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South Africa's Super Bowls

Shigeru Ban's Big Top

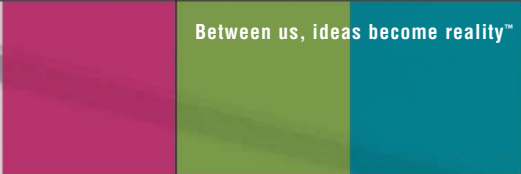
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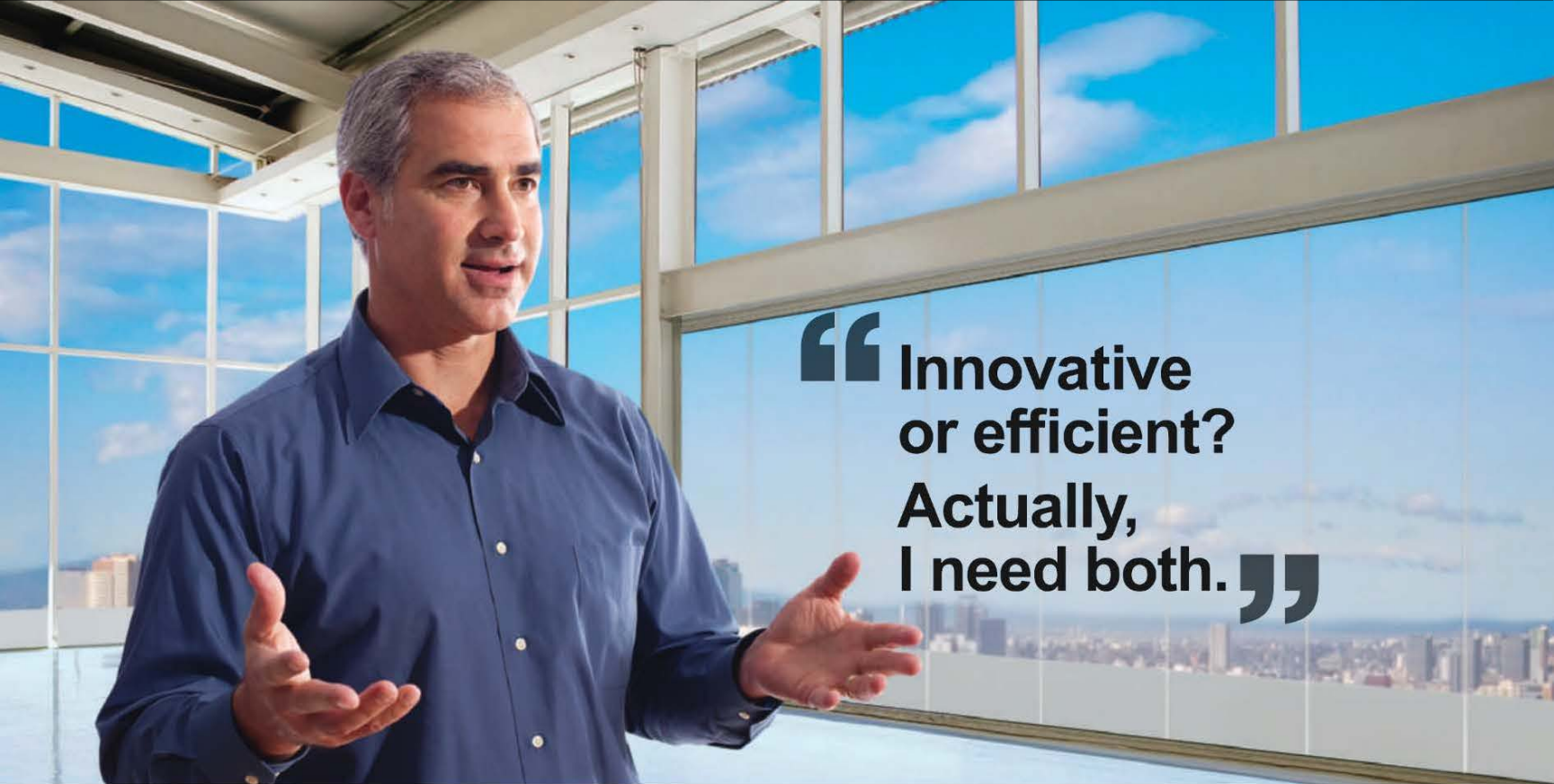
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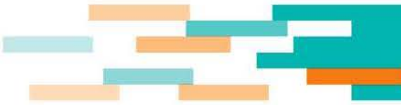
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We visit **Milan Design Week** and report back with highlights from the huge annual event. Our **House of the Month** takes us to Laguna Beach, California, to see a project by Helena Arahuete of Lautner Associates. And we present a video of a collaboration between artist **Olafur Eliasson** and architect **Ma Yansong**. Watch it on our site.



[MILAN DESIGN WEEK]



[HOUSE OF THE MONTH]



[VIDEO: OLAFUR ELIASSON AND MA YANSONG]

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Mission San Xavier del Bac | Unknown Designer | Near Tucson, Arizona | Submitted by jshonkwileraia

[COMMENTS]

“I use Revit and Bentley BIM (as well as AutoCAD and MicroStation). Widely familiar is the enmity between the Autodesk products and the Bentley products, along with the good-natured rivalry between the users ... If the formats of the two models were interchangeable, I don’t think either would lose market share. Some users will prefer one interface over the other. That’s all.”

– Nel on “AIA Calls for Open BIM Software”



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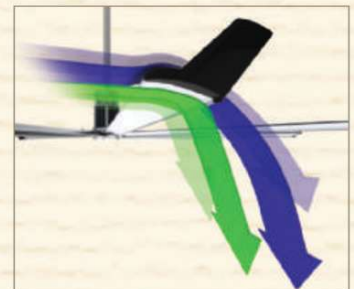
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The Design Vacuum

David Dillon exemplified why good criticism is local.

BY ROBERT IVY, FAIA

DAVID DILLON, ARCHITECTURE CRITIC FOR *The Dallas Morning News* for 25 years and longtime contributing editor of this publication, died unexpectedly on June 3. His passing marked a sea change for many of us in architectural journalism, forcing us to reflect on the current state of the craft and how it has inalterably shifted with the rise of the blogosphere. Dillon – who graduated from Boston College and held a master's in literature and a Ph.D. in art history from Harvard – forged a deep relationship with his adopted subject, the city of Dallas, offering not a superficial review of its buildings, as too often occurs online, but a polychromatic view of its entire urban development, for good or ill. Erudite but piercingly clear, as good journalists can be, he personified how authentic criticism speaks most convincingly from local knowledge. The following are his words, excerpted from a speech he presented in August 2008 to the Council of Architectural Component Executives in Richmond, Virginia.

"... [There is] a huge vacuum in serious design commentary, in which architecture, the most public of the arts, is losing touch with its public – its customer base, if you like – and has less and less influence on how our communities are planned and designed.

To restate the obvious, American newspapers are in a meltdown mode, with revenues dropping and market share shrinking. And one of the most endangered areas of coverage is art and architecture.

This coverage is being marginalized or eliminated across the country. To give you an idea of what this means, three years ago my paper, *The Dallas Morning News*, had 17 full-time arts writers, one of the largest arts staffs in the country. Now it has only five, and that number will likely drop further.... The architecture beat will disappear, ironically at a time when Dallas and Fort Worth are rising to international prominence in the arts.

This is disastrous because newspaper critics are the front line of architecture coverage, always more timely and often more comprehensive than the design magazines. Newspapers are where the public gets most of its architectural information, as well as most of its information about planning, community development, neighborhood preservation, and other matters that it cares about. Online sources can't begin to plug this gap, which means that conversation has virtually stopped on most of these critical issues. Dialogue and debate have given way to deafening silence.

However, I don't believe for a second that the public no longer cares about architecture and planning, that it's become a niche subject. Just look at the proliferation of design and planning review boards around the country.... Whether this indicates that the public is passionate about design or scared to death of what architects might do to them is a different matter.

What's lacking everywhere, however, is a common language and shared frame of reference for talking about these issues. Architects and the public inhabit different worlds when it comes to identifying and analyzing what really matters in communities.

ARCHITECTURAL RECORD, for which I've written for 15 years, recently polled six national critics about what was most important to residents in their part of the country. And almost without exception the key issues were public and civic – affordable housing, regional planning, access to transit, neighborhood preservation, congestion, sprawl, open space. Architecture with a capital A, as in what are Rem Koolhaas or Frank Gehry up to now, barely made the list. Which is to say that there is a big disconnect these days between what architects are doing and what the magazines are publishing, and what the public is doing and interested in.

Correctly or not, the public perceives the profession to be largely indifferent to its concerns. They think architects are interested mainly in architecture as art, in architecture as a business, or in defending the autonomy of the profession, which has been largely squandered, whereas they see themselves as custodians of the public realm and the social and communal elements of architecture and design.

This is a very simplistic division, I admit, but the communication gap is real, and architects and architectural journalists bear much of the responsibility for creating it, and for closing it. Small regional and component magazines have an opportunity to fill some of the coverage gaps and in the process rekindle the public design dialogue.... Another way to put this is that architects and architecture magazines are looking for a way to regain influence and establish authority, which is not the same thing as power.

Power is the ability to make something happen, or not happen, or happen differently. Authority is a different matter. Authority means that your work is read, listened to, talked about, paid attention to. Influence or authority comes not from stopping Project X in its tracks, but from being able to gradually sharpen community perceptions about good design, and thereby to raise public expectations about what is acceptable and what is not.

The great critic Ada Louise Huxtable once said that the public knows its rights when it comes to the law, or Social Security, or Medicare; it's up on all the entitlement programs. But it does not know what it is entitled to in terms of architecture, urban design, or environmental policy. One job of a good design magazine is to help educate the public about its rights in these matters, because in the end its biggest ally is a concerned public, and its most powerful weapon the ability to arouse public opinion in the service of good design."

This excerpt is adapted from an article that first appeared in *Texas Architect Magazine*. We thank its editor, Stephen Sharpe, for bringing it to our attention and permitting us to reprint a portion of it here. It is a fitting memorial to an enlightened spokesperson for our profession and a valuable journalist. We will miss him.

Building for the future

Thanks to Robert Ivy for the appropriate reflections in his June editorial ["Creating a Culture," page 27] on the National Building Museum (NBM), which does indeed contribute to the U.S. building culture better than any other institution.

But the NBM being an independent museum has been both a blessing and a curse. The imagination and ambition shown in its programs are evidence of Chase W. Rynd's and the board of directors' intelligence and vision. Being independent, however, the museum has had to rely on donations (and its gift shop) to continue its programs. Organizations and Institutions have been generous and will continue to assist. The one institution that has not been able to increase its contribution enough, because of hard times, is the landlord General Services Administration. During the start-up years, it was understood that the NBM would naturally improve over time as demand increased. The alterations have consequently been accommodated in phases. When the museum was created in 1980 by an Act of Congress, it surely was not envisioned that it would still be struggling to represent the building culture in 2010. Now is the right time for Congress to consider making the NBM physical plant match its programs by making it world class.
*John S. Stroik, AIA
Reston, Va.*

Awards and context

In coverage of Gold Medal Award winner Peter Bohlin [June 2010], I was very surprised to find that Bohlin Cywinski Jackson's Grand Teton Discovery and Visitor Center has received numerous awards. While the building is stunning, as shown in the carefully composed photos, the success of the overall project must be seriously questioned when context is truly understood. The site plan places the large parking lot, always full of cars and RVs, immediately at the entrance to Grand Teton National Park in front of the new building. The parking lot is the first impression. This begs the question: Is a stunning

building still award-worthy if the site plan is not?

*Mark Hershberger
Jackson, Wyo.*

Naked truth

The Emperor's New Clothes comes to mind when observing Studio Gang's Aqua tower in Chicago [May 2010, page 60]. To read nothing of the building plans other than their being "rectilinear" and "pro forma" says all one needs to know of the design intent. The assumed reason for the building's existence, the housing of sentient beings, becomes a minor design annoyance, while its haute couture robe is elevated to primacy. I hope most realize the Emperor is naked.

*Ron Ward, AIA
Atlanta*

In my back yard

Robert Ivy observes in his May editorial ["The Architecture of Growth," page 21] that "some firms have learned to go where the work is, even if that work lies far afield." However, there is another way to generate work: by simply taking a look out our windows at our own back yards. As architects, we are most familiar with and experienced in the creation and improvement of our local communities. We have the skills and the connections to identify what needs to change and ultimately help bring about substantial improvements to our home turf. We helped design it and build it, now let's tweak it. No, we will not get the air miles, but perhaps a long walk, thoughtful observation and discussion, and creative design and redesign will ultimately be better for all of us and our environment.
*John Mullen, FAIA
Dallas*

Robert Ivy is right – the world has gotten smaller for architects. In spite of the global economic crisis we are experiencing, there's still a lot of work out there. The big difference between the Asian financial crisis of 1997 and the current global economic crisis is this: The first crisis allowed American architects to return to the United States – where there was no crisis – to seek employment. Since the crisis

was confined to Southeast Asia, jobs were readily available in many other regions. Today, there's nowhere to go. So foreign architects and design firms in the region of Asia and the Middle East, such as my firm (with offices in Dubai, Manila, and Singapore), have few options but to stay put, dig a trench, and fight for available projects. What is happening is that project types have changed – and so must we. Developers are venturing to do new types of buildings that will respond to the "real needs" of the market. We are now doing new types of buildings, based on the community's needs: designing affordable housing, new schools, fish markets, university campuses, ferry terminals, and the like. These new projects are opening up new experiences for me as an American architect running a medium size firm, and they demonstrate that you don't have to be a super large U.S. firm to get involved – you just have to be adventurous.

*Medardo Cadiz
Cadiz International Architects
Dubai, U.A.E.*

Corrections

Our story about the restoration of Ludwig Mies van der Rohe's 860-880 Lake Shore Drive in Chicago [June 2010, page 184] should have identified the residential complex as a cooperative owned by 860 Lake Shore Drive Trust. The article also misstated the project budget, which was \$9.2 million. Schendy Kernizan, an Architecture for Humanity design fellow pictured in our special Haiti News report [June 2010, page 42], grew up in Haiti; however, he was not born there, as a photo caption incorrectly stated. Two photos in our coverage for AIA Firm of the Year Award were misidentified as interiors of the Pugh + Scarpa's Solar Umbrella House; in fact, they picture interiors of the firm's Orange Grove Lofts.

Captions for two windows in June's Product Focus were inadvertently swapped. The correct labeling appears below.

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[SHAUN DONOVAN]

Architects + Public Housing: Yes, You Can



WATCH VIDEO

Donovan discusses Obama, Corbusier, HUD's investment in "sophisticated" regional-planning initiatives, and more.

Shaun Donovan, the U.S. Secretary of Housing and Urban Development and a Harvard-trained architect, recently attended the groundbreaking ceremony for Via Verde, a mixed-income apartment community in the South Bronx that he says exemplifies the Obama administration's "fundamentally different" approach to housing – a move away from the Corbusian, tabula rasa model to one that supports local visions of site design. RECORD's Bryant Rousseau spoke with Donovan, 44, about the stimulus package, his focus on planning, and the opportunity for architects to play a larger role in transforming communities.

BRYANT ROUSSEAU Architects had high hopes that the 2009 American Recovery and Reinvestment Act would provide a significant boost to their work, especially with regard to designing schools. It's fair to say that they were disappointed with where the money was eventually directed. Can you give me a statistical sense of the impact the \$13.6 billion in stimulus funding allocated to HUD has had on the architecture profession?

SHAUN DONOVAN Obviously, architects are deeply involved in the design of multifamily housing. Without the Recovery Act, we would not have any multifamily construction going on – it would be stopped dead in its

tracks, along with all of the jobs and the design work that goes with it.

[Even] in good times, the Low Income Housing Tax Credit program [which received billions of dollars in stimulus support] makes up half of all new multifamily construction. Today, when the market has slowed down so much, it's an even more critical piece of ensuring that multifamily design and construction continues at all.

So, for any architect who works in multifamily development, the Recovery Act has been absolutely critical. In terms of the overall job numbers, the more than 20,000 jobs that already have been created [as attributed to HUD's stimulus

spending], we don't know how many architects that accounts for. But for architects working in rental or multifamily housing, every one of those jobs is due to the Recovery Act.

BR What about anecdotal evidence? Tell us about a specific project where HUD's Recovery Act dollars are creating design jobs, improving the nation's housing stock, and facilitating urban development.

SD I was recently in Baltimore to break ground on a project called City Arts [designed by Hord/Coplan/Macht]. It's a very interesting example of artist housing that will incorporate innovative design and gallery space, supporting a broader revitalization in the community.

One of the things I consistently see is Recovery Act projects creating ripple effects that move through a neighborhood, enabling other projects to move forward where a developer may have had real questions about the project's viability. There is a confidence that emerges when you see construction continuing through a downturn. It helps to send the message to surrounding properties and surrounding communities that we're moving forward, that there is hope.

BR Do you see financial-regulatory reform, which is perhaps the single largest legislative priority right now, having a direct impact on architects?

SD Absolutely. Unless we can get a financial system in this country that drives the right kind of invest-

ments, we're never going to have the kind of places in this country that we really want. We need to have a more balanced housing policy, and financial regulatory reform is about creating more balance.

AR What are your top priorities for the next 12 months?

SD Broadly speaking, our national housing policy has been too focused on home ownership and not enough on rental housing and creating sustainable communities. HUD was able to get funding for our new Office of Sustainable Housing and Communities. That will be a critical priority in our next budget, to continue funding that investment. The federal effort to support sustainable, smart planning, at both the local and the regional level, is a major priority for this administration – and architects and urban planners will play an incredibly important role in that effort.

One of the lessons we can take from the foreclosure crisis is not about financial products; it's about the geography of our metropolitan areas. Look at the places hardest hit: the exurbs of Las Vegas and Phoenix or areas in California and Florida, where you have isolated developments, two-hour-long commutes to jobs, and a lack of transportation options. Those are the places that have lost the most value in this crisis. It's a lesson about how we think about our communities, how we invest in them.

BR Why aren't architects more engaged in the affordable-housing sector?

SD One of the things I feel strongly about is that we lost a whole generation of architects. Modernism had a very strong sense of social or even moral responsibility. Yet, because of the direction that urban renewal went, because of the direction of public housing, there was a disillusionment among architects. Frankly, there also was a disillusionment in the broader society with the role of architecture and architects in creating a federalist vision of what communities should look like – a vision that didn't allow for community voice. Unfortunately, that led to a disengagement of architect-

ture and architects from affordable housing, and from social responsibility.

What I see starting to happen around the country are opportunities for architecture and architects to step back into a dialogue with communities, particularly at a time when the housing crisis has decimated neighborhoods. There's an enormous opportunity to bring design, in the best sense, to low-income communities, to make sure that everyone benefits from it. And I sense it when I go to architecture schools, when I talk to architects – there's a reengagement. The president has helped to get young people excited again about public service.

Architects can emerge from this long period of disillusionment. I think of Howard Roark [the protagonist

in *The Fountainhead*]. Here's an architect dynamiting public housing in St. Louis, as an emblem of the disillusionment of architecture. There's a real opportunity to move past that. Frankly, the scale of the crisis that we're emerging from demands it. This is a unique moment for architects.

BR For architects who have never worked with HUD, how do they begin to get involved?

SD I encourage architects to reach out to local community groups, government agencies, public housing authorities, and community development corporations. Understand what efforts they have under way.

HUD will be prioritizing design,

and I mean a broad sense of design – not just the architecture but planning as well. We'll be raising the profile of it, relative to past efforts. But ultimately, architects have to find partners within their communities to be eligible to participate. So really, it's about reaching out locally.

BR Final message for architects?

SD Look at the mistakes we made in the past by not emphasizing design in affordable housing, and not integrating that type of housing more effectively into our communities. We are all living with the consequences. It's sobering. You don't have to be an architect to understand the impact that good design can have on somebody's life.

[GROUND BREAKING]

Affordable Housing Goes Green

CONSTRUCTION FINALLY has begun on Via Verde, a sustainable, mixed-income housing project in the South Bronx designed by Grimshaw Architects and Dattner Architects. A May 3 ground-breaking ceremony drew approximately 100 people, including Shaun Donovan, U.S. HUD secretary, who was involved in the project early on while serving as

commissioner of the New York City Department of Housing Preservation and Development.

The 300,000-square-foot complex is rising on a 1.5-acre remediated brownfield site near a major transportation and commercial center. Via Verde will include 222 units – 151 of which are reserved for low-income tenants – spread across a 20-story

tower, a mid-rise duplex building, and town houses, all organized around a central courtyard. The complex will feature a wellness center and edible gardens.

Designed to use nearly one-third less energy than a comparable housing development, Via Verde, which means "Green Way," is expected to meet or exceed LEED Gold requirements. Sustainable features include a rainwater collection system, photovoltaic panels, and green roofs.

The \$100 million project has been years in the making. It stemmed from a 2004 competition organized by AIA N.Y., which asked designers to conceive green, affordable housing. That undertaking evolved into the "Legacy Project," a competition sponsored by AIA N.Y. and various city departments. It, too, solicited proposals for sustainable, affordable housing, but focused on the South Bronx site. Grimshaw and Dattner, paired with Jonathan Rose Companies and Phipps Houses Group, won first place, beating out 32 other contenders. *Alanna Malone*



Watch a video interview with developer Jonathan Rose at <http://tinyurl.com/jonathanrose>



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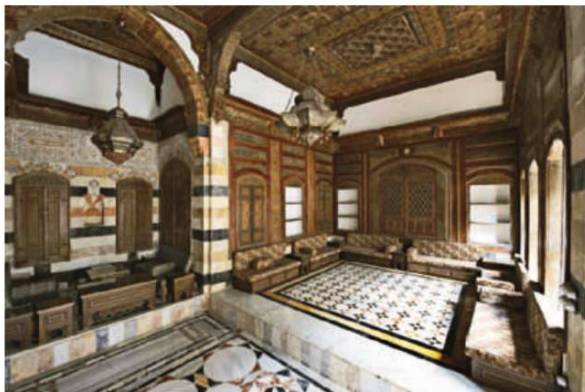
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Setting a Good Example in a Threatened Historic District



The Aga Khan Development Network is restoring three historic houses in Syria.

THE OLD CITY OF Damascus, in Syria, might be a UNESCO World Heritage site, but in recent years money has poured in for new hotels and restaurants. Dozens are already open, while licenses have reportedly been granted for more than 150 hospitality projects across the ½-square-mile area. In some cases, old buildings were razed to make way for newly constructed establishments; others were hastily restored. Developers' lack of technical expertise has led to the use of cheap concrete instead of stone and mud brick, and many developers decorate with a pastiche of Orientalist elements.

Now the Aga Khan Development Network (AKDN), the organization that promotes the preservation of Islamic heritage, is hoping to demonstrate a new development model for the area. The group is in the midst of judiciously restoring three of the Old City's most splendid late-Ottoman houses: Beit Nizam (Nizam House), Beit Sibai, and Beit Kuwatli. All three will reopen collectively as a yet-to-be-named luxury hotel. According to Ali Esmail, C.E.O. of Aga Khan Cultural Services in Syria, the AKDN wants "to bring to life those important

historic assets."

The dwellings, which date from the mid-18th to late-19th centuries, once housed affluent merchant families. They are mansions, really, with sprawling courtyards, ornate receiving rooms, and the environmentally adaptive layout of traditional Damascene architecture.

Begun in 2008 with a \$20 million investment, the AKDN project is slated to be finished in 2012. Galleries, cafés, and "showrooms" to Damascene architecture will fill the ground-floor greeting rooms, and the complex will feature traditional building materials installed by skilled craftsmen.

Still, the project worries some local residents and historians who admired the houses as informal museums. Even if the buildings are restored in earnest, "who will go to these galleries and cafés?" asked one veteran architect who wished to remain anonymous. "Surely not your average Syrian."

The Old City is rife with debate over the pace of investment in recent years, and the AKDN's project fits squarely into these discussions. "The idea of investing [in a hotel or restaurant]

started in order to create money to finance the restoration," said Naim Zabita, an architect. "This should not be a target in itself, to come only for investment. We want to encourage more people to live in the old town, and it's not easy because it's becoming so expensive."

A nation quickly losing its pariah status as it opens to Western tourism, Syria hosts a wealth of historic Arab residential architecture. But much is in disrepair. The Old City's classic Arab houses began emptying in the 1930s as wealthy families were attracted to Modern, open-plan apartments in the new suburbs. Houses like Beit Nizam, Sibai, and Kuwatli were abandoned; some became warehouses and schools. Poorer, rural families that moved into Damascus for work filled them, as the real estate prices and population in the Old City shrank.

Yet as Syria's socialist economy opened up in the 1990s, the Old City became a development target. While now a popular tourist destination, its historic architecture remains threatened. In 2002 and again in 2008, the World Monuments Fund put Old Damascus on its Watch List of threatened heritage sites.

The AKDN aims to preserve three historic structures in this district while giving them a modern purpose. "We are hoping to introduce the project as a model to investors and the government," Esmail said, "from documentation to design to restoration." If they succeed, the project could serve as a benchmark in a country that is expanding its economy while preserving its past. *Frederick Deknatel*

[NOTABLE PROJECTS]

Finalists for 2010 Aga Khan Award Announced

THE 19 FINALISTS for the Aga Khan Award for Architecture were announced May 25 during an event at the Museum of Modern Art in New York City. Chosen by a nine-member master jury, the projects on the short list range from a textile factory in Turkey to a women's health center in Burkina Faso.

Established in 1977 and given every three years, the prestigious Aga Khan Award recognizes notable projects in communities where Muslims have a significant presence. The program was created by His Highness the Aga Khan, Imam of the Shia Imami Ismaili Muslims. The prize fund totals \$500,000.

Various types of projects are eligible, including contemporary architecture, social housing, historic preservation, adaptive reuse, and landscape design. The award is intended to honor all of the entities involved in a project, such as architects, municipalities, builders, clients, craftsmen, and engineers.

Following site visits and further discussion by the master jury, the 2010 winners will be revealed in October at a ceremony in Doha, Qatar. *Jenna M. McKnight*

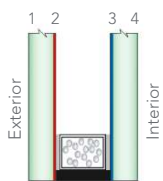
- **Conservation of Gjirokastra**, Gjirokastra, Albania
- **Chandgaon Mosque**, Chittagong, Bangladesh
- **Nishorgo Visitor Interpretation Centre**, Teknaf, Bangladesh
- **CBF Women's Health Centre**, Ouagadougou, Burkina Faso
- **Bridge School**, Xiashi, China
- **Tulou Collective Housing**, Guangzhou, China
- **Palmyra House**, Alibagh, India
- **Green School**, Bali, Indonesia
- **Reconstruction of Ngibikan Village**, Yogyakarta, Indonesia
- **Dowlat II Residential Building**, Tehran, Iran
- **American University of Beirut Campus Master Plan**, Beirut, Lebanon
- **Restoration of the Rubber Smokehouse**, Lunas, Kedah, Malaysia
- **Rehabilitation of Al Qaraouiyyine Mosque**, Fez, Morocco
- **Souk Waqif**, Doha, Qatar
- **Wadi Hanifa Wetlands**, Riyadh, Saudi Arabia
- **Madinat Al-Zahra Museum**, Cordoba, Spain
- **Yodakandyia Community Centre**, Hambantota District, Sri Lanka
- **Revitalization of the recent Heritage of Tunis**, Tunis, Tunisia
- **Ipekyol Textile Factory**, Edirne, Turkey



1. **Palmyra House**, in Alibagh, India.
2. **Green School**, in Bali, Indonesia.

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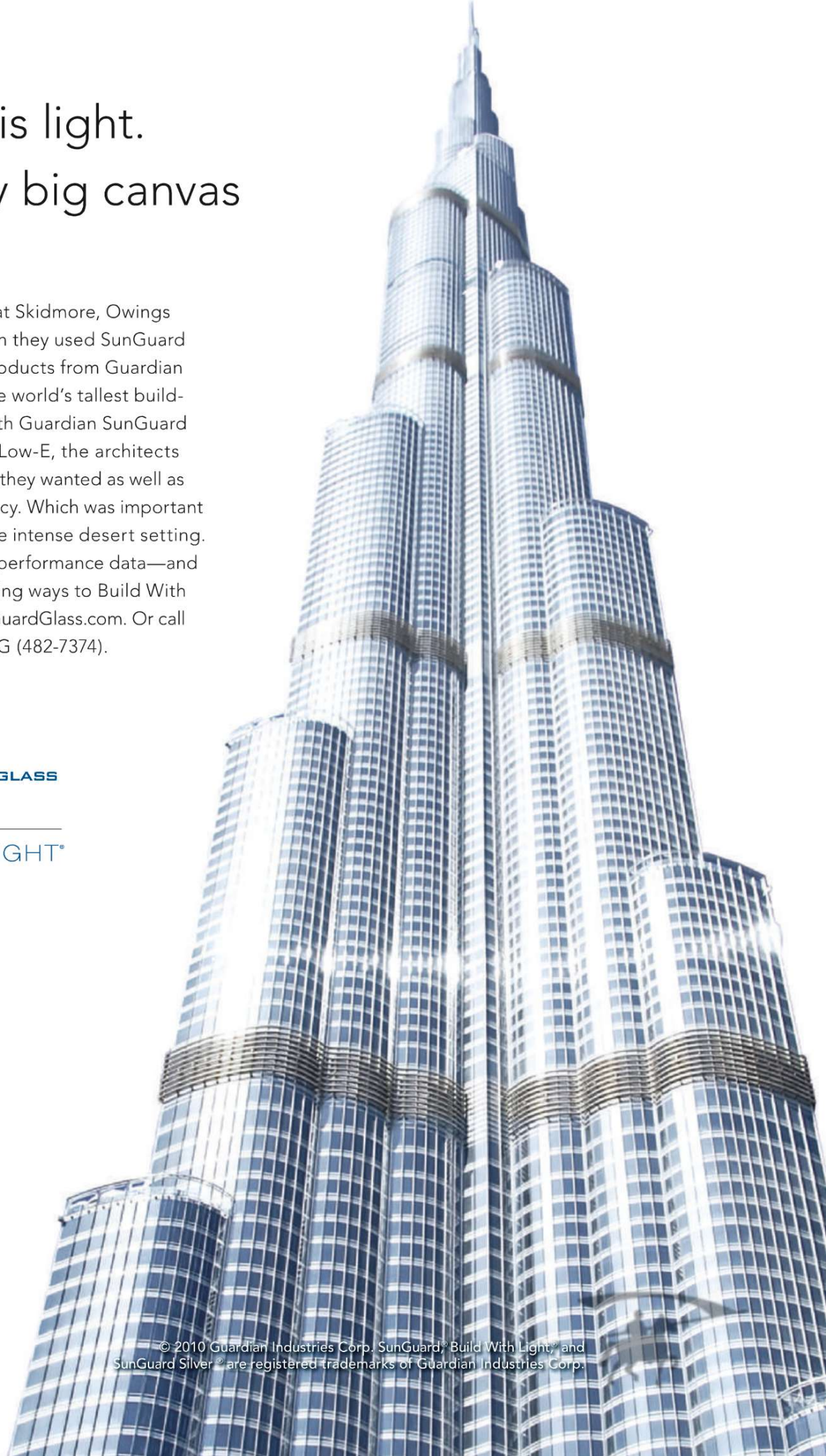
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[SANAA/IMREY CULBERT]

Louvre Annex Rises on Former Mining Site

LENS, A CITY OF 250,000 in northern France, had a rough 20th century. The town was twice destroyed by world wars, and its economic engine, coal mines, gradually declined and have been shuttered for more than 20 years. Following the lead of nearby Lille, which has reestablished itself as a business and cultural hub, Lens is trying to reinvent itself.

In 2004, after reviewing a number of potential cities, government officials selected one of Lens's former mines – now a green, hilly pasture – as the site for the first Louvre satellite museum. Following an international competition, the team of Tokyo-based SANAA and New York/Paris-based Imrey Culbert was chosen for the project in September 2005. After a series of permitting and financing processes, the 150 million euro (\$216 million USD), 183,000 square-foot structure has begun construction, with an intended completion date in 2012.

The museum is to consist of five pavilions, connected at their corners. Aside from the glass entrance pavilion, the buildings will be clad in reflective aluminum, which will mirror the pastoral surroundings in blurred form.

Louis-Antoine Grégo, project architect for SANAA, is working with local architects Extramuros to take the project to completion. He says the curvature of the buildings will add to the ethereal effect: "As you walk by, the building will change, helping to subtly integrate it into the site."

The museum is slated to display art from the Louvre's vast collection, which spans eight departments (Near Eastern Antiquities; Egyptian Antiquities; Greek, Etruscan, and Roman Antiquities; Islamic Art; Decorative Arts; Prints and Drawings; Sculptures; and Paintings). The Lens branch will show rarely seen pieces and will highlight the archival and conservation roles of the institution with a series of visible, below-grade storage areas – a reference to the site's mining history.

"It's an idea of excavation and layers," explains Celia Imrey, principal of Imrey Culbert, which is no longer involved with the project. "But it's still about a museum and a museum program, not a gesture that is tacked on."

Another main feature will be the Gallery of Time, curated by French museographer Adrien Gardère. The large, continuous gallery will have artwork arranged chronologically and will empha-

size cross-cultural connections by displaying works produced in different places at the same time (for instance, pieces that were made in Greece and China while the Pyramids were being built).

With more than 700,000 visitors anticipated for its opening year, Louvre-Lens could catalyze a regeneration of the surrounding area – and help a former industrial town prosper in the 21st century. *Aleksandr Bierig*

ON THE BOARDS



The New School University Center

LOCATION **New York City** ARCHITECT **Skidmore, Owings & Merrill**

Designed by Roger Duffy of SOM, the University Center will serve as a cohesive unit for The New School, whose campus consists of a scattering of buildings in Manhattan. The 365,000-square-foot, 16-story center will contain a central library, space for academic and public programs, an auditorium, and a 608-bed dormitory. Completion is planned for fall 2013.



ArcelorMittal Orbit

LOCATION **London** DESIGNERS **Anish Kapoor, Cecil Balmond**

British sculptor Anish Kapoor and ARUP's Cecil Balmond have envisioned a new steel tower for London's 250-acre Olympic Park, which continues to take shape in advance of the 2012 Summer Games. The structure will rise 115 meters (378 feet) – about 60 feet higher than New York's Statue of Liberty. ArcelorMittal, a major steel producer, will fund most of the \$27.5 million project.



Rose Garden Islands

LOCATION **Ljubljana, Slovenia** ARCHITECT **OFIS**

OFIS Architects, a 2001 RECORD Design Vanguard firm, was commissioned to design a roughly 193,000-square-foot housing complex with 100 units, plus an underground parking area. The architects conceived three hexagonal "islands," each with an interior courtyard. Primary materials are wood, glass, and concrete. Construction is slated to begin this fall.



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National Trust Announcements

The National Trust for Historic Preservation has hired a new president: Stephanie Meeks, who starts July 6. She replaces Richard Moe, who retired last month after leading the organization for 17 years. Meeks will be the eighth president of the trust, which was created in 1949 by legislation signed by President Harry Truman. In related news: The trust has released its annual list of the 11 Most Endangered Historic Places in the U.S. The sites include the Industrial Arts Building in Nebraska; the Art Deco-style Threefoot Building in Mississippi; and the Metropolitan AME Church (right) in Washington, D.C. Visit us online to see a slide show.

Yamasaki Archives Saved From Destruction

Once destined for the shredder, the archives of famed Midcentury Modernist Minoru Yamasaki have been saved, thanks to a last-minute rescue effort by preservationists. The records, now being stored in the State of Michigan Archives, include items related to the N.Y.C. World Trade Center towers.

Lutron Illuminates the Past

Joel Spira, inventor of the solid-state electronic dimming device, as well as chairman and founder of Lutron Electronics (1961), has donated a range of his company's most innovative and historic materials to the Smithsonian National Museum of American History.

Newsmaker: Eva Franch i Gilabert

Following an international search, the Storefront for Art and Architecture has named Eva Franch i Gilabert its new director. A Catalan architect, researcher, and teacher, Franch i Gilabert, 31, is founder of the solo practice OOAA (office of architectural affairs).

AIA/HUD Design Awards

Affordable housing projects by David Baker + Partners, Architects; PSL Architects; buildingcommunity WORKSHOP; and Tyler Engle Architects are the winners of the 2010 AIA/HUD Secretary Awards.

Viñoly's New Domino Plan Wins Key Approval

On June 7, the N.Y.C. planning commission voted 13-0 to approve Rafael Viñoly's scheme to convert the historic Domino sugar plant, in Brooklyn, into homes, offices, and shops. The \$1.5 billion proposal now heads to the City Council for a final vote.

N.Y.C. Skyscraper Earns LEED Platinum

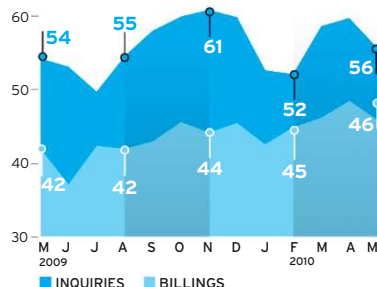
The 1,200-foot-tall One Bryant Park, in Manhattan, has earned LEED Platinum under the USGBC's LEED Core & Shell rating system. To date, it is the only commercial high-rise building in the U.S. to achieve this status.

Design Experts Convene for Haiti Conference

On June 4, more than 150 people filled a Cooper Union auditorium in New York City for a five-hour symposium on "Rebuilding a Sustainable Haiti." Organized by the Institute for Urban Design, the free event offered an overview of redevelopment strategies for the quake-ravaged Caribbean nation.

Architectural Billings

The billings index dropped to 45.8 in May, ending a steady three-month climb. "This dip is somewhat of a surprise since it appeared that conditions were pointing toward a recovery," stated Kermit Baker, the AIA's chief economist. The inquiries score also slipped a few points, registering at 55.5.



Metropolitan AME Church was named an endangered historic site.

OBITUARIES

David Dillon

David Dillon, a leading architecture critic and RECORD contributor, died June 3 of a heart attack at his Massachusetts home. He was 68. Dillon, who held degrees from Boston College and Harvard University, joined the *The Dallas Morning News* in 1981 and worked there for 25 years. Respected nationally and regionally, Dillon authored several books, including *The Architecture of O'Neil Ford* (1999), and taught at the University of Massachusetts at Amherst. The school plans to establish a lecture series in honor of Dillon and host a remembrance event this fall. *Jenna M. McKnight*



William J. Mitchell

A longtime booster of computer-aided design, William Mitchell, 65, died on June 11 in Boston of complications from cancer. Born in rural Australia, Mitchell received an architecture degree from the University of Melbourne; an M.A. from Cambridge University, England; and a master's in environmental design from Yale. From 1992 to 2003, he was dean of MIT's architecture school, where he launched the Smart Cities program. Mitchell published a number of books, including *Me++: The Cyborg Self and the Networked City* (2003) and *City of Bits: Space, Place, and the Infobahn* (1995). *C.J. Hughes*





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CIRCLE 21



Housing Stack

ROBERT VENTURI'S ICONIC 1964 house for his mother in Chestnut Hill, Pennsylvania, a departure from the "less is more" ideal of his architectural peers at the time, offered a strong but subtle statement. In his own words, its gabled form created "an almost symbolic image of a house."

These days, you can forget subtlety. A string of recent projects takes an in-your-face approach to revive the gable once again. In Tokyo, Sou Fujimoto stacks prototypical house shapes three stories high in a wood structure. In Zaandam, the Netherlands, Delft-based WAM Architecten goes further, or higher, with its 12-story, blocklike composition of traditional cottages from Holland's northern Zaan region. Herzog & de Meuron plays a game of Jenga with extruded versions of the same shape for VitraHaus in Vitra's architectural park in Weil am Rhein, Germany.

Fittingly, the buildings are, respectively: collective housing, a hotel, and a showroom for home furnishings – in essence, a permanent home, a temporary home, and an ideal home.

But while Venturi's house may have helped to usher in architecture's Postmodern era, what can be made of this new phenomenon? Is the completion of these three strikingly similar projects within months of each other merely a coincidence, or do they reflect a new tendency in architecture?

From Japan to Germany to the Netherlands, the very fact that these "domestic" projects have popped up around the world suggests that architecture, and the profession's increasingly international scope, is responding to a common condition of contemporary society, and of globetrotting architects in particular. It is the global nature of modern life that has us longing for the comforts of home. *Josephine Minutillo*

1. Sou Fujimoto Architects' Tokyo Apartment consists of five dwelling units in a residential section of central Tokyo.

2. WAM Architecten's hotel in Zaandam, the Netherlands's revitalized center incorporates the iconic wooden houses of the region.

3. VitraHaus, designed by Herzog & de Meuron to display the company's home furnishings, is the latest architectural stunner on Vitra's campus in Weil am Rhein, Germany.





2



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CIRCLE 22



Mikou Design Studio



PRINCIPALS:

Salwa Mikou, Selma Mikou

LOCATION: Paris, France

FOUNDED: 2005

DESIGN STAFF: 10

WORK HISTORY: Salwa: Ateliers Jean Nouvel, Paris, 2001–5; Selma: Renzo Piano Building Workshop, Paris, 2002–5

EDUCATION: Ecole Nationale Supérieure d'Architecture de Paris-Belleville, Paris, 2000, B.Arch.; Salwa: EPFL, Lausanne, Switzerland, 2003, M.Arch.

KEY COMPLETED PROJECTS: Bailly School, St. Denis, France, 2010

KEY CURRENT PROJECTS: Jean Lurcat College, Saint-Denis, France, 2011; Bobigny School Complex, Bobigny, France, 2011; Bateau Feu Theatre, Dunkerque, France, 2011; Paris Institute for Islamic Culture, Paris, 2012; Zero Energie Campus, Saint-Ouen, France, 2012; Saint-Etienne URSSAF Headquarters, Saint-Etienne, France, unbuilt; Training Centre for Sustainable Development Professionals, Marrakesh, Morocco, unbuilt

WEB SITE: mikoustudio.com

TWIN SISTERS SALWA AND SELMA Mikou, principals of Paris-based Mikou Design Studio, were introduced to architecture through living with their family in a traditional riyaad in the heart of the medina in Fez, Morocco. "The house was like a white and luminous void inside the labyrinthine typology of the city," says Selma. "The contrast between the very thin spaces of the streets and the open and generous space in the patio of our house was very powerful." The sisters say those images have always stayed with them: stepping from a dim alleyway into a dark vestibule, then emerging into a sunlit central courtyard around which the house rises. The house had no windows on the street side, as its focus was on the private oasis within.

Home and hearth having left such strong reverberations in the minds of the Mikou sisters, it might seem strange that the two have gone on to build an architectural practice that includes no single-family residences. From working at other firms – Salwa worked as a project architect for Ateliers Jean Nouvel, in charge of projects in Beirut, Kuwait, and Seoul, while Selma spent those same years as project architect for Renzo Piano Building Workshop, in charge of projects in Abu Dhabi and London – they started Mikou Design Studio in 2005 and jumped directly into designing public institutional buildings. The sisters run their 10-person firm as a workshop where everyone collaborates on every project, like "a big family." Their first built project – a pre- and elementary



1. Colored eaves extend into the street in front of the Bailly School in Saint-Denis, France. Hallways run the length of the building, connecting classrooms oriented around gardens.

2. The design for this 172,000-square-foot theater complex is inspired by the many overlapping cultures that have played parts in the history of its location, Beirut.

[View additional images online.](#)

school complex in Saint-Denis, France – reveals a bit of their Moroccan history. The school has corridors along the length of the building on both stories, connecting clusters of classrooms oriented around gardens and courtyards.

You can also see traces of the sisters' influences in some of their many current projects on the boards: a theater complex in Dunkerque, France, with four different facades that react to the various urban situations they face; the Institute for Islamic

BELOW: This 108,000-square-foot headquarters for the URSSAF (France's social security administration) incorporates numerous green terraces for both private and public use. All offices and work spaces have access to gardens.



Culture in Paris's 18th Arrondissement, an elegant design with structural arches that intersect nonorthogonally; the Saint-Etienne, France, headquarters building for the URSSAF, France's social security administration, which includes access to green space for every office in the 108,000-square-foot space. All large-scale, and each with humanistic touches that belie the projects' institutional nature and size. "We love cultural projects," says Selma. "Museums, theaters, spaces for rest, leisure, entertainment. Towers and vertical typologies also. Large-scale projects bring us a lot of satisfaction because they make us think about new ways of living, how to cross activities, and to bring nature and imagination into public spaces."

While Mikou Design Studio continues to compete in competitions for projects in Europe and beyond and to participate in installations (they are currently working on one in Casablanca), the sisters are also seeking residential clients. "We want to work with more private clients because we feel that human relationships bring richness to projects," says Selma. "But ultimately, if a client is intelligent, sophisticated, and needs our help, then all projects are interesting. Our credo is how to give more because a building is above all a place of giving." *Ingrid Spencer*

[AIA COMPETITION]

Different approaches win competition for refugee housing

A WOVEN SHELTER designed by Jiyoung Kim and a lightweight structure made of prefabricated modules by Gene Kaufman shared first place in the first annual Ideas Competition organized by the AIA's Young Architects Forum and the Committee on Design. Eric Polite took third place with his design of a portable dwelling unit fabricated from recycled plastics and polymers. The competition challenged participants to devise a scheme for post-disaster housing on the site of Houston's Astrodome.

Kim's design uses donut-shaped fabric panels that unskilled workers on-site can fill with sand, mud, straw, or refuse and then weave together. Once filled and connected, the fabric panels serve as both skin and structure.

Kim explains that her design was a response to a statement by a planner at the United Nation, High

Commission for Refugees who said it is very hard to replace time-tested tents, no matter their limitations. So instead of starting from scratch, she used tent fabric, but adapted it so it could create permanent, as well as temporary, housing. Kim worked on the project as her senior thesis at the New York Institute of Technology.

Kaufman designed a system of prefabricated modules that nest within each other for shipping, then slide out on-site. Pivoting solar panels and wind turbines on the roofs provide power, while rain is collected for drinking water, and dry composting toilets eliminate the need for sewage connection. As a result, the houses can operate even when a city's power grid has collapsed.

Kaufman, who runs his own firm in New York City and has explored prefabricated plastic bathroom modules for hotel projects, says, "I've



been working on all kinds of housing my entire career, so this competition was a chance to use that expertise for a good cause. You can say I've had this idea inside me for a long time." He hopes to set up a nonprofit foundation

that would produce the units, renting or selling some to pay for others deployed to disaster or refugee sites.

Polite also used prefabrication in his scheme, devising a system of portable and stackable residences made

from vacuformed units delivered to the site by truck.

Barton Phelps, FAIA, Lawrence Scarpa, FAIA, and Mehrdad Yazdani, AIA, served on the jury for the competition. *Clifford A. Pearson*

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CIRCLE 23



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The Latest Cultural Revolution

China, China...: Western Architects and City Planners in China, by Xin Lu. Hatje Cantz Verlag GMBH, 2008, 112 pages, \$30.

Learning from Hangzhou, by Mathieu Borysevicz, Denise Scott-Brown, Robert Venturi, and Clarisa Diaz. Timezone 8, 2009, 330 pages, \$45.

Positions: Portrait of a New Generation of Chinese Architects, by Frederic Edelmann. Actar, 2008, 216 pages, \$40.

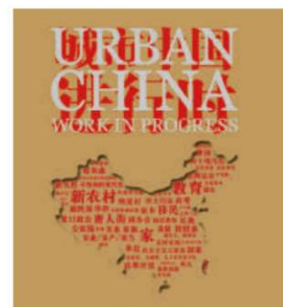
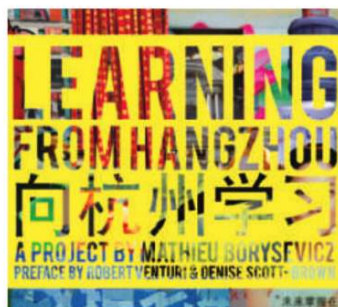
Urban China: Work in Progress, by Jiang Jun; edited by Brendan McGetrick. Timezone 8 and Urban China Magazine, 2009, 208 pages, \$40.

AT THE BOTTOM of the last page of Xin Lu's *China, China...* there is this disclaimer: "Because of the rapid developments in China, information and data given will be subject to change even during the publication process." I think this sums up the situation over there, but it should not deter those poised to start practicing in China from reading this essential publication.

Xin Lu is at her best when articulating the ins and outs of China's business culture and how firms there operate under conditions of constant flux. She provides an insider's perspective on how overlapping domains of state, party, and a still-evolving legal framework shape the practice of architecture, and how foreign firms can negotiate uncharted economic waters.

While meant to be a handbook, *China, China...* occasionally veers into the realm of travel literature – of the 19th-century variety – interpreting cultural differences by citing books such as *The Spirit of the Chinese People*, published in 1915. These sections are amusing, but many of the broad generalizations that Xin Lu attributes to "culture," "essence," or "language," when removed from their original context of early-20th-century intellectual debates, undermine her important 21st-century points about flexibility, communication, and process.

Learning from Hangzhou invokes *Learning from Las Vegas*, but also conjures Roland Barthes's *Empire of Signs*. An artist known for his disorienting billboard art, author



Mathieu Borysevicz started this book with a search for billboards. What he discovered was a city of signs (signage and signifiers). Borysevicz did his gawking with a digital camera, a medium predisposed to gathering a subjective archive. The book's first telling image is not Borysevicz's, but one of old Hangzhou. All the images that follow narrate a lament for the old city, but also illustrate a fascination with where it may all lead. The book's last image, of Borysevicz's exhibition at New York's Storefront for Art and Architecture, shows people gazing at his empire of signs.

Borysevicz represents what often happens when Western art comes up against Chinese history. As the scholar Sherin Wing has noted, this juxtaposition "truncates the conditions of China from a position of first-world privilege, glorifying third-worldness for the Western gaze." Aestheticizing China's culture transforms it into a sort of living museum.

Theories about architecture and its categories tend to break down when crossing cultural boundaries. *Positions*, the companion volume to

Frederic Edelmann's earlier book, *In the Chinese City* (2008), presents works that defy easy categorization and grant individual faces to what is often subsumed under a grand narrative. The specific merits and challenges of the projects chip away at the broad editorial distortions produced by attempts to interpret China's larger transformations. Here are buildings realized under complex political conditions, in challenging settings, and at varied scales.

Edelmann, architecture critic for *Le Monde*, inadvertently demonstrates how problematic the casual reliance on the qualifier *Chinese* can be. Most simply, *Chinese*, when linked with architecture, resides in local manifestations of an advanced design culture that employs hybrid practices. This Chinese architecture exists within the broader political and social dynamics of internal migration, the Communist Party, politics, economic improvisation, and central planning. As Edelmann notes, "Few professions are less free of political and economic ties than that of the architect."

Some Chinese scholars view

current Chinese architecture as post-theoretical. The magazine *Urban China* could be viewed as this mindset's official publication. The book *Urban China: Work in Progress* offers a sampling of some of the themes that define the humanistic, cultural approach taken in each issue of the magazine. The book demonstrates the depth and scope of home-grown research into the implications of the country's evolving metropolitanism.

Urban China tries very hard to escape theory, relying instead on data, observation, and analysis – an empirical approach that avoids transhistorical judgment. The contributors, a group representing a range of humanistic disciplines – plus a few architects – have seemingly returned architectural discourse to the core principals of *shishi qiushi* ("seeking truths from facts"). The essays tend to place buildings in the background, their authors diving into the trenches of policy, planning, and all the soft power of decision-making.

On second thought, perhaps the rapid pace of change in China has not made the information in these books obsolete. *Guy Horton*

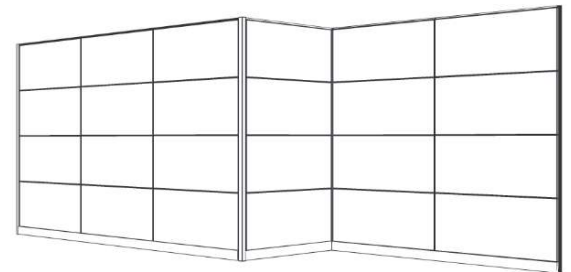


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Income Belly Flops; Firms Swim for Work Offshore

Top 250 Architecture Firms' 2009 revenue fell dramatically, while foreign work was stable.

BY CHARLES LINN, FAIA

THE DOG DAYS OF SUMMER are here, and for Practice Matters readers this means one thing: It's time for the release of RECORD's Top 250 Firms list. For the uninitiated, the list ranks firms according to last year's revenue, as reported to our sister publication *Engineering News-Record*. (We have

only listed the Top 25 on this page, so go online to see the rest.) Last July we marveled at the fact that while the recession was already well under way during 2008, total revenue for the profession was up 9 percent, from \$11.5 billion to \$12.5 billion. Waiting to find out how much revenue would

decline as projects were cancelled and backlogged work ran out has been a bit like watching a fat man start a swan dive off the high board: You want to avert your eyes so as not to see what happens when his flabby midsection smacks the water, but you look on and hope for a graceful

landing. It would have been better to turn away. The combined revenue for the Top 250 firms in 2009 totalled \$10.2 billion (B), \$2B less than the year before. As difficult as it is to comprehend the evaporation of so much money from the profession's income stream, growth over the past

Top 25 Architecture Firms

2010 Rank	2009 Rank	Firms listed by 2009 architecture revenue as reported to ENR in its Top 500 Design Firms Survey	Type of firm	Total architecture revenue	Domestic architectural revenue	International architectural revenue	Percentage of design revenue from architecture	Total design revenue
1	1	AECOM Technologies , Los Angeles, Calif.	EA	695.10	278.00	417.10	14%	5113.50
2	2	Gensler , San Francisco, Calif.	A	549.95	417.73	132.22	100%	549.95
3	4	URS Corp. , San Francisco, Calif.	AEC	424.10	356.10	68.00	9%	4847.60
4	6	Perkins+Will , Chicago, Ill.	A	406.90	291.20	115.70	100%	406.90
5	7	HDR Architecture , Omaha, Neb.	AE	348.70	290.70	58.00	24%	1456.50
6	3	HOK , St. Louis, Mo.	AE	345.00	219.00	126.00	73%	483.00
7	5	HKS , Dallas, Tex.	AE	262.00	232.00	30.00	100%	262.00
8	8	Skidmore, Owings & Merrill , New York City	AE	216.25	93.75	122.50	75%	288.00
9	11	NBBJ , Seattle, Wash.	A	201.84	157.04	44.80	100%	201.84
10	13	Leo A Daly , Omaha, Neb.	AE	175.17	165.15	7.02	100%	175.17
11	20	Cannon Design , Grand Island, N.Y.	AE	156.77	123.20	33.57	91%	171.61
12	10	RTKL Associates , Baltimore, Md.	AE	137.99	97.96	40.03	67%	205.95
13	*	Populous , Kansas City, Mo.	A	125.70	76.70	49.00	100%	125.70
14	12	Callison , Seattle, Wash.	A	119.50	77.00	42.5	100%	119.50
15	18	SmithGroup , Detroit, Mich.	AE	114.70	114.60	0.10	69%	166.30
16	25	Bechtel , San Francisco, Calif.	EC	114.00	41.00	143.00	9%	2159.00
17	15	ZGF Architects , Portland, Ore.	A	113.39	109.93	3.46	100%	113.39
18	14	Perkins Eastman , New York, N.Y.	A	110.00	88.00	22.00	100%	110.00
19	52	Fentress Architects , Denver, Colo.	A	103.92	103.18	0.74	100%	103.92
20	*	Kohn Pedersen Fox Associates , New York City	A	94.33	9.00	85.33	76%	123.56
21	16	Burt Hill , Washington, D.C.	AE	88.00	46.00	42.00	70%	126.00
22	21	Rafael Viñoly Architects , New York City	AE	86.81	57.00	29.81	100%	86.81
23	23	HMC Architects , Los Angeles, Calif.	A	83.40	82.59	0.81	100%	83.40
24	27	Ellerbe Becket , an AECOM Co., Minneapolis, Minn.	AE	79.40	62.90	16.50	77%	103.60
25	22	Corgan Associates , Dallas, Tex.	A	75.60	74.21	1.39	90%	83.76

* Not included in the Top 250 Architecture Firms of 2008

The companies included in ARCHITECTURAL RECORD's list of the Top 250 Firms are ranked according to revenue for architectural services performed in 2009 in \$ millions. The list is compiled from a survey conducted for *Engineering News-Record's* annual Top 500 Design Firms Sourcebook. The McGraw-Hill Companies publishes both ARCHITECTURAL RECORD and ENR.

Key to firm types

- A** Architect
- AE** Architect Engineer
- AP** Architect Planner
- EA** Engineer Architect
- AEC** Architect Engineer Contractor (not all combinations listed)

See the entire Top 250 Architecture Firms list at architecturalrecord.com/practice.

half-decade was phenomenal, and undoubtedly unsustainable. In 2005, income for the largest 25 firms on the list was \$3.3B. By the end of 2008, that had increased a whopping 94 percent, to \$6.4B. In any industry that would be a huge gain. In 2009, their income declined to \$5.1B.

These firms bring in about 50 percent of the Top 250's total revenue. Thirty percent of their work came from the Middle East, China, and elsewhere in Asia. While the big 25 suffered a \$800 million (M) decline in domestic revenue last year, from \$4.4B to \$3.6B, the amount of revenue from foreign work only decreased by \$400M, from \$2.0B to \$1.6B.

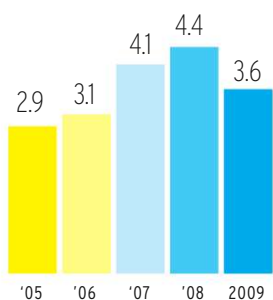
Revenue from foreign sources doesn't help smaller firms much – 70 percent of the Top 250 list made less than \$10M in offshore revenue last year. And in fact, total income for firms ranked between 100 and 150 on our list already peaked in 2007, coinciding with dramatic drops in all of the developer-driven building types: retail, offices, hotels, and multifamily. If your firm specialized in these sectors, you probably did not land softly – average revenue for firms ranked between 151 and 200 on our list, whose income starts at \$8M and goes up to \$16M, was down 24 percent last year. But, firms that ranked between 201 and 250, whose revenue ranges between \$3.7M and \$8M, only saw their revenue decline by 12 percent.

Life is going to continue to be tough for architecture firms, particularly those that depend on developer work. But in mid-May, the AIA said its April New Projects Inquiry Index hit 59.6. Any number over 50 indicates surveyed firms saw an increase in project inquiries compared to the previous month. Kermit Baker, the AIA's chief economist, said noncommittally, "It is quite possible we will finally see positive business conditions in the foreseeable future." That doesn't drip with enthusiasm, but don't jump yet. ■

Quick Takes | Top 250 Architecture Firms

Total domestic revenue takes the biggest hit

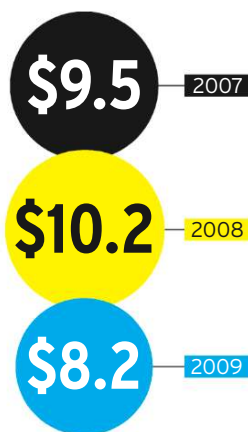
TOP 25 FIRMS
Domestic sources
TOTAL REVENUE IN \$ BILLIONS



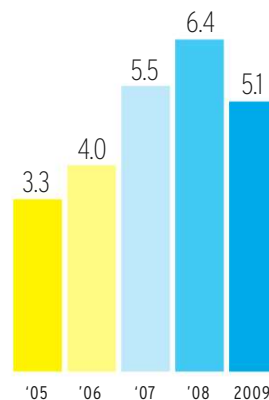
19.6%

Decline in revenue
From domestic sources
2009

TOP 250 FIRMS
Domestic sources
TOTAL REVENUE IN \$ BILLIONS



TOP 25 FIRMS
Combined sources
TOTAL REVENUE IN \$ BILLIONS

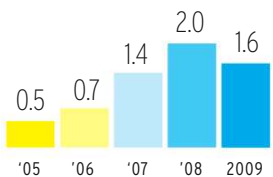


3 / 6

Number of firms making more than \$300 million in total revenue.

International projects keep the big firms afloat

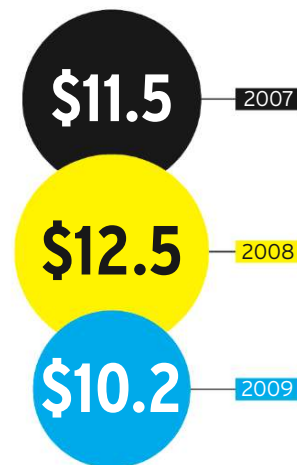
TOP 25 FIRMS
International sources
TOTAL REVENUE IN \$ BILLIONS



TOP 250 FIRMS
International sources
TOTAL REVENUE IN \$ BILLIONS



TOP 250 FIRMS
Combined sources
TOTAL REVENUE IN \$ BILLIONS



30.7%

Top 25 Firms
Percentage of revenue from international sources 2009.

0 / 6

Number of firms making more than \$100 million in international revenue.

18.4%

Decline in revenue
From all sources 2009



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A Colorful Presence

Pairing performance with panache, bold hues are the latest news in glazed facades. **BY JEN RENZI**

MANY ARCHITECTS CHOOSE a glass facade for its inherent invisibility: It is a medium that deflects attention from a building's skin to its structure. But some designers have recently tapped into the material's expressive capabilities, envisioning buildings with delightfully chromatic cladding. A host of new products has made colored glazing easier to specify – and easier to enjoy from both inside and out.

All the colors of the rainbow

Swanke Hayden Connell Architects used Chromatics' cuttable, opaque spandrel glass to fashion a lively and uplifting facade for the King's Mill Acute Care Hospital in Nottinghamshire, England. The glass panels, which affix to aluminum backings via a structural adhesive, can be printed with digital images or textural effects to create mural-like installations for both exterior and interior applications. The glass comes in any hue of the RAL spectrum – and can be precisely replicated in the event of future replacement. Colors derive from organic compounds and the panels contain no toxins or VOCs, rendering them recyclable at the end of their life cycle.

UV stable and distortion free, the safety glass is shatterproof, impact-resistant, and when broken, retains its functional integrity until replaced. Chromatics also offers a Toughcoat process for tempered glass, with a vapor barrier to protect the color layer. Panels come in 48" x 118"; Toughcoat panels are 59" x 118". Chromatics Glass, Rancho Santa Fe, Calif. www.theglasswall-company.com. **CIRCLE 200**

Textured tints

EFI now distributes Italian manufacturer Omni Décor's line of etched, satin-finished architectural glass throughout North America. The subtly textured product is suitable for



1



3

a wide array of interior and exterior applications – kitchen countertops, wall partitions, commercial facades – and has been featured in projects ranging from the Vetreria RE corporate headquarters in Milan to the Dubai International Airport. The glass is ISO 14001 certified and 100 percent recyclable, courtesy of a proprietary etching process that has a minimal environmental impact.

Smog- and stain-resistant Omni Décor is available in myriad sizes, motifs, and colorways. Select patterns and hues are stocked in the U.S. for shipment within three weeks; customization is available with about a two-month lead time. EFI, Kernersville, N.C. efi-us.com.

CIRCLE 201



2

Chameleonlike color

For those seeking a flexible design solution that can be changed to accommodate shifting tastes and palettes, 3form has introduced Gecko. The polyester textile, which sticks to interior and exterior glazing with a water-based solution that leaves behind no residue, can be easily removed, reapplied, or replaced as color schemes are updated. The product is sold in myriad hues and design patterns, including laser-cut perforations.

Although it is an affordable alternative to colored laminated glass, Gecko does have some limitations: The textile must be applied to fenestration from the inside of the building, which limits how it livens the facade. The low-maintenance product can, however, be cleaned with a mild detergent while it is affixed to the glazing. Gecko is sold in 56"-wide rolls. 3form, Salt Lake City, Utah. www.3-form.com. **CIRCLE 202**

1. Vetreria's corporate headquarters in Milan features EFI's Omni Décor satin-finished glass panels, etched via an environmentally safe process.
2. 3form's polyester-based Gecko textile adheres to glazing with water for easy removal or replacement.
3. Swanke Hayden Connell chose Chromatics safety glass to brighten the facade of King's Mill Acute Care Hospital in Nottinghamshire, England.



1, 2 | PRODUCT SL82
 MANUFACTURER **NanaWall Systems**
 nanawall.com

This structurally glazed folding-wall system establishes porous boundaries between indoors and out, thanks to transparent glass panes and Minimalist aluminum frames that slide on a single track. SL82 features in-swing operation, thermally broke frames with triple glazing (for a U value as low as .29), and an integrated multipoint locking system. Up to 12 contiguous panels can be specified to create a 39'-wide opening; the maximum panel size is 39" x 98". A coordinating ADA-compliant flush sill is also available. **CIRCLE 203**



3 | PRODUCT SunGuard SuperNeutral 62
 MANUFACTURER **Guardian**
 sunguardglass.com

Guardian debuts SunGuard SuperNeutral 62 high-performance glass, with one of the highest light-to-solar-heat-gain ratios on the market. As seen sheathing the recently completed Palais Quartier in Frankfurt, Germany, the glass pairs neutral coloration and a high 62% visible light transmission with a low .31 solar-heat-gain coefficient. A high color-rendering index ensures that views out are likewise natural. **CIRCLE 204**



4 | PRODUCT Window Walls
 MANUFACTURER **Pella Commercial**
 pellacommercial.com

Offering in-house design and technical expertise for clients of its new window wall program, Pella Commercial helped architecture firm LPA devise an ecoconscious solution for the LEED Platinum-certified Environmental Nature Center in Orange County, California. Architect Series windows, commercial outswing doors, plus fixed and operable casement and awning windows (some with low-E glass) create expansive glazing. **CIRCLE 205**



5 | PRODUCT Joel Berman Glass Studios Collaboration
 MANUFACTURER **Modernfold**
 modernfold.com

Enhancing its portfolio of operable space dividers, Modernfold has teamed with Joel Berman Glass Studios to offer the artisan's architectural products within its standard material palette. The studio's designs can now be specified for Modernfold's MOVEO and Acousti-Seal lines of operable partitions, movable glass walls, and accordion doors to create light-catching spatial separation. Custom solutions are also available. **CIRCLE 206**

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PRODUCTS IN BRIEF

1 | PRODUCT Leather Composite HardwareMANUFACTURER **Turnstyle Designs**

turnstyledesigns.com

The British maker of luxe leather hardware now offers a lookalike product that simulates the rich, patinated appearance and soft touch of real hides – but in a moisture-, scratch-, and stain-resistant package that's well suited to wet areas and high-traffic hospitality contexts. The collection's 12 pieces, which include both handles and pulls, are cast from a resin-and-marble-dust composite in a silicone mold that captures minute details like stitching for enhanced verisimilitude. In Mocha or Espresso finishes as well as five custom colors. **CIRCLE 207**



1

2 | PRODUCT Armchair 400MANUFACTURER **Artek**

artek.fi

First introduced in 1936, Finnish architect Alvar Aalto's iconic Armchair 400 gets a fashionable update courtesy of Artek's Dress the Chair series, a new initiative that invites contemporary design powerhouses – Ilse Crawford and Missoni among them – to treat the seat to au courant textiles. The company's most recent collaboration is with Maharam, which opted to cover the cushions in three different hues of its brushed Merino felt for a crisp, tonal look. **CIRCLE 208**



2



3

3 | PRODUCT ExpandaMANUFACTURER **Creation Baumann**

creationbaumann.com

Among the innovations comprising the Swiss textile house's Fall 2010 line is Expanda, a high-tech, tactile curtain fabric with the liquid look of steel netting. Woven from flame-retardant polyester scored with laser-cut slits, Expanda is transfer-printed in an ombre pattern that, when draped, creates the effect of tone-on-tone camouflage design. The ecoconscious textile is Oeko-Tex Standard 100 certified. Available stateside next month, Expanda is sold in 63" bolts.

CIRCLE 209

4

4 | PRODUCT Ventilated Wall SystemMANUFACTURER **Marazzi USA**

marazzi.it

Marazzi's ventilated facades tout numerous performance advantages: lowering a building's energy usage by up to 30%, offering improved sound insulation over traditional cladding, eliminating condensation, and enhancing thermal stability to encourage better heat dispersal. Facing options include large-format porcelain stoneware in a variety of sizes, colors, and textures. **CIRCLE 210**



5

5 | PRODUCT Cloud SoftlightMANUFACTURER **Molo**

molodesign.com

Molo expands its line of honeycomb textile products with the luminous Cloud Softlight. Lit by LED, the lightweight pendants are made from a nonwoven polyethylene that is UV- and water-resistant and also recyclable. Fixtures are sold solo (in four sizes) or clustered in groupings up to 8' long to form glowing canopies. Units can be plugged in or hardwired as desired. A Class A fire rating suits the pendants to a variety of applications. **CIRCLE 211**

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A bold urban strategy transforms a worn beachfront into a vivid curvilinear “plaza” on Spain’s Costa Blanca.

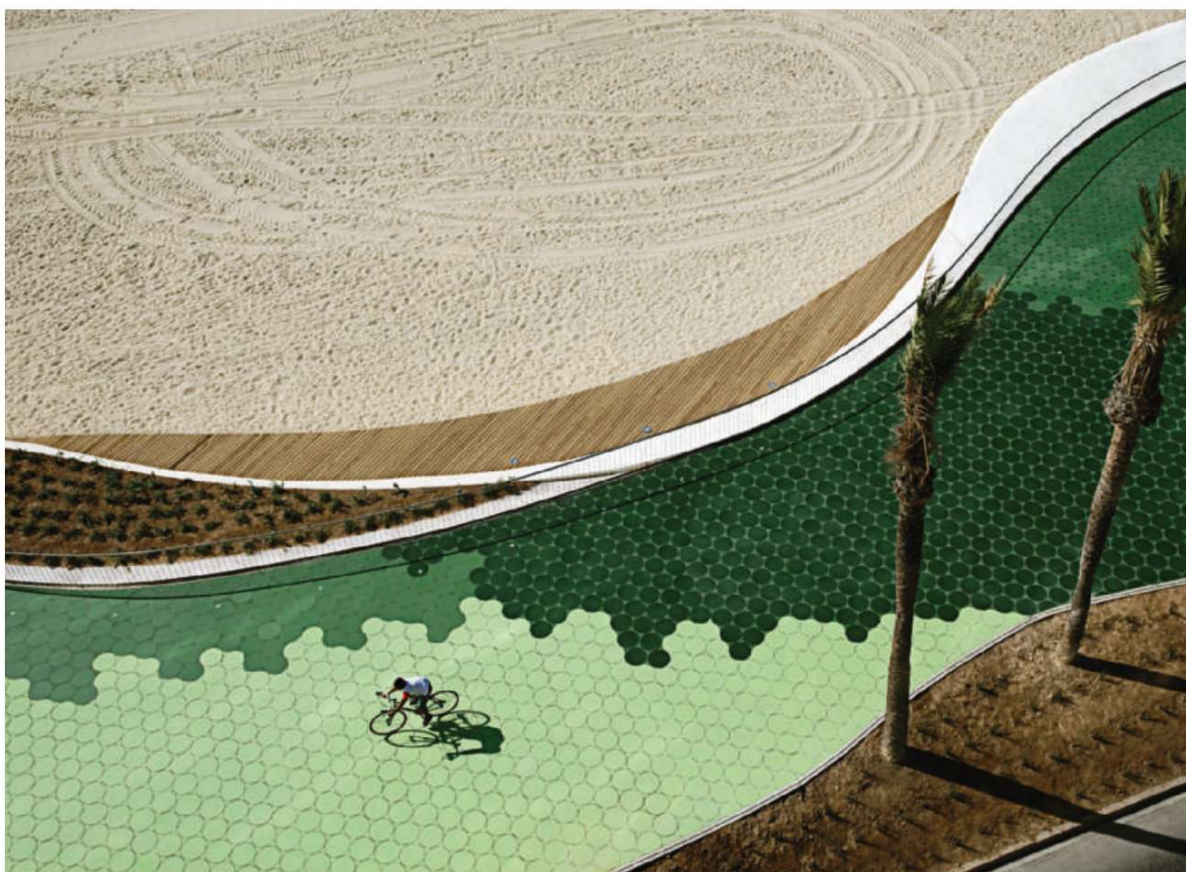
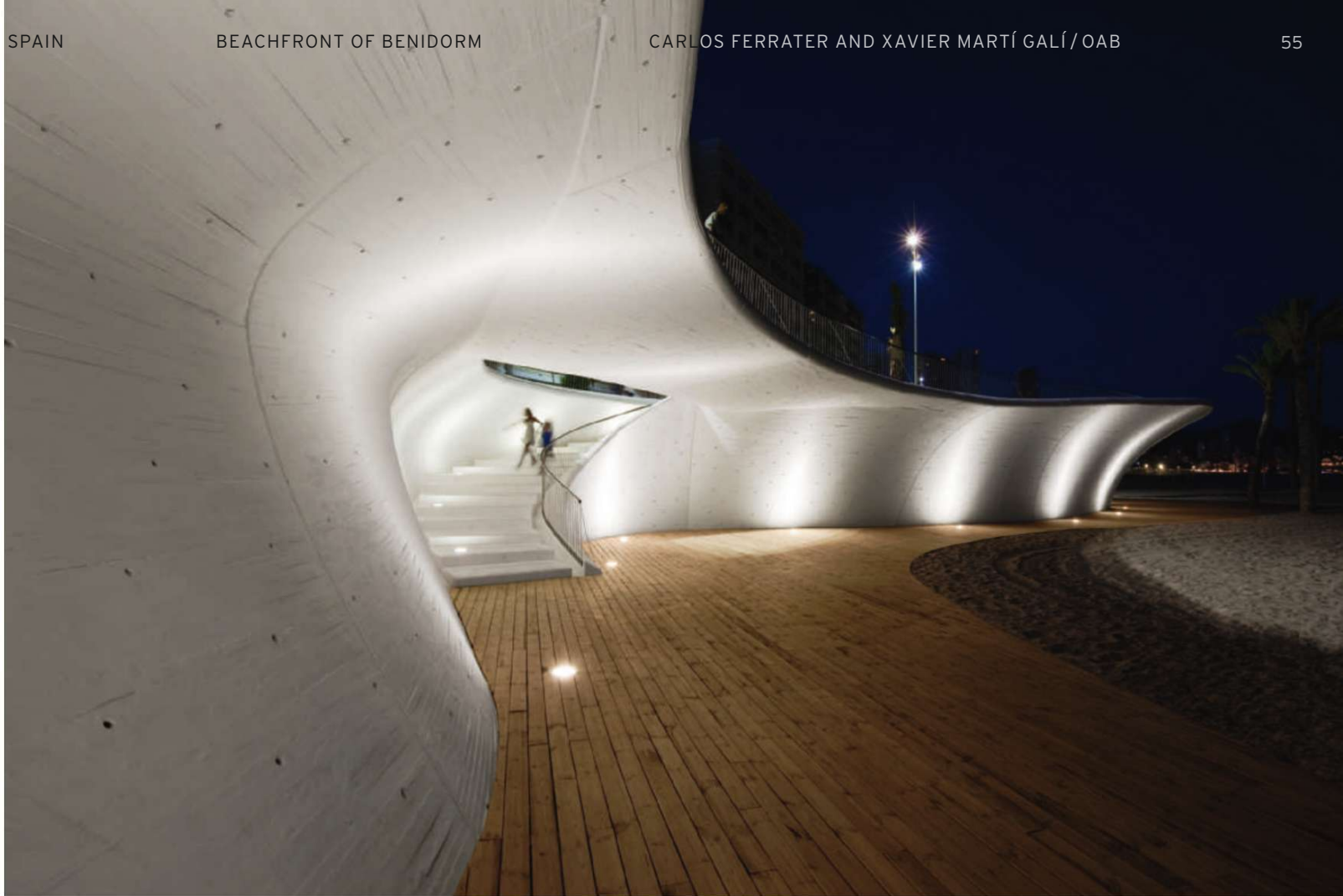
BY LINDA C. LENTZ

WHEN CARLOS FERRATER, principal of Office of Architecture in Barcelona (OAB), won the competition to upgrade the mile-long Poniente Beachfront of Benidorm—a sliver of a city dubbed the “Manhattan of Spain” for its concentration of high-rise buildings along the Mediterranean—he and his associate, Xavier Martí Galí, who are the project’s design architects, referenced the landscape and wavy patterning of Roberto Burle Marx’s Copacabana promenade, as well as the work of Antonio Gaudí, to devise an engaging intervention. The resulting esplanade is now the central public meeting place of this thriving tourist city.

Completed in 2009, the architects’ solution is a sinuous structure comprising a sculptural concrete shell and brilliantly color-coded, landscaped tile paths punctuated by stairways and ramps that provide universal access to the town and beach. A slender “boardwalk” winds around the base for strolling, bicycling, and jogging.

A visual and functional tour de force, OAB’s new Benidorm promenade is so successful, says architect and team member Borja Ferrater, that the “City Hall has commissioned us to extend it for about 500 more meters [1,600 feet].” More important, he notes, “Everybody likes it. Not only the architects, but the people who go there.” ■





OPPOSITE: Ferrater and Martí Galí negotiated with city officials to reduce the width of the road in order to maintain the existing expanse of beach and allow for both a broad promenade and new city infrastructure installed beneath it.

ABOVE: Using local materials, the architects devised an efficient modular system using 18 forms to create a nonrepetitious, 3-inch-thick concrete shell that not only eases the gradient transition (extending up to 13 feet), but also projects to form balconies that double as overhead shelter from sun and rain.

LEFT: Martí Galí worked closely with local Tile of Spain manufacturer Keramia to develop high-performance, 17-inch-round, colorfast glazed-porcelain tiles (and fillers) in 22 custom hues that were largely determined by the vibrant colors adorning adjacent buildings.



South Africa's Golden Bowls

With millions watching the first World Cup to be held on the African continent, the spotlight is on the host country – and the stadiums commissioned for the games.

BY KAREN EICKER







HISTORY WAS MADE ON June 11 when the first game of the 19th FIFA World Cup was played at Johannesburg's stunning Soccer City—one of 10 new or refurbished stadiums in nine cities—launching South Africa into a highly visible economic and architectural arena.

Teamwork, communication, and a willingness to engage were essential for the successful delivery of these projects in time for opening day. To respond to the demands of (largely) global funding, the perceptions of an international audience, and the stringent requirements of the world football (aka soccer) organization that oversees the monthlong event, local architecture practices collaborated with international consultants, whose input ranged from an advisory capacity to leading roles and on-site supervision.

Each venue is set within a context as unique and challenging as the continent itself. However, the three largest—Soccer City, Moses Mabhida Stadium in Durban, and Cape Town Stadium—are the most representative of the process that the country has undergone over the past five years in preparation for this quadrennial event.

CAPE TOWN STADIUM

With a seating capacity of 68,000, the Cape Town Stadium nestles in a remarkable setting, between Table Mountain and the Atlantic Ocean. Located in the trendy and flourishing residential Green Point neighborhood, the stadium was built on part of an existing golf course on the area's eponymous Common, a previously neglected and poorly defined open space.

The design consortium responsible for the project includes Hamburg-based Von Gerkan, Marg and Partners (gmp), for its expertise with this building type; Cape Town's Louis Karol Architects, for a capacity to realize large South

African construction projects; and Point Architects and Urban Designers, an alliance of four firms (Munnik Visser Architects, Jakupa Architects, Paragon Architects, Comrie Wilkinson Architects and Urban Designers)—notable for their skills at achieving contextual fit.

To assure the stadium's appropriateness for its site within a very sculptural landscape, the architects established a "docking station" to deal with interfaces, scale, and pedestrian routes from the building through the podium and forecourts to the park and city beyond. The resulting approach is layered, gradual, and unfolding. The structure itself is unique and undulating, but fairly self-contained. The challenge, therefore, was to create a smooth transition between the 138-foot-high structure and the finely textured, primarily residential surrounds.

Located near the Cape Town Central Business District and Victoria & Albert Waterfront, the stadium lies within a sensitive urban context. According to Henri Comrie, principal of Comrie Wilkinson Architects & Urban Designers, its scale, covering nine city blocks, is significant in a city unused to such large-scale structures. And because it is situated in a prominent, historic, and gentrifying area, serious public concerns surfaced around noise, light pollution, visual impact, and traffic congestion that might impact negatively on property values and on one of the last remaining open spaces in the area.

These concerns were dealt with through an environmental-impact assessment, a rezoning application that required public input, and an extensive public participation process for redevelopment of large areas of the Common into a public park. The result is a compact, elegant, and polite building that does not compete with its natural surroundings.

PREVIOUS SPREAD: **CAPE TOWN STADIUM**

1. Designed to have minimal impact on the night sky and its residential environs, the Cape Town Stadium is like a jewel at the tip of Africa.
2. The stadium is situated in a remarkable setting between Table Mountain and the Atlantic Ocean and is the catalyst for the redevelopment of the once-neglected Green Point Common.
3. The building, made with a PTFE-coated, silver glass-fabric-mesh skin on a steel frame, was designed to integrate into the landscape.
4. A suspended roof supported by a radial truss system contains a diaphanous-membrane lower layer that conceals such technical elements as the stadium's public address and lighting systems.
5. An upper laminated-safety-glass section offers weather protection and improves the venue's acoustical performance by reflecting sound from the bowl back into the bowl.

ABOVE: Durban's luminous Moses Mabhida Stadium, with its transparent, perforated steel skin and translucent, tentlike roof supported by steel cables, is bisected by a 348-foot-high central arch equipped with a crowd-pleasing cable car and stairs that allow visitors to climb to its pinnacle for a spectacular bird's-eye view of the city.

OPPOSITE: A stadium "window" at one end of the field maintains a visible connection with the city beyond and allows natural breezes to circulate throughout the field and grandstands during Durban's hot, humid days.



The building's skin, made of translucent polytetrafluoroethylene (PTFE)-coated silver glass-fabric mesh on a steel frame, lessens its visual impact and makes the building appear scaleless, a neutral backdrop in its setting. The translucent, curved-laminated-glass roof improves its acoustical performance by reflecting sound from the bowl back into the bowl.

According to Henning Rasmuss, codirector of Paragon Architects, the stadium has been detailed for flexibility and compatibility. Installations can easily adapt when its spaces are used for different functions; a sophisticated building management system and human machine interface provide operational control over all communication, fire prevention, and mechanical and electrical systems; and the lighting has been designed to avoid excess spillage into the night sky.

A catalyst for a number of hospitality developments, this project promises much in terms of sporting, conference, and cultural activities. Rasmuss adds that the real legacy of the Cape Town Stadium is the decision to establish the redeveloped, 31-acre Green Point Park as one of the great open spaces in the world, within a vastly improved urban context.

MOSES MABHIDA STADIUM

Situated on the Indian Ocean, Durban's Moses Mabhida Stadium is perhaps the most assimilated in terms of its long-term vision.

The country's eThekweni Municipality, which includes the City of Durban, stipulated in its brief that the stadium should be a symbol of civic pride and inspiration and draw on the physical features that give identity and character to the site – the sea, the Umgeni River, and the sand dunes.

Julie-May Ellingson of the Municipality's Strategic Projects Unit and 2010 Programme

explains that the stadium, situated at the heart of the city, had to be completely integrated with its urban context. "In addition to capturing the attention and excitement of the world, this project is about the city's future."

Like Cape Town, this venue was planned, designed, and realized as a cooperative effort. Here Ibhola Lethu Consortium Architects, a joint

venture of Durban-based firms including Theunissen Jankowitz Durban, Ambro-Afrique Consultants, Osmond Lange Architects & Planners, Mthulisi Msimang Architects, and NSM Designs collaborated with gmp on the concept design and documentation. The implementation was handled by the local firms; the urban design by Ambro-Afrique and Iyer Rothaug Collaborative.

The site forms a catalyst for the development of the Kingspark Sports Precinct, scheduled to become a leading multisport and leisure destination, with restaurants, shops, landscaped open areas, and a pedestrian walkway linking the stadium complex to the beachfront. Lead architect Gerhard le Roux of Theunissen Jankowitz Durban says, "Because of the project's impact on the city, the architects and urban designers had a responsibility to consider the urban design right from the harbor through to the Umgeni River, including roads and open spaces."

This includes the completed 25-acre landscaped People's Park, which is intended to serve as a central park for Durban and includes sports fields, lawns, a promenade, and cycle tracks, and Heroes' Walk, dedicated to icons of sport culture and political change.

The Legacy of the Games

According to *Bloomberg Businessweek*, South Africa has spent upwards of \$4.5 billion to host the World Cup. Was it worth it?

"Yes, of course," says Paragon Architects' Henning Rasmuss, a member of the Cape Town Stadium consortium. "If we want to be foremost in Africa, then there is no question that we should be able to host the world. So let's not question whether this is money well spent."

While the international press has questioned the logic of such expenditures, many members of South Africa's bureaucratic, professional, and business communities claim that the 2010 FIFA World Cup offered an opportunity for the country to be a player in the global economy.

According to Julie-May Ellingson of the eThekweni Municipality's Strategic Projects Unit and 2010 Programme, "The work we are doing in Durban is part of a broader economic development strategy aimed at building domestic and international tourism, and improving infrastructure." And the Cape Town effort's technical director, Dave Hugo, asserts that without the stadium in Green Point there would probably have been no reconstruction of the Common.

Overall, there has been a major focus in all the host cities on improving transport infrastructure for access to the stadiums during the World Cup, and for better accessibility and affordable public transportation for residents post-event.

These projects include the Gautrain Rapid Rail Link and Gauteng Freeway Improvement Project (GFIP) in Gauteng (including the cities of Johannesburg and Tshwane); the new King Shaka International Airport, the new Moses Mabhida Railway Station, and the Warwick Junction interchange in Durban; as well as significant upgrades to Cape Town's Railway Station and International Airport.

Stadium precinct development plans have been put in place in each location and include long-term visions for the integration of public open spaces, enhanced pedestrian links, and surrounding urban fabric.

"There has been huge capital investment by the public and private sectors in terms of skills development," observes Sibongile Mazibuko of the City of Johannesburg's 2010 Project Office. "The challenge now is the sustainability of work, and how to absorb the labor force that has been skilled up." K.E.



The stadium is visible from most parts of the city, so one of the key design considerations was how it would affect the urban skyline. The final solution is an iconic bisecting arch that establishes a recognizable means of orientation. The 348-foot-high arch, spanning 1,148 feet, is set on massive concrete foundations and supports a PTFE-coated membrane roof on a steel-cable structure. Visitors can catch a spectacular view of the city and ocean at the arch's highest point, reached by a cable car or a guided walk up 550 stairs.

Other elements that mediate between city and bowl are the stadium "window," which opens the playing field to the city, and the perforated steel facade, which exchanges views between structure and surroundings. These elements also consider the hot, humid Durban climate by facilitating natural cross ventilation.

In terms of sustainability, the Moses Mabhida Stadium is equipped with energy-efficient lighting and HVAC systems, and People's Park is irrigated by rainwater harvested from the stadium's roof. A substantial amount of concrete from the demolition of the old stadium was crushed and reused in the new stadium, and 400 tons of steel were recovered in the recycling process.

"The entire financial viability of the stadium was around minimizing operating costs and maximizing revenue," Ellingson says. The seating capacity of 70,000 for the World Cup can be increased to 85,000 for larger events such as the Olympic Games. Moreover, improved pedestrian access and open spaces ensure that the stadium's contingent 99,028-square-foot retail component; attractions such as the Sky Car, Adventure Walk, and stadium tours; and various hospitality establishments are easily reached by the public so that the stadium becomes a magnet in a vibrant and "connected" sports precinct.

SOCCKER CITY

The tough, glistening epitome of life in Johannesburg, Soccer City – the home of football in South Africa – lies coiled at the foot of a mine dump in the Nasrec Precinct adjacent to Soweto.

Given the task of transforming the city's inadequate 20-year-old venue into a state-of-the-art facility, the Johannesburg-based Boogertman Urban Edge + Partners, in partnership with Populous, aimed to find a suitable envelope to "fit" over the aging structure, integrating some of the footings and the western grandstand.

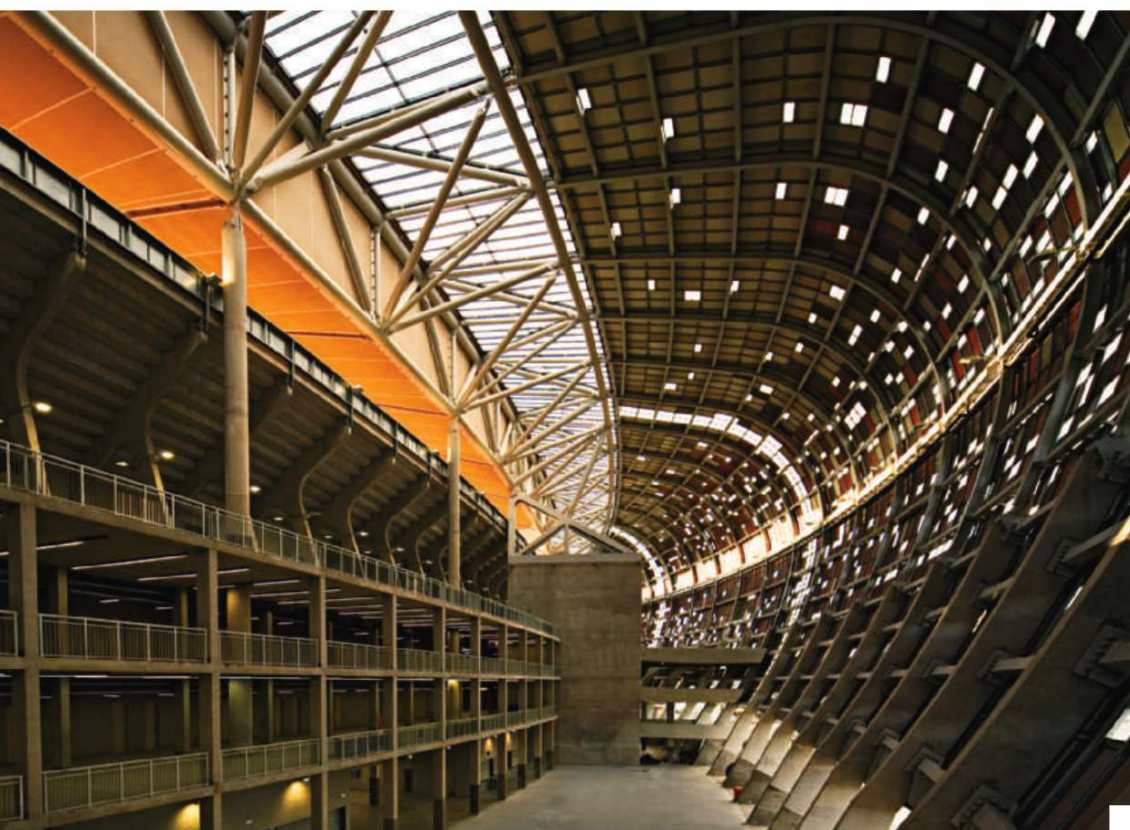
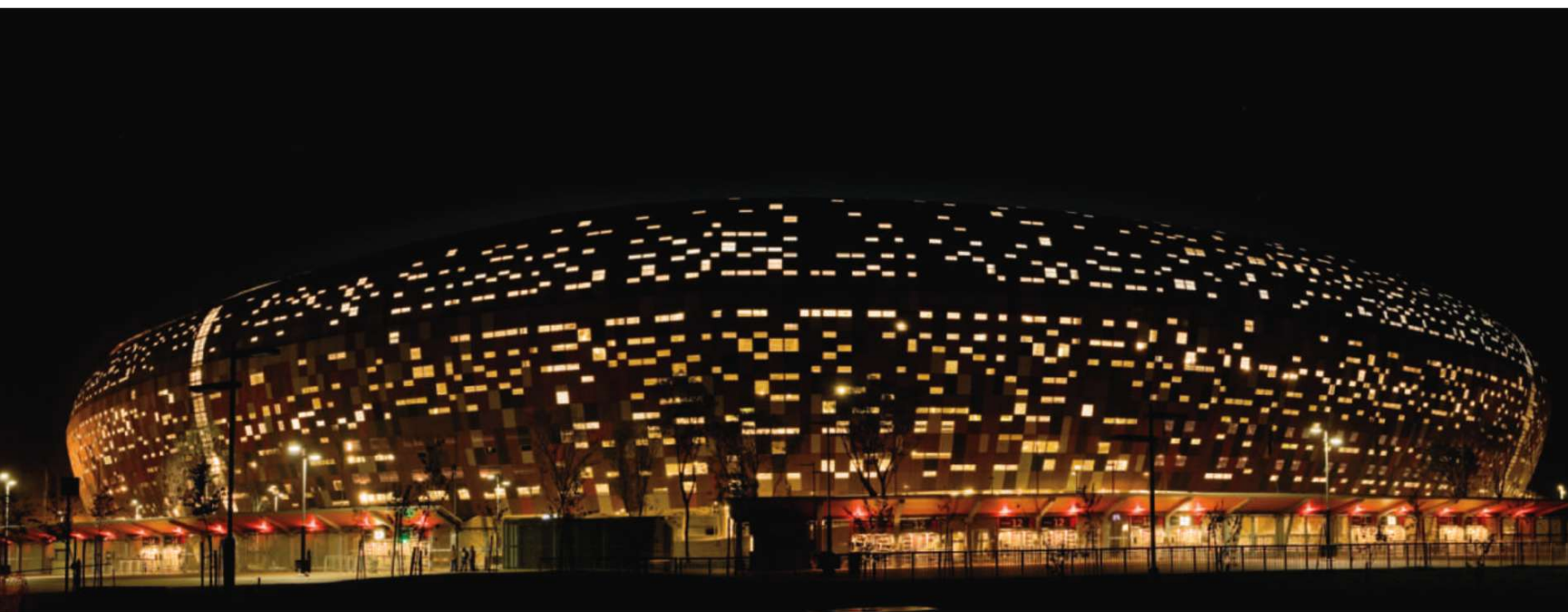
The program also specified an iconic architectural response. So the architects devised a scheme based on the idea of a typical African clay pot that informs the building's silhouette, patterning, and hues. According to Boogertman Urban Edge + Partners director Bob van Bebber, the idea was to create a simple "object" that would be easily recognizable as African.

"Traditionally, the pattern of the pot says something about the person making it or the people who will use it," explains van Bebber. "Here, the pattern depicts the road to the World Cup final, with lines drawn in the direction of the other nine stadiums, and a line in the direction of Berlin, host city for the 2006 FIFA World Cup. These lines carry through from the podium paving to the facade to the seating inside the bowl. The colors are also reminiscent of the natural firing process of clay, darker at the bottom and lighter at the top."

The shell is made of honed and sandblasted extruded-glass-fiber reinforced-concrete panels fixed to a galvanized-steel subframe. This surround is punctured with a secondary pattern to filter daylight indoors and allow interior lighting to illuminate the facade at night. Overhead, a lightweight PTFE-membrane roof cantilevers 131 feet above the upper tier and embankment. Below,

ABOVE AND OPPOSITE, TOP: Imbued with the silhouette and color variations of a typical African clay pot to signify Africa's "melting pot of cultures," Soccer City is located in Johannesburg's Nasrec neighborhood, near the area's new transportation hub. By day, its punctuated envelope appears earthy and rustic, but in the evening, it becomes otherworldly as the glow of its interior lighting system glitters through the variegated fenestration.

1. In order to enlarge and refurbish the city's existing rectangular venue built in 1987, architects Boogertman Urban Edge + Partners, in partnership with Populous, created a circular concrete structure that envelopes its upgraded, triple-tiered concrete seating bowl.
2. The curvilinear facade is supported on 120 inclined concrete columns and faced with lightweight, honed and sandblasted, 1/2-inch-thick, extruded-glass-fiber reinforced-concrete panels measuring approximately 4 by 6 feet. These are fixed to a galvanized-steel subframe.



1 2

PHOTOGRAPHY: © LEON KRIGE (TOP, 2)
© DENNIS GUICHARD (1)

a mine-shaftlike players' tunnel refers to the city's gold mining days. And an existing moat is now capped by a concrete slab and stores rainwater that will be filtered and recycled.

Sibongile Mazibuko, executive director of the City of Johannesburg's 2010 Project Office, says that, in addition to the stadium, the Nasrec Urban Development Framework plans include an International Broadcast Centre; the possible redevelopment of the Nasrec Expo Centre; as well as the potential for commercial, light-industrial,

hospitality, and residential opportunities.

The new Nasrec Transport Hub, an integrated taxi and bus terminus, including a Bus Rapid Transit (BRT) station and upgraded Nasrec Railway Station, not only provides efficient public transport for the World Cup, but it will tie into surrounding activities well after the fans go home.

In a diverse society with African roots and global aspirations, the smooth, abstract forms of Cape Town and Moses Mabhida Stadiums, and the culturally inspired Soccer City may well inspire a

sense of ownership within their surrounding communities. Ultimately, the collaboration of South African and international design teams has created a series of buildings that are inherently appropriate for their physical settings. Meant to attract and entertain the world, they will hopefully benefit the local communities around them and withstand the test of time. ■

Karen Eicker is an architect and writer based in Johannesburg, South Africa.

SHEDDING LIGHT

Thomas Phifer and Partners turns a simple structure into a stunning expansion of the North Carolina Museum of Art. BY JOSEPHINE MINUTILLO











TOM PHIFER SAID THAT he wants his new building for the North Carolina Museum of Art (NCMA), in Raleigh, to disappear into the landscape. By saying so, he is daring you to take a closer look, knowing full well that his first museum, like the art that hangs on its walls, will stand up to the scrutiny.

From a distance, it looks hardly more than a warehouse, an impression that did not sit well with some locals, who for endless months during construction could see only a squat concrete box. Certainly they would have preferred the bold civic gesture, a splashy concoction to bring attention to the Raleigh community. But the focus here is on the art, and the visitor's interaction with it. So while the museum's strong permanent collection, which occupies all the galleries, is not teeming with masterpieces like those of some larger institutions, under the soft light of day, it shines.

Three decisive elements transform what might easily have passed for an ordinary shed into this stunning house for art. Massive aluminum panels, arranged like pleats, clad the precast-concrete wall panels of the steel frame structure. A series of courtyards and reflecting pools cuts into each face of its



rectangular form. Topping everything is a spectacular array of coffered skylights that combines with the glazed courtyard openings to bathe the galleries in controlled natural light and bring the outside emphatically in.

And since the one-story structure has no place for a soaring atrium or grand staircase, *de rigueur* in museum buildings both Classical and Modern, Phifer's singular gesture is to demarcate the main entry with a steel-and-glass canopy beside an allée of American elms. Just past the threshold, the visitor is immediately confronted with art, the reception desk slightly askew. While this entry shares an outdoor plaza with NCMA's existing Edward Durrell Stone building, now home to temporary exhibitions and offices, visitors can access the new building, which is free to the public, from its courtyards as well. "There is a brilliant new thinking about buildings for art," says NCMA director Lawrence Wheeler. "Ours reflects these democratic values." (Security cameras monitor the building and grounds.)

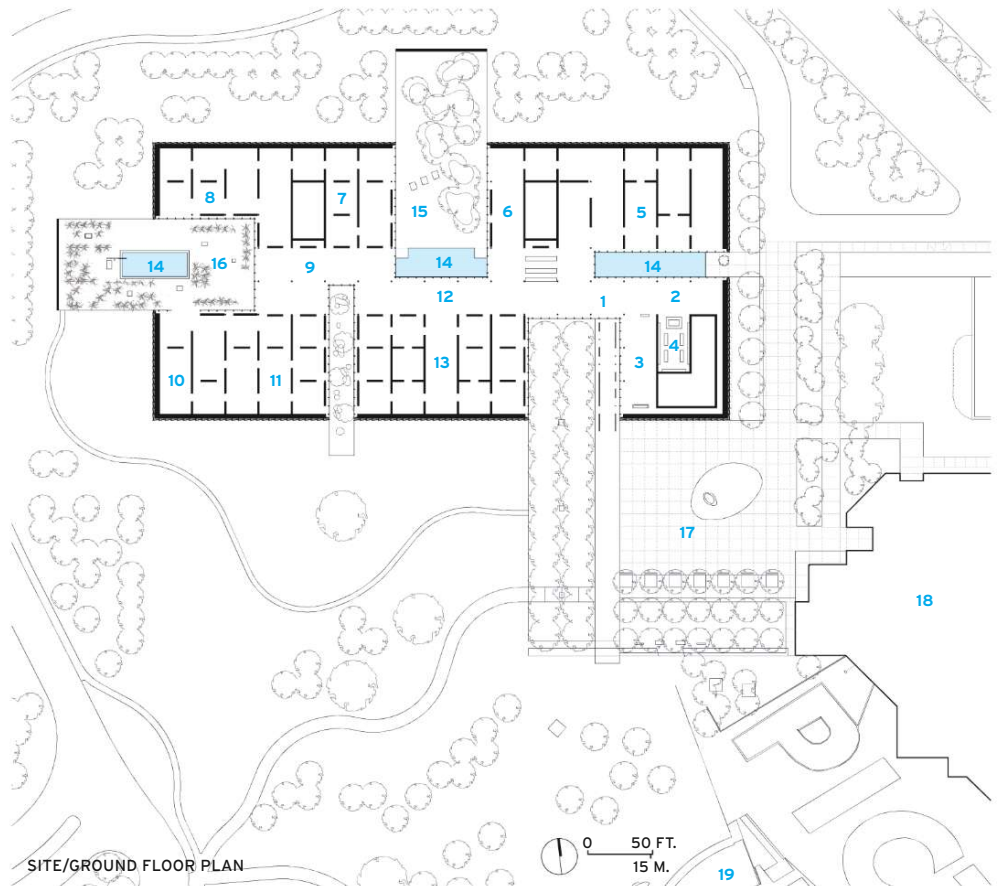
It's a way of thinking that leaves visitors to experience the art, both inside and scattered throughout

FIRST SPREAD: The shaped earth forms a blanket around NCMA's new one-story building. Surrounding it are both trees and tree-like sculptures by artists Ursula von Rydingsvard and Roxy Paine.

PREVIOUS SPREAD: The sculptures in the Rodin Garden are set among gravel, water, and bamboo plants. The garden extends the western end of the building spine, which features smaller works by the artist, into the landscape.

THIS SPREAD: Phifer found inspiration for the entry canopy in the glass and mirror structures of Dan Graham. Its highly reflective glass is a dazzling counterpoint to the anodized aluminum cladding.

- 1 MAIN ENTRANCE
- 2 LOUNGE
- 3 DINING
- 4 MUSEUM SHOP
- 5 MODERN AND CONTEMPORARY
- 6 AFRICAN
- 7 EGYPTIAN
- 8 AMERICAN
- 9 RODIN COURT
- 10 JUDAIC
- 11 EUROPEAN
- 12 CLASSICAL COURT
- 13 ALTARPIECE GALLERY
- 14 REFLECTING POOLS
- 15 NORTH GARDEN
- 16 RODIN GARDEN
- 17 PLAZA
- 18 E.D. STONE BUILDING
- 19 AMPHITHEATER



CREDITS

PROJECT: North Carolina Museum of Art, Raleigh, North Carolina

ARCHITECT: Thomas Phifer and Partners – Thomas Phifer, AIA, partner in charge; Gregory Reaves, AIA, project partner; Gabriel Smith, AIA, project architect

ARCHITECT OF RECORD: Pearce Brinkley Cease + Lee

ENGINEERS: Skidmore, Owings & Merrill (structural); AltieriSeborWieber, Stanford White (m/e/p); Steven Blake (civil)

CONSULTANTS: Arup (daylighting); Fisher Marantz Stone (lighting); Lappas + Havener (landscape); Creative Acoustics (acoustics)

SOURCES

PVC ROOFING: Sarnafil

SKYLIGHTS: Super Sky

LOUVERS: Unicel Architectural

CEILING COFFERS: Fibertech Columns

ALUMINUM CLADDING: LinEI Signature

METAL/GLASS CURTAIN WALL: Oldcastle BuildingEnvelope; Viracon Glass

STEEL-AND-GLASS CANOPY: LinEI Signature

ENTRANCES: Ellison

CURTAINS: Mary Bright

METAL DOORS: Total Door

LIGHTING: Litelab (track); Nippo (fluorescent); Crestron (controls)

FURNITURE: Herman Miller (reception); Fritz Hansen (café); Fermob (outdoor)

the surrounding landscape (NCMA's museum park, the largest in the country, includes a popular outdoor amphitheater by Smith-Miller + Hawkinson and artist Barbara Kruger) on their own terms.

Happily, the exhibition galleries, laid out over 65,000 square feet according to a 26-foot module, do not follow a tightly controlled path of strict chronological or thematic sequences. The fairly open floor plan allows visitors to weave in and out of them, passing by the figurative sculptural works that delineate the building's spine. Curators take advantage of this freedom to experiment with how they display the art. Devorah Sperber's *After the Mona Lisa 2*, a 2005 work that recreates da Vinci's famous portrait with 5,184 hanging spools of thread, is an unexpected delight beside works from the Italian Renaissance. In another gallery, Josef Albers's colorful, mid-20th-century studies for *Homage to the Square* are juxtaposed with American Impressionist Frederick Carl Frieseke's *The Garden Parasol* from 1910.

Of course, everything looks good beneath the ceiling's 360 oculi, the building's only sculptural element and the source of the glorious daylight that shines down on the collection. Phifer took Louis Kahn's skylight detail in the Kimbell Art Museum as a point of departure, finalizing the ellipsoid shape of the NCMA's ceiling coffers after numerous light studies conducted by Arup's London and New York offices. A local boat builder advised on resin technologies for the fiberglass vaults, which rise 5½ feet above the ceiling plane.

While sunlight shines down, it by no means pours in. North-facing louvers and removable scrims limit the amount and type of light that penetrates an oculi and reaches an artwork. Three layers of curtains do the same for light coming in from the courtyard openings. Photocells on the roof measure daylight; the information they gather is used to adjust track lighting within the galleries.

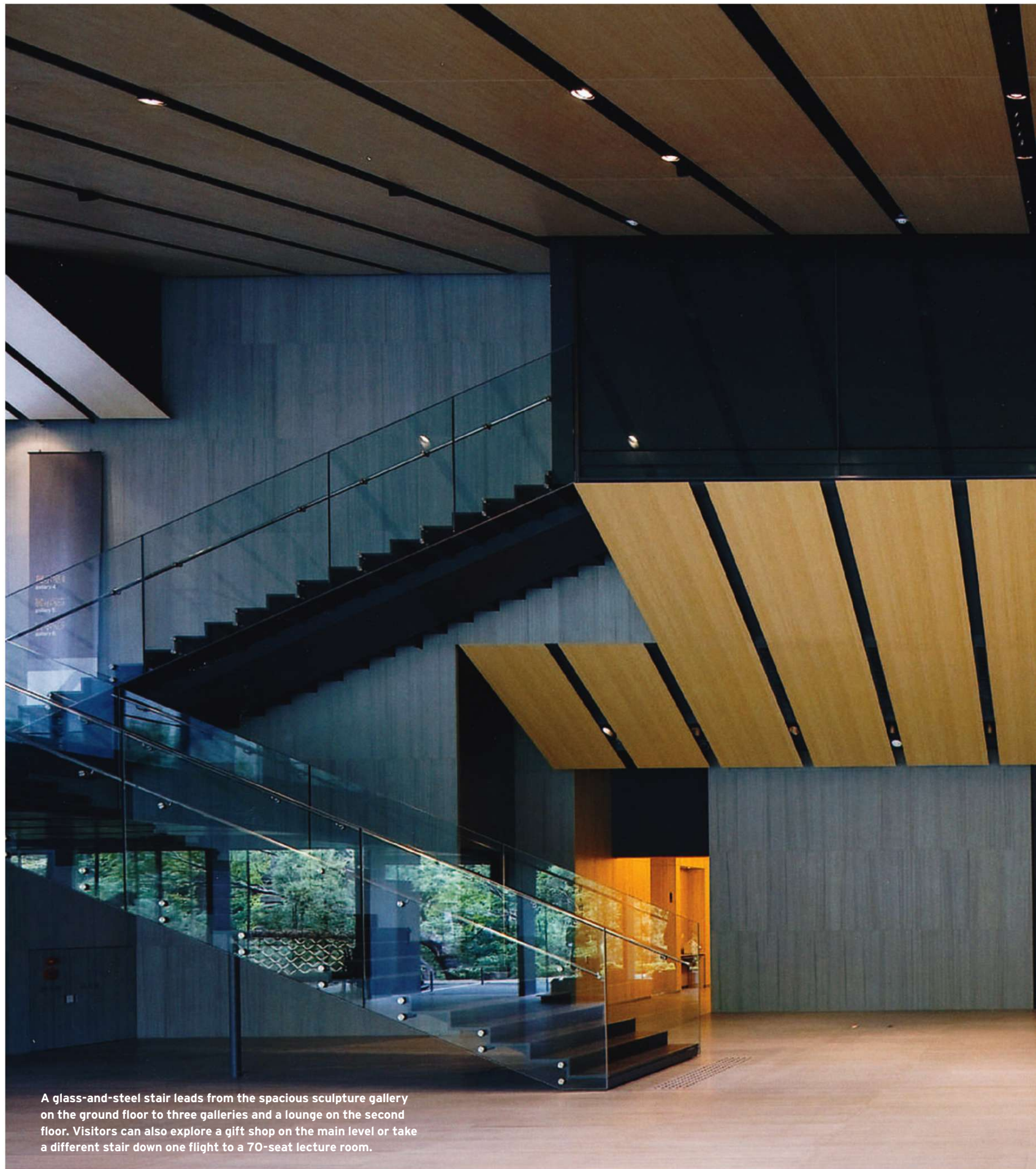
These efforts control the quantity of light inside the museum, but the quality of light is undeniable, particularly as it changes over the course of a day. Outside the museum, the changing light produces equally dazzling effects on the 25-foot-high anodized aluminum panels, which at times appear golden, their jagged outline clearly visible, while at other times they seem to dissolve completely.

This is not groundbreaking stuff. But the sum of these small but thoughtful moves erodes boundaries between building and landscape, outside and inside, and even between different genres of art. By avoiding the all-too-easy tendency toward architectural bravado—to the dismay of some—and instead focusing on good design, Phifer has created something beyond just a remarkable building. It is a remarkable place. ■



ABOVE: White oak floors and white walls characterize all of the exhibition galleries. Coffered skylights top the 16-foot-tall spaces, giving a rhythmic quality to the ceiling. The light levels from the MR16 track lights inserted between the 6 1/2-foot-wide coffers are adjusted according to the amount of daylight coming in from the oculi. The 15-inch-thick fixed walls conceal mechanical ducts.

LEFT TWO: Barely visible from the ground, a series of sleek aluminum mounds on the roof covers the oculi. Their north-facing louvers reduce heat and direct sun penetration.



A glass-and-steel stair leads from the spacious sculpture gallery on the ground floor to three galleries and a lounge on the second floor. Visitors can also explore a gift shop on the main level or take a different stair down one flight to a 70-seat lecture room.



UPDATING TRADITION

For a previously overlooked museum, Kengo Kuma creates a new home that connects to its garden setting and the big city beyond.

BY NAOMI R. POLLOCK, AIA

WITH A NEW NAME, a new logo, and a new building, the Nezu Museum has transformed itself from a staid cultural institution into Tokyo's latest "it" destination. Despite a world-class collection of Asian antiquities and a central location in the city's fashionable Omotesando district, the old museum (the Nezu Institute of Fine Arts) and its traditional garden kept a fairly low profile. But thanks to the new building and landscape design by Kengo Kuma, the Nezu is impossible to miss. Topped with a dramatic tile roof, Kuma's building stands apart from its commercial surroundings. Yet it greets pedestrians warmly with a live bamboo wall symbolizing the elegant blend of architecture and nature inside.

"One unique aspect of Japanese culture is the deep connection between buildings and gardens," says Kuma. "I want to go back to that tradition." This approach marked a departure from the Nezu's previous home. Adjacent yet closed off from its carefully tended grounds, the privately owned museum encompassed a concrete exhibition hall plus four plaster-covered storehouses. The original concrete building opened in 1955 (with additions in 1964 and 1990), but the storage structures and garden date to the era before World War II when the Nezu family estate occupied the property. When roof leaks and poor climate control threatened the priceless artworks in the storehouses, the museum decided to replace them with a new exhibition structure and convert the old museum into offices and a state-of-the-art archive for the 7,000-piece collection.

Removing the storehouses enabled Kuma to reposition the museum's entrance more prominently—to the end of Omotesando's famous, boutique-lined street (instead of a sequestered approach from Kotto Dori). A 148-foot-long walkway leads to the building's main door, in the

process taking visitors away from the buzz of the city. Inside, an intimate reception area adjoins an expansive sculpture hall overlooking the 161,459-square-foot garden. From the hall, visitors can either go outside or enter the six galleries: three on the ground floor and three (plus a lounge) on the second floor—all accessed by a glass-and-steel stair in the middle of the room. While a café occupies its own Kuma-designed garden pavilion, a shop sits near the museum entrance. A second stair descends below grade to a 70-seat lecture room, and a hidden corridor behind the galleries connects to the old wing.

Though the new Nezu has more gallery space, its administrators' primary goal was to improve the quality of the exhibition area—in terms of both conservation and display. Because of their fragility, most of the artifacts make only brief appearances in the galleries, each one designated for a different medium, such as decorative arts, tea ceremony objects, or calligraphy. Sequestered behind solid, steel-reinforced-concrete walls, the galleries are lined with built-in storage and cloth-padded cases where humidity and lighting conditions can be closely monitored. While the rooms are intentionally spare and subdued, the cases are equipped with LED and halogen fixtures that spotlight individual treasures without exposing them to harmful heat.

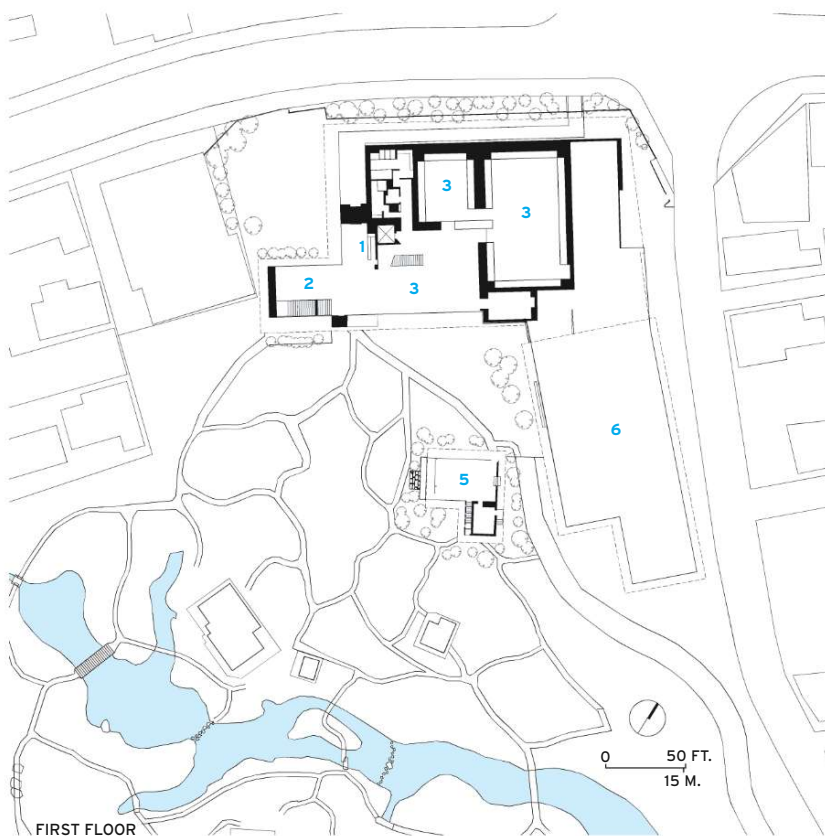
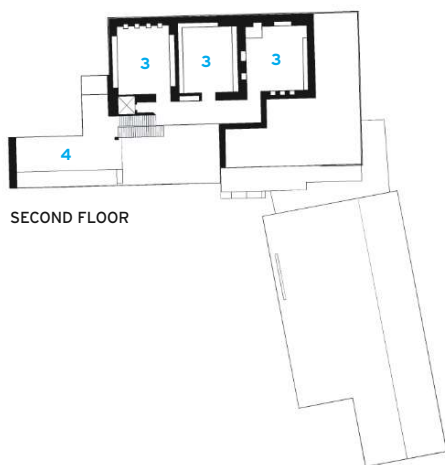
Because earthquakes are a major concern in Japan, stone figures in the sculpture hall stand on pedestals concealing metal springs that absorb

seismic tremors. Though the objects are not light sensitive, Kuma carefully coordinated daylight and electrical fixtures to best present the pieces against the backdrop of the newly configured garden. Fanning out from the building, the garden presents a spacious, tree-ringed lawn cut by a path leading to the café. From here, walkways connect to the existing grounds laid out by the Nezu family's master gardener. Uniting inside and out, a

1. The new building brings the museum closer to the street and gives it a higher public profile, while protecting the garden beyond.
2. A pitched roof with ceramic tiles connects the building to Japanese tradition, but tapered, steel eaves give a modern edge to the design.
3. Kuma placed the main entrance at the south end of the building, which visitors reach after walking along a 148-foot-long path.



- 1 RECEPTION
- 2 SHOP
- 3 EXHIBITION
- 4 INFORMATION
- 5 CAFÉ
- 6 EXISTING MUSEUM





2



3



CREDITS

PROJECT: Nezu Museum, Tokyo

ARCHITECT: Kengo Kuma & Associates – Kengo Kuma, Minoru Yokoo, Toshio Yada, Takumi Saikawa, Atsushi Kawanishi, Ryohei Tanaka, Ayumi Motose, project team

CLIENT: Nezu Museum, Tokyo

CONSULTANTS: Shimizu (engineering); Seifu-en (landscape); Panasonic Electric Works (lighting); Kilt Planning Office (exhibition lighting)

GENERAL CONTRACTOR: Shimizu

SOURCES

CURTAIN WALL: Techno Namiken (glass and steel panels with galvanized phosphate finish)

CLAY ROOF TILES: Marueitogyo

LAMINATED TEMPERED GLAZING:

Asahi Glass

EXHIBITION LIGHTING CONTROLS: Lutron

glass wall fronts the sculpture hall. While glass fins securing the wall minimize view-blocking window sashes, oblong, solid-steel columns measuring 4-by-12 inches seem to effortlessly support ceiling beams that enable the room's 49-foot clear span. Soaring to 49 feet at its apex, the angled ceiling echoes the building's pitched roof.

The museum's most distinctive feature—its roof—is a direct quotation from Japanese history but rendered more abstractly, befitting a contemporary museum in an urban setting. While its traditional image ties the museum's contents and container together, the pitched form, says Kuma, distinguishes the Nezu from the unpopular, boxlike public buildings around the country that do not blend with the Japanese environment. "A pitched roof harmonizes the ground and architecture," he explains. Charcoal-colored ceramic tiles clad the entire roof surface, and their uniform texture accentuates the angled planes. Instead of ending with the typical, decorative flourish at the ridge or gutter, the matte surfaces terminate in tapered, sharp-edged eaves made of 0.13-inch-thick sheets of industrial grade steel—the same material covering the museum's exterior walls.

Supported by 9-foot-long, cantilevered beams, the eaves shield the front walkway but submerge it in semidarkness. "People usually expect lighter spaces in public buildings," comments Kuma. "But this darkness is necessary to separate [the museum]

from Omotesando." Black sandstone pavers compound this shadowy effect, while bamboo walls mitigate it. (Two rows of live bamboo plants buffer the building from the street, and split stalks adorn the facade, forging connections with both the garden and the interior.)

Inside the museum, Kuma used many of the same materials, including sandstone flooring and, especially, bamboo. Complementing the delicate tea utensils on display, exquisitely detailed bamboo panels cover walls and ceilings. In addition, the architect crafted versatile, L-shaped benches from both bamboo and wood salvaged from the old museum's storehouses.

Today, those benches are one of the few reminders of the collection's original home—a tranquil place where railway magnate Nezu Kaichiro I, the museum's founder, first assembled and began sharing his treasures with the public. Drawing a wide audience that spans all ages and nationalities, the Nezu Museum now connects to its founder's dream of honoring Japan's artworks and brings the institution into the 21st century. Kuma's design serves as a physical and metaphorical hinge linking old and new, inside and out, high-tech and traditional. And it does so in such a graceful way that it seems almost inevitable. ■

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



2



3



4

1. A new café building designed by Kuma sits between the new building and the existing museum (now used for offices and archives). The free-standing café pavilion surrounds diners with views of the garden and dappled daylight filtered by translucent portions of the roof.

2. The architect used bamboo and wood salvaged from the old Nezu storehouses for the benches

in a second floor lounge. The light-filled lounge contrasts with the darker galleries, which need to protect artworks from daylight.

3. Broad eaves shade the glazed elevation looking onto the garden and create a transitional zone between indoors and out. The existing building (background in photo) runs perpendicular to the new building.

4. Kuma designed the landscaping around the museum as a dialogue between old and new and connected it with the building's interiors, including the sculpture hall on the ground floor.



The Holl-designed museum (foreground) adds a sculptural twist to Birk Centerpark, the home of a former shirt factory, outside Herning. The circular form of the factory—transformed in 1975 into the Herning Art Museum—is repeated in the planting behind the rectilinear design school. A prototype house by Jørn Utzon, framed by an arcing lawn, sits in front of the parking area.

OPPOSITE: On the south elevation, an opening in the crinkly textured concrete wall (reflecting the colors of dusk) allows a glimpse of the café.

ART OUTPOST

Steven Holl Architects allows art to have autonomy within a sculptural enclosure in Denmark's Herning Museum of Contemporary Art.

BY SUZANNE STEPHENS

IN MUSEUM CIRCLES, CURATORS and artists are well known for kvetching about architects who compete with the art on view by foisting major design statements onto willing clients. Small wonder that when Steven Holl entered an invited competition in 2005 for the Herning Museum of Contemporary Art in central Denmark, he took seriously the admonition from Holger Reenberg, the director of the museum: "Do everything you want as long as it doesn't compromise the art."

The museum, known by its coy (in English) acronym HEART, occupies 10.4 acres of Birk Centerpark, a singular art museum, sculpture park, design school, and office building enclave that was once the home of a shirt factory.

Holl's abstractly conceived, 60,278-square-foot structure leaves alone the art galleries totaling 15,812 square feet. Two discrete precast-concrete volumes form the inner core of the museum, one for permanent exhibitions, the other for temporary ones, and movable walls of lightweight construction allow art to be displayed in orthogonally arranged spaces. The architectural whammy occurs above the hang, so to speak. Here the roof fills out the gestalt, with five white tubular shells bending and twisting to create convex ceilings that billow over the galleries and perimeter areas containing the lobby, bookshop, offices, café, library, and an auditorium for concerts. On the exterior, convex and concave walls echo in the elevation the curves overhead. Although the exterior white walls, made of poured-in-place reinforced concrete, seem rather blank from afar, up close you find the surface rutted with creases. To achieve this thickly textured effect, the architects had trucks drive over vinyl mesh tarp, then staple-gunned the wrinkled material to plywood forms for the pour. When the concrete dried and the tarp was yanked off, "you had wrinkles with no repetition," says Holl.



Much has been said about how Holl's convex roof elements look like shirt sleeves, sliced and folded, and how the wrinkled exterior concrete resembles shirt fabric – both quite apropos of the products of the manufacturer who founded the original Herning Art Museum on the site. Aage Damgaard, owner of the Angli shirt factory, established in 1939, was also an art collector who liked to invite artists, including the Italian conceptual artist Piero Manzoni (1933–63), to take up residence at his factories. In the mid-1960s, Damgaard set up a factory in Birk on the outskirts of Herning, and his collection of Manzoni's works formed the core of the museum that opened in the factory building in 1975 when production moved elsewhere. Backing up the Angli factory, designed in the shape of a round collar by C.F. Møller in 1965, are landscaped parks by Carl Theodor Sørensen that repeat its circular forms as a series of grand and intimate outdoor rooms. The complex soon attracted a design school (TEKO, as it is called), now housed in a series of rectilinear structures built between 1998 and 2004, plus a smaller museum, large-scale sculptures, a carpet factory, and office buildings. A prototype house designed by Jørn Utzon in 1970 and distinguished by large, scupper-shaped roofs, sits near Holl's museum—one more element of this idiosyncratic physical context.

In spite of the visual resemblance of the roof to shirt sleeves, Holl shrugs off the catchy provenance. He argues the roof's design really derives from his desire for daylight to enter the interstices of spaces between the tubular arms, then bounce off the ceilings' white plastered curves to cast a soft, ethereal glow for the artworks displayed below. The openings take the form of clerestories composed of two

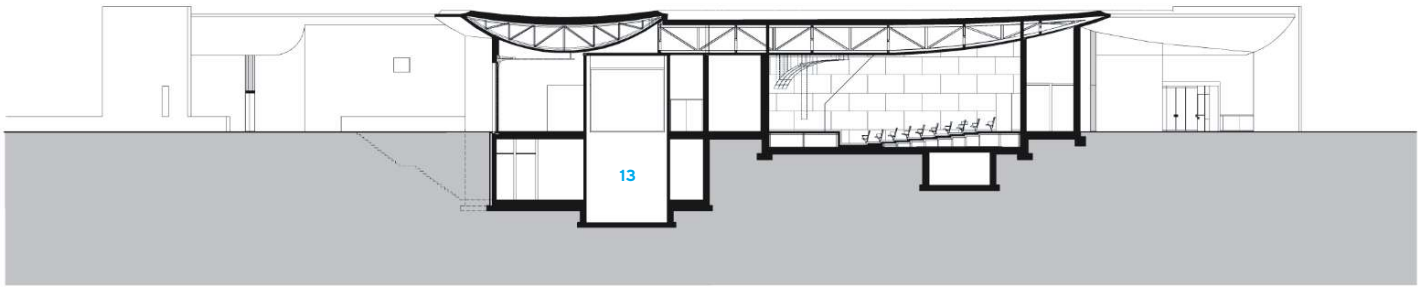
1. A curved soffit forms the understated entrance to the museum. The lobby, café, auditorium, and other related spaces fill out the peripheral areas where walls are curved, while galleries occupy the orthogonally planned volumes.

2. The café and other public spaces overlook reflecting pools that filter rainwater. Exterior walls are white reinforced concrete, wrinkled by a fabric impression. Lattice-like steel trusses form the structure of the convex roof elements.



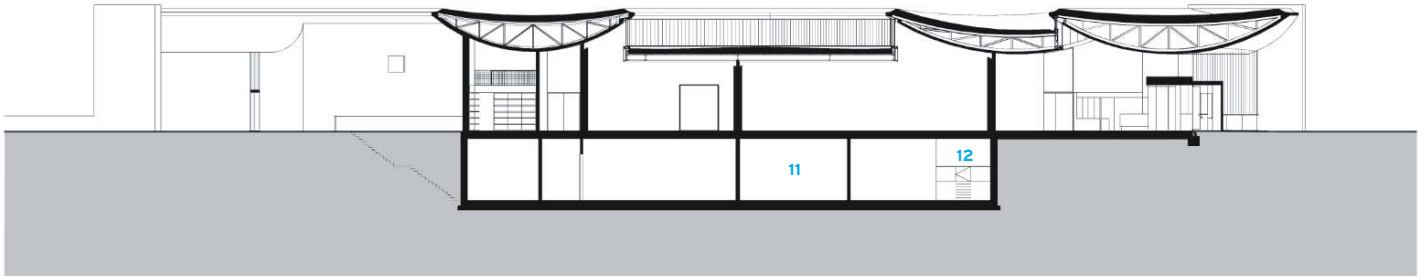
PHOTOGRAPHY: © IWAN BAAN, EXCEPT AS NOTED





SECTION A-A

0 10 FT.
3 M.



SECTION B-B



SITE/MAIN LEVEL FLOOR PLAN

layers of sandblasted channel glass with translucent insulation sandwiched between—somewhat like the glazing Holl used in the Bloch Building of the Nelson-Atkins Museum in Kansas City, Missouri [RECORD, July 2007, page 94]. A two-way-spanning steel-truss structure supports the curved forms, which are covered with a white roofing membrane on top, with steel hangers connecting the curved to the flat portions of the roof. “We worked closely with the structural engineer [Niras] to create large-span galleries where we could balance curved roof sections that sit on precast-concrete elements,” says Noah Yaffe, Holl’s associate in charge. The team designed the outdoor landscape to repeat in reverse the curved shapes of the roof: Rounded berms frame reflecting pools that filter the rainwater. Since the budget was tight (\$20 million), Holl donated \$20,000 of his fee so that a geothermal system could be installed for slab cooling (heating is provided by the district). In addition to inserting heating and cooling tubes in the concrete floors, the architects achieved additional energy savings by using a displacement ventilation system.

The imaginative intersection of art, light, and architecture offers a fittingly dramatic setting for the exhibitions, and not surprisingly, the museum recently received one of the Royal Institute of British Architects’ International Architecture awards for 2010. But nothing is perfect – or at least certain aspects need to be addressed in such an innovative project. For example, the clerestories often have been blacked out with shades since the opening last fall, owing to curatorial concern about daylight levels for the paintings. Visitors (including this observer) have found the entrance not legible enough as a portal to the museum, and Reenberg notes it is hard to tell if the museum is open, since no parking is permitted in front. While the interior circulation through the galleries is clear, and the outdoor piazza welcoming, visitors may not be as easily drawn to walk around the entire exterior of the building, partly because concave walls don’t deflect one’s steps around a corner. (Admittedly, cold weather often dampens such a desire.) Essentially, the integration of the building and land is a visual one best seen from the air, not a kinesthetic one experienced on foot. Here, the interaction of the pedestrian with the art inside the museum takes precedence. ■

1. One of the museum’s rectilinear volumes is devoted to temporary exhibitions, as seen in the inaugural exhibition devoted to the work of Jannis Kounellis. The other volume is for permanent exhibitions, and both seek to provide noncompetitive backdrops for the display of art. Portals, 16 inches deep and outlined in blackened steel, echo the charcoal tint of the integrally painted concrete floors.

2., 3. The curved ceilings of the permanent galleries show how daylight filters between the tubular roof sections to bathe the artworks in an eerie glow (supplemented by conventional spot lighting). The museum owns 37 works by Piero Manzoni, who spent time at the Angli Herring factory in the early 1960s.





2

CREDITS

PROJECT: Herning Museum of Contemporary Art (HEART), Birk Centerpark, Herning, Denmark
ARCHITECT: Steven Holl Architects – Steven Holl, FAIA, design architect; Noah Yaffee, associate in charge; Chris McVoy, project adviser
ASSOCIATE ARCHITECT: Kjaer and Richter
ENGINEERS: Niras (mechanical, structural); Transsolar (mechanical)
LANDSCAPE: Schønerr Landskab

SOURCES

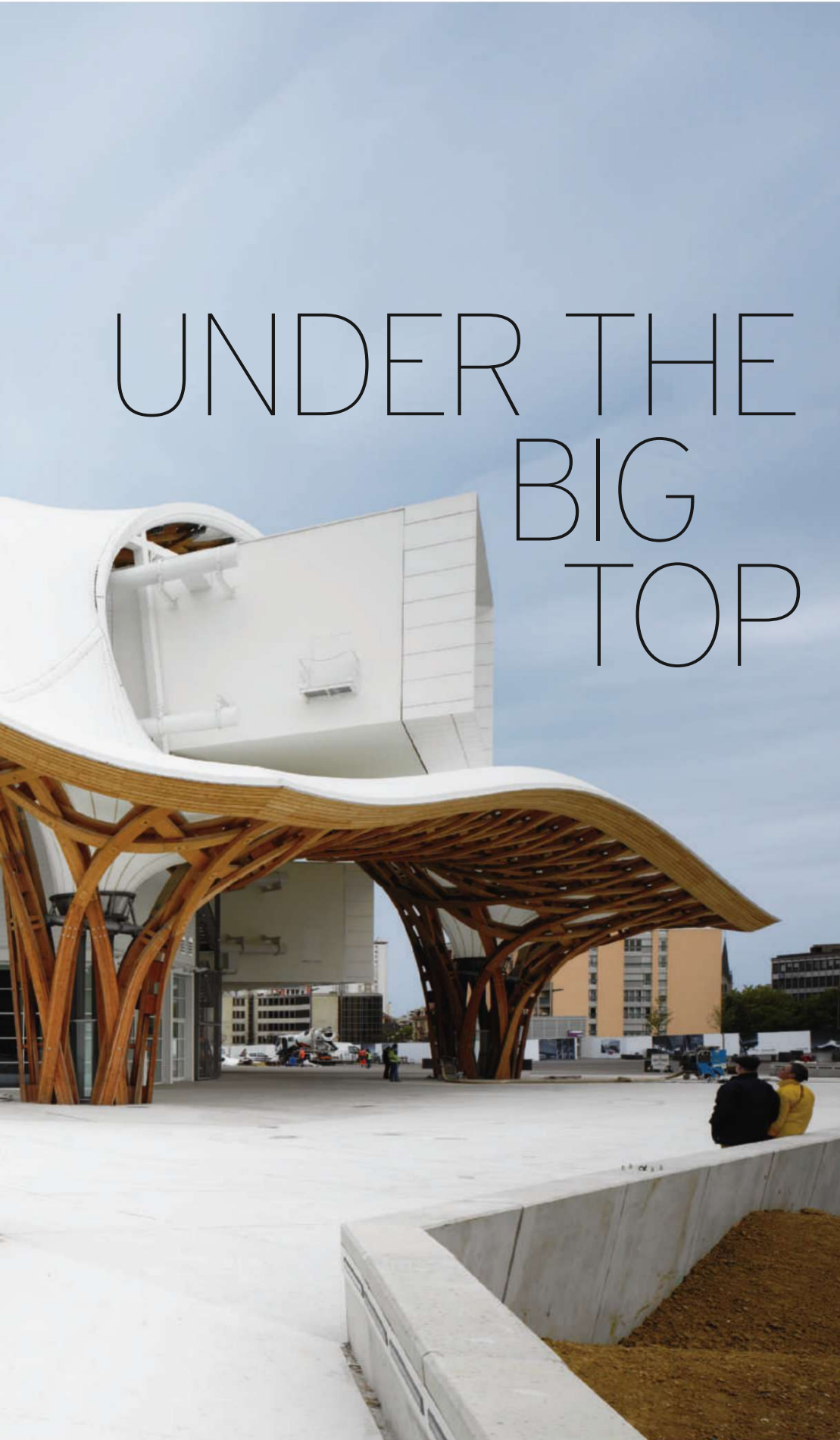
CONCRETE, INCLUDING FLOORS: EMR
CONCRETE SUPPLIER: IBF Ikast
CONCRETE TEXTURE: Ivar Haahr
STEEL: Langkjaer Stalbyg
GLASS FACADES: A.S. Facader
STRUCTURAL GLAZING: Hueck (system); Isolar Glas (glass)
CHANNEL GLASS: Glasfabrik Lamberts
STEEL ROOF: Rafinor



3



The Pompidou-Metz has been conceived as a big, enveloping roof sheltering a loose assemblage of volumes. The galleries, contained in rectangular reinforced-concrete tubes, jut through, or from just below, the curvy canopy.



UNDER THE BIG TOP

With a swoopy roof supported by a novel timber structure, the world-famous Centre Pompidou's home for its first satellite challenges convention. Will it succeed?

BY ROWAN MOORE

SHIGERU BAN is an appealing architect. His emergency shelters of cardboard and paper, devised in response to disasters such as the 1995 earthquake in Kobe, Japan, present him as someone turning his skills to public benefit rather than personal gratification. He also designed a series of houses in which walls disappear or take the form of giant curtains. His choice of renewable materials gives him a warm, ecological glow. He seems to stand for the adaptive and responsive, with work that provides an antidote to the grandiose and the formal.

The Centre Pompidou in Paris has an astounding collection of Modern art and a history of imaginative exhibitions, installations, events, and structures. Its 1977 building, designed by Renzo Piano and Richard Rogers, is a landmark of 20th-century architecture.

Ban and the museum have come together to create an \$62 million outpost of the Pompidou in Metz, in eastern France. In theory, it could have been a wonderfully productive union. In practice, it is conspicuously, tragically less than the sum of its parts.

The main mission of Pompidou-Metz is to display works from the parent institution, in an admirable attempt to share its collection more widely. The obvious precedent is the expanding franchise of New York City's Solomon R. Guggenheim Museum, most famously with Frank Gehry's building in Bilbao, Spain. As in Bilbao, the aim is to raise the profile of a neglected city. Metz, whose contested ownership with Germany contributed to two world wars, now has a forgotten air, despite its fine stone streets and medieval cathedral. The new, 122,000-square-



foot building is on the periphery, on the site of a former freight-railway depot, near the remnants of a Roman amphitheater, and separated by train tracks from the rest of the city. Close by is the town's passenger-rail station, to which the TGV travels the 200 or so miles from Paris in a brisk hour and 23 minutes.

Tokyo-based Ban, together with French architect Jean de Gastines and Londoner Philip Gumuchdjian, won the design competition for the Pompidou-Metz in 2003. Gumuchdjian's close involvement with the project subsequently ended, with Ban and de Gastines taking it to completion. Their concept was for an enveloping, undulating roof, compared by Ban to a bamboo hat, supported by a lattice of laminated and curved timber members. The seemingly woven structure, with spans of up to 170 feet, changes into funnel-like elements where the roof meets the ground. The whole is covered in an 80,000-square-foot membrane of translucent fiberglass and polytetrafluoroethylene (PTFE). The idea is that "the roof is on top of the landscape," says Ban. "We wanted the landscape to flow into the museum," he explains.

Beneath the roof is a loose assemblage of volumes. At ground level is the Grande Nef. Although intended primarily for large-scale work, the 60-foot-tall space has been divided into 17 relatively conventional rooms for the duration of the opening exhibition. Above is a stack of three galleries in shoe-box-shaped reinforced-concrete tubes, oriented to frame views of the surroundings

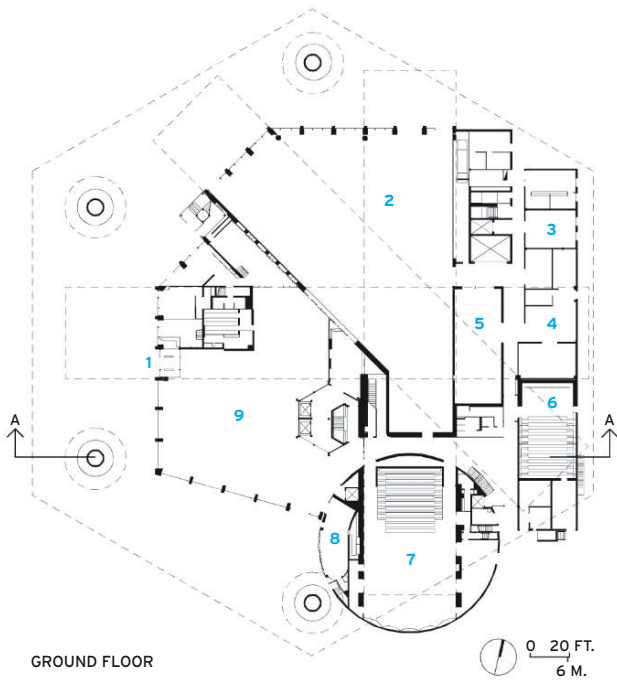


1. A Chinese peasant hat provided the inspiration for the Pompidou-Metz roof shape and construction. Covering its mesh of curved timber elements is a membrane of fiberglass and PTFE (more commonly known as Teflon). When illuminated at night, this translucent skin seems to glow from within, revealing the latticelike pattern of the supporting structure below.

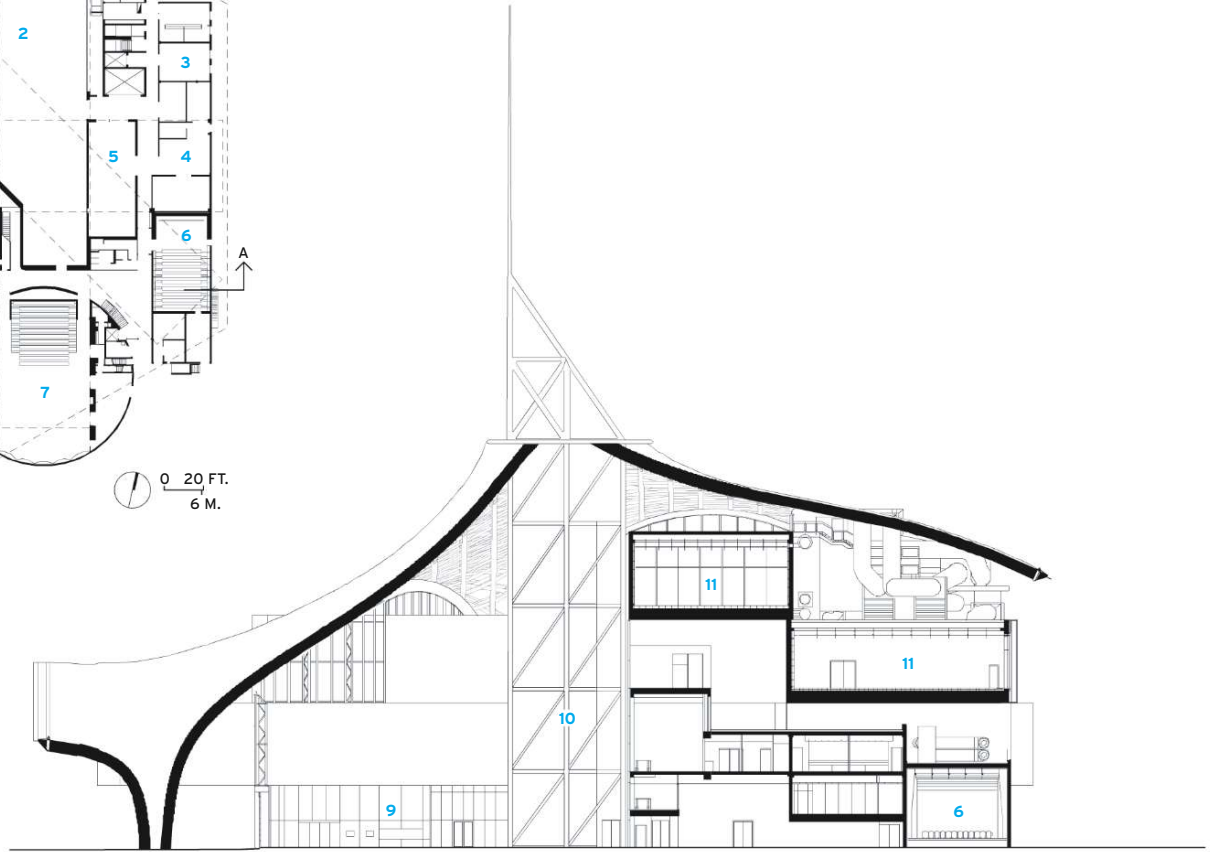
2. From afar, the enveloping and undulating roof appears to float above the surrounding landscape.

3. The roof's seemingly woven structure is made of stacked and bent laminated timber members with a total length of more than 11 miles.

DRAWINGS

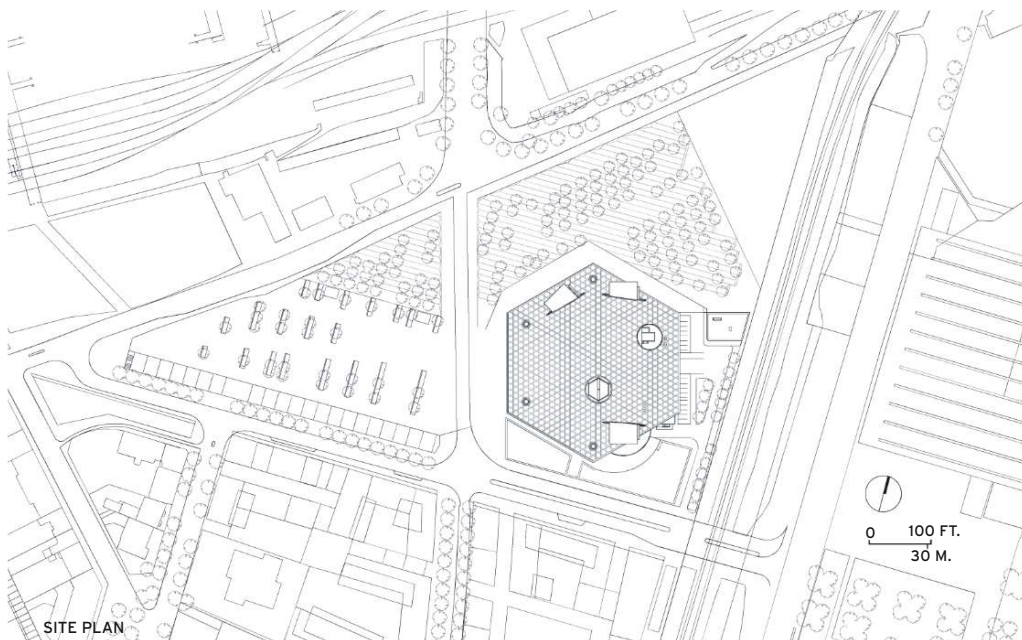


GROUND FLOOR



SECTION A-A

0 20 FT.
6 M.



SITE PLAN

- 1 ENTRY
- 2 THE GRANDE NEF
- 3 ADMINISTRATION
- 4 LOADING DOCK
- 5 STORAGE
- 6 AUDITORIUM
- 7 CREATIVE STUDIO
- 8 CAFÉ
- 9 THE FORUM
- 10 TOWER
- 11 GALLERY





1



2

OPPOSITE: The roof's timber structure is suspended from a steel-and-glass elevator tower that rises from a ground-level multipurpose space called the Forum. The tower appears to pierce the roof, transforming into a spire on the exterior.

1. Most of the museum's exhibition space is enclosed in three 262-foot-long shoe-box-shaped galleries with glazed ends. Each is angled to catch a different view of the surrounding landmarks, such as the town's medieval cathedral.

2. The ground-level gallery, known as the Grande Nef, is an almost 13,000-square-foot area intended primarily for the display of large-scale work. During the opening exhibition, it was divided into a series of smaller exhibition spaces. A mirror suspended above one of these irregularly shaped galleries is part of the inaugural installation.



To house the design team for the duration of the project, Ban set up an office close to his client, constructing a studio on a balcony of the Centre Pompidou in Paris. The 113-foot-long, 14-foot-wide arched building is supported by paper tubes and steel cables. The skin consists primarily of PTFE, the same material covering the timber roof at the Pompidou-Metz.

CREDITS

PROJECT: Centre Pompidou-Metz, Metz, France

ARCHITECT, COMPETITION: Shigeru Ban Architects and Jean de Gastines Architectes, with Gumuchdjan Architects – Shigeru Ban, Jean de Gastines, Philip Gumuchdjan, Nobutaka Hiraga, Mamiko Ishida, Asako Kimura, Anne Scheou, Toshi Kubota, Hiroshi Maeda, Shinya Mori, Ralf Eikelberg, project team

ARCHITECT, DESIGN AND SITE

ADMINISTRATION: Shigeru Ban Architects and Jean de Gastines Architectes – Shigeru Ban, Jean de Gastines, Gerardo Perez, Marc Ferrand, Jacques Marie, Faycal Tiaïba, Elsa Neufville, Vincent Laplante, Alessandro Boldrini, Hiromi Okada, Jeong Hoon Lee, Jae Whan Shin, Jonathan Thornhill, Rahim Danto Barry, project team

ENGINEERS: Arup, Terrell, Hermann Blumer (structure); Arup, Gec Ingénierie (m/e/p)

CONSULTANTS: L'Observatoire 1 (lighting); Commins Acoustics Workshop (acoustics); Agence Nicolas Michelin Associés (urban design); Paso Doble (landscape)

GENERAL CONTRACTOR: Demathieu & Bard

SOURCES

ROOF MEMBRANE: Taiyo Europe

RETRACTABLE GLASS DOORS: Butzbach

GALLERY RAISED FLOOR: Patrick Levieux

Much of the Pompidou-Metz at ground-level is designed to open to a landscaped plaza surrounding it with generously sized glass doors that retract. Above the doors are semitransparent walls of polycarbonate that stop short of the roof's timber-mesh structure.

through glazed ends. The tubes pivot around a steel elevator tower that pierces the roof and transforms into a 250-foot-high spire. Other volumes sheltered under the tentlike covering contain an auditorium, a restaurant, a café, a studio, and offices.

Rising the height of the interior is a big atrium, called the Forum, providing an open-ended area for events. It is semi-external, with transparent walls of polycarbonate and retractable glass doors that allow the space to open almost completely to a landscaped plaza.

As a concept, the project is convincing and seductive: a big, beautiful roof with free-form volumes underneath. It also reprises, in a very different location, the original Pompidou's goal of urban revitalization. Yet the simplicity and lightness of the idea get lost in execution. You can't really read the stack of tubes on the inside, which instead feels inchoate. Internal circulation is disjointed. The roof, conflated with the cuboid volumes beneath, becomes ponderous.

In addition, materials and systems—wood, plastic, metal, glass, competing grids and modules—collide in ways that seem underconsidered. De Gastines once worked for Gehry, but these are not the joyous collisions you find in Gehry's work. If you ascend the tower, you find yourself on a balcony looking down on the atrium, which is potentially the culmination of the internal sequence. But the view is of mechanical equipment and the dust-gathering tops of the tubes enclosing galleries below.

The gallery interiors feel careless. In the inaugural exhibition, A-list works by Picasso, Brancusi, Miró, Duchamp, Dalí, Pollock, et al were washed with a dirty light, a drab metallic grid overhead. The spaces don't show the attention that architects such as Piano or David Chipperfield would bring to materials, proportion, or detail. The idea was more for a studied casualness, but it doesn't come off.

The theme of the building is the play of the monumental and the spontaneous, the permanent and the transient. However, instead of dancing together, these qualities entangle and trip. If it's a tent, it's a lugubrious one; if it's a museum, it's a shoddy one. The best things about the project are the works on display and the fact that they have come to Metz. There are some satisfying spatial moments, including the panoramic views from the galleries and the translucent roof lit up at night. Also successful was the studio that Ban created to deliver the project, a lightweight tube slung high up on the Piano and Rogers building in Paris. This temporary office perfectly responds to the original Pompidou's spirit of appropriation and change. Disappointingly, this spirit seems to have been lost on the train ride east. ■

London-based Rowan Moore is architecture critic of the British Sunday newspaper The Observer. He is former director of The Architecture Foundation, a U.K. nonprofit, and editor of the journal Blueprint.





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CIRCLE 30

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for sustainable construction

- 91 **Formosa 1140**
LORCAN O'HERLIHY ARCHITECTS
- 94 **60 Richmond**
TEEPLE ARCHITECTS
- 98 **Yale Steam Laundry Condos**
JOHN RONAN ARCHITECTS



Formosa 1140

WEST HOLLYWOOD, CALIFORNIA

A private development plays good neighbor by creating a new public park as well as 11 snazzy duplexes.

By Clifford A. Pearson

SOUTHERN CALIFORNIA may conjure images of patios, barbecue grills, and al fresco dining, but outdoor spaces there tend to be private – either tucked behind houses or confined to internal courtyards in apartment complexes. “L.A. is a privatized city,” states Lorcan O’Herlihy, FAIA, whose firm designed Formosa 1140, an 11-unit condominium on North Formosa Avenue in West Hollywood. “New York has a lot more public open space than we do,” adds the Los Angeles-based architect. So O’Herlihy and developer Richard Loring used this project as an opportunity to combine private property and the public realm, enhancing both in the process.

Program

From the start, Loring and his company, Habitat Group, saw the advantages of breaking down the traditional boundary between public and private. Instead of creating a series of small backyards or an internalized courtyard for the residential complex, he and O’Herlihy wanted to establish a larger outdoor space that could be used by the public as well as condo residents. This larger space would add value to the dwelling units while serving as a public amenity for the entire neighborhood.

The developer and architect aimed the complex at young professionals, offering two- and three-bedroom duplex units ranging from about 1,400 to 1,700 square feet. Having worked together on two previous housing projects in West Hollywood, Loring and O’Herlihy had developed a relationship that allowed good ideas to flow back and forth. They had also established a good relationship with the city of West Hollywood, which agreed to provide loan guarantees and small variances to building-envelope regulations in exchange for a public park on part of the site.

Solution

By pushing the apartment building to one side, O’Herlihy was able to create a pocket park on one third of the 13,800-square-foot site. “The challenge was providing enough open space to make the park really useful while fitting 11 units on the property,” says O’Herlihy. The architect solved the problem by orienting the narrow end of the building to the street and the long end to the park. Underneath the park, he tucked a concrete garage with space for 23 cars.

“From the beginning, the park informed the design of the building,” explains O’Herlihy. Although the building has a simple rectangular

footprint to keep construction costs down, balconies and windows project outward in various places to engage the landscape and animate the major facades. Outdoor corridors on the first and third floors overlook the park, providing access to the apartments and serving as a buffer for the units inside.

In addition to overlooking the park, each dwelling unit has its own small outdoor space: balconies facing the park or street for the lower apartments and mostly roof decks for the upper units. The architects provide solar and visual protection for the homes with a series of orange or red corrugated-steel panels – some oriented vertically, some horizontally, some perforated, and some solid. “We wanted to create a layering of screens and skins,” says O’Herlihy. Although he didn’t use any alternative energy sources or high-tech energy-saving devices, the architect kept the building’s footprint small to encourage cross ventilation.

To limit construction costs to roughly \$5 million, the architects designed a simple, wood-frame building with just three different apartment layouts. All of the units are duplexes and most have a “flex” room on the lower floor that can serve as either a study or a third bedroom. (Units facing the street are a bit smaller and have just two bedrooms.) A simple palette of colors (mostly white with orange or red accents) and few partitions (only a curtain separates the master bedroom from its bathroom, for example) make the apartments feel open and contemporary.

Commentary

Inspired by the bright colors of the nearby Formosa café – a favorite Hollywood hangout – O’Herlihy and his associates brought a hipster’s



1



2

vibe to midmarket housing that too often feels stale and formulaic. They also did a good job of using simple materials in a variety of ways to create a feeling of depth and animation on the two major facades. While the floor plans and interiors don’t break any new design ground, they certainly provide attractive, well-lighted spaces for modern living.

O’Herlihy’s claims of “contesting the boundaries between public and private” may be a bit overstated, but Formosa 1140’s inclusion of a public park certainly encourages a type of urbanism that is rare in cities like Los Angeles. If we’re lucky, it will serve as a model for developers to give back to their communities. ■



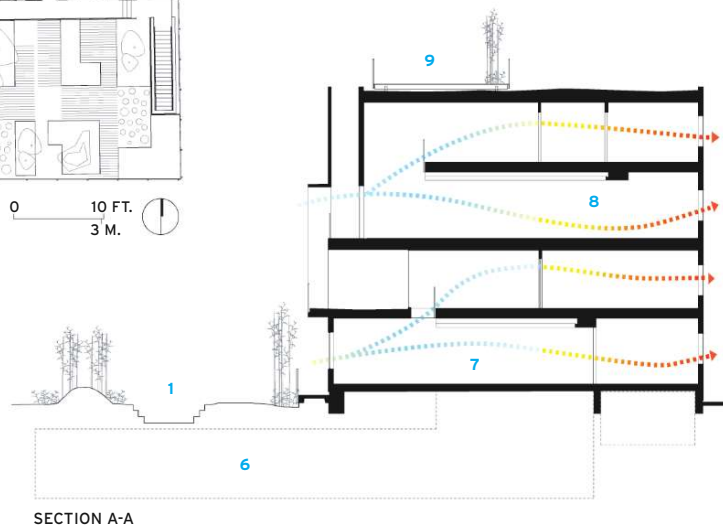
- 1 PARK
- 2 PARKING DRIVEWAY
- 3 LIVING
- 4 KITCHEN
- 5 STUDY/BEDROOM
- 6 PARKING
- 7 TYPICAL LOWER UNIT
- 8 TYPICAL UPPER UNIT
- 9 ROOF DECK

OPENING PAGE: The street facade grabs attention.

1. Residents enter upper units from an outdoor corridor.

2. Each unit is a duplex.

ABOVE: Most apartments overlook the new park with balconies or roof decks.



CREDITS

ARCHITECT: Lorcan O'Herlihy Architects – Lorcan O'Herlihy, FAIA, principal in charge; Katherine Williams, project manager; Kevin Tsai, Evan Brinkman, Kevin Southerland, project team

CLIENT: Habitat Group
ENGINEERS: Simpson, Gumpertz & Heger Engineering

LANDSCAPE DESIGNER: Katie Spitz Associates

GENERAL CONTRACTOR: Archetype

SIZE: 16,000 square feet, 11 units

COST: \$5 million

COMPLETION DATE: January 2009

SOURCES

CURTAIN WALL: Metal Sales corrugated metal siding

WINDOWS: Metal Window Corporation; Milgard

60 Richmond

TORONTO, CANADA

Urban revitalization and live/work cooperative housing come together in an inspired Modern green design.

By Jane F. Kolleeny



CREDITS

ARCHITECT: Teeple Architects – Stephen Teeple, principal; Chris Radigan, project manager; Richard Lai, William Elsworth, project architects

CLIENT: Toronto Community Housing Corporation

ENGINEERS: CPE Structural Consultants (structural); Jain & Associates (m/e/p)

CONSULTANTS: Emermodal Engineering (environmental); NAK Design Group (landscape); Cini-Little International (food service)

CONTRACTORS: Bird Construction Company

SIZE: 99,565 square feet

COST: \$20 million

COMPLETION DATE: March 2010

SOURCES

EXTERIOR CLADDING: Cembonit

CURTAIN WALL: Alumicor

ROOFING: IKO

WINDOWS: Inline Fiberglass; Clearview Industries

GLAZING: PPG Industries

DOORS: Trillium Steel Doors; Cancian Brothers; Amstel

LIGHTING: Selux; Thomas Lighting

HARDWARE: Sargent Manufacturing; Stanley Hardware

CEILING: Armstrong

PAINT: Sherwin Williams; ICI Paints

PLUMBING: Moen; American Standard; Mirolin

FLOORING: Forbo; Armstrong

AS ONE OF THE WORLD'S most multicultural cities, Toronto provides transitional housing for many of its immigrant poor. Since the late 1940s, Regent Park, a 69-acre mega-development of uninviting mid-rise tenement buildings in the city's downtown core, has served as a primary residence for this population. But Regent Park has fallen into decline, making Toronto's downtown increasingly inhospitable and socially marginalized. In 2005, the city and the Toronto Community Housing Corporation (TCHC) developed a 10-year plan to demolish and rebuild the aging development.

"The Regent Park revitalization will create better places to live – replace aging, deteriorating buildings with new ones built to the highest architectural and green standards," explained John Fox, vice president of TCHC. By opening up what were formerly isolated streetscapes to the downtown grid, the city and TCHC hope to develop the character of the area so it becomes a true neighborhood. Redevelopment is already starting to spill out into nearby areas, including Richmond Street, the site of a new building designed by Teeple Architects.

Program

To make up for the loss of some dwelling units at Regent Park, the city needed to create new low-income housing downtown. A former homeless shelter donated by the city to TCHC at 60 Richmond was demolished, making room for a program to house unionized hospitality workers employed in the area. Local city councillor Pam McConnell suggested

a co-op for residents, which ultimately resulted "in a unique partnership among Toronto Community Housing, Unite Here Local 75 (the Hospitality Workers Union), and the Co-operative Housing Federation of Toronto," explains Fox. Conceived as a progressive live/work model of housing, it aspires to encourage residents to take greater responsibility for their lives.

Solution

Completed in March 2010, 60 Richmond provides 85 one- to three-bedroom apartments in a new, 11-story building. TCHC raised the \$20 million required to build the facility, managed construction until completion, then turned it over to a co-op board that collects rent and oversees operations. Residents include sous-chefs, kitchen help, and hotel cleaning staff, who mostly work within walking distance. Due to open this fall, a restaurant and training kitchen will occupy the street level. "Once the restaurant and teaching kitchen are complete," explains Steven Teeple, principal in charge and founder of Teeple Architects, "[they will] enliven the street space with activity."

To break down the mass of the building, Teeple organized the main facade into an irregular series of projecting volumes – three bumped-out volumes are separated by recessed areas, and a sixth-floor reveal opens to a full-height courtyard occupying the central core of the entire volume, bringing light and air inside and creating a stack effect for ventilation. Contributing further to variations in the exterior, an occasional recessed porch painted a vivid color punctuates the otherwise

gray volumes of the highly insulated rain-screen cladding, which eliminates thermal bridging. While the project makes a strong architectural statement, it also serves as an extension of downtown's urban fabric. "The building defines the public and semipublic spaces of the city and the courtyard it encloses. Its mass wraps around the corner, bringing dynamism to this urban intersection," explains Teeple.

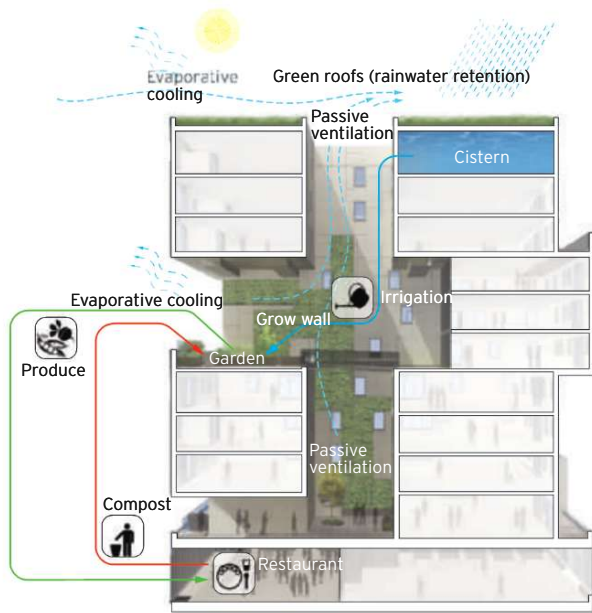
A garden tended by residents on a sixth-floor courtyard will produce vegetables for the restaurant, while compost from the kitchen will fertilize the growing soil. This raised courtyard also provides space where families can gather. "We cut away the mass of the building from the street facade, creating outdoor green terraces, while allowing the primary faces to define the public space of the street," says Teeple. "We didn't set back these terraces or disconnect them from the city but instead wove the greenery into the fabric of the city," he continues.

On track for LEED Gold certification, the project demonstrates an impressive green agenda. Heat-recovery units in apartments and limited glazing on the exterior contribute to overall energy savings, while a sophisticated mechanical system transfers energy from the warm to the cold side of the building as temperatures change. Rainwater collection irrigates the gardens, and a green roof mitigates storm water and the heat-island effect. Limited parking, fuel-efficient autoshare vehicles, bike storage, and proximity to public transit all encourage less energy-intensive transportation.

LEFT: The interiors of some of the units face downtown Toronto.

THIS PAGE: The 11-story 60 Richmond has a distinctive face. White recessed areas contrast with a dark gray facade, and intermittent, vividly colored porches punctuate the irregular surface.

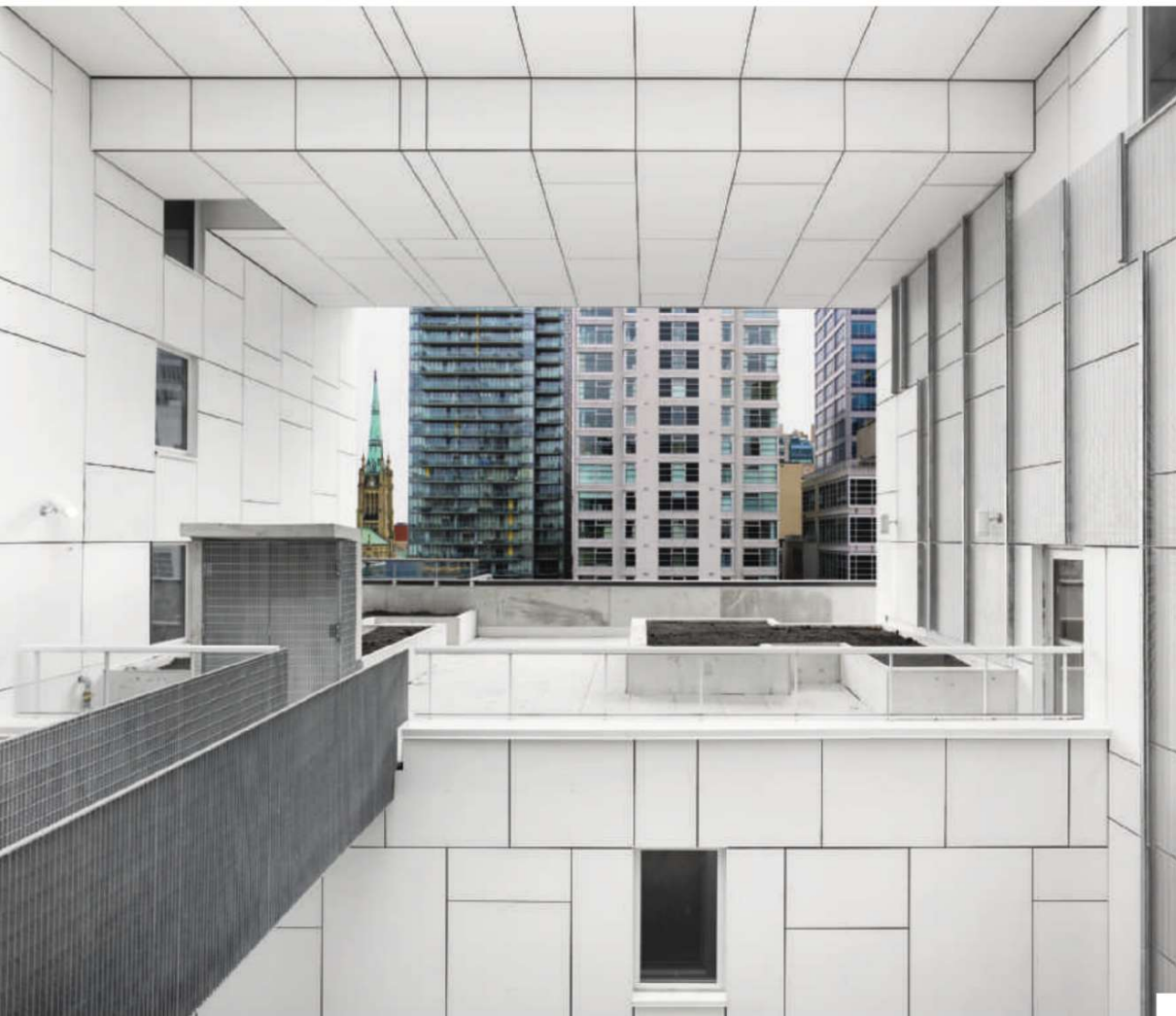




SUSTAINABILITY SECTION



GROUND FLOOR



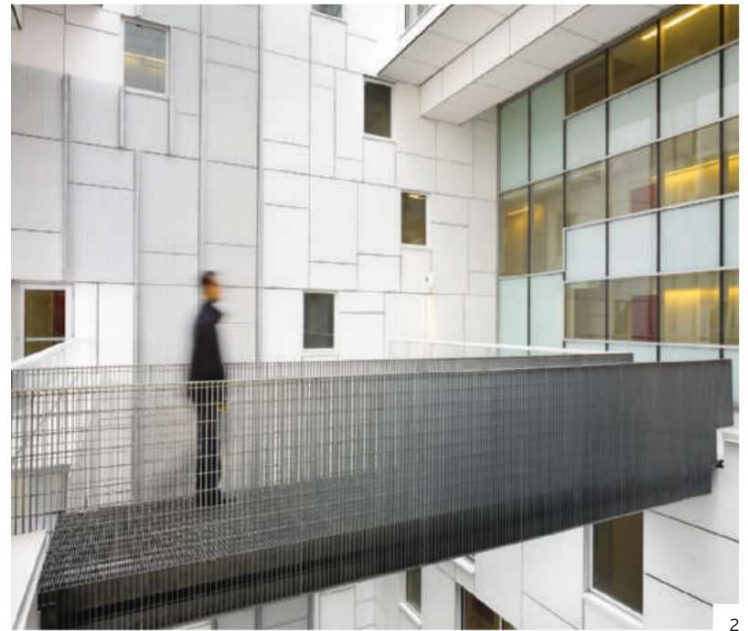
- 1 LOBBY
- 2 OFFICES
- 3 RESTAURANT
- 4 TRAINING KITCHEN
- 5 PANTRY
- 6 BICYCLE PARKING
- 7 AUTOMOBILE PARKING
- 8 GARBAGE/SERVICE
- 9 UNITS
- 10 PUBLIC TERRACES
- 11 GARDENS
- 12 PRIVATE TERRACES

Commentary

Teeples describes 60 Richmond as emblematic of “environmental urbanism,” which recognizes that reasonably dense development in cities is highly sustainable. But the architect did more than just reinforce a trend to denser cities – he and his team brought a strong sense of design to a project serving low-income residents. The firm sculpted the building’s main facade to make it visually compelling, though its projecting volumes appear vaguely derivative of housing by Dutch firms, specifically a project in Madrid called Celosia by MRVDV and Blanc Allee. Still, the project is impressive as an object, as part of an urban landscape, and as a model of high-performance design. ■



SIXTH FLOOR



2

1. A view out to the city across the courtyard and the sixth-floor terrace, with a garden tended by residents.

2. A catwalk on the sixth floor connects two sides of the open volume of the 11-story courtyard.

BELOW: The atriumlike courtyard, viewed here from the ground floor, is open to the sky.



Yale Steam Laundry Condominiums

WASHINGTON, D.C.

John Ronan Architects and BBG-BBGM collaborate to retain the historic character of a 20th-century commercial building complex.

By Linda C. Lentz

CREDITS

ARCHITECT: John Ronan Architects – John Ronan, lead designer, principal in charge; Brian Malady, Yasushi Koakutsu, Brad Kelley, Oscar Kang, project team

ASSOCIATE ARCHITECT: BBG-BBGM – Dominic Giordano, AIA, managing partner

CLIENT: IBG Partners/Greenfield Partners

ENGINEERS: Holbert Apple Associates (structural); GHT Limited (m/e/p)

CONSULTANTS: Charter Sills (lighting); Parker Rodriguez (landscape); Bowman (civil)

GENERAL CONTRACTOR: Clark Construction

SIZE: 38,000 square feet (gross square footage)

COST: Withheld

COMPLETION DATE: April 2008

SOURCES

WINDOWS: Graham Architectural Products; Wasco Custom Skylight Systems

METALWORK: AIW American Ironwork

PAINT AND STAIN: Benjamin Moore

SURFACES: Corian (kitchen solid surfacing)

INTERIOR LIGHTING: Bartco (ambient); Flos (lobby); Leviton (controls)

FLOORING: CB Flooring (wood)

CUT OFF FROM THE CAPITAL'S

downtown area by the sprawling Washington Convention Center, the 12-block span that makes up the Mount Vernon Square Historic District exemplifies typical urban woes: poorly planned projects, abandoned buildings, and worn streetscapes. It also displays signs of an architectural and commercial revival.

Rich with a history that reflects D.C.'s economic and social development, this working-class neighborhood in Northwest Washington is attracting developers, entrepreneurs, and residents looking to invest in the charms of what is left of its mid-19th- to mid-20th-century building stock – as well as the potential revenue presented by its proximity to the convention center.

Program

When IBG and Greenfield Partners allied to purchase the Yale Steam Laundry property in the early 2000s, the once-thriving commercial establishment – comprising a three-story Italianate, brick-and-limestone structure built in 1902, its 1924 two-story annex, and 1919 garage – had been shuttered for decades. Built to meet the demands of a high-volume service business, the main steel-framed building, by architect Thomas Francis, Jr., featured irregular wood floor joists; thick, glazed white brick interior walls; and a corbeled smokestack. The concrete-framed addition, by A.B. Mullett & Company, had a ground-level dirt floor and ample industrial steel fenestration.

The developers' intent was to adapt the run-down facility, listed on the National Register of Historic Places, as an aesthetic "anchor" for an expansive residential complex. So they enlisted the local office of



BBG-BBGM to oversee the project's preservation and landscaping aspects and to devise a scheme for two 12-story contemporary towers – one for condominiums, the other for rental apartments – that would feature loftlike residences with traditional layouts. However, they sought an architect with an edgy perspective for the interior renovation of the original building and annex, which would connect to the condo tower and house real lofts, as well as owner amenities for both. (The old garage will be merged with the rental tower under separate management.) To cast a wide net, a competition was held. The winning design, by Chicago-based John Ronan Architects, is hip yet mindful of the building's structural legacy.

Solution

"We let the building do the talking," explains principal John Ronan. Basing spatial configurations on its windows and structural elements, he and his

team arranged 14 single-floor and six duplex lofts, all with distinct layouts, into the main section. They isolated mechanicals by devising a central zone in each to accommodate HVAC, plus custom kitchens and baths, leaving the original cleaned but scarred ceilings and brick walls intact. Likewise, they carved an infrastructural hub at the building's core, and faced the walls in the hall with hot-rolled steel to separate past and present.

"We wanted to leave the patina and character that time conferred on it," says Ronan. "So the first thing we did when we started construction was walk through with the contractor, telling him what not to do."

ABOVE: The restored buildings feature a landscaped courtyard and driveway.

RIGHT: The annex opens to a daylight entry with existing repainted brick, and an inserted steel stair and bridge.



- 1. Newly installed wood flooring and custom kitchens are distinct from existing surfaces.
- 2. The lobby features uplift existing columns, plus furnishings by Moooi, Zeus, and Flos.



1



2



GROUND FLOOR



SECOND FLOOR

- 1 ENTRANCE
- 2 LOBBY/RECEPTION
- 3 MANAGEMENT OFFICES
- 4 PUBLIC CORRIDORS
- 5 RESIDENCES
- 6 OWNER STORAGE
- 7 RECREATION AREA
- 8 GYM
- 9 BRIDGE
- 10 ANNEX ROOF
- 11 SKYLIGHT
- 12 LIGHT MONITOR



THIRD FLOOR

The architects created a double-height entry in the annex, opening it to existing skylights. Then they fit a glass wall into the masonry to reveal the adjacent lobby with its satiny concrete floor, sleek furnishings, and access to the garage and management offices. They inserted a “grand” steel stair and glass-lined bridge leading to the upper gym and recreation area – also daylit by large monitors.

Outside, BBG-BBGM stripped the painted facades, replaced or

repaired windows, and rebuilt the smokestack – the project icon.

Commentary

According to Scott Fuller, IBG executive vice president, “This project was a unique opportunity to marry new towers to a historic building in an area undergoing a rapid renaissance.” With near total occupancy, Ronan’s discreet transformation of the old Yale Steam Laundry clearly fills a niche in a city with few industrial buildings. ■



WESTERN RED CEDAR
ARCHITECTURAL

Design Awards 2010

The Western Red Cedar Lumber Association (WRCLA) is calling for entries in the 2010 Western Red Cedar Architectural Design Awards program. The awards recognize innovative design and architecture using one of the world's most unique and sustainable building materials, Western Red Cedar. Winners from the 2008 award program included the Experimental Media and Performing Arts Center by Grimshaw Architects and the Queens Botanical Garden by BSKS Architects LLP.

2010 winners will be chosen by a panel of notable architects, and the results announced at the Greenbuild Expo in Chicago, November 16 – 19, 2010. All entries must be submitted by July 30, 2010.

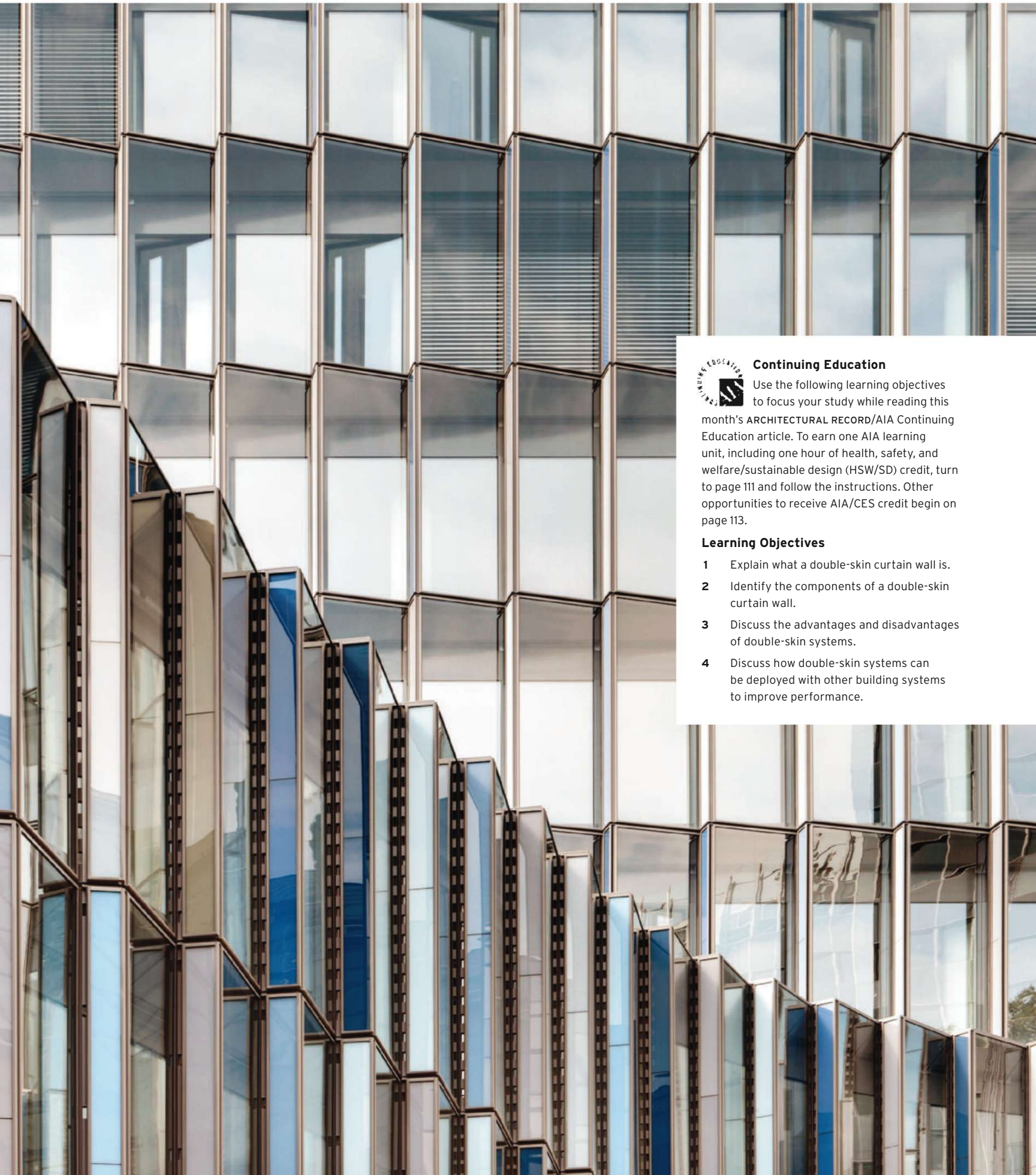
For more details and how to enter, please visit:

www.construction.com/cedarawards/



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

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Continuing Education

Use the following learning objectives to focus your study while reading this month's ARCHITECTURAL RECORD/AIA Continuing Education article. To earn one AIA learning unit, including one hour of health, safety, and welfare/sustainable design (HSW/SD) credit, turn to page 111 and follow the instructions. Other opportunities to receive AIA/CES credit begin on page 113.

Learning Objectives

- 1 Explain what a double-skin curtain wall is.
- 2 Identify the components of a double-skin curtain wall.
- 3 Discuss the advantages and disadvantages of double-skin systems.
- 4 Discuss how double-skin systems can be deployed with other building systems to improve performance.

More Than Skin Deep

An integrated facade strategy helps designers create more comfortable and better-performing glass buildings.

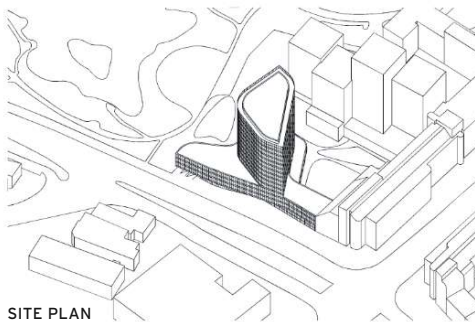
By Joann Gonchar, AIA

AT LEAST SINCE MODERNISM emerged in the early 20th century, and perhaps as early as the mid-19th century, when Joseph Paxton built the Crystal Palace in London, architects have been fascinated with glass. They've exploited the material's properties to make buildings that almost disappear, to create a glowing effect at night, and to enhance connectivity with the outdoors. And of course, many have chosen to clad their structures in glass because of its associations with openness and honesty. But a mostly transparent building can be at odds with sustainability. Depending on how it is designed and built, an all-glass-clad structure is prone to heat gains and losses, resulting in interiors that are too hot or too cold and creating the need for bigger mechanical systems.

One response to the competing demands of energy efficiency and transparency is a double-skin facade—a cladding assembly made up of two surfaces or walls of glass separated by an air cavity ventilated either by mechanical or natural means. This intervening air space, which acts like a climatic buffer, often encloses shading devices and can be as narrow as a few inches, but is typically 3 or more feet deep to allow access for maintenance. In cold seasons, the air within the cavity can be distributed to the building to help fulfill heating needs, and in warm weather it can be vented to lessen cooling loads.

The approach does have drawbacks, including the loss of usable floor space and the cost of an extra skin and its supporting structure. A double wall also adds a level of complexity requiring a whole building approach that closely coordinates several disciplines, including mechanical and structural engineering, thermal analysis, and lighting design.

The just-completed 400,000-square-foot, \$85 million expansion of the Frankfurt, Germany, headquarters of KfW Bankengruppe is one project that is the product of this kind of tight integration. Berlin-based Sauerbruch Hutton won the commission in 2004 with a proposal for a 184-foot-tall glass-clad building that includes a 10-floor office tower, shaped like an airfoil in plan, on top of a



SITE PLAN

OPPOSITE: The new KfW building in Frankfurt, Germany has a double-wall facade with a sawtooth-shaped outer skin.

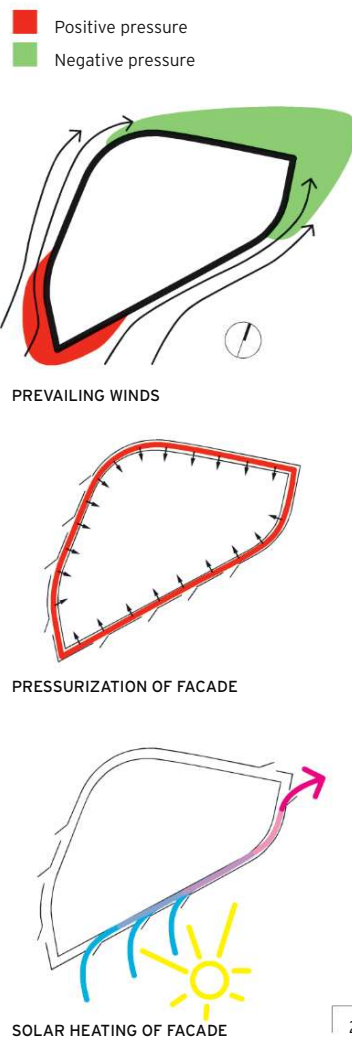
ABOVE: The skin includes colorful automated flaps that open, depending on conditions, to allow outdoor air to enter the facade cavity.

curvy four-story podium.

The form was the outcome of an effort to preserve views and daylight for the occupants of the bank's cluster of existing buildings. At the same time, the designers hoped to reinforce the street edge and draw an adjacent botanical garden into the rear of the site.

This configuration, especially the tower's winglelike shape, was also ideal for an unusual type of double-skin facade that takes advantage of the prevailing wind direction and should allow offices in the new KfW tower to rely on natural ventilation for several months of the year. "The urban concept and the ventilation strategy fit well together," says Tom Geister, Sauerbruch Hutton project architect.

The facade, along with several other coordinated features, including radiant slabs and geothermal heating and cooling, is expected to help the building meet an ambitious operating target



1. The inner face of the KfW building's double-wall facade includes occupant-controlled windows.
2. The tower's airfoil shape and encircling cavity make the most of prevailing winds for natural ventilation. The cavity also provides protection from solar gain.
3. Fresh air supplied to the offices is vented through the corridors (above) and then to the building core.

intake louver located at the site's edge near the botanical garden and temper it with the constant temperature of the earth before delivering it to the work areas from a plenum below their raised floors. In winter, the air will be further warmed by a recovery system that captures heat from exhaust air and from the data center. And during the summer, radiant ceilings will absorb heat.

Chill factor

Frankfurt has a mild climate, with long, benign shoulder seasons, making it well suited for such an approach. But a double-skin can also be incorporated into a coordinated strategy for energy conservation and occupant comfort in buildings in more extreme environments, as illustrated by the \$271 million headquarters for public utility Manitoba Hydro. The 700,000-square-foot building opened in September in downtown Winnipeg, Canada – a city with short and humid summers and long and brutal winters. It has the dubious distinction of being the coldest city on the planet with a population of 600,000 or more.

Despite the harsh conditions, the client and its design team, led by Toronto-based Kuwabara Payne McKenna Blumberg Architects (KPMB), opted for a highly transparent structure. But by deploying a host of tightly coordinated features, including a double-skin, they've created a tower expected to consume only a third of the energy of a code-compliant office building.

Manitoba Hydro's massing, the product of in-depth site analysis, includes two 18-story office blocks separated by a service core on top of a three-story podium. The blocks are set at angles to one another, forming the long legs of a triangle, with dominant exposures to the west and east-northeast. To the north, at the triangle's apex, is a

of consuming no more than 27 kBtu per square foot of primary energy per year, if calculated in accordance with the U.S. standard ASHRAE 90.1 – about half the needs of a standard German office building. The goal was important to the client, since much of its lending activity supports energy-efficient housing and the development of sustainable technologies.

The KfW envelope system, which designers have dubbed a "pressure ring," consists of an encircling sawtooth-shaped cavity, 28 inches wide at its deepest point, that encloses automated blinds to block solar gain and control glare. The space is defined on the exterior by a skin made up of fixed, tempered-glass panels and colorful ventilation flaps, and on the interior by alternating operable and fixed argon-filled insulated glazing units (IGU) incorporating a low-E coating.

This double-wall assembly will extend the number of days each year that natural ventilation is practical, maximizing air quality, but not at the expense of energy conservation, according to Stuttgart-based Thomas Auer, managing director of Transsolar KlimaEngineering, the project's energy consultant. In high-rise buildings with operable windows, pressure differences on the windward

and leeward faces can produce too much cross ventilation, causing unwanted heat loss, he explains. But at KfW, the pressure ring should keep the cross ventilation and associated heating loss in check.

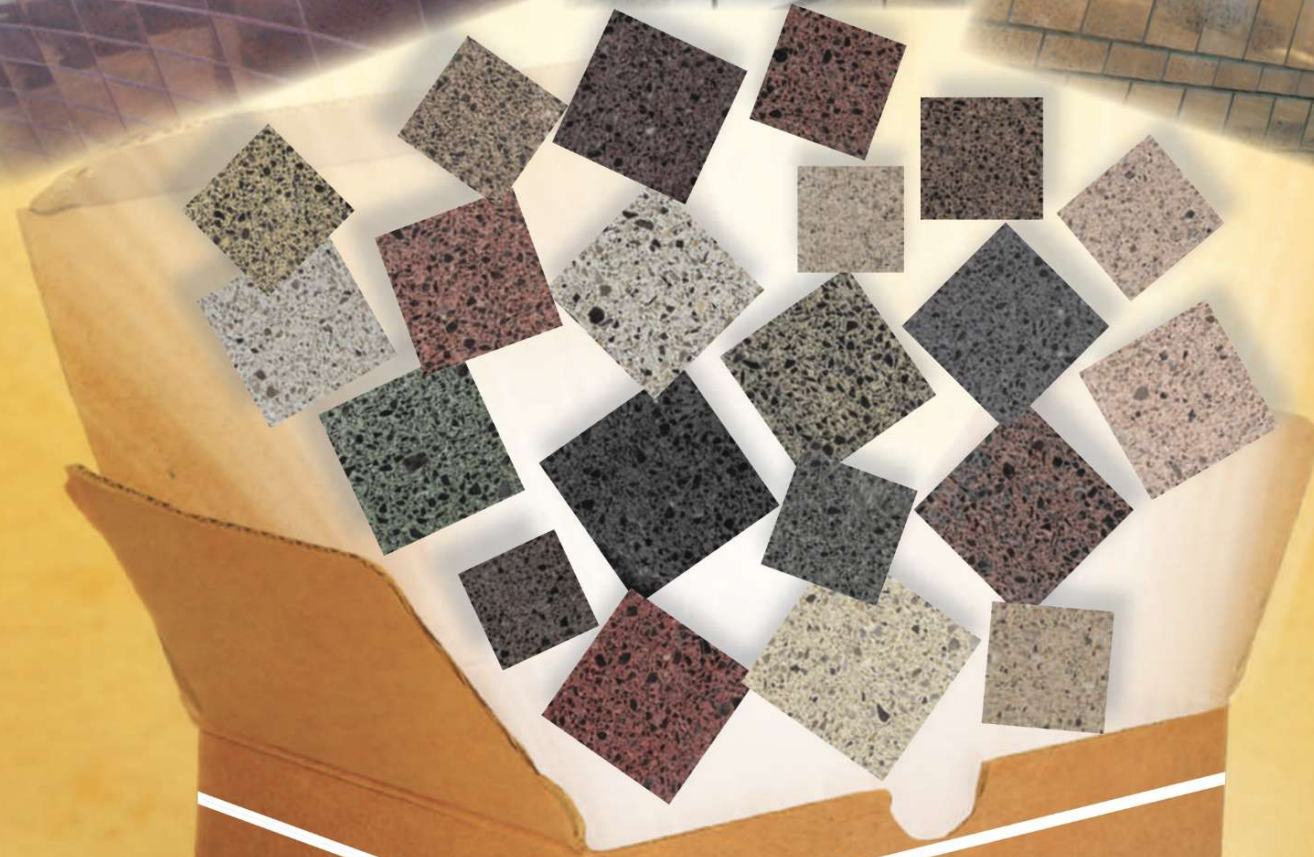
The building has a roof-mounted weather station that monitors wind direction and speed, among other factors, and controls the ventilation flaps in the facade's outer shell. Depending on conditions, the building management system (BMS) opens or closes flaps to introduce fresh air and create a zone of consistent pressure surrounding the curtain wall's inner skin while simultaneously producing a slight pressure differential between the cavity and the building's interior. This air is then drawn into offices through floor vents near the perimeter, or through the occupant-controlled windows. It is subsequently exhausted naturally to the negatively pressurized corridor, and ultimately through the building core.

Auer expects that the building will operate in this mode – with the mechanical systems for heating and cooling the offices off – during much of the spring and fall. During the winter and summer, the offices will be supplied with fresh outdoor air through a duct buried underneath a below-grade parking garage. It will carry the air from an

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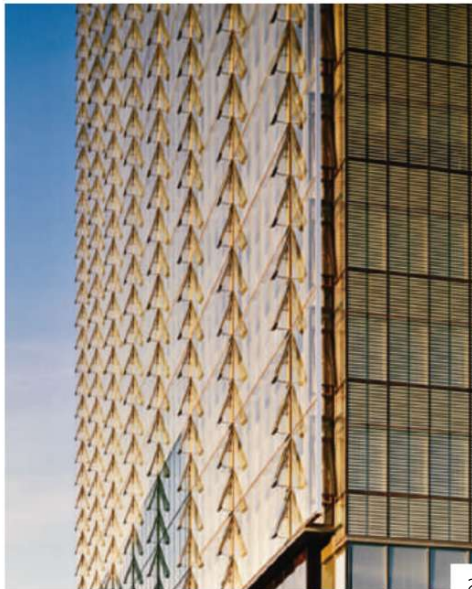
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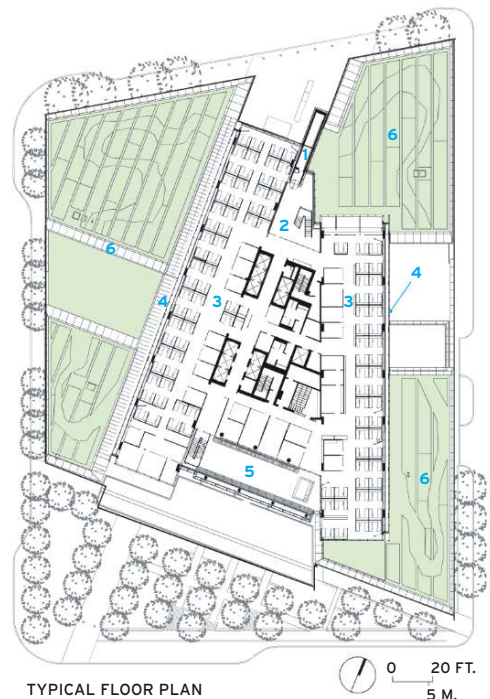
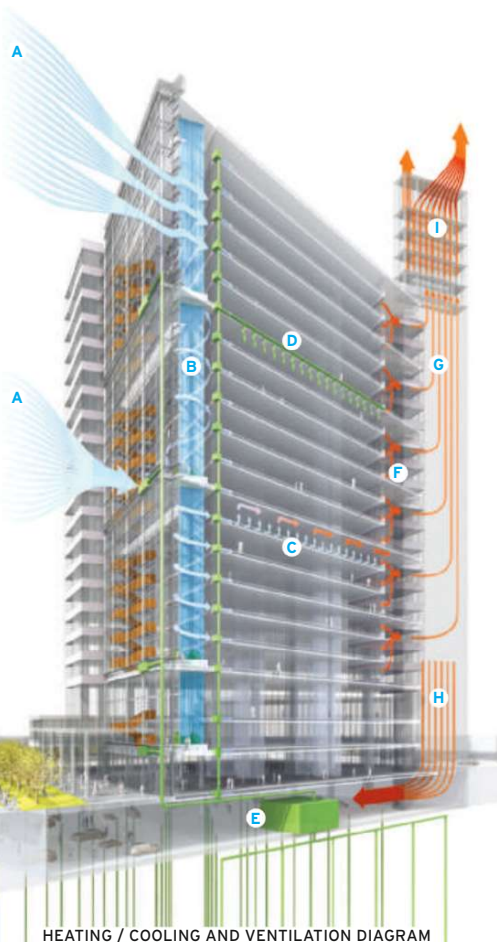
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1. Even though Winnipeg has a harsh climate, its new Manitoba Hydro building is clad completely in glass.
2. The cladding systems include double-skin curtain walls with automated windows that open to vent excess heat.
3. South-facing winter gardens precondition outdoor air before it is distributed to the rest of the building.

- A. Fresh air enters south-facing winter gardens.
- B. Air is humidified or dehumidified by the water features, depending on the season.
- C. Air is distributed via underfloor displacement ventilation.
- D. Radiant ceilings add or remove heat as needed.
- E. A chiller fed by 280 geothermal wells transfers heat to or from pipes running through the radiant ceilings.
- F. Air drawn through office spaces is vented through two-story atria at the north end of the building.
- G. The air flows to the solar chimney and is exhausted upward in the summer.
- H. In winter, the exhaust air travels through a heat exchanger and then warms the parking garage.
- I. Sand-filled pipes absorb the sun's heat to help maintain the stack effect on cool summer nights.



- | | |
|-----------------|----------------------|
| 1 SOLAR CHIMNEY | 4 DOUBLE-SKIN FACADE |
| 2 NORTH ATRIUM | 5 WINTER GARDEN |
| 3 OFFICES | 6 GREEN ROOF |

finlike solar chimney that extends several stories beyond the roof. And at the opposite end, forming the triangle's base, are three stacked atrium spaces, or winter gardens, each six stories tall.

This configuration, and especially the south-facing atria, allow the building to make the most of Winnipeg's unique atmospheric conditions: Although frigid in winter, the city's skies are among the clearest in Canada. "Even when it is cold, it is almost always sunny," points out Transsolar's Auer, whose firm also served as this project's environmental consultant.

The winter gardens were conceived to take advantage of this free solar energy. The 90-foot-

long and 30-foot-wide space acts almost like an expanded double skin, providing a chamber for preconditioning outdoor air before it is distributed to the office areas through an underfloor displacement ventilation system.

Fresh air enters each atrium through the louvers in the south-facing insulated glazing. During the winter, it is warmed by the sun and humidified by 80-foot-tall fountains made of tensioned mylar ribbons that carry water along their length. In the summer, chilled water runs along the ribbons, helping remove humidity from the air. The winter gardens are the building's "lungs," says Bruce Kuwabara, KPMB principal.



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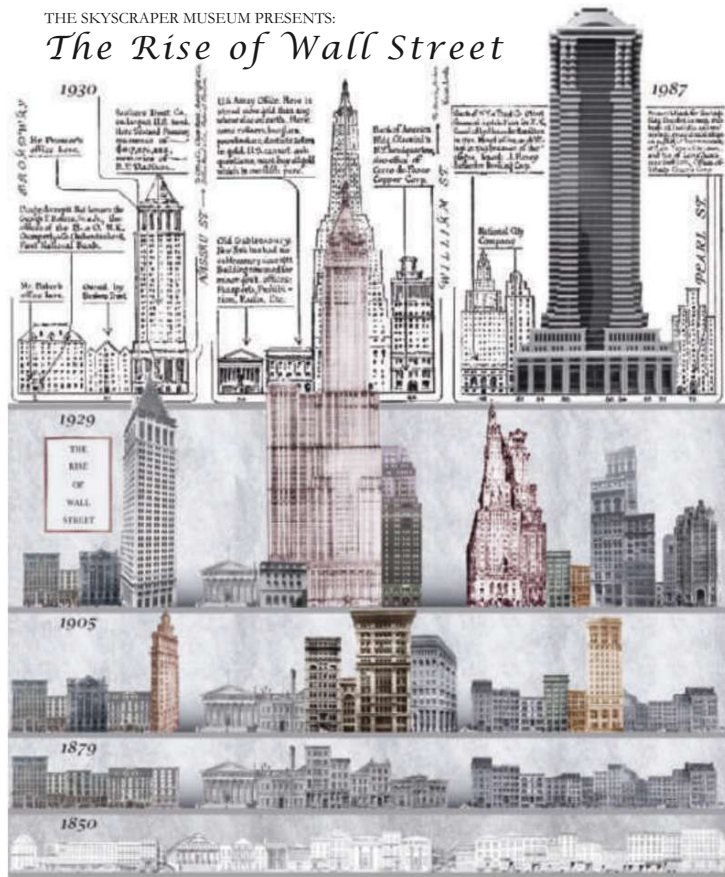


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1. The Cambridge Public Library's double-skin facade has horizontal louvers and laminated-glass visors to mitigate direct solar penetration.
2. The architects opted for an all-glass facade to make the building inviting at all times of day.
3. A 15-foot-wide strip of the interior immediately next to the curtain wall is column-free to enhance the connection with the surrounding park.



SUMMER AIRFLOW

LEFT AND ABOVE: During the winter, closed vents at the top and bottom of the cavity allow the air within to heat up, creating a thermal barrier between exterior and interior. During the summer, the vents are opened to allow cool air to enter at the base and exit at the top as it warms, via the stack effect.

Once the air is introduced into the offices, heat is added or absorbed, depending on the season, by radiant ceilings. During the summer, the stack effect draws the air upward through the solar chimney and out of the building. But in the winter, the heat in the air is recovered and used to warm a below-grade parking garage.

The long, exposed faces of the office blocks are clad with a more typically dimensioned double skin. The system includes a 49-inch-deep cavity enclosed by an IGU on the exterior and a single lite on the interior. Both inner and outer skins are of low-iron glass, incorporating low-E coatings, but of differing performance levels: Somewhat counter-intuitively, the outer skin's coating allows much of the sun's radiant energy to pass through the glass into the cavity. However, the inner skin includes a higher-performing pyrolytic, or baked-on, coating. It reflects a large portion of the solar radiation back into the cavity while helping maintain comfortable temperatures for office areas immediately adjacent to the curtain wall. "The goal was to collect as much heat [in the cavity] as possible," explains John Peterson, KPMB project architect.

The combination of coatings is so effective that excess heat often builds between the inner

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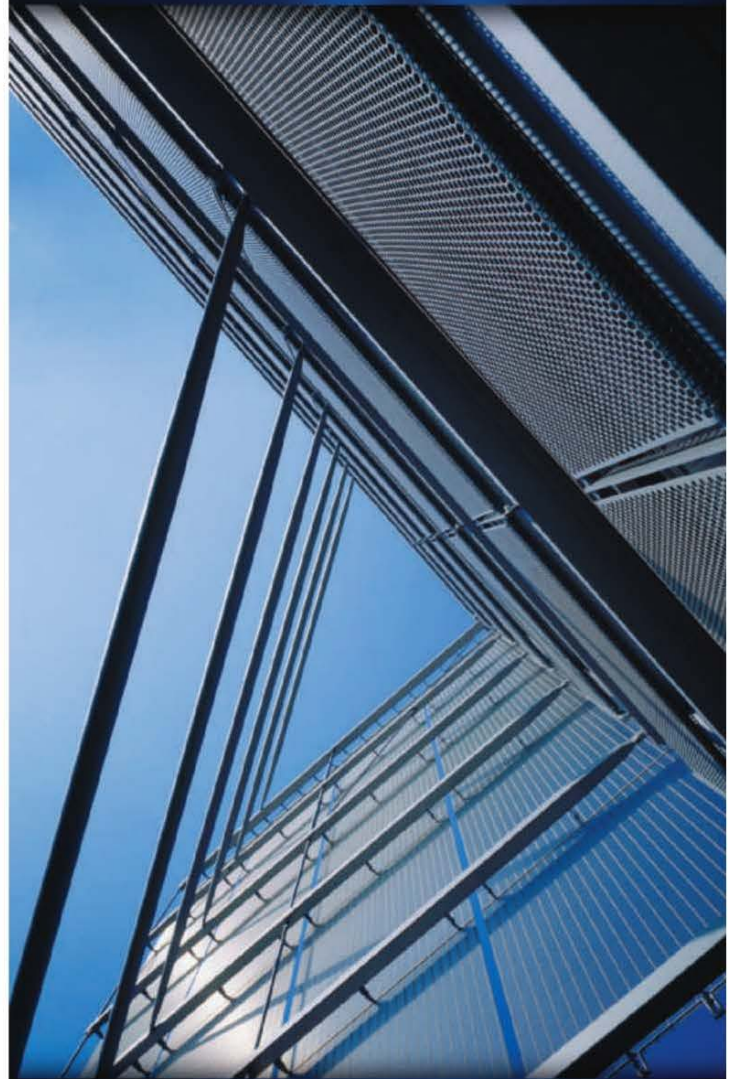
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and outer curtain-wall layers whenever outdoor temperatures rise above 41 degrees. But at those times, the BMS opens operable windows in the outer skin to vent the cavity. The system also controls automated blinds to further block unwanted solar heat gain and control glare. Occupants can open windows, as well, on the curtain wall's interior skin to introduce more fresh air if they desire.

Luminous library

Given all the variables and components, optimizing the performance of a double-skin facade is not as straightforward as that for a standard curtain-wall assembly. Energy modeling of a double-skin curtain wall involves not only thermal analysis of the complete assembly, but also analysis of the contribution of dynamic components, such as blinds and vents, explains Andrew Hall, a director in the London office of Arup. A double-skin facade "is not a static system," he says. Hall's firm served as facade consultant for the new central branch of the Cambridge Public Library, in Cambridge, Massachusetts.

Despite the inherent complexities, the library's designers saw a double-skin as the perfect solution for the building's main facade. They desired a transparent expression, but a typical single-wall curtain wall was impractical because of the southwest exposure and the associated heat gain and potential for glare. "We wanted the building to

be welcoming from the outside, luminous at night, and not intimidating," says Clifford Gayley, a principal at Boston-based William Rawn Associates, the project's lead architect. In addition, the architects sought to establish a relationship between the library's interior and the 4-acre city park that surrounds it. And they hoped to avoid dwarfing the much smaller original library – a late-19th-century masonry building by Van Brunt & Howe restored as part of the \$70 million project. The new, 76,700-square-foot structure is connected to the 27,200-square-foot historic building, quadrupling the size of the library.

The team developed a double-wall assembly, 180 feet long and 42 feet tall, with an outer skin of ½-inch tempered low-iron glass and an inner, thermally broken skin of 1-inch IGUs. The two layers define a 3-foot-wide, two-story cavity that serves as a thermal flue: Depending on the season, louvers at the top and bottom of the wall can be opened or closed, to vent or to warm the air within.

Because the connection between indoors and out was such an important part of the concept, the project team worked hard to limit the visual obstructions between the library interior and the park. Their first move was to cantilever the strip of floor slab immediately behind the double skin from a row of columns 15 feet away, creating a zone free of large vertical elements at the building's edge.

To support the curtain wall, the team devised a framing system that was as minimal as possible but still able to withstand the necessary loads. The structure includes 33 vertically oriented Vierendeel trusses spaced 5 feet 6 inches apart and connected by catwalk grilles and steel angles. Because the vertical trusses contain no diagonals and because the horizontal members are placed above or below occupants' sight lines, views through the facade, even at oblique angles, are relatively unimpeded, explains Hall.

Sunshades within the cavity for controlling direct sunlight penetration are always extended and are set to one of two possible angles, depending on the season or time of day. But in keeping with the design mandate for unobstructed views, the shades shield only the upper portion of the two floors behind the curtain wall. The first 8 feet of these floors are instead protected by laminated-glass visors that project from the building face and have a slight gray tint. "It was important that they cut the transmission of light but still be read as glass," explains Gayley.

The product of all of these carefully considered design decisions is a crisply detailed crystal-line facade optimized for its orientation. "A double skin is not the only way of achieving a green facade," says Arup's Hall. But, he adds, it makes sense where daylighting, protected shading, and transparency are desired. ■

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To receive one AIA learning unit, read the article "More Than Skin Deep" using the learning objectives provided. To apply for credit, complete the test below and follow instructions for submission at right.

1 Which qualifies as a double-skin facade?

- A a double-glazed, argon-filled IGU
- B an assembly of two glass skins defining a ventilated cavity
- C both a and b
- D neither a nor b

2 Which of the following is true?

- A a double-skin facade must have an air cavity at least 3 feet wide
- B a double-skin facade must be mechanically ventilated
- C a double-skin facade is only appropriate for buildings in mild climates
- D none of the above

3 Which of the following regarding the KfW pressure ring facade is false?

- A it was designed to maximize cross ventilation
- B it was designed to take advantage of prevailing winds
- C it should extend the number of days each year the building can operate without mechanical ventilation
- D none of the above

4 When is the KfW building expected to operate in natural ventilation mode?

- A all year long
- B during the summer
- C during the winter
- D during much of the spring and fall

5 The goal of the KfW pressure ring is to create which kind of condition within its cavity?

- A a consistent zone of pressure surrounding the inner skin
- B a zone of negative pressure at the windward end of the building
- C a zone of negative pressure at the leeward end of the building
- D none of the above

6 Which of the following regarding the outer skin of the Manitoba Hydro office blocks is true?

- A its low-E coating reflects more solar radiation than that on the inner skin
- B its low-E coating reflects less solar radiation than that on the inner skin
- C its low-E coating reflects the same amount of solar radiation as that on the inner skin
- D it has no low-E coating

7 Before outdoor air is delivered to the Manitoba Hydro office areas, where it is preconditioned?

- A in the solar chimney
- B in the data center
- C in the winter gardens
- D in the underfloor displacement ventilation system

8 The water features at Manitoba Hydro serve which purpose?

- A they are ornamental only
- B they humidify the air in summer
- C they humidify the air in winter
- D they dehumidify the air in winter

9 Which of the following helped limit visual obstructions between the Cambridge Public Library's interior and its surrounding park?

- A cantilevering of floor slabs
- B placement of horizontal curtain-wall structural elements above and below sight lines
- C elimination of diagonals from the curtain-wall structure
- D all of the above

10 Modeling a double-skin facade includes which kind of evaluation?

- A a thermal analysis of the complete double-skin assembly
- B an analysis of the contribution of dynamic components
- C both a and b
- D neither a nor b

Program title

"More Than Skin Deep,"
ARCHITECTURAL RECORD,
07/10, page 102.

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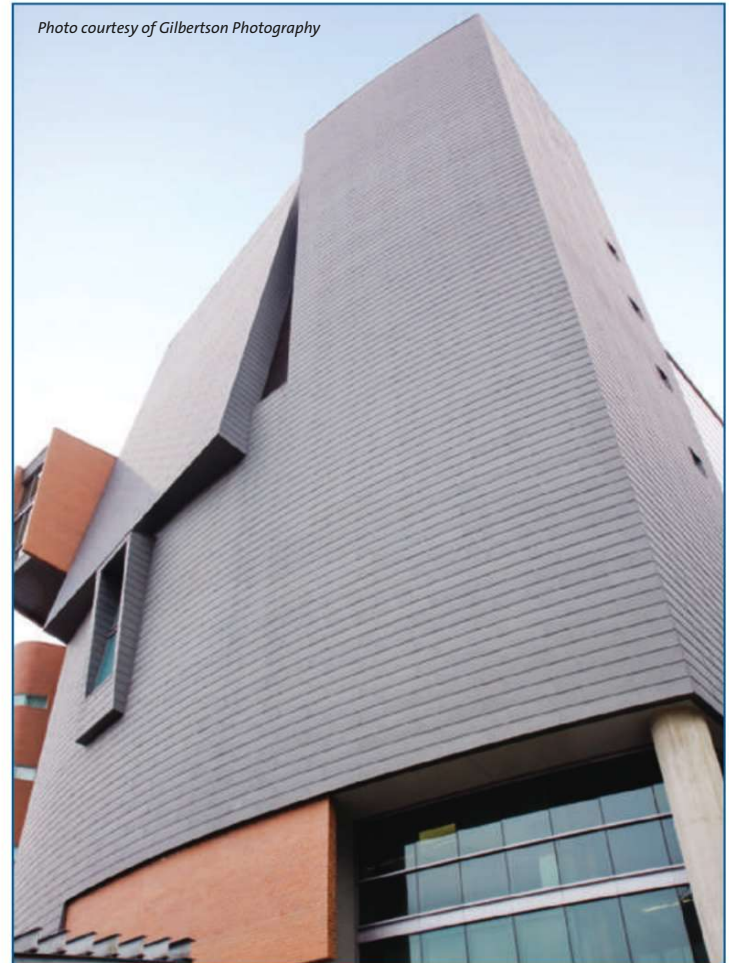
By Peter J. Arsenault, FAIA, NCARB, LEED-AP

Architectural metals are used widely in commercial, institutional, and industrial buildings. In order to meet the variety of design conditions in these different building types, architects in the US have often turned to some rather energy intensive metal choices such as aluminum, copper, painted steel, and stainless steel. However, the use of zinc as an architectural metal of choice is gaining popularity in this country and catching up with its widespread and long term use in other parts of the world. Parts of Asia and Europe in particular have used zinc as a building envelope material for generations. Americans are recognizing not only the historical long term durability of zinc but the recent growth in its use in the US is based in part on the recognition of the green and sustainability attributes that it can contribute to a building design.

ZINC OVERVIEW

In reviewing any building material, it is always appropriate to start with a basic understanding of key characteristics of that material which are summarized below for zinc:

- **Natural prevalence:** Zinc is a very natural and significant mineral that is prevalent throughout the world. In fact, it is reported to be the 23rd most abundant element in the earth's crust found not only in rocks, soil, air and water, but also in all living organisms including plants, animals, and humans. As a human nutrient, it contributes to normal growth processes and it has been shown that a lack of zinc in human diets is a significant cause of childhood disease and mortality, particularly in underdeveloped countries.



CONTINUING EDUCATION

Use the learning objectives below to focus your study as you read **Zinc: The Sustainable Choice among Architectural Metals**. To earn one AIA/CES Learning Unit, including one hour of health safety welfare credit and sustainable design, answer the questions on page 117, then follow the reporting instructions or go to ce.architecturalrecord.com and follow the reporting instructions.

Learning Objectives

After reading this article, you should be able to:

- Differentiate among basic qualities of zinc as a building material compared to other architectural metals.
- Analyze and assess the multiple qualities of zinc that can contribute to green and sustainable building design.
- Examine the different applications of exterior zinc wall panel systems including green building applications.
- Explore the life cycle benefits of zinc roofing among common applications.

Zinc is used in fertilizers to enrich agricultural soils and increase yields yet it is this very ability to mix and link with other elements in soils that keeps it at safe levels for human exposure.

- **Available supply:** Zinc is mined worldwide predominantly from extraction processes that avoid strip mining meaning that less land is disturbed and any potential environmental damage is minimized. Various projections have been made about the worldwide supply of zinc, but current estimates go up to 750 years worth of supply at current extraction levels. When re-cycling and re-use of zinc is considered, the projections are even longer.
- **Processing:** There appear to be fewer zinc processing plants than other types of metal processing plants around the world however, these zinc processing plants are reputed to meet current and projected demand. The environmental air emissions produced

from zinc processing at these plants are minimized due to the use of up to date equipment and emission abatement processes during smelting. But quite significantly, zinc requires less energy to process due to its relatively lower melting point of 786 °F (419 °C) compared to other metals like aluminum at 1120 °F (660 °C), copper at 1983 °F (1084 °C), and steel at 2372 °F (1300 °C).

• **Durability:** Since zinc is a non-ferrous metal, it is not subject to the rust and corrosion found in iron, steel, and other ferrous materials. According to the International Zinc Association's "Zinc for Life" program, "Zinc material requires little maintenance over its service life; its (natural) patina constantly renews itself as it weathers and ages and will 'heal over' scratches and imperfections, requiring no touch-up or repainting. Because the metal is uncoated, there is no possibility of the fading, chipping or peeling that otherwise needs recurrent attention. A single zinc roof, with a lifespan of 80 to 100 years may well outlast the building it has been sheltering." It should be noted that wall panels using zinc, without the environmental rigors of roofing applications, may have service lives of 200 to 300 years, depending on the product used and local conditions.

• **Coloration or patina:** The key to the extraordinary durability of zinc roofs and facades, and its beauty over time, is the ability of zinc metal to develop a natural protective patina. Again according to the International Zinc Association, "Just as copper ages from orange to green, zinc over time develops its distinctive patina, going from shiny silver to matte gray (depending on the precise alloy, other colors and finishes are also possible). In contact with the water, oxygen and carbon dioxide molecules in the atmosphere, the surface forms a closely adhering protective layer of zinc carbonate, which is insoluble in rainwater and will hinder any further exchanges between oxygen and zinc, thereby protecting the zinc from further corrosion. Zinc continues to renew this protective layer throughout its life, although the heaviest formation is usually complete in about five years, and will self-repair any imperfections or scratches." It should be noted, too, that some manufacturers of zinc products provide a complete "color management" system that allows for a "pre-patination" to occur giving greater control over the color of the installed product initially and over time. In addition, the patina

process means that architectural zinc panels can be perforated with any number of patterns without worry about rust and usually at a dramatic cost savings compared to treated steel and other mesh and expanded options on the market.

• **Common construction uses:** Zinc is commonly used as a stand-alone metal product or in combination with other metals for a variety of uses that you are probably already familiar with:

- Zinc is mixed with copper to form brass
- Zinc is the primary metal used to galvanize steel, causing a chemical reaction that protects the steel from rust and corrosion
- Rolled and sheet zinc is fabricated into interior and exterior wall panel products for both decorative and functional purposes
- Rolled zinc is fabricated into standing seam and other types of metal roofing products
- Metal flashings and roof accessories are fabricated from zinc as an alternative to copper and other metals
- Historical building ornaments such as metal finials, vanes, campaniles, dormers, etc. can all be fabricated out of zinc
- Rainwater collection gutters and downspouts made from zinc are an alternative to other metals
- Zinc is used in batteries and recently in fuel cells for alternative energy solutions

• **Standards:** Products manufactured out of zinc are subject to strict standards that determine the quality and purity of the material since most of what we refer to as zinc metal is in fact an alloy containing well over 99 percent zinc mixed with trace amounts of copper, titanium, and aluminum. ASTM B6 - 09 "Standard Specification for Zinc" covers zinc metal made from ore or other material by a process of distillation or by electrolysis in five grades: LME grade (related to the London Metal Exchange standards), special high grade, high grade, intermediate grade, and prime western grade. Under this standard, the zinc metal is tested to conform to chemical composition requirements free of any surface corrosion and adhering foreign matter. The most common building related standard for products then manufactured out of zinc metal is ASTM B69-09 "Standard Specification for Rolled Zinc." This standard covers Type I coils or sheets cut from



strip rolled zinc, and Type II zinc plates such as boiler and hull plates produced by any rolling method. This standard tests for chemical composition, tensile properties, and hardness. In Europe, zinc must meet similar stringent testing requirement under EN988 which also dictates the specific zinc material characteristics to be used in building products.

These characteristics and others of zinc have contributed to its widespread use around the world for centuries. In fact, the use of zinc as a building material can be traced back to the 1st Century ruins of Pompeii and even earlier. Zinc roofing in Europe has been used extensively since the 13th century as evidenced by the fact that approximately 85 percent of the current rooftops in Paris are made from zinc. With this long history of use, the knowledge base about zinc as a sustainable and durable building product are well documented and readily known.

In addition to the strong historical track record of zinc, architects should also be aware that there are some emerging trends and practices of companies that manufacture zinc building products that will make it easier to specify and design zinc into buildings in the US. First is the offering of material in 48-inch-wide products instead of only the previously available meter wide material. This coordination with American standard construction sizes will make it easier to design and install zinc wall and roofing products at new scales and with more economical installation. Second is the expanding range of color choices offered by some manufacturers. While maintaining the positive durability effects of the zinc patina, some products can be color managed through a pre-patina process meaning that the material will arrive onsite already showing some of its patination and coloring ahead of typical time frames. Third, is a global approach to the fabrication and service for a specific product. This means that a product can be specified in the US for a project in Europe, China, or the Middle East and have exactly the same make up and characteristics in any of those locations. Finally, zinc

is being used innovatively to improve building performance such as rainscreen products that harness air flow in parts of the building envelope for enhanced heating, cooling, and ventilation. Coupling all of this with a growing awareness of an envelope that meets a strong and positive life cycle cost analysis, architects and designers are becoming increasingly savvy in making long term choices that allow for both contemporary and traditional aesthetics, even allowing a seamless flow from roofing to walls in some cases.

SUSTAINABILITY QUALITIES OF ZINC

According to the May 2008 issue of *MetalMag*, the trade journal for processed metals, “As the building industry migrates toward green practices, zinc will continue to play an increasingly important role in the development of truly sustainable buildings.” This statement is readily backed up by a number of observable sustainable qualities of zinc products including a life expectancy of more than 100 years, a lower environmental foot print than competing materials, little or no maintenance over the life-time of the product and no replacement required over the life-time of building. More specifically, the following traits of these materials that readily contribute to green building design have been identified by the International Zinc Association and several manufacturers:

- **Life Cycle Analysis:** The long term service life implication of buildings has received more attention in recent years, particularly during the current process of developing the International Green Construction Code (IGCC). Among the provisions of the current Public Version 1.0, Chapter 5 of this emerging standard addresses Material Resource Conservation and Efficiency and calls for a Building Service Life Plan to be included in the construction documents for the project and provides detailed requirements for the plan. Of particular note is the identification of 100-year and 200-year service life elements. The long life expectancy of zinc will readily support this requirement.

Separate from requirements of codes and standards, many clients look for very positive Life Cycle Analysis (LCA) studies on building material and product choices as well. The International Zinc Institute has used LCA as a standardized scientific method for systematic analysis of all mass and energy flows as well as environmental impacts attributed to a product system, from raw materials acquisition to end-of-life management. The terms “cradle to grave,” “cradle to cradle” and “total cost of ownership” describe this overall full life cycle concept of materials. Reviews of LCA studies are not only a matter of simple longevity, but also of the costs necessary in maintaining a material throughout its service life. To take roofs as an example, in a 2004 study conducted by Ducker International, owners and property managers reported performing little or no maintenance on their metal roofs (to be fair, the study included all types of metal roofs, not just zinc). A comparison of maintenance costs over the life of the roof for metal versus asphalt and single-ply membranes showed that owners of metal roofs spent approximately 3 percent of total installed costs on maintenance, versus 28 percent for asphalt and 10 percent for single-ply membranes. More specific studies comparing zinc roofing to other long lasting roofing materials have

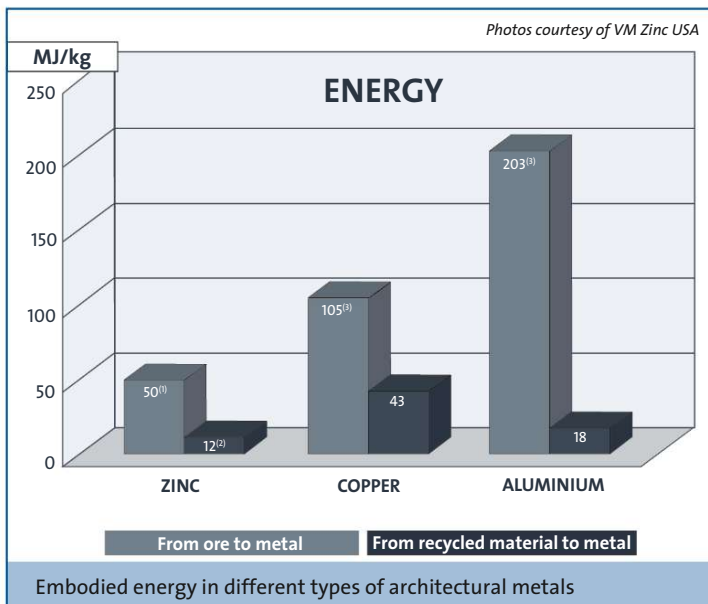


Third Street Lofts, in San Francisco, CA uses zinc for continuous roof and wall panels.

shown that, when including a credit for recycling of material at the end of its useful life, zinc has a noticeably smaller environmental footprint and a more favorable life cycle result than aluminum, copper, stainless steel, or cement tiles.

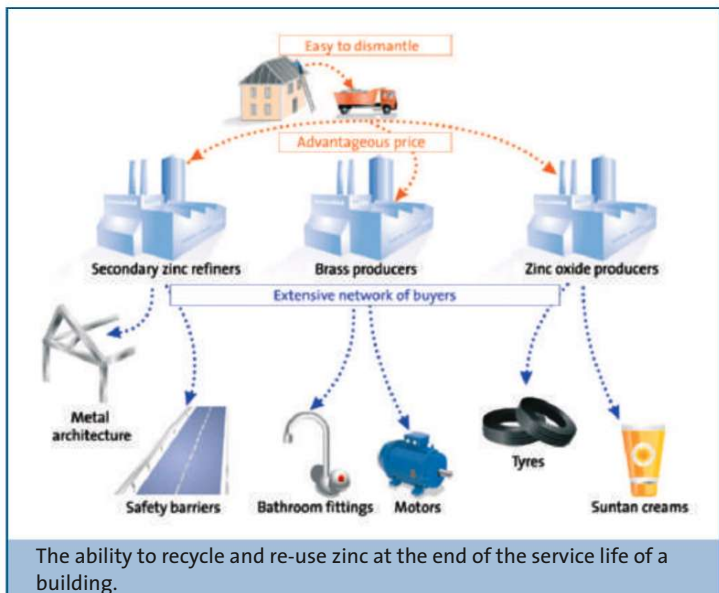
- Reducing embodied energy in materials:** Zinc production is friendlier to the environment than other metals through its comparatively low embodied energy. Embodied energy includes the total amount of non-renewable energy needed to create one unit of a finished product, including raw material extraction, transport, manufacturing, assembly and installation, and in detailed calculations, to maintain it during its useful life and dispose of afterwards. Among the non-ferrous metals used in building, zinc has the lowest embodied energy. It is the least energy intensive to produce, requiring one fourth the energy of aluminum, and one third that of copper or stainless steel. Zinc is less energy intensive to extract than many other metals, and requires lower heat and therefore less energy to process. A complete embodied energy balance sheet must also take into account the energy value of labor to repair or remove old systems such as asphalt roofs, the energy cost of the replacement materials, the energy used in transportation of materials on each occasion, and impacts at landfills. Use of a longer lasting material such as zinc eliminates the cost and embodied energy of such removal or repairs of other roofing systems with shorter service lives. By contrast, at the end of the service life of zinc, an estimated 95 percent of the energy content embodied in a zinc product is conserved during recycling meaning that significantly less energy is used to produce zinc building products when recycled material is used instead of mining and processing new ore.

- Selecting materials with recycled content:** Very few common building materials, including those considered to have low embodied energy, can match the recyclability of zinc material. Architectural-grade zinc must be very pure, and so it contains higher percentages of pure ore than industrial-grade zinc.



However, once the pure architectural alloy has been created, it can be recovered and reprocessed for use in new architectural products. Some current zinc product manufacturers achieve very high levels of this recycled content in their architectural zinc, over 45 percent, almost all of which is post-consumer content. Specifying recycled content in zinc products is very realistic and achievable as a result.

- Ability to recover and recycle at end of useful life:** Removal and disposal of typical building materials can be a complex and costly job, and the resulting debris may have low or no value ending up in a landfill producing the associated costs for freight and disposal plus the long-term cost to the environment. However, of the millions of tons of discarded building materials taken to landfills every year, there is hardly a scrap of architectural zinc. This is because metallic zinc can be recycled indefinitely without loss of its chemical or physical properties. This theoretically infinite recyclability is, in fact, being approached in reality in the case of zinc used in buildings. The overall recycling rate for architectural zinc recovered from renovations and removal from old building is over 90 percent in some countries because of its high value. In Europe, buildings whose zinc parts outlasted them are numerous yet virtually no zinc on a building ever goes to a landfill. Recycling of zinc is a well-established industry because products can be recovered easily at the end of their life and there is an extensive network of buyers offering advantageous prices.



Continues at ce.architecturalrecord.com.

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See Quiz on the Next Page

or

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Program title: **“Zinc: The Sustainable Choice among Architectural Metals” (07/10, page 113).** 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 July 2012). **Directions:** Refer to the Learning Objectives for this program. Select one answer for each question in the exam and fill in the box by the appropriate letter. A minimum score of 80% is required to earn credit. **To take this test online and avoid handling charge, go to ce.architecturalrecord.com**

1. **Zinc is not subject to rust and corrosion because it is:**
 - a. a natural material.
 - b. denser than other metals.
 - c. processed at a lower melting point.
 - d. a non-ferrous material.
2. **Among the emerging trends in the zinc industry, one that is making it easier to specify zinc products in the US is:**
 - a. ASTM standards for zinc products.
 - b. global manufacturing.
 - c. standardization to 48-inch panels instead of only meter-wide panels.
 - d. world wide web based information.
3. **The protective patina of zinc is usually complete in about five years although it will continue to renew itself throughout its life and self-repair any imperfections or scratches:**
 - a. True
 - b. False
4. **Common zinc building products include:**
 - a. interior and exterior wall panel products for both decorative and functional purposes.
 - b. standing seam and other types of metal roofing products.
 - c. metal flashings and roof accessories.
 - d. All of the above
5. **The architectural metal with the least embodied energy content is:**
 - a. aluminum.
 - b. zinc.
 - c. copper.
 - d. stainless steel
6. **In addition to maintenance costs, Life Cycle Analysis is fundamentally dependent on:**
 - a. the source of the material.
 - b. the ownership of the building.
 - c. the longevity or service life of a material or system.
 - d. the code requirements related to service life.
7. **It is possible to specify recycled zinc content in architectural zinc panels of 45 percent or more.**
 - a. True
 - b. False
8. **Because zinc is both valuable and recyclable, what percentage is typically recycled during demolition and remodeling projects?**
 - a. 50 percent
 - b. 75 percent
 - c. 80 percent
 - d. 90 percent
9. **Metal rain screen wall panels offer a distinct design feature from other rain screen systems in that they have:**
 - a. ventilation behind the cladding.
 - b. interlocking grooves giving the appearance of a recessed joint.
 - c. pressure-equalized systems.
 - d. the ability to be used on new or renovation projects.
10. **Zinc roofing panels are suitable for:**
 - a. roof slopes above 1:12.
 - b. straight roofing systems.
 - c. curved or folded roofing systems.
 - d. All of the above

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

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Innovations in Smart, Universal, Energy-efficient and Water-saving Home Appliances

Design professionals can select innovative appliances to provide greater water conservation and energy savings in sustainably designed homes for people of all ages and abilities.



Design professionals are responding to homeowner demands by creating multi-purpose spaces that include water saving washers and dryers in their hobby centers.

Provided by:

- TOTO
- Whirlpool Corporation

By Celeste Allen Novak AIA, LEED AP

Architect Celeste Allen Novak AIA, LEED AP, specializes in sustainable design and teaches as an adjunct professor at Lawrence Technological University.

In response to a new environmental consciousness, more homeowners are choosing to buy and install appliances that reflect their eco-friendly attitude. Clients are turning to design professionals for guidance and advice as to what will work the best for their lifestyles. They want design professionals to tell them how to find the best ways to show their social responsibility in their

homes. In his keynote address to the 2010 AIA Convention in Miami, Florida, author Daniel Pink urged architects to develop a clientele that understands how utility can be combined with significance. He believes that successful professionals can “give the world something they don’t know is missing” and that includes things that can solve problems on a large, social and global scale like climate change, energy saving and water conservation.

According to Gunnar Baldwin, a Water Efficiency Specialist at TOTO, “Conspicuous consumption is being replaced by conspicuous conservation. Especially in higher-end renovations and new construction, more clients are willing to spend money to save energy and water.” In fact, if appliances were purchased prior to the turn of this century, this conscious attitude toward sustainability also saves money because of new technology that has substantially decreased operational inefficiencies. Manufacturers have also created programs that recycle and/or refurbish the old appliance when it is discarded, to avoid additional waste in landfills as an unintended consequence of purchasing a new appliance. What’s in vogue now is also the right way to design a sustainable home.

As the population ages, consumers have a new awareness of universal and inclusive design for all ages and abilities. As pointed out by Valerie Fletcher of the Institute for Human Centered Design, “Design powerfully and profoundly influences us and our sense of confidence, comfort, and control. Variation in ability is ordinary, *not* special, and affects most of us for at least part of our

CONTINUING EDUCATION

Use the learning objectives below to focus your study as you read **Innovations in Smart, Universal, Energy-efficient and Water-saving Home Appliances**. To earn one AIA/CES Learning Unit, including one hour of health safety welfare credit and sustainable design, answer the questions on page 124, then follow the reporting instructions or go to ce.architecturalrecord.com and follow the reporting instructions.

Learning Objectives

After reading this article, you should be able to:

- Discuss new appliance choices for the kitchen, bath and laundry that maximize conservation of water and energy savings.
- Integrate universal design in the selection of home appliances as central to socially sustainable design principles.
- List certifications and standards such as ENERGY STAR and the WaterSense label to provide guidance and interpretation of these labels to clients.
- Discuss the advantages of smart controls, and the smart grid, for future energy savings.



Photos courtesy of TOTO

Toilet seats with bidet functionality adds accessibility while eliminating the need for a separate fixture and expensive plumbing costs.

lives.” Understanding the impact of design on human behavior is a sustainable choice — one defined by the intersection of economic, environmental and social design decisions. New appliance choices can impact all three of these linked areas of sustainable design.

Plugging into the power and water infrastructure, millions of households continue to have an effect on the capacity of an aging utilities grid. To respond to this demand, manufacturers are developing smart appliances that will talk to the national electric supply “Smart Grid,” as well as provide consumer information that would even amaze George Jetson. In a recent press release, Whirlpool Corporation vice president, Dr. Henry Marcy, stated that “Smart Grid compliance is a critical step forward in creating a demand response environment in which energy reduction is systematically controlled across tens of thousands of homes at a time, providing automatic energy reduction without any inconvenience to consumers.”

This course will review state-of-the-art appliances, controllers and fixtures that are helping to transform the modern kitchen and bath, with a special emphasis on how these products will save energy and water and provide accessibility for all ages and abilities.

SAVING ENERGY, SAVING WATER: HOW INDIVIDUAL CHOICES CAN HAVE COMMUNITY AND CLIMATE IMPACTS

When determining an energy budget, the design professional inventories all of the appliances as well as the mechanical systems in the home. According to the Department of Energy (DOE), there is a strong link between energy saving and water conservation. DOE statistics show that:

- 8 percent of the electricity used in the U.S. is for the delivery and treatment of potable water.
- The average home spends about \$2,200 on energy bills every year.
- Appliances use approximately 9 percent of a home energy budget.
- Refrigeration accounts for 8 percent of a home energy budget.

Manufacturers have developed new appliances that can reduce those percentages to 10 – 50 percent less than standard models. In renovating existing homes, an inventory of existing appliances can begin to identify where savings are possible. In designing new homes, architects can leap forward in energy-saving technology by choosing new products that can be integrated into whole-house systems.

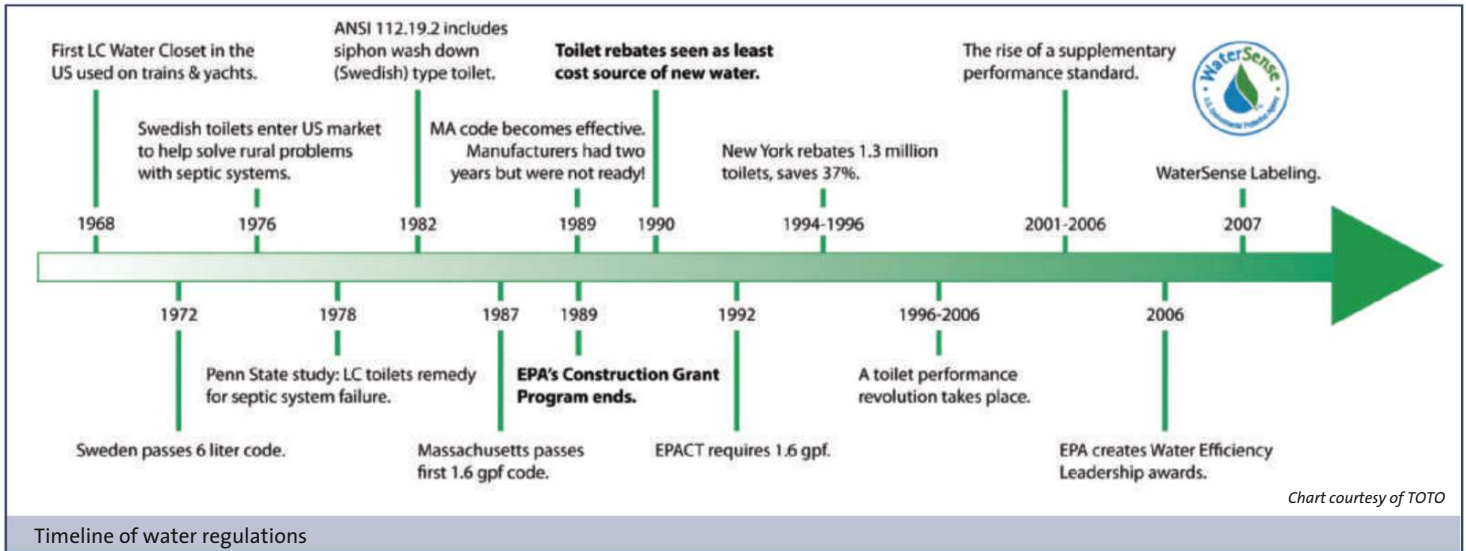
Indoor water use and a water budget for the home is typically determined by the number of people in the home and the number and types of fixtures. The EPA provides a simple calculator¹ for homeowners who want to know how much water and dollars they will save if they are replacing or purchasing fixtures with a WaterSense label. In 2006, the EPA sponsored WaterSense as a program that promotes water efficiency, protects the nation’s water supply, educates consumers on water-efficient practices and labels and certifies water-efficient products. The WaterSense label is an important tool for designers who want to meet quantifiable water targets. Products bearing the WaterSense label:

- Are 20 percent more water efficient than average products
- Realize water savings on a national level.
- Provide measurable water savings results.
- Achieve water efficiency through several technology options.
- Are effectively differentiated by the WaterSense label.
- Obtain independent, third-party certification.²

When individuals save water, each drop accumulates into community savings as well as has an impact on climate change and the emissions of greenhouse gases. The facts are astounding:

- American public water supply and treatment facilities consume about 56 billion kilowatt-hours (kWh) per year — enough electricity to power more than 5 million homes for an entire year.
- Letting your faucet run for five minutes uses about as much energy as letting a 60-watt light bulb stay on for 14 hours.
- If one out of every 100 American homes were retrofitted with water-efficient fixtures, we could save about 100 million kWh of electricity per year — avoiding 80,000 tons of greenhouse gas emissions. That is equivalent to removing nearly 15,000 automobiles from the road for one year.
- If one percent of American homes replaced their older, inefficient toilets with WaterSense-labeled models, the country would save more than 38 million kWh of electricity — enough to supply more than 43,000 households’ electricity for one month.³
- New ENERGY STAR-qualified dishwashers use just 3-10 gallons of water per cycle, compared to the average 30 gallons used when washing dishes by hand.
- Replacing a refrigerator purchased in 1990 with a new ENERGY STAR-qualified model would save enough energy to light the average household for more than 4-1/2 months.⁴

There are also many environmental benefits to conserving water and many communities are strengthening their regulations in order to protect their aquifers, and wastewater treatment facilities, by reducing the amount of sewage. In fact, in the last census, “WaterSense estimates there are currently 222 million residential



toilets in the United States. This estimate is based on an assumed one-to-one ratio of toilets to bathrooms. In addition to the existing stock, approximately 10 million new toilets are sold each year for installation in new homes or replacement of aging fixtures in existing homes. Residential toilets account for approximately 30 percent of indoor residential water use in the United States — equivalent to more than 2.1 trillion gallons of water consumed each year.”⁵

In communities in California, Arizona and the Southwest, the increasing scarcity of water sources from drought and aquifer depletions has led to a rise in new mandates for water efficiency. According to the EPA, Americans extract 3.7 trillion gallons per year more than they return to the natural water system to recharge aquifers and other water sources. In other communities, where water is plentiful, an aging infrastructure and a tight economy have caused budget policy makers to review their water regulations. In the future, some communities may begin to regulate the installation and retrofit of all new and existing homes to require upgrades to high efficiency plumbing fixtures.

According to the American Water Works Association, daily water use in a single-family home can equal as much as 69.3 gallons.⁶ Reduce, reuse and recycle water through a

number of strategies to target a water budget for a typical home that would be closer to 40 to 50 gallons.

THE BATHROOM: PLUMBING PRODUCTS THAT SAVE WATER AND ENERGY

By now most architects know the impact of the Energy Policy Act legislation (EPAct) initiated in 1992 that mandated changes in common household equipment. According to this legislation all United States plumbing products must meet the following standards:

- Toilets 1.6 gallons per flush (gpf)
- Urinal 1.0 gpf
- Faucets 2.2 gallons per minute (gpm)
- Showerheads 2.5 gpm

To put this into perspective, pre-EPAct toilets flushed at 5 gpf, sending potable water into many already challenged community sewage systems. This was one of the many major factors in creating this new legislation. As the flushing mechanisms changed, so did the science of how the fixtures were designed. Manufacturers began to use computer modeling to design the china fixtures to optimize the hydraulic performance of the bowls. A new super-smooth material development in glazing using nanotechnology reduces mineral deposits on the toilet bowl, allowing for easier cleaning. New testing standards have been set by the American National Standards Institute, (ANSI) that were the result of solid waste tests using four different artificial pastes studying both drain line carry and flushing performance. No matter what type of toilet the design professional is choosing, a well-designed toilet will have been tested and will be WaterSense-labeled. This is one piece of equipment that is rarely replaced in a home and should not be hard to clean or difficult to flush properly. Durable, low maintenance, high quality and good performance are as important as appearance and when the professional specifies a Water Sense labeled toilet, there is a guarantee that this will mean third-party certification of the product.

Use	Gallons per Capita	Percentage of Total Daily Use
Showers	11.6	16.8 percent
Clothes Washers	15.0	21.7 percent
Dishwashers	1.0	1.4 percent
Toilets	18.5	26.7 percent
Baths	1.2	1.7 percent
Leaks	9.5	13.7 percent
Faucets	10.9	15.7 percent
Other Domestic Uses	1.6	2.2 percent



Toilets: HET, Dual-flush and Bidets

New high-efficient toilets or HETs must use 20 percent less water than the current federal standard of 1.6 gpf, saving over 4,000 gallons of water per year. All HETs are the WaterSense-labeled and as such meet the standards of a third-party testing agency. HETs can be single-flush or dual-flush but all HETs must meet the following criteria:

- Single-flush toilet must use 1.28 gpf or less;
- Dual-flush toilets must have a full flush no more than 1.6 gpf and a reduced flush no more than 1.1 gpf. Field studies indicate that in actual use such toilets will flush 1.28 gpf or less, on average.

When it comes to selecting environmentally friendly bathroom fixtures, dual-flush toilets are a popular choice. Users can select one button for the liquid flush and one for solid waste flush. Water use can be greatly reduced by choosing a dual-flush toilet that selectively provide a short or long flush depending on the use.

A common fixture in Europe, bidets are another type of toilet system becoming more popular in the U.S. as a choice for both water saving and ease of use for those with special needs. Today's most advanced bidets are toilet seats that have warm water sprays, heated seats and even built-in dryers. Seats can be added to almost any fixture and designers must include electrical outlets as part of the installation specification.

Faucets and showers

As an alternative to the bathtub, showers were popularized in the nineteenth century as means to consume less water, less space, less

time, and require fewer repairs. After 1992, aerators or laminators were required to be added to restrict the flow of water and sometimes were placed on existing fixtures solely for the time of the building inspection, quickly removed by the owner in order to provide better water flow while washing and bathing.

The daily shower accounts for nearly 17 percent of residential water use or approximately 30 gallons per day. As of April 16, 2010, the EPA revised its new high efficiency showerhead specification to 2.0gpm in order to gain certification by its WaterSense labeling program. Exceeding even this new specification, some manufacturers have provided showerheads and hand-held showers that use no more than 1.75 gpm, a 30percent savings over the EPACT mandates. They have optimized shower system spray channel sizes and hydraulic efficiency to ensure shower power.

Controlling the flow of hot water contributes to the savings of both water and energy. Thermostatic mixing valves made with shape-memory alloys can respond to heat faster than older, wax-type valves. Nickel and titanium alloy coils expand and contract quickly to regulate water temperature more effectively. This shape-memory alloy technology removes the fear of scalding and drastic changes in water temperature from pressure drops from the use of other plumbing in the home. It also suppresses the water hammer at the end of a shower — the banging of plumbing pipes that results when water rushing through pipes is brought to a quick halt.

THE KITCHEN: ENERGY-EFFICIENT MEALS

Cool induction cooktops

For the greenest cooks, the induction cooktop may be the best solution for safe, effective cooking. An alternating current is sent through wires in a smooth glass cooktop to create a magnetic field. This current transfers electromagnetic waves directly to iron or steel pans that can heat food with lightning-fast speed. Learning to cook on an induction cooktop may take some adjustments, but the 90 percent energy rating by the EPA may well provide the incentive for the switch. According to the U.S. Department of Energy, the efficiency of energy transfer for an induction cooktop is 90percent, versus 71 percent for a smooth-top non-induction electrical unit, an approximate 20 percent saving in energy for the same amount of heat transfer. According to the new "U. S. Green Building Green Home Guide," induction cooktops are a safe and reliable alternative to natural gas and one that does not reduce indoor air quality.⁷ These cooktops can be placed at counter height above a ten inch cabinet frame, leaving space for either wheelchair access or kitchen storage below its surface.

The National Green Building Standard™, ICC700-2008, is the first national standard or program to recognize the energy efficiency of induction cooktops.

Continues at ce.architecturalrecord.com.

See Quiz on page 124

or

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Program title: “Innovations in Smart, Universal, Energy-efficient and Water-saving Home Appliances” (07/10, page 119). 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 July 2012). **Directions:** Refer to the Learning Objectives for this program. Select one answer for each question in the exam and fill in the box by the appropriate letter. A minimum score of 80% is required to earn credit. **To take this test online and avoid handling charge, go to ce.architecturalrecord.com**

1. **According to the Department of Energy (DOE), There is a strong link between energy saving and water conservation.**
 - a. True
 - b. False
2. **Most current plumbing standards are based on The Energy Policy Act (EPA) enacted in:**
 - a. 1972.
 - b. 1982.
 - c. 1992.
 - d. 2002.
3. **A High Efficiency Toilet should:**
 - a. flush at 1.28 gpf or less.
 - b. meet the EPA WaterSense Label.
 - c. be certified by a third party testing agency.
 - d. meet all of the above standards.
4. **Thermostatic mixing valves use what new technology?**
 - a. Shape memory alloys
 - b. Motion detectors
 - c. Timers
 - d. Water power
5. **Induction cooktops work using:**
 - a. natural gas.
 - b. Halogen.
 - c. electro-magnetic waves.
 - d. glass pans.
6. **Duct-free downdraft ventilation systems**
 - a. use powerful filters.
 - b. can only be used with electric cooktops.
 - c. can only be used with gas cooktops.
 - d. are hard to clean.
7. **ENERGY STAR-labeled refrigerators can reduce energy bills by what percent as compared to non-ENERGY STAR-labeled refrigerators?**
 - a. 10 percent
 - b. 20 percent
 - c. 30 percent
 - d. 40 percent
8. **New energy saving features on dishwashers include:**
 - a. soil sensors.
 - b. cycle selectors.
 - c. no heat dry.
 - d. All of the above
9. **Toilet installations with universal design principals may include:**
 - a. 15-inch seat heights.
 - b. an electric outlet.
 - c. insulation.
 - d. adjacent heated towel bars.
10. **Digital technology will allow consumers to save money by:**
 - a. delaying appliance use to off-peak hours.
 - b. scheduling maintenance.
 - c. connecting to ENERGY STAR.
 - d. connecting household equipment.

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

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Product Review



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The company designed and built the first top-loading clothes washer specifically designed for the Energy Star Program. Whirlpool Corporation was awarded their 10th Energy Star Award in 2009.

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CIRCLE 40

New and Upcoming Exhibitions

Su Pietra

Lecce, Italy

July 10, 2010–January 15, 2011

The exhibition focuses on Steven Holl Architects' recent projects in China and Europe. While the firm's Chinese projects – the Horizontal Skyscraper in Shenzhen, Linked Hybrid in Beijing, and the Nanjing Museum of Art and Architecture – explore the macro scale of cities through the

lens of architecture, its European projects show a vision of the preservation of natural landscape. At the Castle of Acaya. Visit www.stevenholl.com.

Ongoing Exhibitions

Mind Your Behaviour: How Architecture Shapes Behaviour

Berlin

Through July 29, 2010

The Copenhagen-based architectural firm 3XN has a particular interest in how architecture

shapes behavior. This exhibition at Aedes Am Pfefferberg will provide visitors with an exclusive insight into the development of 3XN's projects, and how the studio communicates spatial qualities through ambience, attention to detail, choice of materials, and light. Visit www.aedes-arc.de.

1:1 – Architects Build Small Spaces

London

Through August 30, 2010

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

Rising Currents: Projects for New York's Waterfront

New York City

Through August 2010

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

Senseware

Holon, Israel

Through September 4, 2010

This exhibition at the Design Museum Holon will showcase advances in synthetic fiber technology and the future possibilities for Japan's artificial fiber. On display will be the commissioned work of 17 designers, artists, and architects, including the work of Japanese architect Shigeru Ban, who has created an ultra-light chair that uses TENAX carbon fiber. Visit www.dmh.org.il.

Our Cities Ourselves: The Future of Transportation in Urban Life

New York City

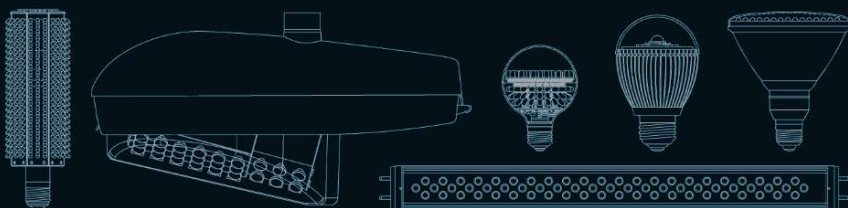
Through September 11, 2010

In this exhibition at the American Institute of Architects Center, leading architects will show how cities of the future can integrate urban planning with transportation. With two billion people expected to move into cities by 2030, *Our Cities Ourselves* proposes how building cities around people, not cars, will improve urban life. For more information, visit www.ourcitiesourselves.org.

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CIRCLE 41

Lectures, Conferences, and Symposia

Three Movements in Architecture: Gothic Revival

Washington, D.C.

July 24, 2010

During the mid-19th century, the revival of medieval forms of architecture – pointed arches, tracery, towers, and turrets – stood in contrast to the prevalent Classicism of the time. This lecture at the National Building Museum explores that prolific period in architectural history. For more information, visit www.nbm.org.

International Urban Design Conference – Designs on Our Future

Canberra, Australia

August 30–September 1, 2010

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

Annual Landscape Architecture Convention

Washington, D.C.

September 10–13, 2010

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

Competitions

Urban SOS: Transformations

Deadline: July 31, 2010

Urban SOS gives students all over the world the opportunity for real engagement with issues facing built, natural, and social environments. This year's competition seeks creative, viable proposals for sites in one of seven cities: Phoenix, Arizona; Jeddah, Saudi Arabia; Beijing, China; Port au Prince, Haiti; Istanbul, Turkey; São Paulo, Brazil; and Johannesburg, South Africa. For more information, visit www.aocom.com.

The European Architecture Prize

Deadline: August 1, 2010

The European Architecture Prize will be given annually to any living architect whose built work exemplifies the highest ideals of European civilization and embodies vision, commitment, and a profound respect for humanity and for the social and physical environment. Nominations are encouraged from architects in all nations in the European Union, as well as several non-E.U.-member states. For more information, visit www.europeanarch.eu.

SHIFTboston Moon Capital Competition

Deadline: September 3, 2010

SHIFTboston seeks to collect visions that will provoke thought on the moon as a new destination. This competition welcomes radical ideas for new lunar elements such as rovers, growing pods, inflatable structures, and lunar habitats. For more information, visit www.shiftboston.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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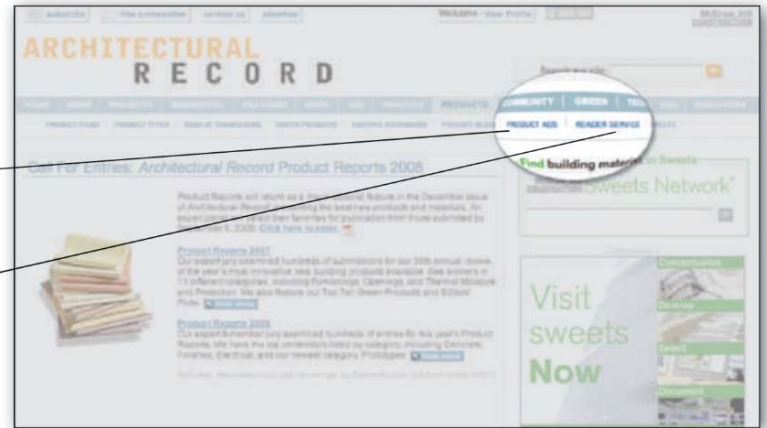
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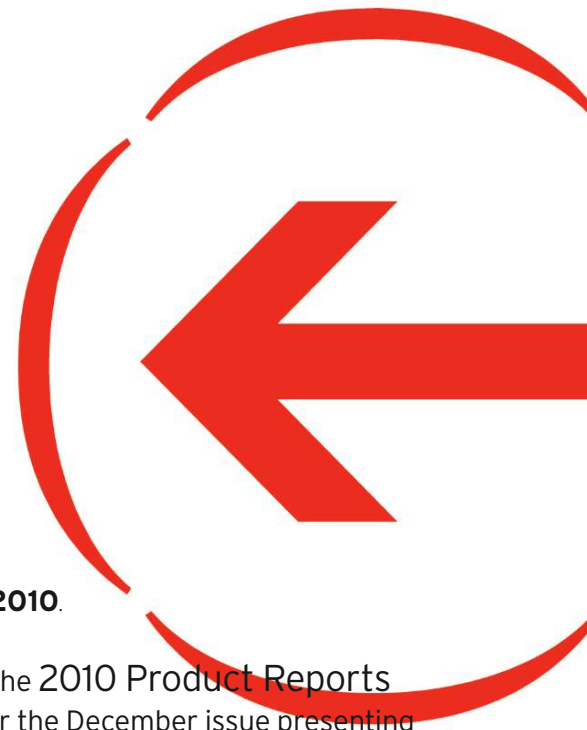
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Design Vanguard 2010 CALL FOR ENTRIES

Our annual **Design Vanguard** issue each December features a group of 10 emerging architects from around the world. Although we do not have an age limit, we try to select architects who have had their own practices for less than 10 years and are doing innovative and provocative work. **DEADLINE: August 1, 2010**
For instructions and to download the entry form visit architecturalrecord.com/call4entries.

Product Reports 2010 CALL FOR ENTRIES



DOWNLOAD A FILLABLE **PDF FORM** AND SUBMIT YOUR ENTRIES BY **09/08/2010**.

The editors of ARCHITECTURAL RECORD are currently accepting submissions for the 2010 Product Reports review process. Manufacturers are welcome to submit new building products for the December issue presenting the best and most innovative offerings available to architects, specifiers, and designers in 2011.

A panel of architects, design professionals, and editors will select products for publication. There is no entry fee. For submission instructions and to download the entry form visit architecturalrecord.com/call4entries.com.

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▲ SARGENT seamlessly unifies the lever and the door with its new Simpli™ Roseless Trim. Compatible with most Studio Collection decorative levers, Simpli creates a flawless aesthetic vision on any door opening. The lever and trim melt into the door, minimizing the appearance of the hardware, and maximizing the design of the facility. Offered in 13 finishes, including MicroShield™ antimicrobial coating, all you'll see is beauty. Available for use on commercial-grade tubular locks, mortise locks, and Harmony™ access control mortise locks, the look is Simpli irresistible.



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DOORS, WINDOWS

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Woodfold Manufacturing, Inc.

▲ Woodfold makes doors/partitions for use as sight, security, and acoustic solutions. Short production.

Product Application:

- Hotels, restaurants, conference rooms, schools, churches, pharmacies
- Candlewood Suites, various locations
- Walt Disney World, Orlando, FL

Performance Data:

- FSC hardwoods available
- FSTC rated up to 33



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503.357.7181 | Contact: Justin Norman

Circle 151

DOORS, WINDOWS

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Major Industries, Inc.

▲ Guardian 275 skylights and translucent curtain wall illuminate spaces with glare-free natural light.

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- Enhance work areas, schools, and other locations where uncontrolled sunlight can wreak havoc

Performance Data:

- Lightweight and economical
- Sandwich panel design for enhanced thermal performance
- Hurricane and blast protection



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888.759.2678

Circle 152

DOORS, WINDOWS

THE BENEFITS OF CONCEALMENT

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Samuel Heath

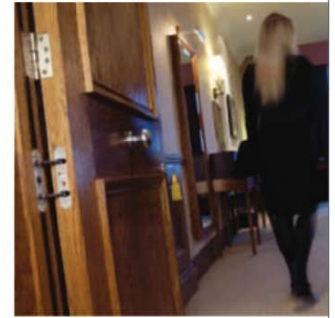
▲ PERKO POWER™ door closers deliver aesthetic and practical benefits for the architect and specifier.

Product Application:

- Hilton Hotel
- Godolphin and Latymer School
- South Lodge Hotel and Spa

Performance Data:

- UL10B/10C/228
- ANSI/BHMA A156.4



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Circle 153

ELECTRICAL, LIGHTING

ARCHITECTURAL CEILING FANS & LIGHTING

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G Squared Art

▲ Flyte ceiling fan, GOOD DESIGN Award winner. Quiet, powerful, reliable, an energy saver.

Product Application:

- Suitable for sloped ceilings up to 30°, can be used on 8-ft. ceilings or on cathedral ceilings with optional downrods up to 6 ft. long

Performance Data:

- Other finishes available
- Cap for non-light use included; integrated 100W mini-can halogen bulb, bulb included
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Circle 154

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Performance Data:

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- Other blade finishes available
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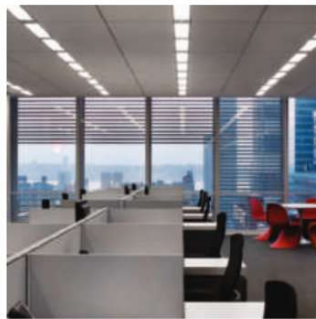
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Lutron Electronics Co., Inc.

▲ The Lutron Quantum® system saves energy, and monitors, manages, and reports on all building lighting and shades. By combining strategies like daylight harvesting and high-end trim into a Total Light Management program, Quantum can deliver 60% or greater lighting energy savings.

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- Not limited to art hanging



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▲ Wide range of commercial living wall systems and trellises. On-structure or freestanding solutions.

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- Living wall modules for complete coverage, edible walls
- Commercial trellis for green facade
- Hybrid—living wall coverage at trellis prices

Performance Data:

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- Grown and installed by local contractors, uses recycled content



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▲ Quarrier and fabricator offering select slates, quartzites, sandstones, limestones, marbles, granites and basalts.

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- St. Williams Hall - Boston College
- Unfading Mottled Green & Purple slate roof
- DiMella Shaffer



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800.343.1900 | Contact: Craig Markcrow

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▲ Accurate is a leader in providing custom perforated metal components to the construction industry.

Product Application:

- Sunshades, sunshades, daylighting
- Building facades, wall panels, cladding, etc.
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- Thousands of standard perforating patterns available or design your own
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800.621.0273 ext.363 | Contact: Damon Henrikson

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TOTO USA

▲ The Aquia wall-hung toilet features a high-efficiency dual-flushing system that optimizes water usage by allowing users to choose a light flush or full flush.

Performance Data:

- 0.9 GPF or 1.6 GPF flush options
- Saves space and easy to clean



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DECK SUPPORTS & WOOD TILES

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▲ Support paving materials—concrete pavers, stone tiles, wood tiles—on rooftops and green roofs.

Product Application:

- Rooftop decks and terraces, green roofs
- Commercial and residential

Performance Data:

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- 2009 *Architectural Record* Editor's Pick



www.BisonDeckSupports.com
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Architectural Columns & Balustrades by Melton Classics

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The Cable Connection
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The Copper Shop, Inc.

▲ Protect your flue from pest and water while giving your home a custom look. Their chimney pots are 100% recyclable and are compatible with both masonry and pre-engineered fireplaces.

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- Great for custom and standard applications

Performance Data:

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- Increases draft
- Serviceable



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866.454.5131 | Contact: Andy Preske

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▲ Rangine Corporation's counter support brackets provide an easy-to-install alternative to full-height laminated panels. Available in a range of sizes to support counters up to 30 in. deep, brackets install easily into studs or blocking and can support loads up to 450 lb. Less expensive than laminated supports, they increase open space while improving handicapped access and ergonomics. Brackets can be ordered in either surface- or flush-mounted configurations to provide heavy-duty unobtrusive support.



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800.826.6006 | Contact: David Greenburg

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▲ CPI LiteBrow sun shades provide shelter while allowing glare-free daylight into the area below.

Product Application:

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The Wagner Companies

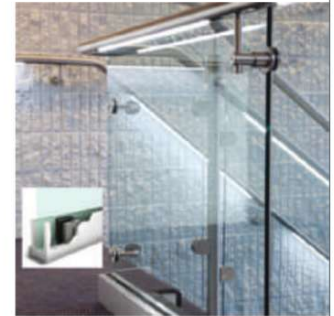
▲ PanelGrip™ provides a cost-effective alternative for the installation of tempered glass panels.

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- Private residence, Milwaukee, WI

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SPECIALTY PRODUCTS

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\$\$\$ | G | NEW

Nathan Allan Glass Studios Inc.

▲ Feature wall becomes an impressive backdrop in the lobby. Safety-tempered Willow pattern in 3/8-in.-thick glass is pinned with spider clamps. Iridescent sparkle of Gemstone Cobalt Blue color finish is revealed with front lighting. Client: Bridgeview Condominium, Hayden Ferry Lakeside LLC. Architect: Callison. Lobby glass selection: Richard Drinkwater w/DAVIS. Photo: Al Payne.

Product Application:

- Cladding, fascia, feature walls



www.nathanallan.com
604.277.8533 ext. 225 | Contact: Barry Allan, Director

Circle 172

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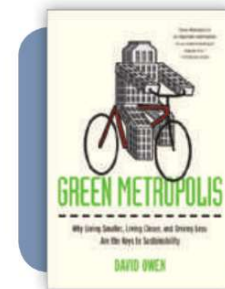
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