authorities in the early 19th

A glass-fronted atrium serves as a hub for the complex of buildings and provides access to various government agencies. Library visitors climb the internal stair to the second floor.



- 1 BOOKSTORE
- 2 GOVERNMENT OFFICES
- 3 RECEPTION
- 4 MULTIPURPOSE
- 5 CHILDREN
- 6 ADULT
- 7 MULTIMEDIA
- 8 REFERENCE
- 9 ATRIUM

SECOND FLOOR



CREDITS

ARCHITECT: Bucholz McEvoy Architects – Merritt Bucholz, Karen McEvoy, partners in charge; Ronan Burke, project architect; Rebecca Egan, project architect for fit-out; Connor Galligan, Kieran Fitzgerald, Ralf Kampe, Katja Potzern, Julie Fisher, Gabrielle Brainard, Eoin Flood, project team

ENGINEERS: Transsolar (environmental); Project Management Group (m/e); RFR (atrium structure and facade); WYG Engineering (structural)

CONSULTANTS: Pritchard Themis (lighting)

CLIENT: Westmeath County Council

SIZE: 100,000 square feet (complex); 25,000 square feet (library)

COST: \$43 million

COMPLETION DATE: July 2009

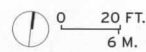
SOURCES

STEEL STRUCTURE: Roschmann

STRUCTURAL TIMBER: Wiehag

CURTAIN WALL: PolConstruct

EXTERNAL FABRIC BLINDS: Taurus Littrow International



GROUND FLOOR



century. This descent across the property serves also as a transition between the town center to the north and the countryside to the south. To the west lies an undistinguished zone allocated to future commercial development.

A wavelike roof sits above the complex's curving glass entry facade and is held in place by an external web of thin laminated-

wood beams. Inside, narrow trays of offices open onto the sun-filled atrium and are equipped with simple linen shutters to control the daylight. The offices also look south through a double-glass membrane, its outer layer serrated in plan to provide acoustic protection from a nearby railway. The architects emphasize that this wall assembly is not a vertical void working as a

chimney for air, but is instead made of contiguous horizontal compartments. Some portions of the south elevation are protected by a checkerboard of vertical metal panels and metal mesh.

Because of the site's change in grade from north to south, the architects were able to exploit sectional opportunities. Characterizing the library as a "floating volume"



within the larger group of functions, Bucholz and McEvoy made it accessible at several points in both plan and section. From the town center, visitors approach the library from the old county building (now refurbished to accommodate a council chamber) and cross a concrete footbridge (spanning a broad flight of steps that leads below to the project's main, curving



facade). High above this complex landscape, another bridging element, a truss enclosed in glass, connects the county building to a suite of senior managerial offices above the library.

Visitors either enter the library from the concrete footbridge on the second level or go to the ground-floor atrium, where they can engage county agencies dealing with housing, planning, and motor vehicle issues, then climb a ribbonlike internal staircase to the library entrance on the second floor. Inside, meeting rooms hug the atrium side, while on the other side a double-height reading room rises to clerestory windows. A staff canteen above provides access to a roof terrace where people can look down into the library through the clerestories.

As they do in all their projects, Bucholz and McEvoy took a straightforward approach to materials here, exposing concrete ceilings and protecting outer facades with vertical timber baffles. Light fittings hang simply from the ceiling. The information desk, or command control, adds a cheeky splash of

color, with green and yellow enamel panels facing the landscape and red and pink ones facing the books, McEvoy says.

The architects have earned a reputation for designing environmentally responsive buildings in collaboration with talented consultants. At Westmeath, they worked with Paris-based RFR on the complex's curving glass facade and with Stuttgart, Germany-based Transsolar on making the building entirely naturally ventilated.

Favored by senior citizens in the morning and kids in the afternoon, the Westmeath library acts as an informal hub for social interaction. As Bucholz explains, the architects used the library as the centerpiece of the county complex to "foreground its role in civic life." ■

Raymund Ryan is curator of the Heinz Architectural Center at the Carnegie Museum of Art in Pittsburgh, where his recent exhibitions include Design Competition: New Cottages at Fallingwater and Gritty Brits: New London Architecture.

ABOVE: Enamel panels set flush in the library's reception counter provide colorful accents to the interior.

LEFT: Sunlight fills a double-height reading room thanks to glass walls and clerestory windows. The architects worked with engineers at Transsolar so the entire complex could be naturally ventilated.

Ingleside Branch Library San Francisco Fougeron Architecture By Joann Gonchar, AIA



1. Ingleside Library is composed of several discrete but attached volumes that enclose various programmatic elements. A children's room with an egg-shaped plan anchors the building's corner.

2. The main reading room has a set of windowed nooks looking out onto a courtyard and a series of daylight monitors that incorporate cross-shaped lighting fixtures.

3. The carrel-like nooks extend into the courtyard, where they provide seating for patrons.

AS A TAGLINE, "building better libraries for stronger communities" might be a little trite, but it does sum up San Francisco's ambitions for its branch-improvement program – an ongoing building campaign funded in part by a \$105.9 million bond passed by city voters in 2000. The 24 renovated or newly constructed branch libraries that will ultimately result from this program strive to be more than just places to borrow the latest *New York Times* best seller or surf the Internet. They are intended to serve as community hubs, offering events as diverse as cooking demonstrations, English classes for recent immigrants, or computer instruction.

These aspirations were very much on the minds of the architects responsible for a branch on a corner lot on Ocean Avenue, the Ingleside neighborhood's main

commercial strip. Even though the \$3.5 million building, which opened in September 2009, was to be only one story tall and just over 6,000 square feet, "we wanted to give it a civic presence," says Anne Fougeron, principal of the eponymous firm that designed the library along with Group 4 Architecture.

To distinguish the library from the surrounding jumble of one- and two-story structures that include everything from residential buildings to fast-food restaurants to auto repair shops, designers enclosed the various programmatic elements in discrete, but attached, mostly wood-framed volumes clad in stucco and tile. The 22-foot-tall children's reading room, egg-shaped in plan, anchors the southwest corner. Two shorter, boxlike wings extend from the taller volume at right angles. One houses

administrative functions and the main reading room, while the other contains a teen area and a room for special events. The roof capping the egg stretches out on steel pipe columns to shelter the main entry and seemingly hovers several feet above the Ocean Avenue-facing wing's actual weatherproof enclosure. The idea was to endow the building with a "grandeur scale" that belies its true size, explains Fougeron.

Judging from the photos, the strategy works well in strong sunlight, when the building's various surfaces are rendered by shade and shadow, making the edges of the secondary roof and of other projecting facade elements pop. But on a gray day (like the one when this reporter visited) the elevations appear flat, despite the building's sculptural qualities. In the



CREDITS

ARCHITECT: Fougeron Architecture – Anne Fougeron, partner in charge; Todd Aranz, project manager

ASSOCIATE ARCHITECT: Group 4 Architecture Research + Planning

CONSULTANTS: G.M. Lim & Associates (m/e/p); Ingraham DeJesse Associates (structural); Pola Design + Engineering (electrical); Telamon Engineering (civil); Patricia O'Brien Landscape Architecture (landscape); Smith, Fause & McDonald (technology)

CLIENT: San Francisco Public Library

SIZE: 6,100 square feet

COST: \$3.5 million

COMPLETION DATE: September 2009

SOURCES

EXTERIOR TILE: Casa Dolce Casa

METAL/GLASS CURTAIN WALL: Kawneer

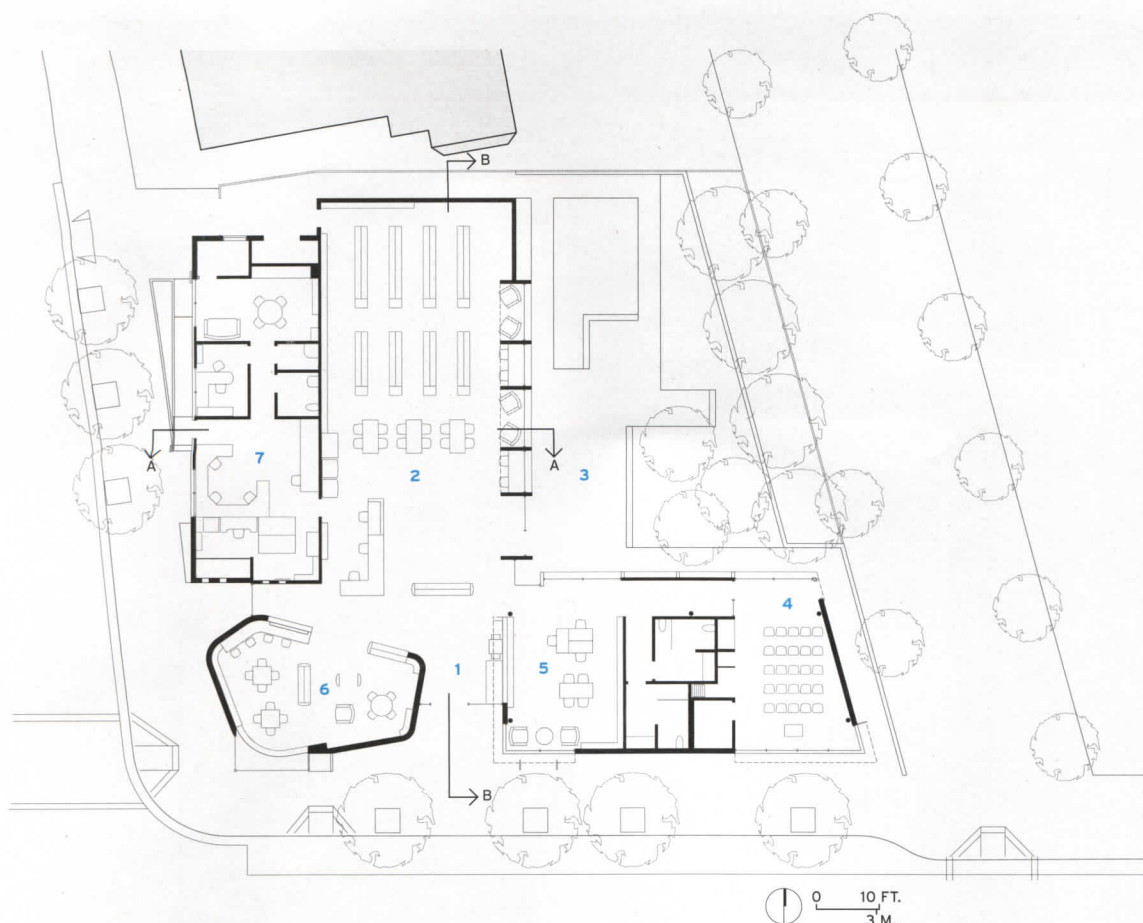
SKYLIGHTS: Acralight

ACOUSTICAL CEILINGS: Fireline, Rulon

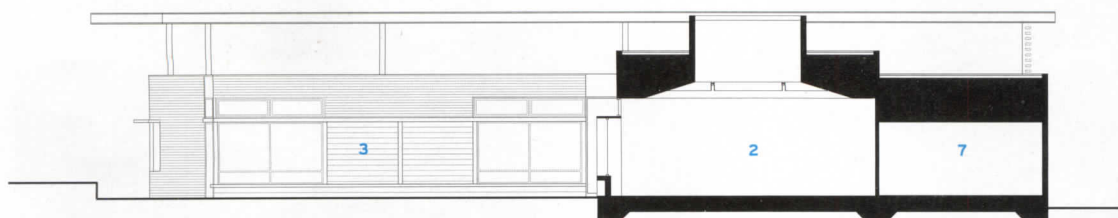
RESILIENT FLOORING: Forbo

AMBIENT LIGHTING: Metalux, Neo-Ray

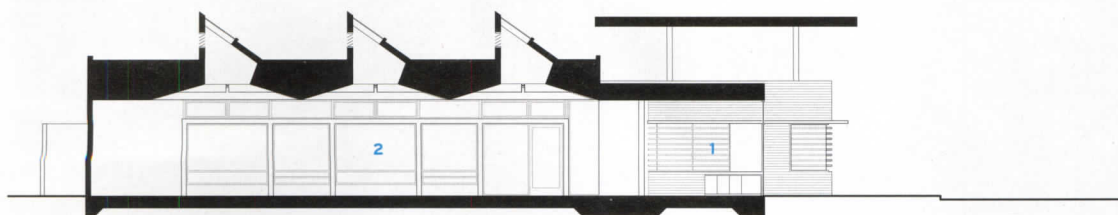




- 1 MAIN ENTRANCE
- 2 READING ROOM
- 3 COURTYARD
- 4 PROGRAM ROOM
- 5 TEEN ROOM
- 6 CHILDREN'S ROOM
- 7 STAFF AREA



SECTION A-A



SECTION B-B

0 10 FT.
3 M.

absence of shadow, some pieces, like metal grillwork surrounding the top of the egg, seem superfluous.

If the exterior is a bit disappointing (except under certain atmospheric conditions), the interiors are uncluttered and cleanly modern, with tightly coordinated components. The operable skylights over the main reading room offer one example of this integration. They are a key part of the building's natural ventilation system and they allow daylight to provide the primary source of illumination. But for those times when daylight is not sufficient, designers devised cross-shaped luminaires that they incorporated into the ceiling openings, eliminating the need for potentially visually obtrusive pendant fixtures.

Finishes are basic, with a material palette dominated by gray linoleum and white-painted drywall. Even the children's reading room, except for apple-green seating built into a bay window, has few instances of bold color. Instead, the architects have created interest with the curved walls and an amoeba-shaped light diffuser suspended below an oculus in the ceiling — elements that Fougerson refers to as "little moments to spark a child's imagination."

In the reading room, a set of mahogany-veneer, windowed nooks that face a small outdoor courtyard provide visual warmth. Because the nooks penetrate the exterior wall like a giant piece of indoor-outdoor furniture, they afford a transition between the interior and the court — a space intended both for solitary reading and community events.

On the chilly July afternoon when *RECORD* was at Ingleside, the courtyard was empty, but almost every seat inside was taken. This popularity might be due to the free Internet access, but it seems just as likely that patrons are drawn to the library's modest but thoughtful interior environment. ■

An amoeba-shaped light diffuser dominates the ceiling of the children's reading room.



Anacostia Library
Washington, D.C.
The Freelon Group
By Suzanne Stephens



On the main entrance plaza, the Freelon Group gave the District of Columbia's Anacostia Library a 17-foot-high glass curtain wall shielded by a perforated metal canopy; its function is highly legible while glare inside is mitigated. The light tower, wrapped in frosted laminated glass, acts as a beacon at night.



IN RECENT YEARS, the District of Columbia Public Library (DCPL) has embarked on a program of building architecturally noteworthy facilities in a variety of Washington neighborhoods. The twofold mission clearly emphasizes the value of books and reading while fostering a sense of community cohesion. Of these districts, Anacostia, once plagued by drugs, crime, and poverty, is particularly ripe for such an ambitious effort.

In selecting the Freelon Group of Durham, North Carolina, in association with R. McGhee & Associates, to design the District of Columbia New Anacostia Neighborhood Library, the client made it clear it wanted an iconic building that would engage the community around it. DCPL didn't know it at the time (2007), but it selected the architect who would soon be involved in designing another, even more visible, icon: the National Museum of African American History and Culture, where Freelon is working with a team of architects led by David Adjaye and including Davis Brody Bond Aedas and the Smith Group. Interestingly, Adjaye and Davis Brody Bond Aedas are also designing libraries for Washington, and Freelon has just finished the Tenley Friendship Neighborhood Library.

Since the \$10.3 million Anacostia library straddles an area that gradually shifts from commercial to residential buildings in the city's southeast section, Freelon decided to beef up the scale at the entrance with a bright green, perforated bent-metal canopy and a 37-foot-high light tower clad in frosted laminated glass. As visitors arrive at the expansive entrance plaza on Good Hope Road, they readily see the various activities of the library's main floor through the 17-foot-high glazed window wall. The idea was to create a library "with both high visibility and transparency of function," says Jeff Bonvechio, director of 21st Century Capital Projects for DCPL.

Because the grade drops 12 feet toward the back of the one-acre site, Freelon broke up the library's massing with pavilion-like protrusions. At the rear of the building, a lower-level entrance, dramatically framed by a portal of ground-faced gray concrete masonry and silvery metal panels, gives direct access to a 100-person community meeting room.

In building this 22,000-square-foot library, Freelon had to take into account certain factors. One was the presence of large, old oak trees on the edge of the property. In addition, a temporary library operated on the site during construction, which was to be torn down when the new building was finished. In its place a bioretention basin and a swale now filter storm water before it goes on its way to the Anacostia River.

In organizing the circulation in the library's efficient plan, Freelon and his team placed a long axial path along the east side of the structure; visitors follow this main street past the circulation desk and conference rooms on one side, with stacks, reading areas, and computer desks extending through the open area to the west. "We let the stacks define the space," says Freelon, whose arrangement of low metal shelves provides an easy sense of orientation to the users.

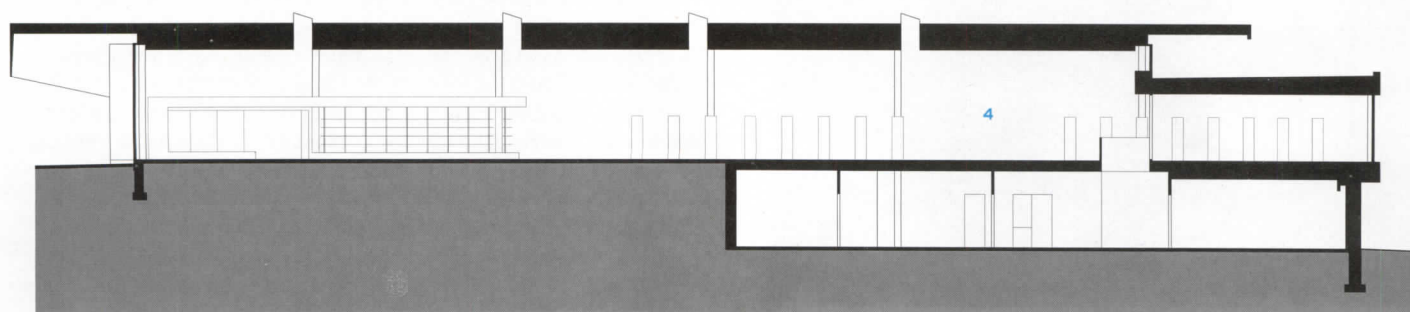
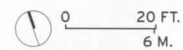
The bare-bones structure includes exposed steel columns and ceilings. Raised access floors, 14 inches thick, accommodate the power cables needed for computers plus heating and air-conditioning elements. As Freelon points out, distributing hot and cold air through the floor is more energy-efficient in terms of reaching the occupants than blasting air from above.



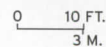
LOWER FLOOR



UPPER FLOOR



SECTION A-A



- 1 VESTIBULE
- 2 OFFICES
- 3 CHILDREN'S AREA
- 4 LIBRARY/STUDY
- 5 SPECIAL PROGRAM
- 6 SEMINAR CLASSROOM
- 7 COMMUNITY ROOM
- 8 LOUNGE
- 9 ENTRANCE TO COMMUNITY AREA

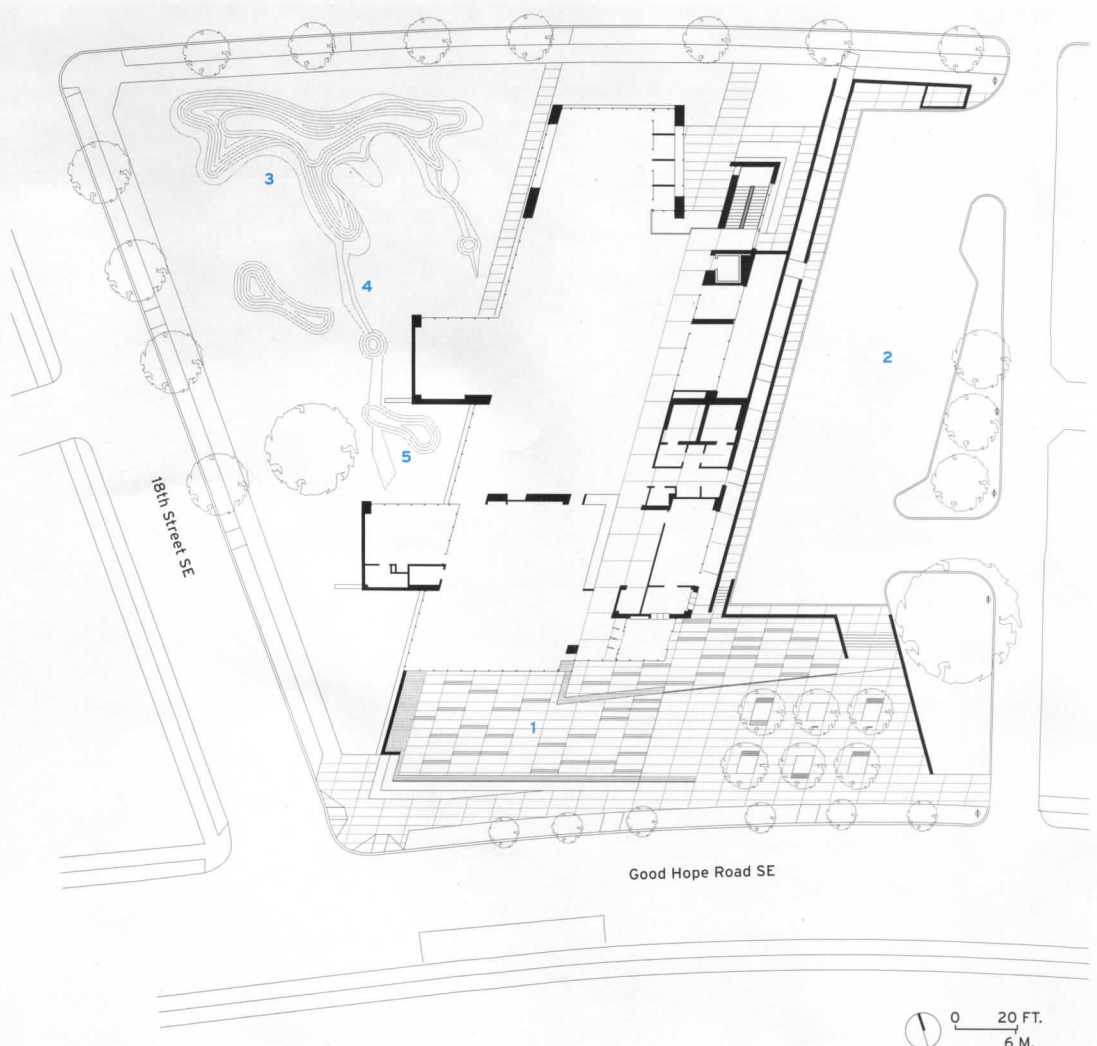
1. At the rear of the library a vertical portal offers neighborhood residents an entrance to community meeting spaces on the lower level.

2. On the northwest corner, a bioretention basin and swale help filter runoff water before it is diverted to the Anacostia River nearby.



The linear skylights overhead and the exposed metal-deck ceiling help expand the sense of height in the one-story space. Admitting so much daylight to the reading room and ancillary areas through the skylights and the windows (shielded by the *perforated screens* and canopies) helps reduce the building's electricity needs. To obtain a LEED Silver rating, the architects made use of recycled materials where possible. And, instead of shipping building products from miles away, they went to regional manufacturers for items such as carpet and gypsum board.

All told, the horizontal expanse of taut planes along the front facade, punctuated by the vertical shaft of the light tower, brings to mind the utopian spirit of mid-20th-century Modernist architecture. This syncopated massing in relation to the drop in grade relates the overall design to the site and makes more discrete and intimate the assorted programmatic elements of the structure. On top of this, Freelon's deployment of inexpensive materials, whether massive (concrete block) or lightweight (metal screen), opaque (metal panel) or transparent (glass), is sophisticated and well thought out. Inside the library, the clarity of plan combined with the daylighting and the interior colors further communicates the intended message: come, meet, and read. ■



- 1 ENTRANCE PLAZA
- 2 PARKING
- 3 BIORETENTION BASIN
- 4 STORM WATER CONVEYANCE CHANNEL
- 5 SWALE

CREDITS

ARCHITECT: The Freelon Group in association with R. McGhee & Associates—Phil Freelon, principal in charge; Zena Howard, project manager; Mike Rantilla, project architect; Kathryn Taylor, interior designer

ENGINEERS: Delon Hampton & Associates (civil); Stewart Engineering (structural); John J. Christie & Associates (m/e); Professional Consulting Corporation (geotechnical)

CONSULTANTS: Lappas + Havener (landscape); Horton Lees Brogden Lighting Design (lighting)

CLIENT: District of Columbia Public Library

SIZE: 22,000 gross square feet

COST: \$10.3 million

COMPLETION DATE: June 2010

SOURCES

PERFORATED METAL PANELS AND SUNSHADE: Morin

METAL PANELS: MR Metals

GLASS: J.E. Berkowitz

CURTAIN WALL: EFCO Corporation

1. The ample amount of glass curtain walls and skylights limits overdependence on electric lighting. Glare is cut by the green perforated metal screen.

2. A long streetlike axis extends along the edge of the reading room; a pressed polymer finish in which shredded magazines are embedded covers the metal shelves.

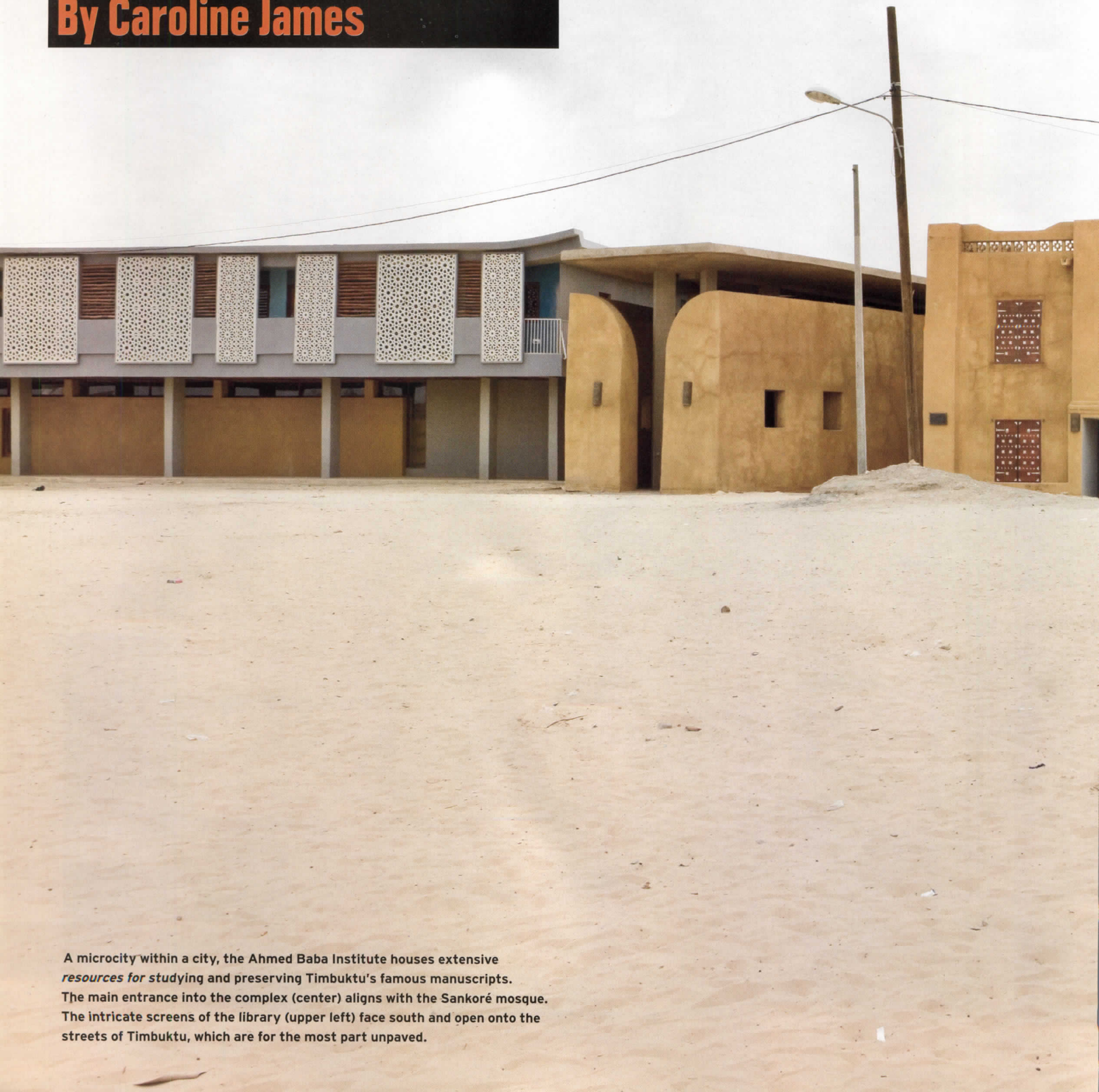


Ahmed Baba Institute Library

Timbuktu, Mali

dhk Architects

By Caroline James



A microcity within a city, the Ahmed Baba Institute houses extensive *resources for studying* and preserving Timbuktu's famous manuscripts. The main entrance into the complex (center) aligns with the Sankoré mosque. The intricate screens of the library (upper left) face south and open onto the streets of Timbuktu, which are for the most part unpaved.





JUST A FEW miles from the Niger River Delta in Mali, Timbuktu appears as a labyrinth of single-story mud buildings. A city of near-mythic status, it is the last outpost before the great Sahara Desert, a place synonymous with being almost impossible to reach. Despite its remote location, the city boasts a heritage of scholarship that has produced an astounding number of manuscripts. The new Ahmed Baba Institute of Higher Islamic Studies and Research, completed in 2009, introduces state-of-the-art techniques for conserving, exhibiting, and studying these famous Timbuktu manuscripts. The new institute is part of a 10-year initiative to replace its aging predecessor, founded in 1970 and located less than a mile away.

After French colonial rule ended in 1960, Timbuktu slid into decline and scholars went to great lengths

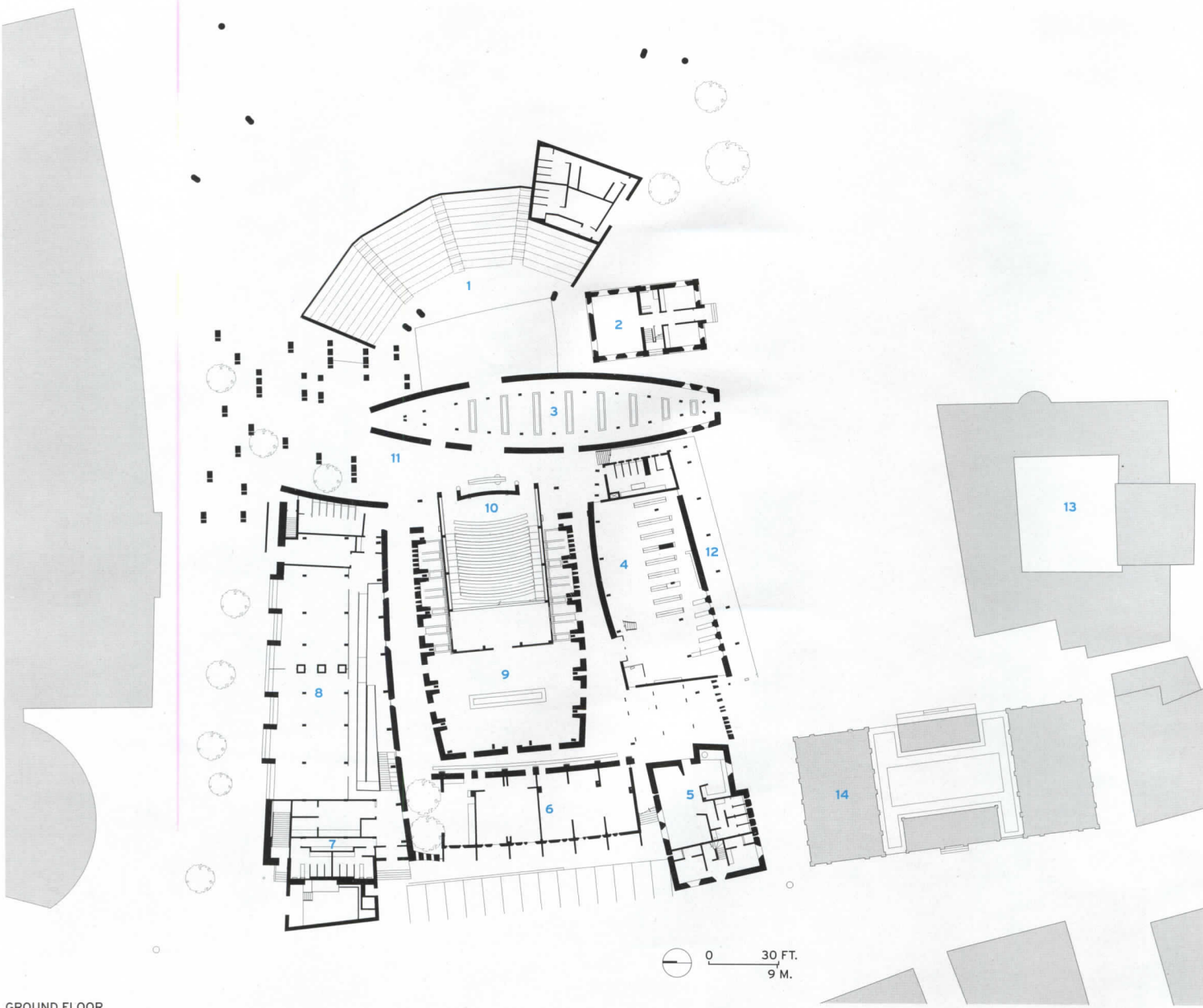
to protect the city's legacy, even burying manuscripts in the sand. An estimated 60 to 80 private libraries formed a grassroots conservation effort in Africa. According to UNESCO, a staggering 300,000 manuscripts exist in the Timbuktu region alone.

In recent years, African leaders have used architecture to reclaim their countries' intellectual heritages. Egypt, for example, commissioned the Norwegian firm Snøhetta to design a grand library in Alexandria with the goal of rekindling the city's reputation as a seat of learning. In 2001, a year before the inauguration of the library in Alexandria, then South African president Thabo Mbeki traveled to Timbuktu on an official visit, helping to found the Timbuktu Manuscripts Project and set in motion plans to construct an impressive new home for the manuscripts.

dhk Architects of Cape Town designed phase one of the \$8.36 million, 50,000-square-foot Institute, creating an archive of 20,000 manuscripts and a public library with reference materials on the culture of the region. Andre Spies, the project architect for dhk, designed the institute and now heads his own practice in Cape Town called twothink architecture, which completed phase two – fitting out the interiors.

Spies describes Timbuktu as being "like a dry Venice." Just as Venice must resist sinking into its lagoon, present-day Timbuktu must fight against the encroaching Sahara Desert. The ancient city unfolds as a series of garden courtyards tucked behind imposing walls along narrow streets cloaked in deep sand drifts. Spies derived his design concept from the juxtaposition of ancient and modern

Circulation at the institute occurs along exterior spaces, to allow for informal gatherings and exchange. A sculpture garden, featuring a series of abstract pylons, is adjacent to the amphitheater.



GROUND FLOOR

- 1 AMPHITHEATER
- 2 AHMED BABA HOUSE (ISLAMIC STUDIES)
- 3 GALLERIA
- 4 LIBRARY
- 5 GUEST HOUSE
- 6 RESEARCH UNIT
- 7 PHOTOGRAPHIC
- 8 DIGITIZATION AND RESTORATION
- 9 COURTYARD
- 10 AUDITORIUM
- 11 GATHERING SPACE
- 12 STAFF OFFICES
- 13 MOSQUE
- 14 PUBLIC ABLUTION

CREDITS

ARCHITECT: dhk Architects – Andre Spies (phase one); twothink architecture – Andre Spies and Valerie Lambrechts (phase two)

ENGINEERS: Kantey and Templer Consulting Engineers (structural); Johardien and Associates (m/e/p); Procom Global (information technology)

GENERAL CONTRACTOR: Sandy Construction

PROJECT MANAGERS: Target Project Managers

CLIENT: Malian government; Timbuktu Manuscripts Trust

SIZE: 50,000 square feet

COST: \$8.36 million

COMPLETION DATE: January 2009





Staff offices overlook the airy spaces of the library, with suspended votive lamps characteristic of North African designs. The growing collection of contemporary books on the culture and history of the region draws scholars and laypeople alike to the Institute.



ABOVE: From the conservation lab, a ramp slopes down to the underground exhibition room and archive space, where the manuscript collection is stored.

OPPOSITE: Students congregate in the courtyard, which is sheltered from sand drifts and cooled by the fountain.

Timbuktu. "The new city is much more rigid and is laid out on a grid, while [the old city] grew sporadically over time." His design creates a hybrid of building and street, contemporary and traditional. Circulation paths create "wall play" similar to the organization of the city's streets, where openings between buildings vary in width and are "very organic," according to Spies. The complex connects the new city to the old city via outdoor hallways and aligns its main artery with the minaret of the Sankoré mosque, a 15th-century structure made with mud and declared by UNESCO to be a World Heritage Site.

To respect the vernacular architecture of the region, Spies chose to build primarily with mud, which requires maintenance after the

annual rains. He found a local mason who mixed mud with concrete to make the facade rain-repellent, and he purchased mud bricks from craftsmen on the streets.

Because the archive and conservation lab required more protection, the architect specified standard concrete-block cavity walls for this portion of the building. By placing the conservation lab so it faces a hallway, he let visitors watch technicians at work. And by bringing visitors down a long ramp to the subterranean archive and a small exhibition space, he created a sense of procession. An air-conditioned, 300-seat auditorium and an outdoor amphitheater can accommodate symposia and lectures. To connect the various programmatic elements, Spies designed expansive

outdoor hallways that converge at a courtyard.

Head librarian Baba Tandina says he enjoys watching schoolchildren fill the library, which is particularly cheerful in the late afternoon when light filters through ornate, carved screens. The screen configurations – radiating diagonals, zigzags, and pyramids – derive from manuscript graphics and West African textile patterns. The airy double-height main gathering space hosts rows of desks and shelves of books, while the upstairs provides space for private study. To reduce the amount of sand blowing into the library, the architect placed entry doors off the courtyard (rather than the street) and designed the courtyard so scholars could congregate there and enjoy air cooled by a fountain.

Overall, Tandina prefers the new institute to the old one, which he describes as stuffy and too warm for the manuscripts. He knows that air conditioning is a rare luxury in Timbuktu and that many visitors will have never encountered a glass exhibition cabinet before.

Yet Tandina and his staff are concerned about the dependability of the building's modern conveniences. If machines break down in the desert, technicians are 500 miles away. To test the consequences of an outage, they shut off power for two weeks, and they were reassured when the temperature of the archive room remained nearly constant. He also wishes the new fire management system had manual controls.

The introduction of a new building is challenging in the low-tech, mud-built setting of Timbuktu. Albakaye Ousmane Kounta, the Malian writer, poet, and storyteller, criticizes the building as "too modern." Whereas fortresslike walls concealed the internal configuration of the former institute, the new one blurs inside and out with outdoor hallways arrayed along a "free plan." This modern approach is uncommon in West Africa, where public and private spaces are strictly demarcated to keep out sand, roving donkeys, and itinerant people. The new design encourages access and openness, but it has drawbacks as well. In addition, some spaces – such as the auditorium – have rigid functions not easily adapted to other uses. Since the Institute is not yet equipped to host conferences, the auditorium will probably go unused for a while.

In time, the staff of the Ahmed Baba Institute will adapt to their new complex, which will enrich Timbuktu and become a locus for international scholarship. For the time being, though, Timbuktu is adjusting to the new facility. This illustrates how architecture pushes change, which is exactly what Andre Spies intended to do with this remarkable project. ■

Caroline James has worked extensively in product design and architecture. She is currently pursuing an M.Arch. at Harvard.



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Working with Water

Coastal cities respond to the threat of rising sea levels with diverse design strategies at multiple scales.

By Michael Cockram

ABOVE AND OPPOSITE, TOP: For an especially flood-prone part of New Orleans, Waggoner & Ball has proposed transforming the streetscape into a parklike environment that would incorporate water as an amenity.

AS THE WARMEST decade on record drew to a close, representatives from the more than 190 countries attending the United Nations Climate Conference held late last year in Cancun, Mexico, made just halting progress in addressing the root causes of climate change. The conference agreements, although a step forward, set only modest limits on greenhouse-gas emissions. But as the symptoms of a warmer world become more apparent, the design community has begun to consider the consequences of climate change. Looming large among these symptoms is sea-level rise, a dynamic that has the potential to radically change the character of coastal areas throughout the world.

If the weight of the science doesn't hit home, then consider that 55 percent of private real-estate insurers are now limiting new policies in mid-Atlantic coastal areas, says Wetlands Watch, a Virginia-based conservation organization.

One top-10 company will no longer insure properties within one mile of the coast. Also consider that more than 30 U.S. military installations are already facing elevated risk from rising sea levels, according to the Pentagon's most recent *Quadrennial Defense Review*, issued in February 2010.

The fluctuating seas

The earth has been warming for thousands of years. This very gradual warming trend took a steep turn upward around the start of the industrial revolution – a phenomenon that many researchers link to escalating carbon dioxide levels. Scientists are finding that the rate of sea-level rise is increasing as well. NASA satellite measurements show that the last decade's rate of increase is almost double that of the last century. Seas are currently rising about $\frac{1}{8}$ inch per year.

Experts believe that much of the rise during the 20th



century can be attributed to thermal expansion. Acting as the earth's heat sink, the oceans expand like the mercury in a thermometer. But the engine behind the future threat is melting land-based ice. Tremendous deposits of ice, nine-tenths of the earth's freshwater, lie stored atop Greenland and Antarctica. The last time there was a major rise, 120,000 years ago, the sea level rose around 18 feet above current levels. But most climate scientists expect the rise this century to be in the range of 3 to 7 feet. The immediate concern is that higher sea levels will allow storm surges to inundate coastal areas more frequently, according to several recent scientific and engineering studies.

Learning from New Orleans

No single weather event can be tied directly to climate change. But the Gulf Coast is a sobering reminder of what

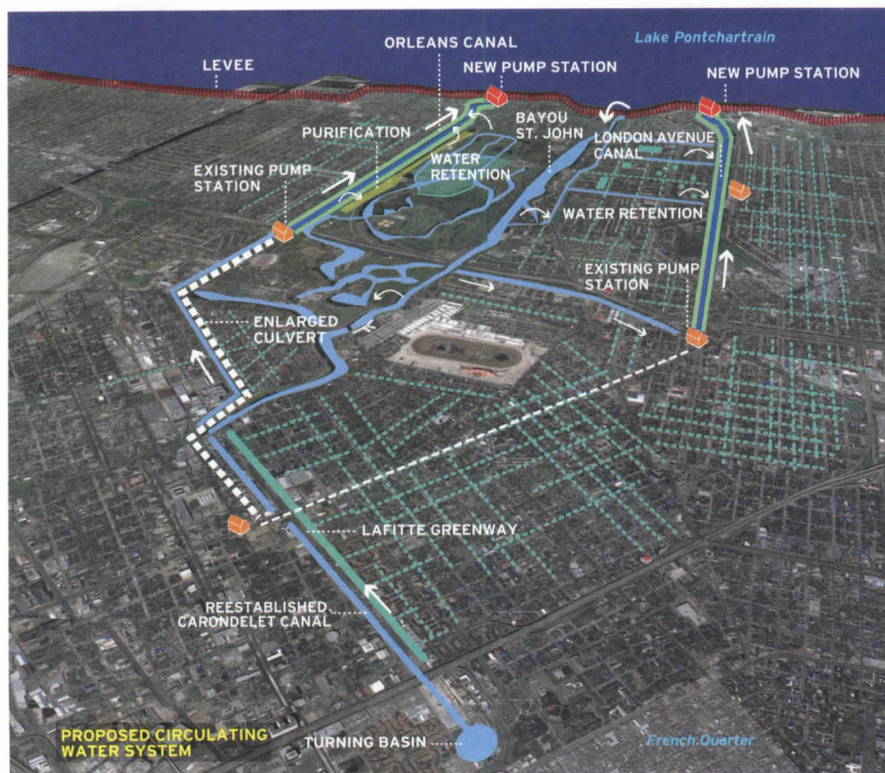
BELOW: Waggonner & Ball's water-management scheme for one section of New Orleans includes reviving the long-ago filled and abandoned Carondelet Canal, which once connected a turning basin near the French Quarter and the Bayou St. John. The plan also incorporates a host of strategies intended to relieve the city's overburdened drainage network.

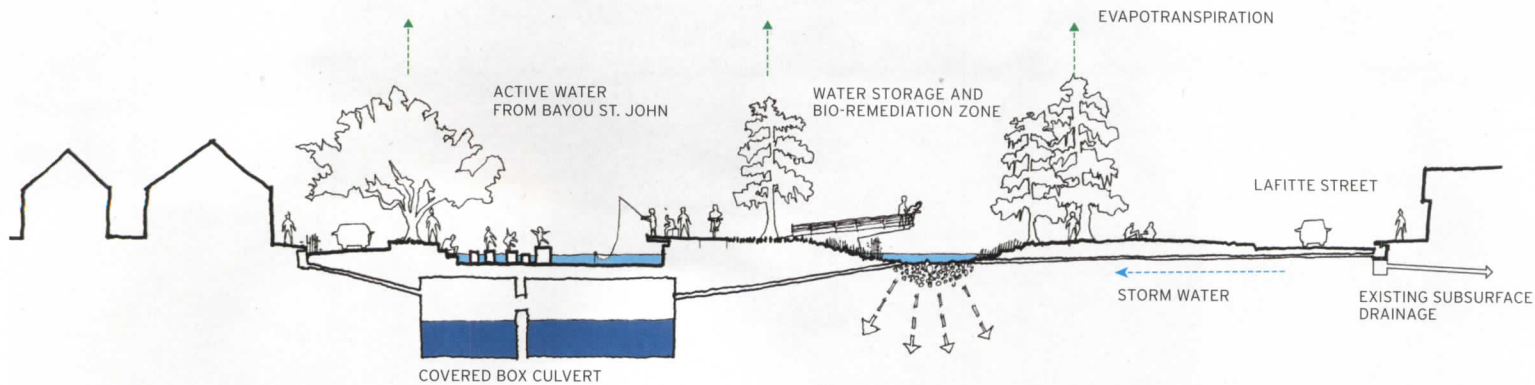
can go wrong in a catastrophic storm. Since the devastation of Katrina, New Orleans-based architects Waggonner & Ball have been grounded in projects that respond to the issues of water management. But instead of solely considering holding the water back, the firm advocates a diverse approach that adds to the experience of the city. "The challenge is to find the balance between safety and beauty," says president David Waggonner. "And safety is not just levees. Any reasonable risk-reduction strategy deals with internal water and where it goes."

The firm has worked on several planning projects, including a proposal to reestablish a water identity for the Lafitte Greenway, where the historic Carondelet Canal once connected a turning basin at the French Quarter to the Bayou St. John and Lake Ponchartrain beyond. The plan is one option New Orleans officials are considering. The scheme incorporates diverse strategies at different scales to absorb, slow, and direct water, such as wide parklike areas along the canal that act as water shock absorbers and bioswales – landscape elements that can remove silt and pollution from surface runoff. The intent is to keep water out of the city's overtaxed underground storm system by allowing it to evapotranspire through plantings, infiltrate the soil to replenish groundwater, or gradually flow into the canal. The plan could lessen the reliance on the mammoth pumps that not only remove storm water but also lower the natural water table of the area. This decrease in the water table is a major contributor to land subsidence – New Orleans, like Venice, is sinking.

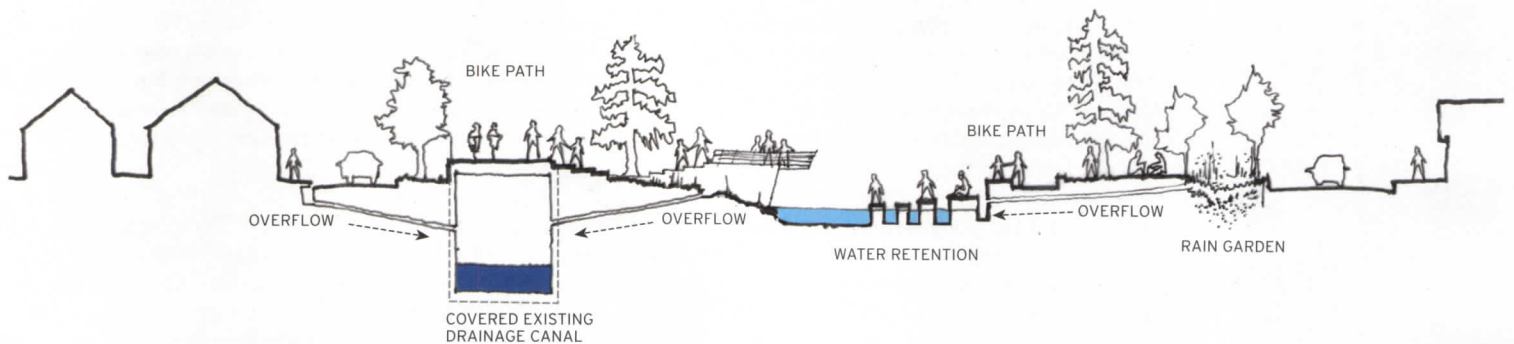
Waggonner says that in a city that has traditionally tried to keep water out, it's hard to convince people there are times when it's better to let it in. But he adds that the Dutch have inspired many of his strategies, and they have shown that it's possible to live on land below sea level.

With centuries of experience in coastal engineering, the Netherlands provides a well-tested model of water manage-





LAFITTE GREENWAY SECTION-OPTION 1



LAFITTE GREENWAY SECTION-OPTION 2

ment. The nation operates the busiest port in Europe and generates 70 percent of its gross domestic product on land that lies below sea level. In 2001 and again in 2007, the Dutch government appointed a panel of scientists and engineers called the Delta Committee to make recommendations to respond to increased risks. The committee laid out an ambitious set of projects – literally shoring up coastal areas by extending shorelines outward up to several kilometers. They also proposed adding more mechanical controls like the colossal waterway surge gates at Maeslantkering, which close during threats of surges and extremely high tides.

The Dutch are also implementing a somewhat controver-

sial plan to breach a few inland dikes and allow water back into some of the polders – land reclaimed from the sea and protected by dikes. Climate scientists believe that some higher latitudes in northern Europe may experience increased rainfall and flooding. Hence, the Netherlands could be under increased threat from land-based flooding from rivers like the Rhine that drain a substantial part of Northern Europe. Allowing water back into some polders could provide a kind of relief valve that takes pressure off lower-lying areas.

The Dutch firm Waterstudio is spearheading one experimental project in flooding polders in Naaldwijk called New Water, which includes half land-anchored and half floating buildings. One piece of the development, a floating complex of 60 residential units known as the Citadel, is slated for completion in 2012. Waterstudio has made a specialty of buoyant architecture, having completed a flotilla of “watervillas” as well as a large floating prison docked near Amsterdam. Waterstudio principal Koen Olthuis sees his work as part of a trend for cities to move onto the water instead of away from it and envisions floating platforms, 600 feet square, acting as armatures for the urban fabric.

Soft infrastructure

New York City, with enormous assets perched on the water’s edge, was one of the first cities to establish an advisory panel to look at adapting to climate change. And, recently, a group of architects, engineers, and researchers participated in an interactive brainstorming session called Rising

ABOVE: Waggoner & Ball’s proposal for reviving the Carondelet Canal and reinvigorating the Lafitte Greenway depends on techniques that treat water as a resource and help absorb, slow, and direct its flow.

RIGHT: Waggoner & Ball’s house for the Lower Ninth Ward in New Orleans plays on the local vernacular and has a raised first floor.



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Currents that culminated in an exhibit at the Museum of Modern Art (MoMA). The interdisciplinary teams developed a toolbox of solutions for New York's waterfront.

"Often the work of [governmental] agencies doesn't involve designers," says Guy Nordenson, a New York City-based structural engineer who was a consultant to MoMA and the project director on the Latrobe Prize research project that inspired the exhibit. "The point of Rising Currents is that designers can make a contribution by visualizing and representing what can be done [about sea-level rise]." The results were focused on "soft infrastructure" – elements that cushion and absorb storm surges by enhancing or emulating natural systems. The concept includes water breaks such as artificial islands or shoals and reintroducing once-plentiful oyster beds. The teams proposed softer, more parklike edges that would serve to dissipate storm surges while making the water more accessible to people.

"If you build a wall around the inhabited areas, it's not going to help the overall ecology of the area – you've submerged wetlands that are necessary to the health of the estuary," Nordenson says. "We felt there's more benefit in designing a city that lets water in from time to time," adds architect Adam Yarinsky, a principal at New York City-based ARO and a coauthor of the book *On the Water: Palisades Bay* (2009), which documents the Latrobe Prize research.

Designing for resilience

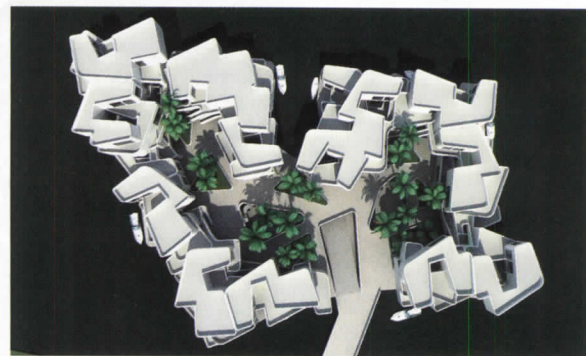
In the last decade, the term resilience has come to embody a multifaceted approach to promote the ability of the natural and built environment to sustain itself through extreme events. Timothy Beatley, professor of sustainable communities at the University of Virginia, points out that most current planning models consider only 20- to 30-year cycles and are rarely coordinated at the regional or national levels. Cities like New Orleans and New York need 100- or even 200-year plans that have a broader scope and take into account ecosystems and their flood-resistant qualities, he says. Beatley also cautions that certain regions will need to consider shifting land-use patterns. "We're going to have to think about strategic retreat in some areas."

For resilience at the building scale, Beatley points to the idea of "passive survivability": the ability of buildings to maintain livable conditions after the loss of essential services. Any strategy that enhances the self-sufficiency of a building can extend its viability as shelter in the aftermath of debilitating storms. Off-grid energy systems such as photovoltaics, solar water heating, and on-site water collection can keep basic services going. Reducing demand



ABOVE AND RIGHT: The Dutch firm Waterstudio has designed a floating complex of 60 residential units for a new development in Naaldwijk, the Netherlands.

BELOW: The firm has already built several private buoyant houses, or "watervillas," including one in De Ronde Venen, Utrecht.



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Learning Objectives

- 1 Discuss the relationship between climate change and rising sea levels.
- 2 Describe landscape and infrastructure strategies that help coastal cities adapt to sea-level rise.
- 3 Explain strategies that help make buildings more resistant to flooding.
- 4 Define key terms relevant to flood-resistant design.

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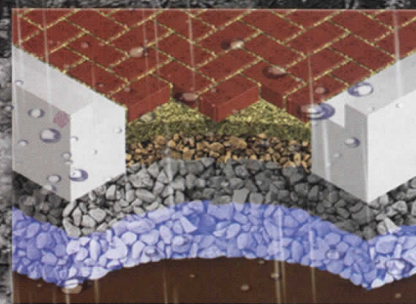


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LEFT AND BELOW: Skidmore, Owings & Merrill has proposed a barrier to protect San Francisco Bay from periodic high water levels associated with sea-level rise. The device, which the firm calls BayArc, consists of a submerged, cable-reinforced membrane and an inflatable bladder. When deployed, the BayArc floats to the surface and creates a barrier stretching from the water's surface to the sea floor.

by designing in a high-efficiency envelope and using passive heating and cooling techniques can also help.

The flood-resistant building

Of course, passive survivability assumes that the structure remains intact after an event like a tropical storm or tsunami. The National Institute of Building Sciences publishes a Whole Building Design Guide on flood-resistant buildings. The guide describes strategies to allow a building to survive waterborne disasters with minimal damage.

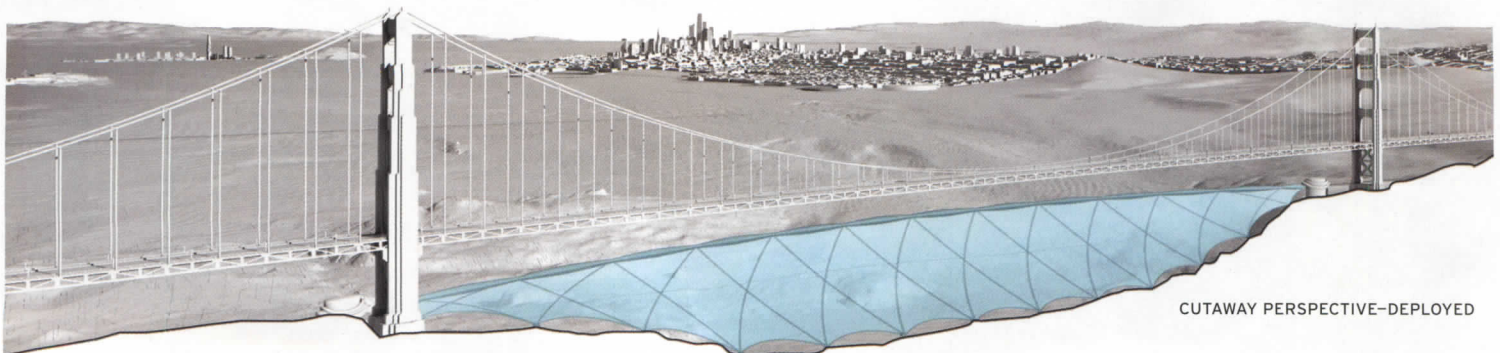
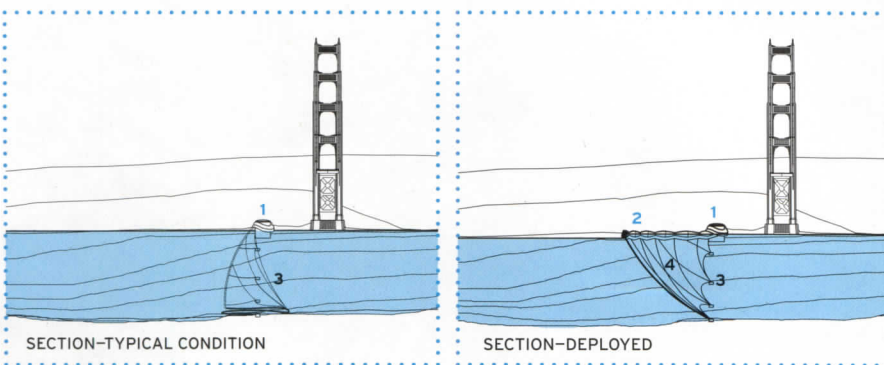
The Federal Emergency Management Agency (FEMA) publishes maps that designate Special Flood Hazard Areas delineated by a Base Flood Elevation (BFE). This benchmark is often set at the level of a 100-year flood – a flood that has a 1 percent chance of being equaled or exceeded in a given year. Local codes typically designate a Design Flood

Elevation (DFE) based on the FEMA maps. Coastal zones are often more restricted since they are potentially subject to more severe conditions, such as wave action. The recent images of houses floating down the swollen rivers of Brisbane, Australia, are a reminder that the safest option is keeping new structures away from vulnerable zones.

If there's no choice but to build in a flood-prone area, a level of safety can be achieved by lifting the structure's habitable parts above the DFE. In many cases, this requires elements such as piers that can withstand hydrostatic and debris loads. Brad Pitt's Make It Right Foundation commissioned Waggoner & Ball to design such a flood-resistant house for New Orleans. The prototype plays on the vernacular of the shotgun house but raises the first floor 8 feet to protect it from flooding and provide a place to park cars.

In inland zones where the structure won't be subject to wave action, the area of the building below the DFE can often be constructed to withstand flooding with only cosmetic damage. This strategy, known as wet flood-proofing, was explored in a winning entry in the U.K.'s Norwich Union Flood Design competition. London-based Nissen Adams developed a housing model that uses materials such as masonry that can withstand water on the lower level. The plan is organized so that nonessential functions like bedrooms are placed on the lower level, allowing occupants to relocate to the upper floor in a flood. Dry flood-proofing is a more involved strategy of essentially making the building watertight and able to withstand extreme hydrostatic pressure. In both cases, designers should consider the buoyancy of the structure and ensure that the founda-

- 1 TIDAL ENERGY CAPTURE AND STRUCTURAL ANCHORAGE
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tion is protected from the erosive effect of floodwaters. There is also a range of mechanical flood barriers for buildings that are either deployed automatically or manually.

Understanding risk

The population of coastal cities continues to grow. Now at 3 billion, the number of people worldwide living near the coasts is expected to nearly double by 2025. Many metropolitan areas are just beginning to consider the risks of sea-level rise. Miami is one of the most vulnerable cities in the U.S. with most of its neighborhoods and some \$400 billion in assets lying around 3 feet above sea level. A storm surge from a Category 3 storm could submerge much of the city in 6 to 9 feet of water, according to the National Oceanic and Atmospheric Administration. Sea levels predicted for the end of the century would drive the coastline back dramatically, potentially flooding much of the city.

San Francisco is perhaps more fortunate than many coastal urban areas since its bay is relatively sheltered and the region has higher areas of retreat. But it also has many assets close to or below sea level. The Bay Conservation and Development Commission sponsored a competi-

tion called Rising Tides to consider ways to adapt to higher sea levels. One of six winning entries, the Skidmore, Owings & Merrill (SOM) BayArc scheme proposed an inflatable barrier placed at the bay's entry under the Golden Gate Bridge.

"Our research showed that the problem would be in storm surges that occur at high tide," says Craig Hartman, design partner in SOM's San Francisco office. Add that swell to the projected sea-level rise, and many areas like the transportation corridor around San Francisco's airport could be threatened, he says.

The barrier "shaves off the tidal peak" during extreme events, says Hartman. The device has a 4-foot-high rigid band that acts like a dam at the water's surface. Below the surface, where the pressures are less, a web of tension cables hold a submerged curtain and the inflated barrier in place. Hartman relates that the deployable barrier doesn't address the long-term issue of substantial sea-level rise, but it could buy the area time to consider more comprehensive solutions.

Every coastal urban area has its own set of issues. The simple elegance of SOM's solution would have little application in New Orleans with the Mississippi River running through its heart, Lake Ponchartrain at its back, and the Gulf at its

flank. But if the floodwaters of Katrina foreshadow things to come, then designers in coastal cities would do well to look at the proposals for the Gulf and the formidable challenges the region faces. On the Waggoner & Ball website there's a menu item that is fairly unusual in the profession: Research. The firm has extended its mission to engage universities, governmental agencies, and foreign countries in considering the task of saving one of America's most distinctive and culturally rich cities. Congress has ordered the Corps of Engineers to build New Orleans's levees to a 1:100 probability of flooding. Meanwhile the Dutch are building critical defenses to a 1:10,000 level. In his forward to the 2008 *Delta Committee Report*, chairman C.P. Veerman remarks that the document's proposals are unusual because they present an integrated plan to protect the Netherlands for centuries to come. "After all," he concludes, "a living land builds for the future." ■

Michael Cockram is a freelance writer specializing in architecture and the environment.

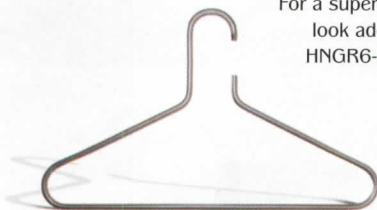
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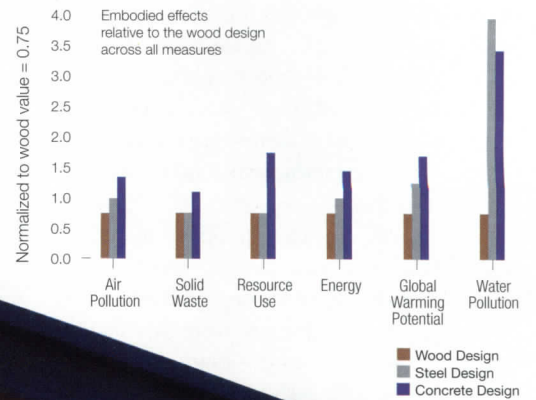
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Use the learning objectives below to focus your study as you read *Materials Matter*.

Learning Objectives

After reading this article, you should be able to:

- Discuss the life cycle costs of wood, concrete and steel
- Explain recyclability vs. renewability for each material
- Describe responsible procurement
- Explain the advances each industry is making toward sustainability



Vancouver Convention Centre, Media Centre for the Vancouver 2010 Olympics, Vancouver, British Columbia.

Photo courtesy of www.naturallywood.com

In terms of green building materials, wood remains the top choice.

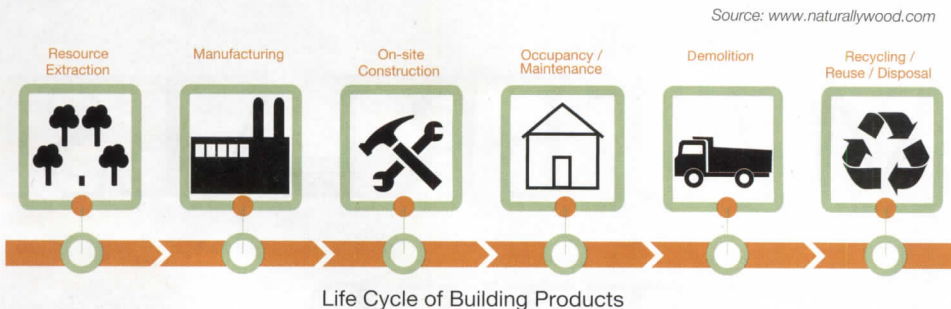


According to the U.S. Department of Energy, buildings account for 38 percent of total U.S. energy consumption and 38 percent of U.S. carbon dioxide (CO₂) emissions—statistics that have prompted the architecture and construction industries to search for ways to lower the environmental footprint of tomorrow's structures. The search is particularly pressing in view of the projection that the commercial building sector carbon dioxide emissions will grow faster than any other sector, averaging 1.8 percent a year through 2030. A complex problem, to be sure, but one with a relatively straightforward answer—stop burning fossil fuels, which emit the greenhouse gases (GHG) that fuel global warming. Reducing GHG emissions involves selecting materials with low embodied energy and emissions and high recyclability. But against a backdrop of competing claims it can be difficult to determine which materials truly stand out in these areas.

In terms of green building materials, wood remains a top choice. International scientific studies have shown time and again that using wood products from sustainably managed forests rather than non-wood building products, results in a reduction of GHG emissions. This article will address through research and facts, the overt differences between three common building materials—wood, steel and concrete—in terms of their environmental footprint at several stages of the life cycle process, including raw resource extraction, manufacturing, and transportation. The materials will also be discussed in terms of responsible procurement, sustainability and community issues.

LIFE CYCLE ASSESSMENT: A SCIENTIFIC WAY TO CALCULATE ENVIRONMENTAL IMPACTS

One approach to determining the environmental impacts of various building materials is Life Cycle Assessment (LCA), an internationally recognized decision making tool that acknowledges the fact that all phases of a product's life, from cradle to grave, have a quantifiable impact on the environment. Based on standards by the International Organization for Standardization (ISO) and based on science rather than assumptions, LCA assesses those impacts from the time materials are extracted through



manufacture, transportation, storage, use, recovery, reuse and disposal. LCA, which can be done at the product level, the assembly level, and the whole building level, is gaining widespread acceptance as an impartial comparison of materials based on their potential to add to global warming.

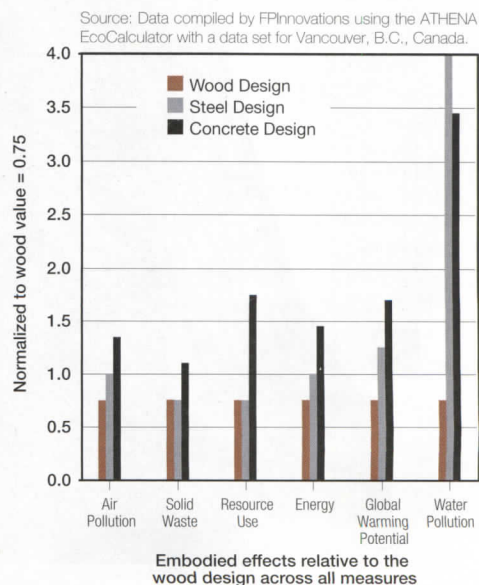
"There's been a tendency to look for simple answers to very complex questions. There is no perfect material, so we need to understand tradeoffs in terms of real environmental effects," says Wayne Trusty, President of the Athena Institute, a non-profit organization that seeks to improve the sustainability of the built environment by meeting the building community's need for better information and tools. "One simple answer is that, by definition, something that is agricultural or grown rapidly is better. But if we don't consider the fertilizer, pesticides, and water that's used, and the energy required to grow, process, and move these products, then we're only getting a little piece of the answer."

Trusty says it's critical to move toward answers that truly reflect environmental effects. "Life cycle assessment gets us to take a holistic view of these products as we possibly can, and understand the full set of impacts," he says. "Sometimes the rapid renewable is going to come out looking OK, but lots of times it won't. Often it will turn out that a longer-rotation wood product or a different material altogether is going to come out looking good. But we have to take everything into account."

In several studies, the life cycle assessment of wood has been shown to have a better overall environmental impact than either steel or concrete, with wood showing the least impact on energy, climate and air pollution. In New Zealand, an LCA conducted by research institute Scion shows that a wood-predominant house has the lowest environmental impact option. LCAs by the Canadian Wood Council and by the Consortium for Research on Renewable Industrial Materials (CORRIM) in the U.S. also

found wood to have the lowest environmental impact compared to concrete and steel, with the CORRIM study finding that the global warming potential of the steel-frame home was 26 percent higher than the wood-frame home, and 31 percent higher for the concrete-frame home than the wood frame house. In a Swedish study, researchers compared CO₂ emissions from the construction of a multi-story building with a timber and a concrete frame, from a life cycle and forest land use perspective. The primary energy input, predominantly fossil fuels, in the production of materials was found to be up to 80 percent higher in the concrete frames.

Because calculating life cycle impacts is complex and time consuming, tools exist to help architects judge the environmental merits of various materials. Online resources like the ATHENA® EcoCalculator for Assemblies, which provides LCA data on hundreds of common building assemblies, and the carbon calculator from Build Carbon Neutral are giving architects another tool to assess the sustainability of their building plans. By



entering specific parameters, these resources can estimate the energy required to build the structure in question.

Calculations of LCA impacts have shown clear environmental advantages for timber, because of its low embodied energy, and because its carbon storage properties actually give wood a positive environmental impact. As Peter Busby, Managing Director of Busby Perkins+Will, likes to put it, "Wood is a renewable building material made by the sun. Trees are a major vehicle on the globe to reduce carbon," he says. "They're our ally in keeping the biosphere healthy."

AS THE MOVEMENT TO CARBON-NEUTRAL BUILDINGS TAKES HOLD, MAKERS OF BUILDING MATERIALS ARE WELL AWARE OF THE NEED TO IMPROVE THE ENVIRONMENTAL FOOTPRINT OF THEIR PRODUCTS.

Michael Green, MAIBC, AIA, MRAIC, Principal in mgb in Vancouver, British Columbia, Canada, believes that "All materials have their place, and no material is an all-out winner." But for Green, the overriding issue is carbon. "More than five percent of the carbon we put into the atmosphere comes from concrete. Steel, too, has a heavy environmental impact. As architects we have to ask ourselves: is there a material that minimizes or eliminates carbon in the environment? While some of the actual numbers in these analyses may be arguable, what's not in doubt is that wood stores carbon, and that it's our only carbon-neutral structural option."

As it turns out, architects are asking themselves that question. The CREE (Creative Renewable Energy and Efficiency) Group is designing a low-carbon 30-story mixed-use facility to be built in Dornbirn, Austria, with a hybrid construction system based primarily on wood. There will be a reinforced concrete basement, first and second floor; composite wood/concrete slab from the second floor

upwards; and façade columns using wood. CREE claims that, compared to conventional construction, the aptly named LifeCycle Tower will require less than half the time to build and see a 90 percent reduction in carbon emissions. Busby, who calls the tower "amazing," says, "The technology to use wood in taller buildings is there. British Columbia has recently relaxed its codes to allow six-story wood buildings. As we see more changes in this direction, we'll see taller buildings in wood."



Photo courtesy of www.creebyrhomborg.com

The 30-story LifeCycle Tower to be built in Dornbirn, Austria features a hybrid construction system based on wood.

MOVING AHEAD

As the movement to carbon-neutral buildings takes hold, makers of building materials are well aware of the need to improve the

environmental footprint of their products. Both the steel and concrete industries are working to improve the efficiency of manufacturing and construction processes as well as the environmental and structural properties of their products. According to the World Steel Association, in the last 30 years the steel industry has reduced its energy consumption per ton of steel produced by 50 percent. However, the association says that there is now likely only room for marginal further improvement on the basis of existing technology. Further environmental gains will come through breakthrough steelmaking technologies, next-generation steels in lighter and stronger products as well as recycling and the use of byproducts to power steel mills or other types of factories.

In terms of concrete, new research out of the Massachusetts Institute of Technology indicates that Insulated Concrete Form (ICF) homes have been shown to provide 20 percent energy savings in the form of reduced heating, cooling and ventilation needs as compared to conventional wood-framed construction. The findings also note, "There are measurable differences between alternative construction systems, and that the thermal mass of concrete can provide energy savings over a life cycle of 75 years." While ICF technology has been around for some 50 years, only recently has there been a significant increase in ICF structures in cost-sensitive commercial, industrial and multi-family markets.

Technical innovations in wood, too, involve increased potential in the commercial sector. Architect Michael Green is part of the emerging movement to consider wood as a building material for larger, taller commercial structures. His firm won the 2009 Royal Architecture Institute of Canada's award for the Prince George Airport in British Columbia, a Douglas-fir glulam structure with a generous use of wood in both interior and exterior applications. But the real rationale for expanded use of wood: next generation wood structural systems like cross-laminated timber (CLT) and large format panel products that

have gained wide acceptance in Europe. CLTs are multi-layer panels in which layers of dimensional lumber are placed crosswise and glued under high pressure to create a stable, rigid component that can be used in all assemblies and for long spans. CLTs have been successfully deployed in European mid-rise buildings, both commercial and non-commercial.

Green sees new structural opportunities for wood beginning to mushroom, much like they did more than a century ago with the advent of steel. "We're looking at radically new systems made of wood that make sense from a carbon, sustainability and forestry standpoint and that are realistic competitors to steel and concrete," says Green, noting that his firm is currently tapping next generation wood products in a design study for a new 20-story residential tower for Vancouver. "We have to start pushing on the ceilings that stifle innovation. Design studies like this are important to show the science and engineering behind the next generation of buildings. It's the beginning of a systemic change towards truly sustainable structures."

WOOD, CONCRETE AND STEEL: THE RAW MATERIALS

In understanding the carbon footprint of the various materials, it is useful to know how they are made. Wood, concrete and steel are end products, processed from various natural resources.

Wood is harvested by one of several silvicultural systems, based on the ecology of the site. The harvesting of forests conducted according to the principles of sustainable forest management, including their use as a source of wood products and biofuels, allows the greatest potential for reducing net carbon emissions. According to the Canadian Council of Forest Ministers, sustainable forest management is management that maintains and enhances the long-term health of forest ecosystems for the benefit of all living things while providing environmental, economic, social and cultural opportunities for present and future generations.

The embodied energy in wood is relatively low compared to concrete and steel, which rely on substances that must be mined and heated by fossil fuels to extremely

high temperatures. Concrete is a composite construction material that is highly durable, low maintenance, and can be easily adjusted to meet various strength requirements. It is versatile in that it can create structures of any size and shape, and energy efficient in that it can reduce heating costs in winter and has a high rate of solar reflectance that reduces reliance on air conditioning.

Typically, a **concrete** mix is about 10 to 15 percent cement, 60 to 75 percent aggregate and 15 to 20 percent water, though proportions often change with the required strength and flexibility. While most of concrete's ingredients are manufactured

to fine gray powder (cement), which is then transported to its destination by truck, rail or ship. Sometimes, fly ash, a byproduct of coal burning plants can be substituted for a percentage of the cement, as can volcanic ash or magnesium oxide that is mined or processed from seawater, with substantial reductions in carbon footprint.

Steel is an alloy consisting mainly of iron and has a carbon content between 0.2 percent and 2.1 percent by weight, depending on grade. A durable, architecturally versatile material, steel is energy efficient, quick to construct and has a high strength-to-weight ratio and long-term cost effectiveness.

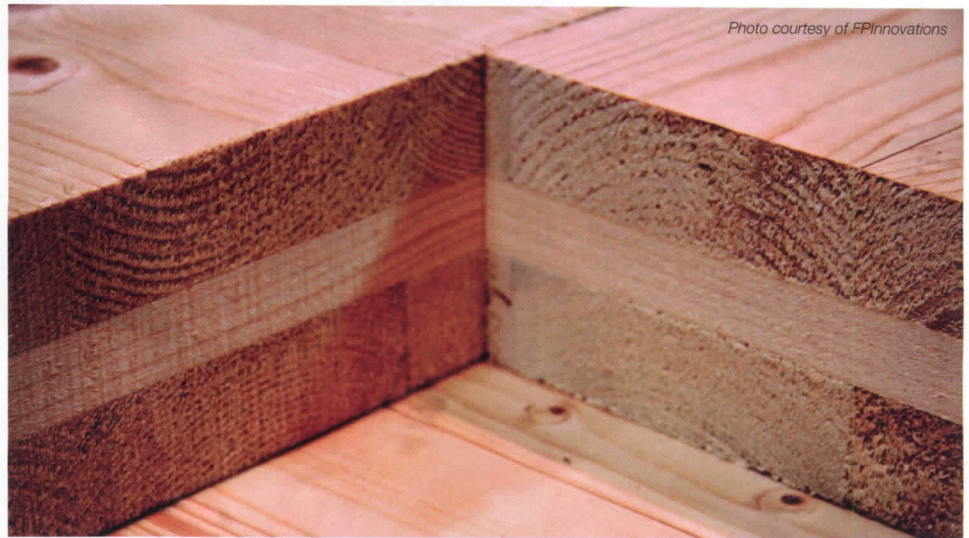


Photo courtesy of FPInnovations

Cross-laminated timber will provide increased opportunity to use wood in commercial structures.

GREEN SEES NEW STRUCTURAL OPPORTUNITIES FOR WOOD BEGINNING TO MUSHROOM, MUCH LIKE THEY DID MORE THAN A CENTURY AGO WITH THE ADVENT OF STEEL.

products themselves or mined materials, it's the cement in concrete that has the highest embodied energy. The major ingredient needed for cement is limestone, which is found in abundance worldwide. In most cases, limestone is blasted from surface mines and removed in large blocks to a crusher, mixed with other raw materials and transferred to a rotating furnace and heated to about 2,700 degrees F, powered by coal or natural gas, in order for the materials to coalesce. The mixture is cooled and ground

The process of manufacturing steel, however, is extremely energy intensive and consists of a number of procedures. Steel's main ingredient is iron ore, which must be extracted through open pit mining, and heated to extremely high temperatures via fossil fuels—two processes that take a toll on the environment. In surface mines, ground is removed from large areas to expose the ore. Ore is then crushed, sorted and removed by train or ship to the blast furnace where the iron is heated to 3,000 degrees F, usually with charcoal or coke, and charged with the ore and limestone. The molten iron then drains off and iron cubes are formed—this pig iron, as it's called, is the basis for steel.

Continues at ce.architecturalrecord.com

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Program title: "Materials Matter" (03/11, page 115). AIA/CES Credit: This article will earn you one AIA/CES LU hour of health, safety, and welfare/sustainable design (HSW/SD) credit. (Valid for credit through March 2013). **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. In several studies, the life cycle assessment of wood has been shown to have:
 - a. the same environmental impact as steel.
 - b. the same environmental impact as concrete.
 - c. a better overall environmental impact than either steel or concrete.
 - d. a more adverse environmental impact than steel.

2. LifeCycle Tower will require less than half the time to build and see what percentage reduction in carbon emissions?
 - a. 10 percent
 - b. 25 percent
 - c. 65 percent
 - d. 90 percent

3. While ICF technology has been around for some 50 years, only recently has there been:
 - a. a significant increase in ICF structures in commercial, industrial and multi-family markets.
 - b. a significant increase in ICF structures in residential markets.
 - c. an increase in cost pressures that have made ICF structures prohibitive in commercial markets.
 - d. a decline in interest in ICF structures.

4. What allows the greatest potential for reducing net carbon emissions?
 - a. Further reduction in fossil fuels by the steel industry
 - b. Further reduction in fossil fuels by the concrete industry
 - c. The harvesting of forests conducted according to the principles of sustainable forest management, including their use as a source of wood products and biofuels.
 - d. The proliferation of hybrid structures

5. What ingredient in concrete has the highest embodied energy?
 - a. Aggregates
 - b. Cement
 - c. Limestone
 - d. The batch plant proces

6. What is the main ingredient in steel?
 - a. Carbon
 - b. Iron ore
 - c. Limestone
 - d. Coke

7. In British Columbia, what percentage of the log is used in making products?
 - a. 25 percent
 - b. 53 percent
 - c. 76 percent
 - d. 90 percent

8. Of the three building materials—concrete, wood and steel—wood is the only renewable source.
 - a. True
 - b. False

9. Certified wood is the only one of the three products that can have optional:
 - a. recyclability potential.
 - b. design flexibility.
 - c. a chain-of-custody certification.
 - d. management systems certified to ISO standards.

10. What is the reason several countries have included forestry in their stimulus packages?
 - a. Its global warming potential
 - b. Forestry requires an investment in people as opposed to only capital investment.
 - c. To improve forest management
 - d. To improve timber logging practices

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naturallywood.com Naturallywood.com is an online resource that provides the latest information on wood products from British Columbia that are used in markets around the world. Resources include an extensive wood products supplier directory, latest innovations in wood technology, green building tools and much more.

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DATES & EVENTS

New and Upcoming Exhibitions

Architectural Photography Exhibition

San Francisco

March 3–April 22, 2011

This exhibition features the creative work of a group of talented Bay Area architectural photographers. These images convey more than pictorial representations of a static building or space; they are expressions of the architect's vision through the photographer's filtered camera lens. Participating photographers include Keith Baker, Bruce Damonte, Timothy Griffith, Emily Hagopian, Muffy Kibbey, David Duncan Livingston, Sharon Risedorph, Cesar Rubio, John Sutton, Matthew Millman, Ethan Kaplan, Michael David Rose, and Rien van Rijthoven. Visit www.aiasf.org.

Proportional Systems in the History of Architecture

Leiden, the Netherlands

March 17–19, 2011

This conference at the Universiteit Leiden frames a rigorous new scholarly discussion of proportional systems throughout architectural history, and in the process, will help to define appropriate methods, standards, and limits for it. The conference will explore this subject from both historical and historiographical points of view. For more information, visit www.hum.leiden.edu/icd/proportion-conference.

Ongoing Exhibitions

Plywood: Material, Process, Form

New York City

Ongoing

Plywood is an important modern material that has given 20th-century designers greater flexibility in shaping Modern forms at an industrial scale. This installation features examples, drawn from MoMA's collection, of Modern designs that take advantage of the formal and aesthetic possibilities offered by the material, from around 1930 through the 1950s. Archival photographs illuminate the process of design and manufacture in plywood. Iconic furniture by Alvar Aalto, Charles and Ray Eames, Eero Saarinen, and Arne Jacobsen appears. Visit www.moma.org.

Neutra VDL House

Los Angeles

Ongoing

Seventy-five years ago, Viennese-American architect Richard Neutra built a radical "glass house" with rooftop and balcony gardens, a project that has since grown into a modern marvel of the architectural world. Saturday tours of the house – a place that saw the beginning of the careers of architects

including, among others, Gregory Ain, Raphael Soriano, and Donald Wexler – are offered by architecture students from Cal Poly Pomona and give a unique chance to stay as long as you want and see the entire house. Visit www.neutra-vdl.org.

Nordic Models + Common Ground: Art and Design Unfolded

New York City

Through March 9, 2011

Nordic Models examines a diverse selection of works, including architecture, product design, fine art, graphic design, fashion, and photography by 35 emerging and established artists and designers. In doing so, it offers a compelling look at contemporary Nordic art and design, highlighting shared practices and ideas and their global impact. All of the Nordic countries – Denmark, Finland, Iceland, Norway, and Sweden – are represented. At Scandinavia House. For more information, visit www.scandinaviahouse.org.

Journeys: How Traveling Fruit, Ideas, and Buildings Rearrange Our Environment

Montreal

Through March 13, 2011

Featuring 15 narratives, this exhibition questions and debates architectural concerns raised by increased global movement. Stories range from the vagabondage of seeds and how this transforms the landscape to the rearrangement of communities that unexpectedly changes society and the built environment. At the Canadian Centre for Architecture. Visit www.cca.qc.ca.

Light Frames

Los Angeles

Through March 13, 2011

Light Frames, an installation by Los Angeles architect Gail Peter Borden, will transform the exhibition space with two complementary towering structures. The exhibition was created using component-based structural frames that combine to create complex geometric forms. Borden makes a conscientious effort to emphasize the method of fabrication by truthfully exposing joints and materials. For more information, visit www.emanate.org.

Kahn in Venice

Los Angeles

Through March 19, 2011

Considered to be one of the most influential American architects of the last 50 years, Louis I. Kahn created stunning work that encompassed materiality, light, and humanistic values in a manner transcending the limits of architectural form. At the Istituto Italiano di Cultura, this exhibition showcases a sketch and model of Kahn's Palazzo dei Congressi, as well as a comprehensive collection of Kahn's travel sketches from Italy. For more information, visit www.iiclosangeles.esteri.it.

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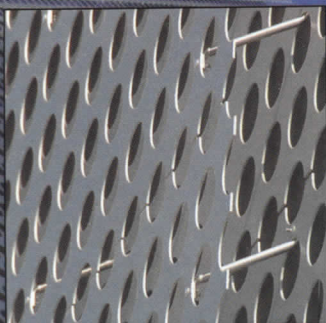
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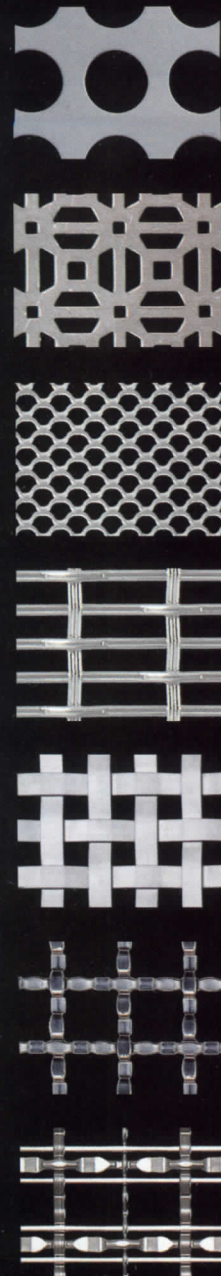
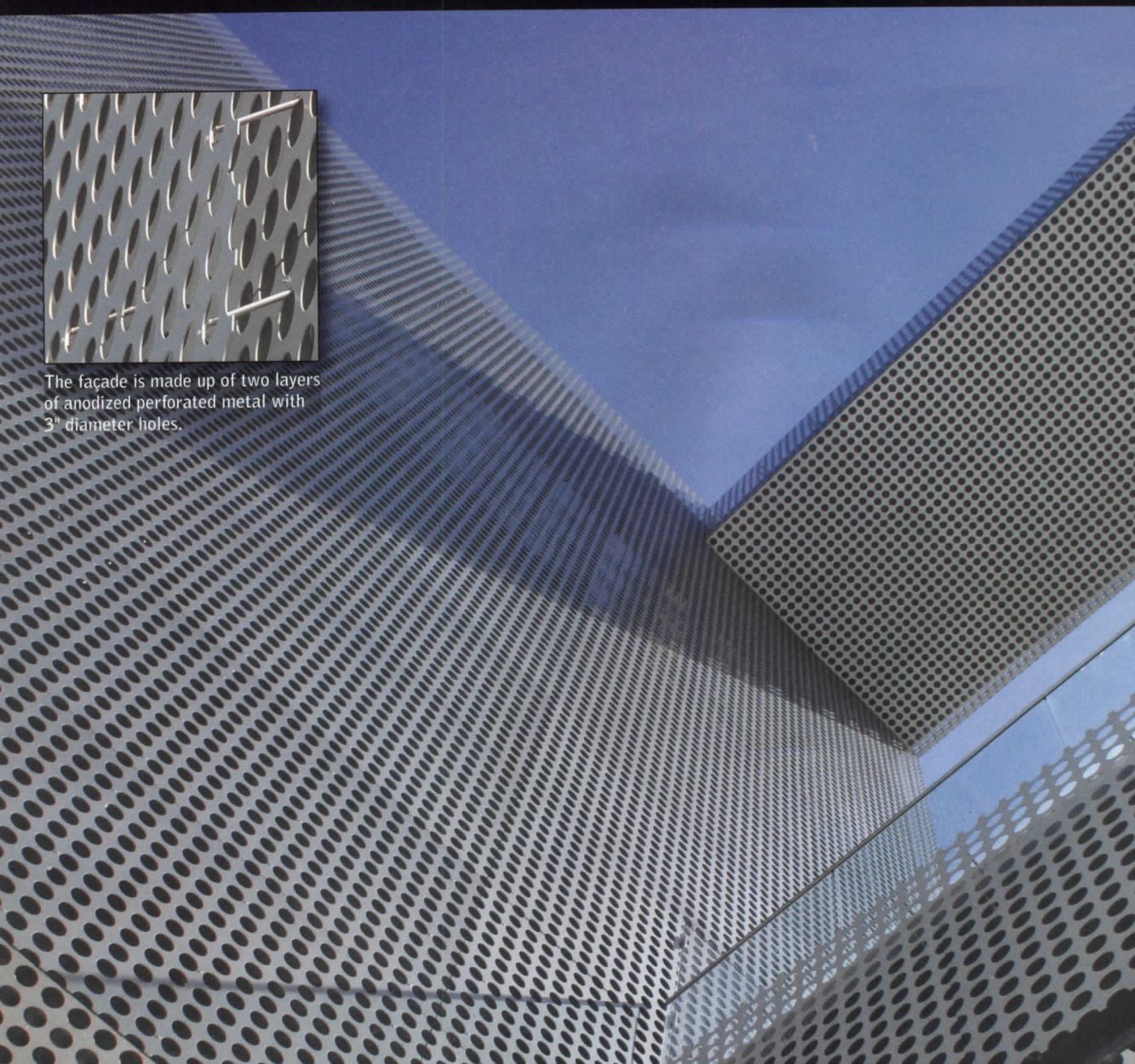
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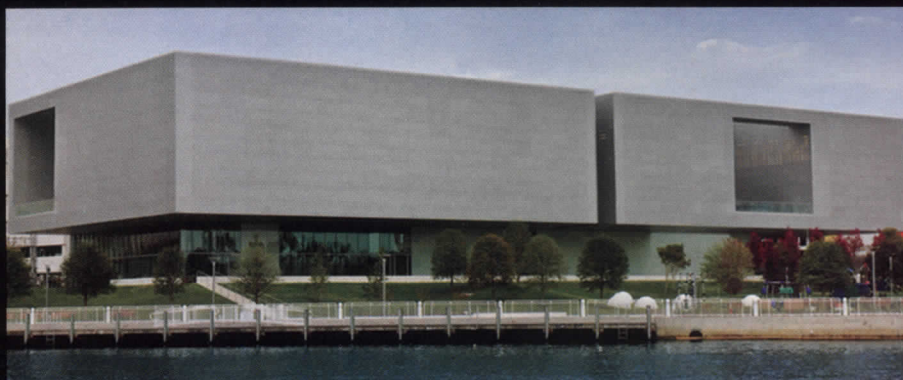
Tampa Museum of Art's façade double layer "skin" creates an intriguing visual pattern. A single matched layer was used to clad the interior atrium. More information may be found in our case studies at mcnichols.com.

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The Extraordinary Joseph Urban

Palm Beach, Florida
Through April 17, 2011

This exhibition explores the life and work of Joseph Urban (1872-1933), a prolific and innovative Gilded Age artist who, the *New York Herald-Tribune* observed, "did more than any other man to revolutionize the American sense of design." With more than 100 objects from Urban's extraordinary body of work, the exhibition is at the Flagler Museum. Visit www.flaglermuseum.us.

On Becoming an Artist: Isamu Noguchi and His Contemporaries

Long Island City, New York
Through April 24, 2011

This important exhibition explores the relationship between Isamu Noguchi (1904-1988) and some 40 figures from the worlds of art, architecture, design, and theater. It integrates artworks and documentary materials to examine Noguchi's relationships with figures such as artists Constantin Brancusi and Frida Kahlo, designer and inventor Buckminster

Fuller, and architects including Gordon Bunshaft and Louis Kahn. For more information, visit www.noguchi.org.

The Emperor's Private Paradise: Treasures from the Forbidden City

New York City
Through May 1, 2011

This is a loan of some 90 paintings, architectural elements, and decorative and religious works created for an elaborate 2-acre private retreat built deep within the Forbidden City in 1771 as the retirement residence of one of China's most extravagant monarchs – the Qianlong Emperor (r. 1736-95) – who presided over China's last dynasty, the Qing, at the zenith of its power and wealth. For more information, visit www.met-museum.org.

American Streamlined Design: The World of Tomorrow

Tulsa, Oklahoma
Through May 15

This exhibition focuses on a design era that emerged during the 1930s and 1940s, characterized by curving forms, and smooth, clean silhouettes. The style, which suggested speed and glamour, entered American design in the post-Depression years. The work of Raymond Loewy, Norman Bel Geddes, Henry Dreyfuss, and more are on display. For more information, visit www.philbrook.org.

Frank Lloyd Wright: Organic Architecture for the 21st Century

Milwaukee
Through May 15, 2011

Experience more than 150 objects designed by Frank Lloyd Wright. This exhibition features 33 never-before-shown drawings by the Wisconsin legend, as well as rare home movies. Examining every type of project that Wright designed, along with his plans for suburban communities and American System-Built Homes, the exhibition includes drawings, models, photographs, and more. For more information, visit www.mam.org/frank-lloyd-wright.

Silent Disco

Los Angeles
April 1-May 15, 2011

Architecture students are the imagined clients for this temporary disco installation at the SCI-Arc Gallery. Providing respite from the institutional production of architecture with a lightly hedonistic program, Silent Disco aims to support social and communal experiences. The architectural project here is a framework to encourage visual, physical, and social pleasure. Visit www.sciarc.edu.

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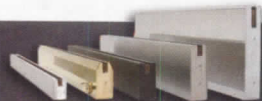
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Lectures, Conferences, and Symposia**BuildingEnergy 11**

Boston

March 8–10, 2011

BuildingEnergy is the only conference where architects, designers, planners, builders, policymakers, manufacturers, and installers work together to determine what's possible in the world of sustain-

ability. Held at the Seaport World Trade Center, conference sessions range from emerging trends in renewable energy to deep energy retrofits of commercial and residential buildings. The trade show features 160 exhibitors with the latest sustainable technologies and products. For more information, visit www.nesea.org/be11.

Subtropical Cities 2011 Conference – Subtropical Urbanism: Beyond Climate Change

Fort Lauderdale, Florida

March 8–11, 2011

The international collaborative conference will discuss the future of development in subtropical cities around the world. Key themes include: subtropical cities in the urban age, sustainable practices and decision making for resilient cities, and adaptation to climate change. For more information, visit www.subtropicalcities2011.com.

The Pleasures of the Internet

New York City

March 29, 2011

From YouTube to e-books to WikiLeaks, media critic Virginia Heffernan will address the specific ways that digital culture has already superseded analog, and how that's both terrifying and exhilarating. Heffernan is a television critic for the *New York Times* and writer of "The Medium" column in the *New York Times Magazine*. Started in 2006, "The Medium" reviews and analyzes our web, television, video, and ever-changing media culture and "the way we watch now." For more information visit www.dcrit.sva.edu.

Permanent Change: Plastics in Architecture and Engineering

New York City

March 30–April 1, 2011

"Permanent Change" sheds new light on plastics and their implications for the fields of architecture and engineering. Materials that forecast easily molded, reformed shapes have become a permanent measure and control point in design. This conference explores the boundaries between architecture, engineering, and materials science by mobilizing symposia, studios, exhibitions, books, and films in an intensely focused investigation. Architect Greg Lynn is the keynote speaker. For more information, visit www.arch.columbia.edu/permanentchange.

Aftertaste 5: Immaterial Environments

New York City

April 1–2, 2011

This symposium at the New School explores the intangible but physically perceivable aspects of interior space. Designers, physicians, scientists, scholars,

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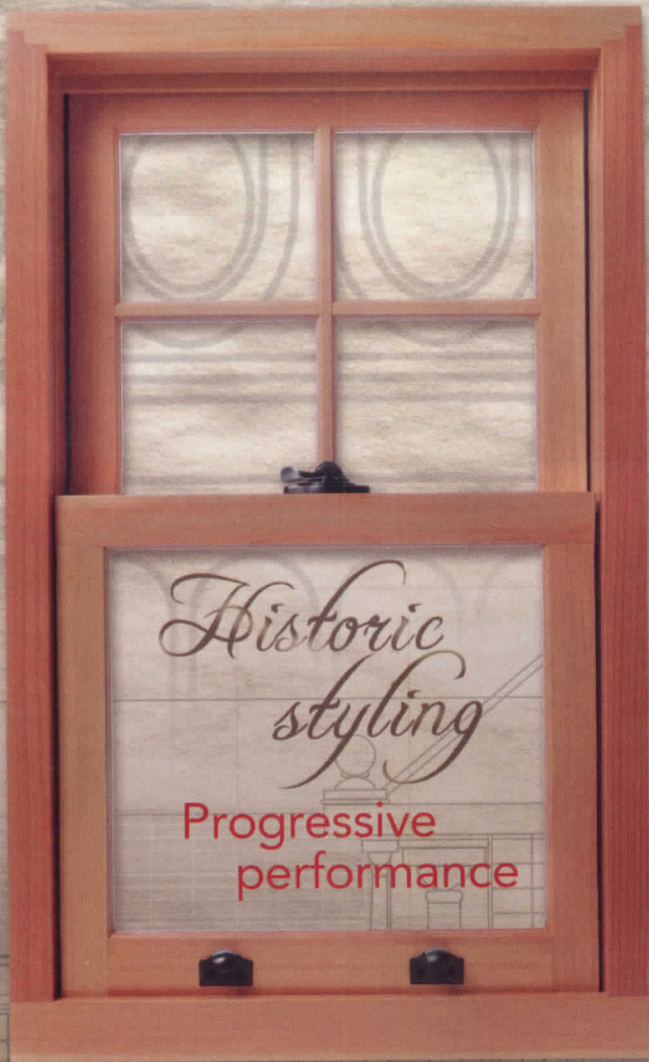
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and artists will come together to explore the aspects of the interior that go beyond physical design – light, air quality, and flow. Visit www.newschool.edu.

AMT Visiting Artist Lecture Series: Ann Hamilton

New York City
April 20, 2011

Ann Hamilton, who is internationally recognized for the immersive sensory experiences of her large-scale multimedia installations, presents this

lecture at The New School. Hamilton creates liminal environments that respond to the architectural presence and social history of their sites. For more information, visit www.thenewschool.edu.

Green IT Summit

Tysons Corner, Virginia
April 20–21, 2011

The Green IT Summit brings together the top leaders in technology and sustainability to discuss and share current and future plans to push the

boundaries of Green IT. This event will give you the chance to learn about the different aspects of Green Technology that are changing the way many companies and governments are running their business. At the Ritz-Carlton. Visit www.greenitdc.com.

AltBuild Expo and Conference

Santa Monica, California
May 6–7, 2011

AltBuild provides the best opportunity of the year for professionals – designers, architects, and the building trades – and the public alike to explore everything that's new and on the horizon in green building, design, and operational practices. The event features public demonstrations, accredited educational programming for professionals, and small group discussions led by area green building experts. At the Santa Monica Civic Auditorium. For more information, visit www.altbuildexpo.com.

Competitions

The Habitare Design Competition

Deadline: March 31, 2011

The Habitare Design Competition, now organized for the 10th time, is set to focus on the concept of outdoor houses. The contestants are commissioned to create the overall concept of an outdoor toilet and related items from the point of view of architecture and design. For more information, visit www.habitare.fi.

The Gowanus Lowline

Registration Deadline: April 1, 2011

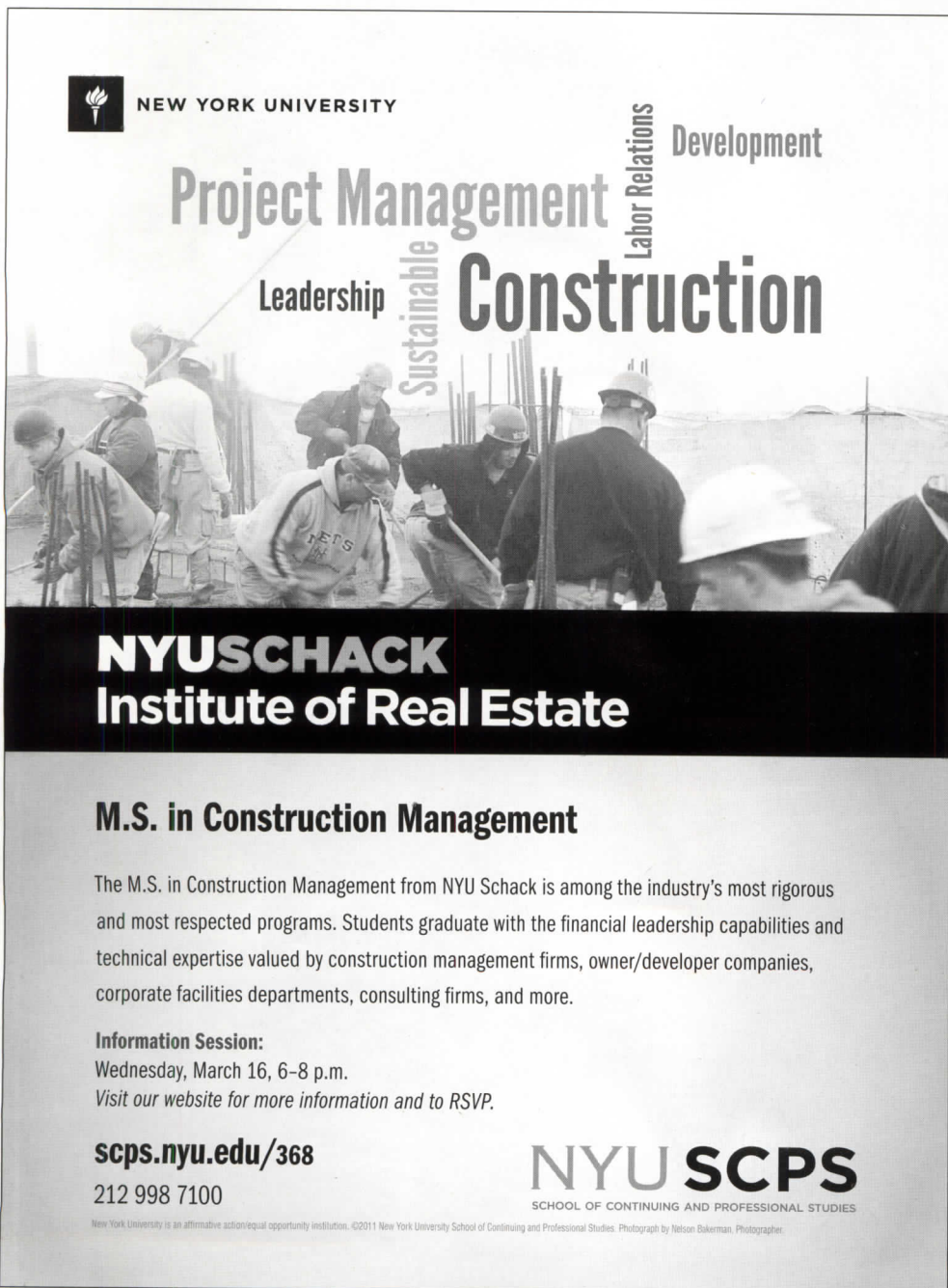
This competition invites speculation on the value of urban development of postindustrial lands and the possibility of dynamic, pedestrian-oriented architecture that either passively or actively engages with the Gowanus Canal in Brooklyn and the surrounding watershed. One of its goals is to generate a discourse about urban issues that are relevant to the community. Visit www.gowanuslowline.org.

Floating Stage Design Competition

Registration Deadline: April 11, 2011

This international design competition seeks out inventive architectural concepts for a multipurpose stage that can be used for concerts, artist exhibitions, theater performances, and more to complement the Miami Marine Stadium. The Miami Marine Stadium, located on Virginia Key in Miami just five minutes from downtown, is an internationally recognized icon. Visit www.dawntown.org.

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



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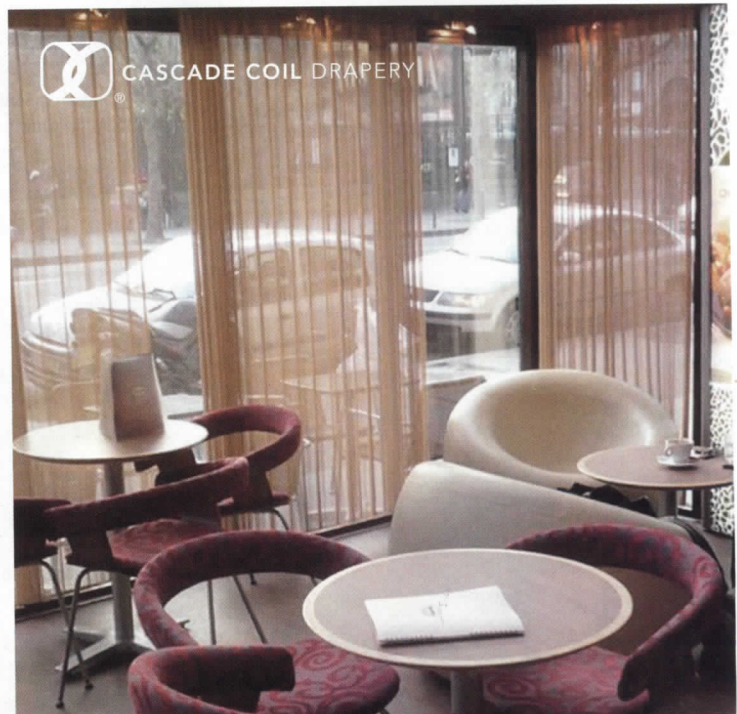
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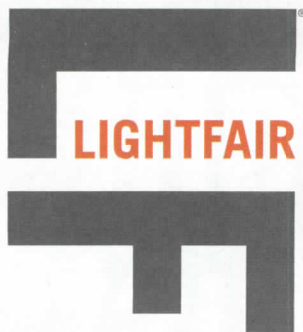
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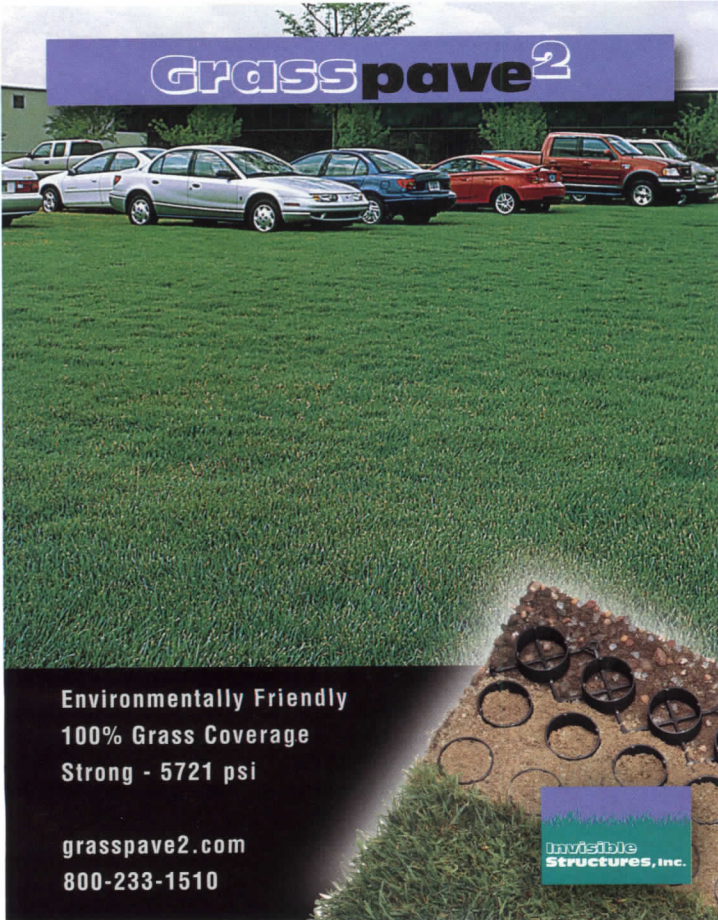
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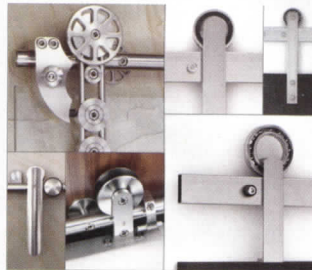


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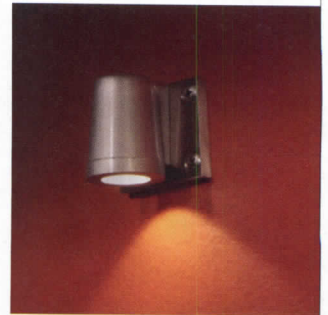
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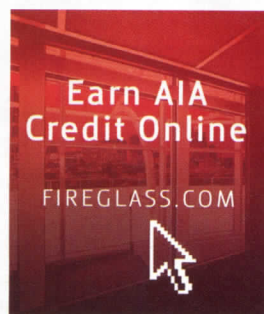
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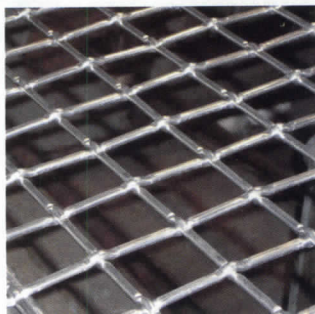
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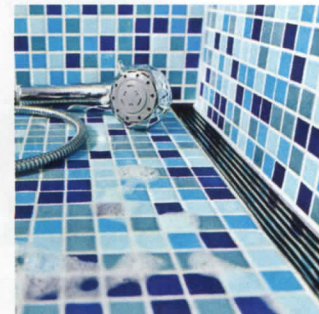
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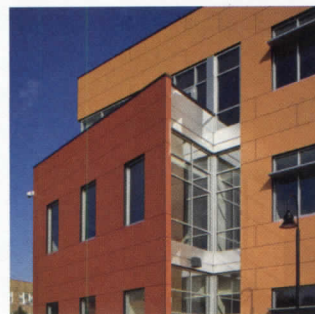
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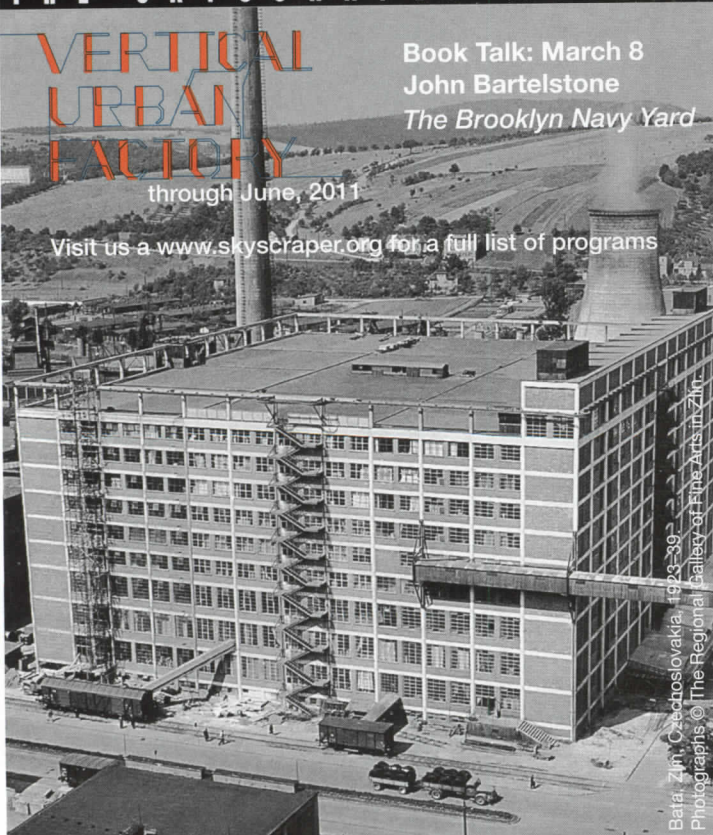
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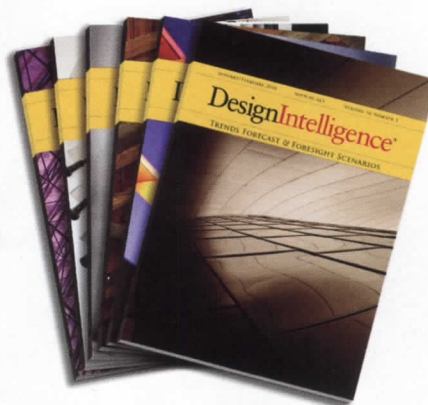


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SNAPSHOT

PROJECT TESHIMA ART MUSEUM
 LOCATION TESHIMA ISLAND, JAPAN
 DESIGNERS RYUE NISHIZAWA AND REI NAITO



LOCATED ON A remote island amid Japan's Seto Inland Sea, the Teshima Art Museum is a one-room gallery that behaves like a work of art. A collaboration between Pritzker Prize-winning architect Ryue Nishizawa and avant-garde sculptor Rei Naito, the project is the latest from the Naoshima Fukutake Art Museum Foundation, which is famous for developing art venues on the neighboring Naoshima and Inujima islands. A narrow path winding its way through the landscape leads from a separate building that holds the museum's shop and café to the gallery embedded in the hilly terrain. Shaped like a drop of water, the new museum is a low-lying, column-free, reinforced concrete shell. Though devoid of conventional doors and windows, the cavernous space has two oculi that enable daylight, wind, and rain – as well as people – to move freely in and out of the building. While 182 floor ducts animate the floor plane with tiny puddles, the oculi focus attention on the beauty of the ocean, forest, and terraced rice paddies surrounding the site.

Naomi R. Pollock, AIA



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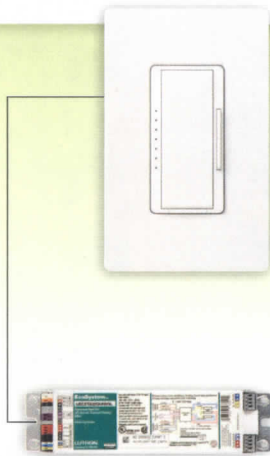
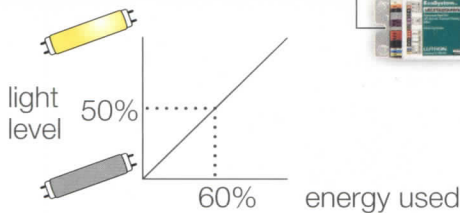
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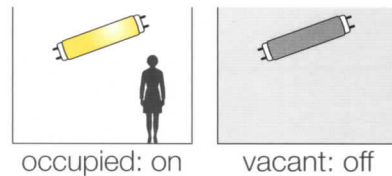
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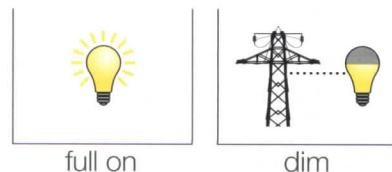


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