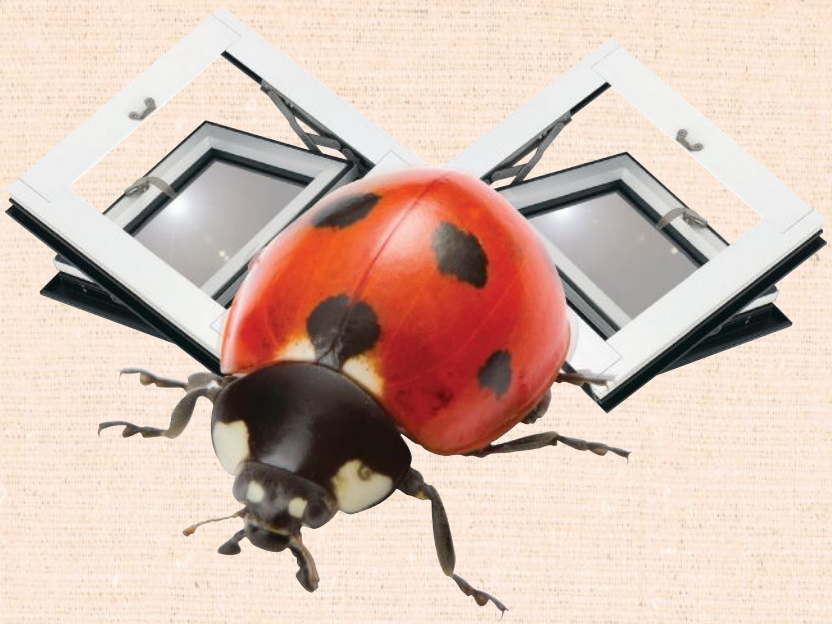
# ARCHITECT

THE MAGAZINE OF THE AMERICAN INSTITUTE OF ARCHITECTS

## ANNUAL DESIGN REVIEW


BIG's Superkilen Park



# OUR WINDOWS LET YOUR IDEAS TAKE FLIGHT.

ENERGY-SAVING FIXED AND OPERABLE SOLUTIONS FOR NATURAL VENTILATION.

ENTRANCES STOREFRONTS CURTAIN WALLS SUN CONTROLS WINDOWS BALCONY DOORS

YKK AP® Quality inspires®

800-955-9551 - ykkap.com/design

Circle no. 599 or http://architect.hotims.com

# COLOR TRANSFORMATION

Lead architect/engineer: Astorino, Pittsburgh, PA

## Helping to make children feel better, inside and out.

UPMC Children's Hospital of Pittsburgh is not just a world-class health care facility and LEED® silver certified. It's also a vivid example of how designers, architects, and contractors can use color to create a physical and emotional transformation. After extensive research with children and their families, the hospital's architect chose PPG CORAFLON® and DURANAR® fluoropolymer coatings for the exterior colors, to communicate a facility that is dynamic and alive. Interior walls and trim are coated with PPG PURE PERFORMANCE®, among the world's first premium-quality zero-VOC* latex paint, in shades designed to promote healing. SUNGATE® 500 glass allows high levels of natural sunlight, while our Atlantica glass supplies the spectacular emerald-green hue. With more than 100,000 custom-created *Duranar* colors and a wide array of energy-saving tinted glass, no company offers more color choices for your next project. So visit **ppg.com** to contact an architectural specialist.

PPG Industries

Bringing innovation to the surface.™

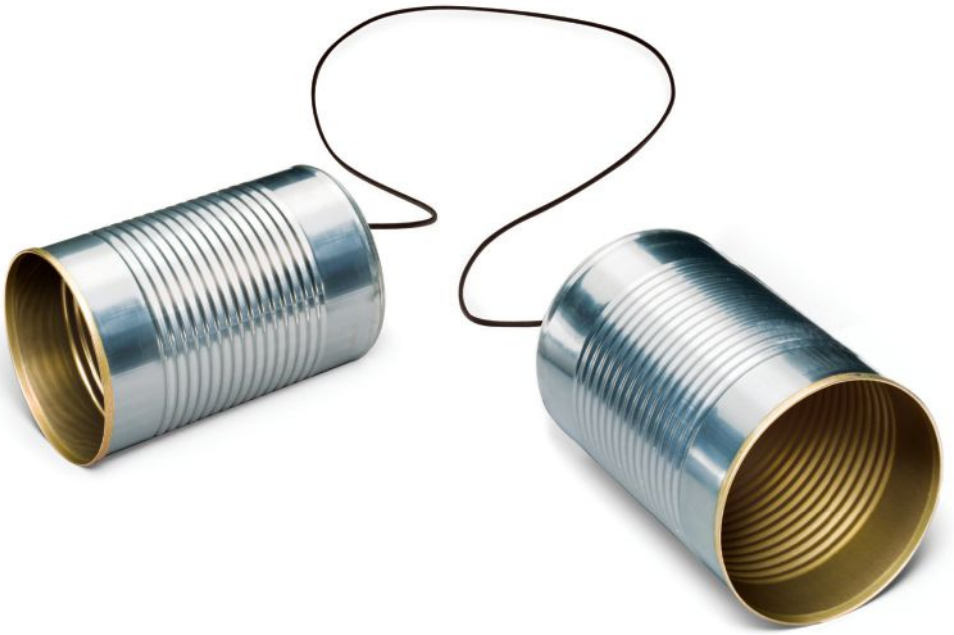
PAINTS - COATINGS - OPTICAL PRODUCTS - SILICAS - CHEMICALS - GLASS - FIBER GLASS

Circle no. 423 or http://architect.hotims.com



*Colorants added to this base paint may increase VOC levels significantly, depending on color choice.

BIM IQ® is Patent Pending.



# BIM


# BIM IQ®

Like smartphones have revolutionized how people communicate, BIM IQ® will revolutionize Building Information Modeling (BIM). How does it differ from BIM? Change the glass option or mullion design—only BIM IQ® will show you that change from any view of your project, interior or exterior, in its precise location, on any day of the year! That's right, and you not only see what it looks like, BIM IQ® calculates the energy data based on your selections—no waiting. To learn more, **visit BIMIQ.com to take a tour.**

**Oldcastle BuildingEnvelope®**

*Engineering your creativity™*

Circle no. 52 or http://architect.hotims.com

# CONTENTS



## ONLINE

### FRESH ARCHITECTURE, EVERY DAY

Want more coverage of design, products, culture, technology, and business? We are so darn productive that it's impossible to fit every word and image into the monthly print edition of ARCHITECT. If you like the magazine, then you'll find even more good stuff online at **architectmagazine.com**.

### CONTACT US

We want to hear from you. On pages 8 to 12, you'll find all of the contact information for our editors and sales representatives—as well as where to send information about changing your address, ordering back issues, uploading your projects to our website, and more. If we feel your correspondence would benefit the rest of the readership, we may publish it in our Letters section, which is on page 16 in this issue.

LEFT: JAMES STEINKAMP; COVER IMAGE: IWAN BAAN


nichiha.com/projectgallery

Imagine. Design. Create.

Designs come *ALIVE* with Illumination Series panels.

NICHIHA fiber cement

1.866.424.4421



Circle no. 380 or http://architect.hotims.com

# 12.12

60

74

## FRONT



## CENTER



## BACK



TOP: COURTESY LOUVRE; BOTTOM: LILY IDOV


Eric Stengel Architecture, LLC

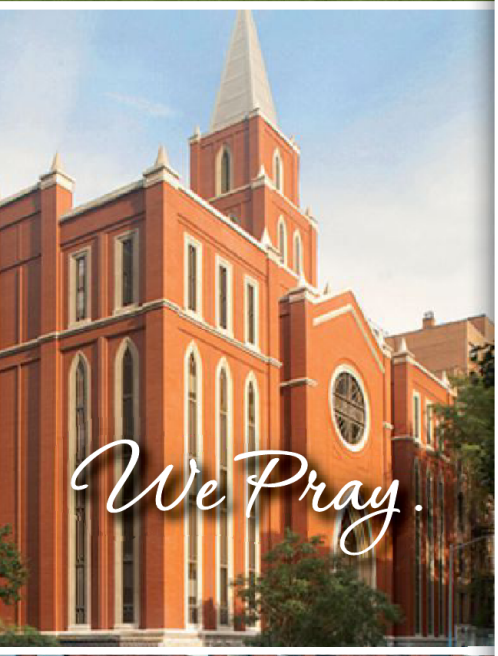

# BELDEN

## THE BELDEN BRICK COMPANY

***We*** *surround ourselves with buildings that last generations and hold strong memories. Brick has long been known as a solid choice for its durability and integrity. For 127 years Belden Brick has been supplying quality brick products to buildings that we trust to last a lifetime.*

*How can* ***we*** *help you build your next project of a lifetime?*

www.beldenbrick.com
info@beldenbrick.com / (330) 456-0031
An ISO 9001:2008 Registered Quality Management System
An ISO 14001:2004 Environmental Management System
Circle no. 82 or http://architect.hotims.com





# CONTACT

**Want to get in touch with an editor or sales representative? Order a back issue? Change the address for your subscription? Find all of the information you need on this and the following pages. Or, if you'd rather, go to *architectmagazine.com* and click "Contact" at the top of the page.**

## Submissions

**LETTERS TO THE EDITOR**

Send us an email. You can reach us at *letters@architectmagazine.com*. Letters may be edited for length, content, and style, and published in a future issue.

**PROJECTS**

If you have a building project that you think would be of interest to our readers, please go to *architectmagazine.com*, click "Projects," select "Add a Project," and upload images, project credits, and a description directly to our website. Our design editors review every submission for possible publication in print and for promotion online.

**ARTICLES**

ARCHITECT does not accept unsolicited articles. If you have an idea for a story, please email a brief description and writing samples to senior editor Eric Wills at *ewills@hanleywood.com*.

**PRODUCTS**

To submit a product for consideration for publication, please email a press release and at least one image of the product to *products@architectmagazine.com*.

## Edit Calendar & Media Kit

Please visit *architectmediakit.com*.

## Subscriptions, Customer Service, and Back Issues

Email *arch@omeda.com* or call 888.269.8410 (toll-free in USA) or 847.291.5221. You can also visit *architectmagazine.com* and click on "Subscribe" (subscriptions only). Allow six to eight weeks for the first issue.

**ANNUAL SUBSCRIPTION RATES**

US: $59; Canada: $69;
Other countries: $199 (12 monthly issues)

**SINGLE-COPY PRICES**

US: $10; Canada: $15; Other countries: $20

## Continuing Education

We have more than 200 free courses to help you stay current with your learning requirements: To register, please visit *architectmagazine.com* and click "Continuing Ed" at the top of the page.

## Newsletters

ARCHITECT produces two free email newsletters: the **ARCHITECT NEWSWIRE**, which is a daily compilation of our top stories, and the **ARCHITECT WEEKLY**, which keeps you current on all of the top stories from ARCHITECT and its Hanley Wood sister publications. Subscribe to one or both at *architectmagazine.com* by clicking "Newsletter" at the top of the page.

## Digital Edition

You can read any issue of ARCHITECT on your computer. Read it while online, or download the PDF of the issue to read offline. Go to *architectmagazine.com* and click on "Magazine" at the top of the page.

## ARCHITECT on Mobile

In addition to visting our website, *architectmagazine.com*, there are two ways that you can read ARCHITECT on your iPad or iPhone. With our **ARCHITECT MAGAZINE READER** app, download the digital version of our latest print edition or go back through our archives to find an issue you missed. With our **ARCHITECT NEWS** app, keep up with all of the news, products, and projects as they go live on our website.

## Reprints

Call the YGS Group at 717.505.9701, ext. 128, or email *brad.hairhoger@theygsgroup.com*.

## Newsstand

ARCHITECT is available at Barnes & Noble and other booksellers across the country for $9.95 per issue. Contact your local bookstore to check for availability.

## Address Changes

**AIA MEMBERS**

Call 800.242.3837, and press 2

**ALL OTHERS**

ARCHITECT
P.O. Box 3494
Northbrook, IL 60065-9831

ARCAT®

The Building Products App


# People are flippin over the Android version.

**Use the ARCAT app to find building products, specs, CAD, BIM and more.**
**FREE to use, and no registration required.**

ARCAT

Available on the App Store

GET IT ON Google play

amazon apps Available at amazon appstore for Android

Circle no. 430 or http://architect.hotims.com

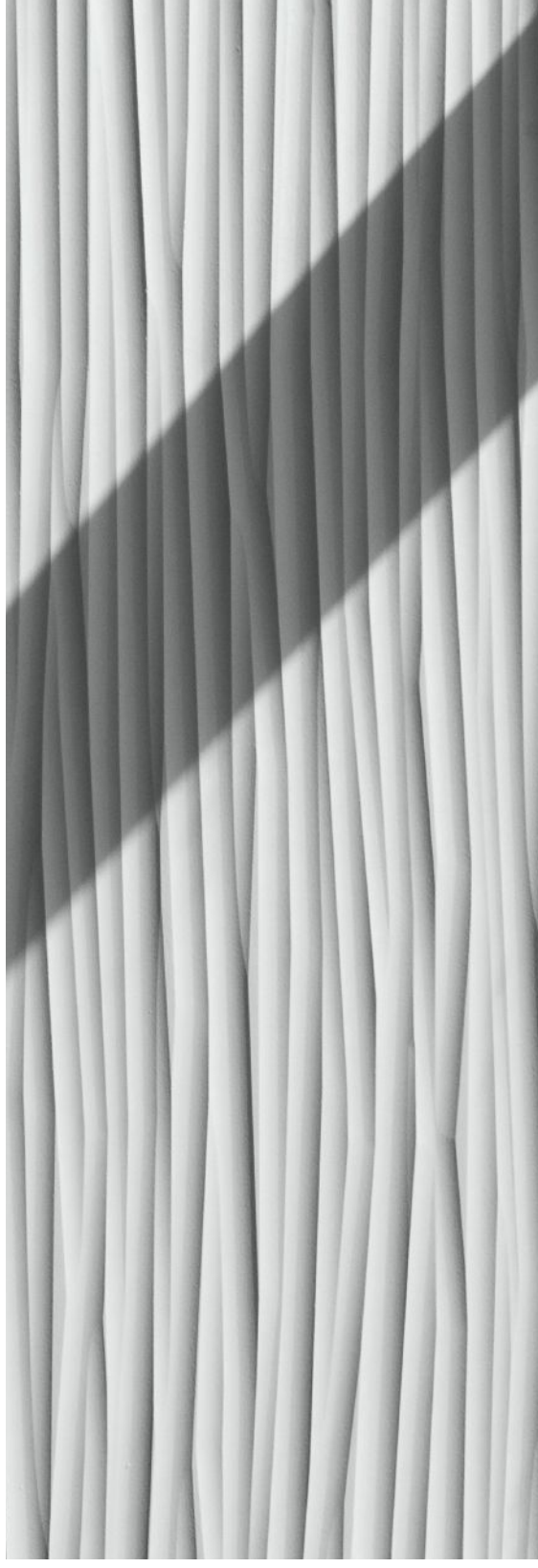
# ARCHITECT

THE MAGAZINE OF THE AMERICAN INSTITUTE OF ARCHITECTS



**EDITORIAL AND ADVERTISING OFFICES**
One Thomas Circle, NW, Suite 600, Washington, DC 20005. Phone: 202.452.0800. Fax: 202.785.1974.

**Gateway Youth Services Center, Pittsburgh PA**
Architect: Rothschild Doyno Collaborative
Contractor: Massaro Corporation
Installer: Easley & Rivers, Inc.



## Discover Ultra High Performance Concrete

TAKTL® offers a full line of architectural elements – including VECTR™ façade and wall panels, corners, screens, louvers, and fins – made of TAKTL ultra high performance concrete. Uniting superior strength, durability, and environmental performance with a wide range of pattern, finish and color options, TAKTL will change the way you think about concrete.

Standard colors + finishes available in eight weeks.
Shown: Arbos™ in Natural and Charcoal.

**www.taktl-llc.com**
Circle no. 584 or http://architect.hotims.com

# ARCHITECT

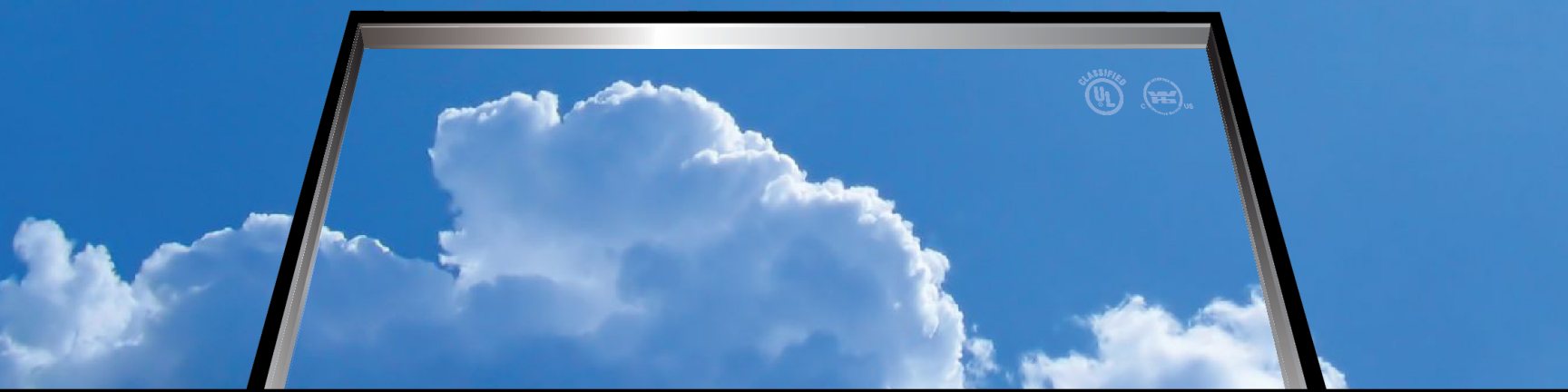
THE MAGAZINE OF THE AMERICAN INSTITUTE OF ARCHITECTS

FIRE RATED GLAZING SOLUTIONS SINCE 1981

# The Clear Solution

# JUST GOT CLEARER

**SuperLite II-XL™** with **Starphire® Ultra-Clear Glass By PPG**



mySAFTI App

WWW.SAFTI.COM

888.653.3333

SAFTIFIRST

Proudly made in USA

Circle no. 515 or http://architect.hotims.com

I WISH THERE WAS ROOM ON THIS PAGE TO NAME EVERY DESERVING ARCHITECTURE ORGANIZATION. PLEASE VISIT OUR WEBSITE FOR ACCESS TO MANY MORE OF THEM.

# GIVE A LITTLE

## THIS HOLIDAY SEASON, WHY NOT SKIP THE MALL AND INSTEAD GO SHOPPING FOR A WORTHY CAUSE?

**COMPLAINING** about the commercialization of Christmas is itself a holiday tradition. This year, my local drugstore was swathed in red and green the day after Halloween, and Walmarts across the country had the temerity to start their Black Friday sales on Thursday. I figure resistance is futile. But if I'm bound to go shopping, at least I can do it for a worthy cause.

Choosing a charity is intensely personal. Nobody wants to give their time or money to an abstraction (ergo those commercials with Sally Struthers hugging starving children). I've always got an eye out for nonprofits that focus on the built environment—because they speak to my heart. Here are a few standouts.

**Architecture for Humanity,** the organization-slash-phenomenon founded by Cameron Sinclair and Kate Stohr, helps communities with limited resources to design and build essential facilities such as housing and health clinics. There are now 54 chapters in cities across the globe, from Tokyo to Bogotá. They are the real deal—architects helping those most in need. *architectureforhumanity.org*

**The Chicago Architecture Foundation,** where I used to work, is essentially a collective of some 450 volunteers who offer awesome boat, bus, walking, and biking tours of the Windy City. The K–12 education program has a lower profile, but the work really blows me away: *The Architecture Handbook* (2007), written by staffers Jennifer Masengarb and Krisann Rehbein, offers ready-made, architecturally focused lesson plans that high school teachers can use to teach core subjects. *architecture.org*

**The National Building Museum** in Washington, D.C., does something rare and wonderful by knocking architecture off the curatorial pedestal and making it generally accessible—without talking down to the public or offending professionals' sensibilities. Oh, and by the way, the museum's collection of architectural toys is a national treasure. *nbm.org*

**The National Trust for Historic Preservation,** ensconced in its Neoclassical D.C. headquarters, has faced serious financial challenges since the onset of the Great Recession and the departure of longtime president Richard Moe in 2009, including a $5.8 million budgetary shortfall last year. But the dowager still has work to do. Having awoken to the attractions—and vulnerability—of its one-time nemesis, modern architecture, the trust is fighting the good fight to save Bertrand Goldberg's Prentice Women's Hospital. *preservationnation.org*

**Public Architecture,** through a program called The 1%, brokers relationships between nonprofits in need of design services and architects willing to donate a small portion of their time and expertise (hence the name). If every firm in the U.S. spent 1 percent of its staff time on pro bono work, Public Architecture estimates, "It would add up to 5,000,000 hours annually—the equivalent of a 2,500-person firm working full-time for the public good." That's a lot of good. *publicarchitecture.org*

**The Rural Studio** is the grandpappy of public-interest architecture programs, and it thrives under the leadership of director Andrew Freear. Auburn University students continue to bring world-class architecture to the inhabitants of west Alabama's Black Belt, much as they did in the day of legendary founder Sam Mockbee. *ruralstudio.org*

**The World Monuments Fund** is the global equivalent of the National Trust, fighting to preserve landmarks at risk due to both benign neglect and malignant abuse. Its heartbreaking annual Watch List raises awareness of the most heavily endangered sites. This year's list includes a 19th-century palace in Bhutan, a 17th-century fortress in Zimbabwe, and the fifth-century Nasca lines in Peru. *wmf.org*

I wish there was room on this page to name every deserving architecture organization, so instead please visit our website for access to many others. Just look for the promo on the home page, and click. Then connect with a nonprofit, and give. (If you don't see your favorite cause listed, email me and we'll add it.) This is one time you can break the bank without guilt. Happy shopping!

MORE OPINIONS AT ARCHITECTMAGAZINE.COM




**AIR-SHIELD LSR** (Liquid Synthetic Rubber) is the newest addition to the **W. R. MEADOWS** line of air/vapor barrier systems.

- Asphalt free formulation
- Air/Vapor and moisture barrier
- User friendly VOC formulation
- Can be applied to damp surface
- Can be sprayed or rolled
- Highly flexible
- Excellent adhesion –
  CMU, exterior gypsum boards, concrete and wood

Choose **AIR-SHIELD LSR** for your next project.
For more information, visit **wrmeadows.com** or call **1-800-342-5976.**

Guardian of the Structure

W. R. MEADOWS®
SEALTIGHT®

QUALITY...INTEGRITY...
SERVICE...SINCE 1926

Scan code on your smart phone to find out more.

# LETTERS


**Contact Us:**
Letters, c/o ARCHITECT
Hanley Wood
One Thomas Circle N.W.
Ste. 600
Washington, D.C., 20005

**letters@**
**architectmagazine.com**

## No Denying, Dialogue, November

The damage from Hurricane Sandy is evidence of increased coastal development, not some mystical change in climate. Hurricane Hazel passed along a similar track 60 years ago and did much less damage because there were fewer civil structures to damage. Carbon emissions have nothing to do with weather, and no amount of touting peer-reviewed studies alters the climatic history of the planet, which has been much warmer and much cooler, long before any human activity. Jumping on the anthropogenic global-warming bandwagon is beyond silly.
STEVEN PETERS, AIA, EVERGREEN, COLO.

I am witnessing a downright scary trend of over-engineered buildings that owners can't maintain. Operable windows are out of the question, there is nighttime ice production, the flush valves are oddly solar powered, and the faucet and soap dispensers are battery powered. Everything is awesome. Until it isn't. Has anyone else looked at the ridiculous pile of operations and maintenance manuals of a modern project lately? Architects ignore passive approaches and hand the complete systems design over to engineers, who are at the mercy of the bottom line and hamstrung between old comforts and new codes. We need to push a holistic design approach to sustainability.
MIKE NOVAK, AIA, SACRAMENTO, CALIF.

## Reva and David Logan Center for the Arts, and Webb Chapel Park Pavilion, November

The Logan Center is a great looking building, but I noticed several places where it appeared that a section of masonry wall was unsupported at the corner; the visual effect suggests that the building defies gravity. The reader is left to guess whether the stone facing and sections of the walls over the openings are supported by a cantilevered floor slab, or if there is concealed bracing to carry the load. Webb Chapel is also a page-stopper. I suppose that the upper walls hide trusses, but it would be nice to give us a clue as to how they were arranged, and if steel or wood was used for structural framing.
NEAL O. HAMMON, AIA, SHELBYVILLE, KY.

*In the October products section, Interstyle Ceramic & Glass' Tatami glass-on-mesh tile was not represented correctly. Please see the new image above.* ARCHITECT *regrets the error.*

ARCHITECT

# Publish Yourself

KNEstudio published their project to the new **ARCHITECT Project Gallery** and so can you. Just visit the ARCHITECT website, create a profile, and upload photos, drawings, and info about your latest and greatest. ARCHITECT editors scour the gallery daily for buildings to feature in our newsletters and magazine articles.

PROJECT
**Rope Pavilion**
Winnipeg, Canada

SUBMITTED BY
KNEstudio

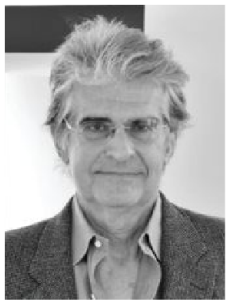
The ARCHITECT Project Gallery puts the power in your hands:

- Create your own profile page
- Upload images, drawings, and data for as many projects as you like
- Share your latest work with peers and clients
- Show your process from design and construction, to completion and commissioning
- Build and update an online monograph
- Give feedback on peers' projects

Share your portfolio today at
**architectmagazine.com/projects/list**

hanleywood

# CONTRIBUTORS



JOSEPH GIOVANNINI

**JOSEPH GIOVANNINI** has written on architecture and design for three decades, for such publications as *The New York Times*, *Art in America*, and *Artforum*. He has also served as the architecture critic for *New York Magazine* and the *Los Angeles Herald Examiner*. In addition, he is the head of a design practice, Giovannini Associates, which is based in New York and Los Angeles. His projects have ranged from the adaptive reuse of a large trucking facility into lofts to house additions and apartment interiors.

A graduate of Yale University, where he received his bachelor's degree in English, he also holds a Master of Arts degree in French Language and Literature from La Sorbonne as well as a Master's degree in architecture from Harvard's Graduate School of Design. He has taught advanced and graduate studios at Columbia University, the University of California Los Angeles, the University of Southern California, and the University of Innsbruck.

Giovannini has won numerous awards, including the Art World Magazine/Manufacturer's Hanover Trust for distinguished newspaper architectural criticism. He has received grants from the National Endowment for the Arts and the Graham Foundation, as well as commendations from the AIA Los Angeles Chapter and AIA California Council. Giovannini lives in New York with his wife and daughter.

READ GIOVANNINI'S CRITIQUE OF THE LOUVRE'S NEW ISLAMIC ART WING, DESIGNED BY MARIO BELLINI AND RUDY RICCIOTTI, ON PAGE 60.

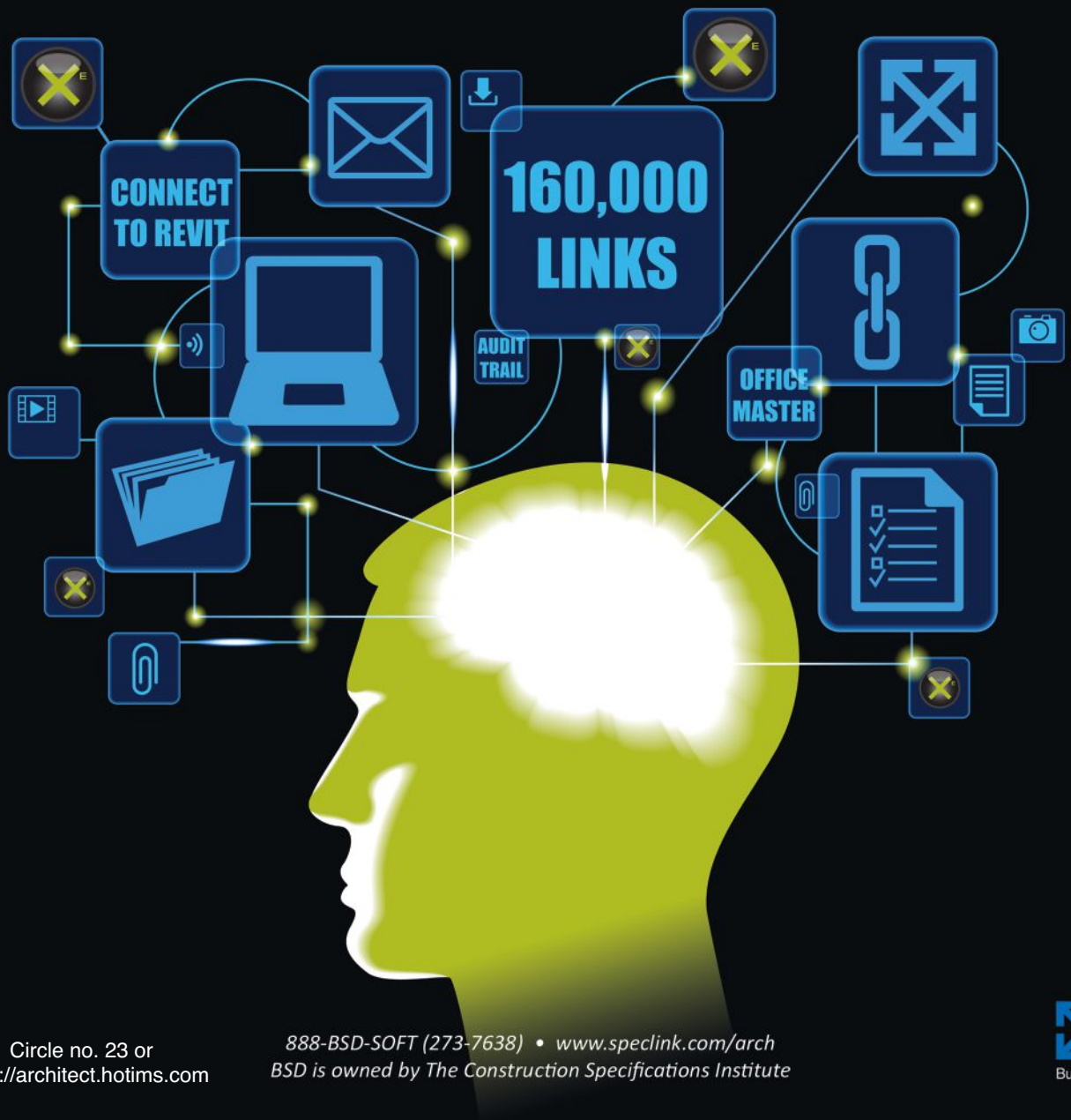
BSD speclink·e

Save up to 30% through 12/31/12

# INTELLIGENCE

## SPECLINK-E IS THE INTELLIGENT WAY TO *MANAGE* SPECS

- The software maintains itself
- Data updates are automatic
- Office master protection is included
- User roles assign specific privileges
- Audit trail records editors and edit times
- Coordinates with BIM through LinkMan-E




CSI

Circle no. 23 or
http://architect.hotims.com

888-BSD-SOFT (273-7638) • www.speclink.com/arch
BSD is owned by The Construction Specifications Institute

BSD
Building Systems Design, Inc.

ENDICOTT™

ENDICOTT BIM endicott.com

# THE WOW OF BRICK.

The possibilities of brick never cease to amaze and astound. Leading architects know it. They respect the unique qualities of Endicott brick, thin brick, tile and pavers. The unmatched elegance of Endicott's one-of-a-kind ironspot clays offer them the ability to design striking and elegant structures. Ready to create your next "wow?" Let's talk brick.

*Southern Polytechnic State University*

*Marietta, GA*



Masonry Detail

To talk brick with your nearest Endicott distributor, or to request samples, literature and BIM models, visit us online and contact us today.

Endicott Clay Products Co./Endicott Tile LLC · P.O. Box 17 · Fairbury, Nebraska USA 68352 · 402/729-3315 · endicott@endicott.com

Circle no. 540 or http://architect.hotims.com

# FRONT

STUDIO GANG ACHITECTS

## STANLEY TIGERMAN: DON'T TEAR DOWN CHICAGO'S PRENTICE

MAYOR RAHM EMANUEL'S SUPPORT FOR REPLACING BERTRAM GOLDBERG'S PRENTICE WOMEN'S HOSPITAL IS SHORT-SIGHTED.

**Saving Bertrand Goldberg's Prentice Women's Hospital** at Northwestern University's Medical Campus is not so much about preservation as it is about character. The face of an institution, like the face of a human being, reveals character—and Northwestern Hospital's character has, with few exceptions, been as architecturally appealing as a cold toilet seat. The major exception (now under fire): Goldberg's idiosyncratic and not entirely useful Prentice Women's Hospital.

Since the modernist Galter Health Science Library by Gerald Horn with Holabird and Root and the neo-Gothic Tarry Research and Education Center by Ralph Johnson and Perkins+Will both make an effort at being contextually consistent with the long-since demolished Passavant Pavilion, we must measure Northwestern Hospital by what it has done lately. And Northwestern Hospital has of late favored function over aesthetics, as if they were mutually exclusive. The desire to be up-to-date with the most recent medical technology has been employed by the hospital as a code-phrase for dumbing-down its increasingly monolithic campus, which now looks more like an overblown suburban incubator complex than a quality-driven addition to Chicago's well-deserved modernist heritage.

Jeanne Gang's brilliant proposal to the problem of restoring Prentice's usefulness, a solution that situates a tech-tower above Goldberg's structure, was dismissed virtually out-of-hand by the hospital. Decoded, that probably means that Northwestern jumped the gun, commissioning the replacement structure even as it failed to anticipate that there would be any public push-back to its announced proposal.

That Mayor Rahm Emanuel has sided with such bottom-line logic is regrettable, particularly as CEO of a city that has a hard-earned reputation as the world capital of modernist architecture. It's not too late, Mr. Mayor: If you allow proposals like Studio Gang's design to run their course, you might uncover a win-win proposition. STANLEY TIGERMAN

[THE MUSEUM OF MODERN ART] HAS ACQUIRED A SELECTION OF 14 VIDEO GAMES, THE SEEDBED FOR AN INITIAL WISH LIST OF ABOUT 40 TO BE ACQUIRED IN THE NEAR FUTURE, AS WELL AS FOR A NEW CATEGORY OF ARTWORKS IN MOMA'S COLLECTION THAT WE HOPE WILL GROW IN THE FUTURE. ... ARE VIDEO GAMES ART? THEY SURE ARE, BUT THEY ARE ALSO DESIGN, AND A DESIGN APPROACH IS WHAT WE CHOSE FOR THIS NEW FORAY INTO THIS UNIVERSE.

—PAOLA ANTONELLI

# REVISITING "RISING CURRENTS"

## ARO, LTL, AND NARCHITECTS DISCUSS SANDY IN NEW YORK AND "RISING CURRENTS" AT MOMA.

**In 2010, the Museum of Modern Art (MoMA)** in New York staged an exhibit that struck some as alarmist. "Rising Currents: Projects for New York's Waterfront" broke the New York area's waterfront into five sections and asked architecture firms to propose ways to mitigate the effects of rising sea levels specific to each area. But many New Yorkers don't think of themselves as residents of a coastal city the way that, say, New Orleanians do.

In the wake of Hurricane Sandy, media outlets such as *The New York Times* pondered whether New York should construct sea gates to keep out the rising tides. The MoMA exhibit recommended a very different course. Talking to some of the architects involved, a consistent theme emerges: The emphasis should be on soft rather than hard prevention techniques. In other words, instead of building a seawall—which would alter the salinity and ecosystem of the harbor—to keep water out, New York should try to work with the natural environment, a program of coexistence instead of confrontation.

"We think that hard engineering solutions are the wrong approach. It creates a binary where either it works or it doesn't," says Stephen Cassell, AIA, a principal in Architecture Research Office (ARO), which partnered with landscape architects Dlandstudio for the Lower Manhattan portion of the MoMA exhibit (above). "Soft infrastructure solutions are more resilient and can be layered on over time."

Sandy is unlikely to be the last storm that poses this level of threat to New York. The vision that "Rising Currents" presented for New York is one in which architects take some of the latest and most prominent conceptual innovations from the field—resilience and adaptivity being the big ones—and apply them to the task of safeguarding the city. If this exhibit is any indication, New York won't be adopting a levee system like the one that failed in New Orleans after Hurricane Katrina.

"Those big engineering projects can fail," says Eric Bunge, AIA, a principal at nArchitects, who proposed deploying inflatable barriers to preserve the coastline around southwestern Brooklyn and hard-hit Staten Island. "Will ours work as well [as a levee] every time? Maybe not; it will get a little wet, but it will get people to think about [the water] in a new way." BEN ADLER

**October 2012**
Architecture Billings Index

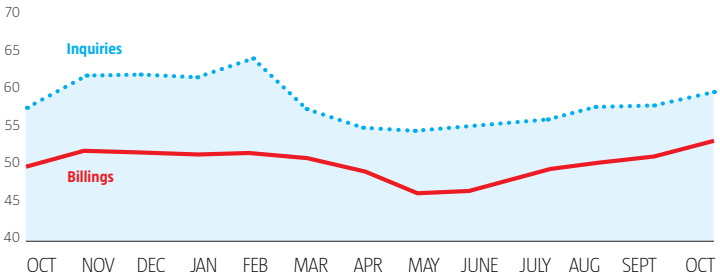
**52.8** ↑ 1.2 pts from September

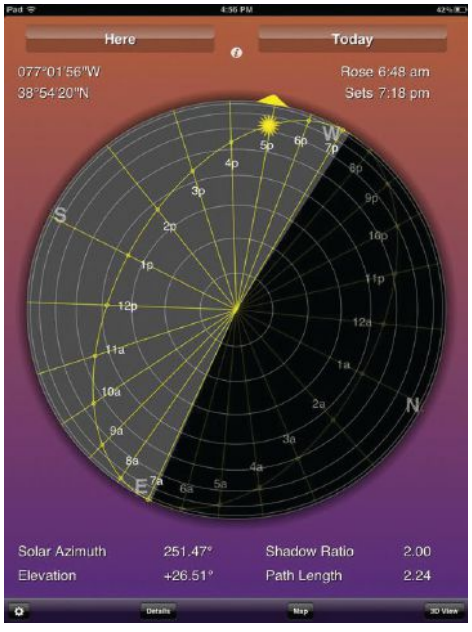
**48.0** Commercial ↓

**51.4** Institutional ↑

**52.4** Mixed Practice ↑

**59.6** Multifamily Residential ↑




**SOLAR POWER**
Developed by the Australian app company ozPDA, the **Sun Seeker app** offers valuable solar information that makes site visits all the more meaningful. The app's main function is to show sun paths in an overhead view, with sunrise and sunset times, as well as solar angles listed in a detail view. The feature that architects will find most valuable is Sun Seeker's overlays of the current day's solar path with the solstice sun paths, all merged with live views from their smartphone or tablet's built-in camera and compass to show augmented 3D views. • $5.99–$8.99; ozpda.com
DEANE MADSEN

TOP: COURTESY ARCHITECTURE RESEARCH OFFICE AND DLANDSTUDIO
BOTTOM: DEANE MADSEN

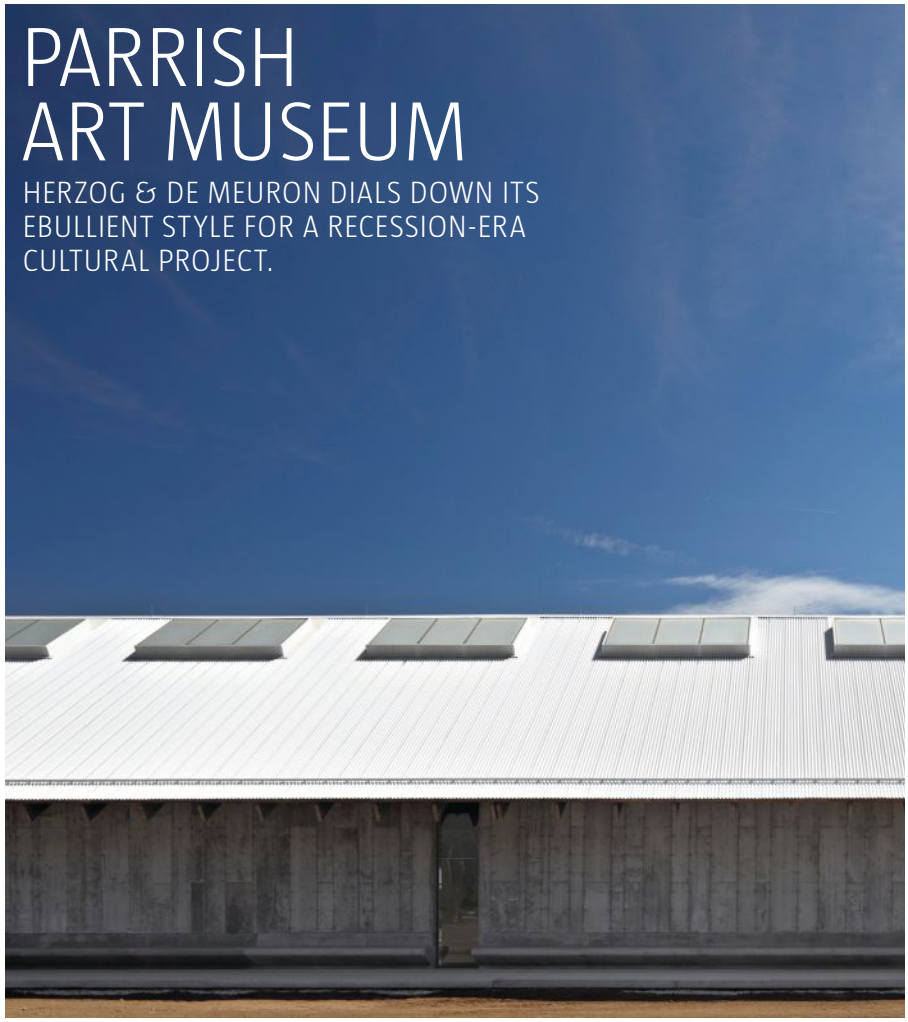
# Your ideas. Just as you imagined.

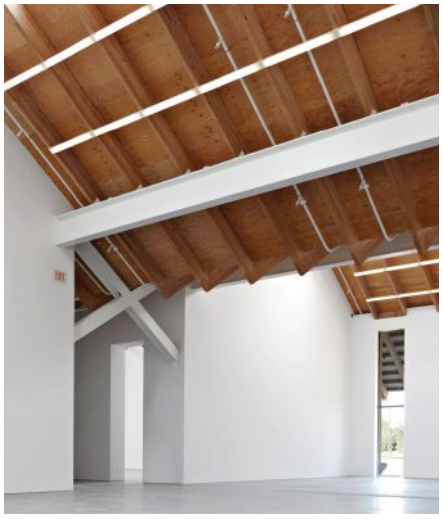
**The HP Designjet T520 ePrinter gives you fast and professional quality from the very first print – bringing your ideas to life.** With up to 2400 dpi you get accurate lines and sharp detail that are bound to impress. And with HP Designjet ePrint & Share you can use your smartphone or tablet to access, view and print from virtually anywhere. It's the printer that does your work justice.

Find out more at **hp.com/go/newdesignjet** or call **888.772.9897.**
Circle no. 450 or http://architect.hotims.com

# PARRISH ART MUSEUM

## HERZOG & DE MEURON DIALS DOWN ITS EBULLIENT STYLE FOR A RECESSION-ERA CULTURAL PROJECT.





THE ARCHITECTS WERE SENT BACK TO THE DRAWING BOARD TO FIND ECONOMIES OF SCALE AND REPETITION THAT WOULD PROVIDE AT LEAST THREE-QUARTERS OF THE PLANNED SQUARE FOOTAGE FOR APPROXIMATELY ONE-QUARTER OF THE COST.

**ADMIRERS OF HERZOG & DE MEURON** must find themselves in the same dilemma that Bob Dylan fans did when he decided to plug in his Fender Stratocaster guitar and go electric at the 1965 Newport Folk Festival.

The Swiss winners of the Pritzker Prize found early fame with severely minimal buildings, such as the Goetz Collection gallery in Munich and the Ricola factory in Mulhouse, France—work that featured precisely proportioned prismatic volumes clad in taut skins of carefully calibrated translucency. Like all good folk-rock artists, the pair applied vernacular craft traditions to modernist formal conventions. But over time, fame and fortune appeared to send them in whimsical and willful directions—as in their recent museums for San Francisco, Minneapolis, and Madrid. It's as if Dylan not only went electric, but continued on to full-jumpsuit Elvis as well.

But out in the Hamptons, the tony weekend community at the East End of New York's Long Island, that excess has been tempered, thanks to the financial crisis of 2008. Two years earlier, the Parrish Museum, a distinguished local institution dating to the Gilded Age and renewed by its association with local midcentury masters, had acquired a new 14-acre site in the town of Water Mill, N.Y., and hired Herzog & de Meuron to bring a touch of Bilbao to the local potato fields.

For the new Parrish, the designers proposed a complicated compound of intricately interconnected structures, each as unique as a snowflake and as massive as a McMansion, modeled closely on the local barns and outbuildings typically converted into artists' studios—with a 2008 budget estimated as high as $80 million. Then came the crash. The architects were sent back to the drawing board to find economies of scale and repetition that would provide at least three-quarters of the planned square footage for approximately one-quarter of the cost.

The result is a very long shed. With a corrugated aluminum roof above cast-concrete perimeter walls, it features a 615-foot-long east–west extrusion of a single cross-section: an M-shape generated by the overlapping of two 32-foot-high pitched-roof profiles, supported by hurricane-ready steel frames at intervals of some 37 feet. The central crossbraces of those frames distantly recall the patterns perfected by Fay Jones in his Thorncrown Chapel and related projects. Portions of those patterns, somewhat insistently highlighted by various cutaways and frames, also recall the faux-naive triangle-over-square elevation of a symbolic house (memorably commemorated in Herzog & de Meuron's own Rudin House of 1997).

Minimalism's finest architectural effects, achieved through strategic proportions and exhaustive detailing, establish a sensation of calm—and also of thrill at the compulsive effort to construct that calm. There is at the Parrish Art Museum, though, the occasional impression that someone, like Dylan in 1965, knows how to keep it simple but doesn't really want to. The feeling at the Parrish is perhaps one of ambivalence about times that are, as usual, a' changin'. THOMAS DE MONCHAUX

MATTHU PLACEK


LEADING THE WAY TO
ENHANCED PROTECTION.
Go ahead. Explore the far reaches of your imagination. VT will always be there to guide you to the perfect solution for architectural wood door design and performance—whether your project calls for antimicrobial protection, superior acoustics, or added durability. Because when inspiration hits, VT is there.
VT INDUSTRIES
Architectural Wood Doors
VTDoors.com 1-800-827-1615 (ext. 512)
FSC
www.fsc.org
FSC® C005590
The mark of responsible forestry
©2012 VT Industries, Inc. All rights reserved.
Circle no. 53 or http://architect.hotims.com

**NEW IDEAS FOR GRAND CENTRAL TERMINAL**

For a fall summit, the Municipal Art Society of New York presented three visions of **Grand Central Terminal**. These proposals, submitted by Foster + Partners; Skidmore, Owings & Merrill; and WXY Architecture, suggest future solutions for the historic rail terminal.

SOM suggests a moving observation deck (left) above the historic building, WXY highlights connections to the surrounding neighborhoods by opening up Vanderbilt Avenue, while Foster + Partners reconfigures the adjacent urban fabric to accommodate pedestrian and traffic patterns.

"The plan for Midtown's near future needs to make the Grand Central neighborhood a place people enjoy being in, not just running through," said WXY's Claire Weisz, AIA, in a release. D.M.

BUILDINGS TELL THE HISTORY OF A PLACE IN A WAY THAT NATURE CANNOT. THERE IS A BEAUTY IN BUILT FORM THAT SPEAKS OF THE CULTURE OF CRAFT AND LABOUR, LAYERS OF LIFE EMBEDDED IN STREETS. AS ITALO CALVINO WROTE, "THE CITY … DOES NOT TELL ITS PAST, BUT CONTAINS IT LIKE THE LINES OF A HAND, WRITTEN IN THE CORNERS OF THE STREETS, THE GRATINGS OF THE WINDOWS, THE BANISTERS OF THE STEPS, THE ANTENNAE OF THE LIGHTNING RODS, THE POLES OF THE FLAGS, EVERY SEGMENT MARKED IN TURN WITH SCRATCHES, INDENTATIONS, SCROLLS."

—OLIVER WAINWRIGHT, *THE GUARDIAN*

MORE DAILY NEWS AT ARCHITECTMAGAZINE.COM

# KAZUYO SEJIMA TAKES ON AN INTERN

FOR A NEW INITIATIVE, THE JAPANESE MASTER WILL MENTOR A YOUNG CHINESE ARCHITECT.

**Acclaimed Japanese architect** Kazuyo Sejima has picked Chinese architect Yang Zhao to serve as her protégé as part of the Rolex Mentor Protégé Arts Initiative, a program that pairs a rising talent with an accomplished master. This is the mentorship program's first foray into architecture.

SANAA, the firm Sejima established with Ryue Nishizawa in 1995, completed New York's New Museum of Contemporary Art in 2007. SANAA won the Pritzker Prize in 2010; the pair were among the youngest winners in the award's history. In 2004, the firm won the Venice Architecture Biennale Golden Lion for Japan's 21st Century Museum of Contemporary Art.

Sejima earned Japan's Young Architect of the Year award in 1992, three years before she formed SANAA. As a woman who was herself so accomplished at a young age, she may be an ideal mentor for Zhao, 32, who started his practice, Zhaoyang Studio, in 2007. KRISTON CAPPS

# STEP UP, STEP DOWN

## BIG MOVES ON THE CAREER LADDER

**Hyeon Ju Son, AIA**
Architect,
Ayers Saint Gross

**Adele Chatfield-Taylor**
President, American Academy in Rome

**Michael H. Meyers**
Vice president,
EDSA

**Matt Renauld**
Vice president,
EDSA

**Gregory Wessner**
Executive director,
OHNY

**Brett Sprietler**
Continuous improvement engineer,
Accurate Perforating

**Steven Stainbrook**
Director of higher education, Francis Cauffman

**Don Rataj**
CEO, Rataj-Krueger Architects

**Kurt Krueger**
CEO, Rataj-Krueger Architects

COURTESY SOM

# Techstyle® Canvas Is Anything but Blank

Your idea may start with a blank canvas, but Techstyle's already got you covered. With an NRC of 0.85 for superior acoustics and easy access to the plenum, Techstyle acoustical ceilings no longer just cover a room, they define it. Introducing Techstyle Canvas, an acoustical ceiling system with unlimited potential for design.

**HunterDouglasContract.com/Techstyle**

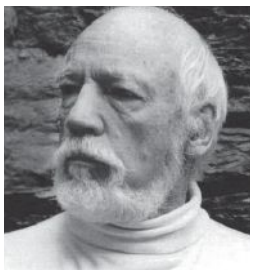
ACOUSTICS

AESTHETICS

HunterDouglasContract™



CIRCLE NO 47



# REMEMBERING JOHN JOHANSEN

## HIS PASSING, AT 96, OCCURS AS THE FATE OF TWO OF HIS BRUTALIST BUILDINGS REMAINS UNCERTAIN.

**There are the artists and designers** who die too young, before the cognoscenti discover and elevate their work from obscurity, and then there are the John Johansens of the world, who live long enough to hear some of their self-proclaimed best work derided by detractors as having outlived their usefulness. Johansen died in late October of heart failure in Brewster, Mass., at age 96, fully aware of the ongoing battles to demolish two of his buildings: the 1970 Mummers Theater in Oklahoma City, and the 1967 Morris A. Mechanic Theater in Baltimore.

Both buildings have been derided for their forbidding Brutalism. And both have found ardent supporters. The Mummers, which, with its concrete "pods" connected by skywalks, has an almost whimsical air, may be saved from the wrecking ball if a local group, including Tracy Zeeck with Rees, succeeds with its proposal to refashion the building as a children's museum. And the Mechanic Theater, threatened with demolition by a development firm, has received a temporary stay of execution because the local AIA chapter in Baltimore helped persuade the city to reconsider its decision to deny the building landmark status.

Johansen, who was the last surviving member of that heavyweight contingent of modernist architects known as the Harvard Five, was anything but a rigid thinker, resistant to change. His buildings reflected a constant progression of ideas. His 1957 Warner House in New Canaan, Conn., with its gold-leaf ceilings, ebonized wood cabinets, and symmetrical layout by way of Palladio, "helped show that Modernism, which had its roots in industrial efficiency, could also be luxurious," Fred Bernstein wrote in *The New York Times*' obituary of the architect.

Even as he was designing monumental theaters in concrete, Johansen was building a series of so-called Symbolic Houses, which drew upon the work of the psychoanalyst Carl Jung. The 1975 Plastic Tent House in Stanfordville, N.Y., was nothing more than a steel frame covered in translucent plastic. He designed it as his own home, with a bedroom lined with stone symbolizing the womb, and a stone bathroom used for ceremonial washing.

Johansen's optimism coursed through all of his work and was also on display when he swallowed his anguish and put on a brave face at seeing some of his best work threatened with demolition. "My response to this, as to other of my buildings which have been threatened, is [that] the reward for an architect is in the doing. Having done it already, he can't expect much more from it," he told Amanda Kolson Hurley, when she interviewed him about the Mechanic Theater for ARCHITECT in May.

Johansen's passing was a great loss. And so, too, will it be a great loss if future generations are left to page through two-dimensional art-book images as they attempt to discern his lasting legacy. ERIC WILLS

CONTINUING ED

# HOT UNITS

### FIBER CEMENT PANELS AS RAIN SCREENS

Moisture intrusion in a wall system can be the cause of building defects, as well as health ailments for the building's occupants, making rainscreens a very important tool in water mitigation. This course will review the cause and effects of moisture intrusion, and more specifically the forces that drive rainwater into a building. Identify different rainscreen technologies and American Society for Testing and Materials testing standards that measure their performance. Discuss fiber cement panels and how they can be used as a rainscreen to reduce moisture build-up, rotting interior walls, and mold growth. (*1 AIA*)

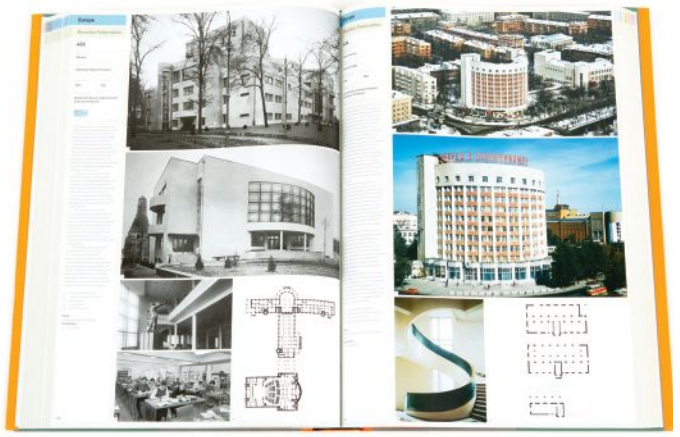
### SELECT APPROPRIATE ROOFING ADHESIVE FOR FLAT-ROOF APPLICATIONS

Flat-roof construction has unique challenges and durability issues associated with water; selecting an adhesive system that will complement the roof structure is important. This course will provide an overview of roof construction common in commercial buildings, and offer a specific examination of multilayer roof applications typical of flat-roof construction. Explore productivity and material costs issues related to flat-roof construction, and successfully choose the most appropriate adhesive for flat-roof construction by comparing and contrasting a specific set of attributes related to durability, strength, healthfulness, cost, and ease of use that can greatly affect the performance of the roofing system. (*1 AIA*)

### HOW GREEN RATING SYSTEMS, CODES, AND SOURCING PRACTICES INFLUENCE SPECIFICATION DECISIONS

As a building material, responsibly sourced wood contributes to efficient construction and operation. Review prevalent green-rating systems, building codes, and standards as they relate to ensuring responsible building practices and sustainable sourcing of wood. Discover the economic, social, and environmental implications of sourcing practices and how to factor for rating systems and codes. (*1 AIA HSW/SC)*

MORE CONTINUING EDUCATION AT ARCHITECTMAGAZINE.COM



TOP: PHILIP JOHNSON GLASS HOUSE; BOTTOM: NOAH KALINA

### BIG BOOK

At 18 inches by 12.25 inches and 7 pounds, the new **20th Century World Architecture: The Phaidon Atlas** is a beast of a book. But hoisting the tome onto your coffee table is worth it: The resource presents a geographic survey of 757 buildings from over 80 countries. • $200, Phaidon, November 2012 LINDSEY M. ROBERTS

# RB 500™ is a Smooth Operator

Sleek, strong and precisely engineered, the RB 500 roller shade operating system knows how to keep it cool. Easy to install, simple to use, and built to last, it's the driving force behind window coverings large and small.

**HunterDouglasContract.com/RB500**


PRECISION ENGINEERING

INTERIOR COMFORT

HunterDouglasContract™



CIRCLE NO 49

# GOING GREEN AROUND THE GLOBE

## NEARLY 50 PERCENT OF NEW CONSTRUCTION IN THE U.S. IS NOW GREEN.

**Building green** is no longer just an indicator that a company wants to do the right thing—now it symbolizes client and market demand as well as adding to a business' bottom line, according to a new study released by McGraw-Hill Construction and United Technologies.

Presenting the study at the Greenbuild International Conference and Expo in San Francisco, United Technologies CEO Geraud Darnis said the market has shifted and green building is now a consumer request instead of a supplier option. According to the study, firms reported that client demand and market demand were the top reasons for taking on green work, totaling 35 percent and 33 percent, respectively.

By 2015, 63 percent of firms say they will have green work completed or under way for new commercial projects, and 45 percent say the same for new institutional projects. The numbers are even higher in other countries such as Brazil and Singapore.

Jane Henley, president of the World Green Building Council, said in a statement, "We've been on the ground watching the markets shift to green around the world. Today, there are green building councils in 92 countries around the world—more than double what it was when we first looked at the green building market globally in 2008." ALEXANDRA RICE

35%

Firms reporting **client demand** as driving green work

SOURCE: MCGRAW-HILL/UNITED TECHNOLOGIES 2012 CONSTRUCTION STUDY

33%

Firms reporting **market demand** as driving green work

SOURCE: MCGRAW-HILL/UNITED TECHNOLOGIES 2012 CONSTRUCTION STUDY

30%

Firms reporting **lower operating costs** as driving green work

SOURCE: MCGRAW-HILL/UNITED TECHNOLOGIES 2012 CONSTRUCTION STUDY

30%

Firms reporting **branding advantage** as driving green work

SOURCE: MCGRAW-HILL/UNITED TECHNOLOGIES 2012 CONSTRUCTION STUDY

MORE NUMBERS AT ARCHITECTMAGAZINE.COM

TWITTER

**@MATTROY14:**
I'D TRY TO EXPLAIN THIS TO YOU, BUT YOU'RE NOT AN ARCHITECTURE MAJOR. #YOUWONTUNDERSTAND

**@BLDGBLOG:**
SO EXCITED ABOUT THE STUDIO I'LL BE TEACHING NEXT SEMESTER AT COLUMBIA—PROPOSING, AMONGST OTHER THINGS, A SAN ANDREAS FAULT NATIONAL PARK.

**@EVOLVINGCRITIC:**
WE WANT AND DESERVE TIN-CAN ARCHITECTURE IN A TIN-HORN CULTURE.

**@INGASAFFRON:**
ALL ARCHITECTURE IMPROVES WITH WI-FI AND WINE.

# RESILIENCE IS THE NEW GREEN

## A RECENT WORKSHOP ON RESILIENT BUILDINGS POSITED THAT ONE CANNOT SEPARATE THE NATURAL ENVIRONMENT AND NATURAL DISASTERS.

NOAH KALINA

**Resilience is the new sustainable design.** Just consider the new book by Thomas Fisher, Assoc. AIA, *Designing to Avoid Disaster* (Routledge, 2012), or Andrew Zolli and Ann-Marie Healy's new release, *Resilience: Why Things Bounce Back* (Free Press, 2012), and it's clear enough that "resilience" has entered the argot of the building and infrastructure fields.

Resilience has many parallels with yesterday's buzzword: sustainability. At the Resilient Buildings Workshop held at the National Building Museum this fall, for example, National Institute of Building Sciences' senior vice president Earle Kennett said that one cannot consider resilient buildings and infrastructure without considering the natural environment and its own ability to bounce back from disasters. Resilience even has its own version of LEED: the Fortified Building Programs, launched by the Insurance Institute for Business and Home Safety.

While considerations of durability and multihazard resistance in the built environment are nothing new, the concept of resilience brings important attention to our all-too-efficient and first-cost-focused approaches to construction. Can resilience—and sustainable design—encourage the construction of buildings and infrastructure with a longer-term view? BLAINE BROWNELL

# NBK™ is the Showstopper

NBK terracotta panels come in more colors and more textures than any other rainscreen façade, creating stunning architectural statements that last.

HunterDouglasContract.com/NBK

ENERGY SAVINGS

THERMAL CONTROL

HunterDouglasContract™



CIRCLE NO.51

# A TALK WITH ...

Adele Chatfield-Taylor, president of the American Academy in Rome, will step down next year, after 25 years at the institution.

**What's changed at the Academy since you started as president in 1988?**
It's always had the same mission, to take carefully selected American artists and scholars and give them an opportunity to do independent work in Rome. That's been the beauty of the Academy from 1894 onward: gifted people who need some time to think and work. That part was completely intact. The trouble is, we had money problems, and a lot of deferred maintenance. We were a 19th-century organization trying to live in the 20th century. There was a lot that needed attention. My interest in life is historic preservation, so it was a very good match.

**Has the experience of working at the Academy changed over time?**
Tremendously. The Internet didn't exist 25 years ago. When I was a fellow in 1983, I was the only fellow who had brought a computer over. That wasn't that unusual. I'm sure there weren't any other computers around in the 30 other foreign academies in Rome. The work that the fellows are doing now is very different from when Charles McKim founded the Academy in 1894, and from what I saw when I came in as president in 1988. That's just what happened in the world.

**When did you decide that 25 years would be enough as president?**
We're trying to make the institution sustainable and inheritable. Fifteen years ago, we changed the bylaws to create term limits for trustees. Putting a limit on what I did, too, was the right thing and very much in the spirit of constantly refreshing the leadership of the institution. Twenty-five sounded right. It's also breaking my heart, because I love it so much.

**What are some issues that the next president will need to address?**
We leave a sturdy version of the Academy able to face the world of the next 25 years. But we're all going to be facing issues of sustainability. Not a surpassing answer, but these are issues that face everyone around the globe at this point, and we will not be spared. In the old days, we were an outpost in another country. Now we are a crossroads in a global world.

FULL INTERVIEW AT ARCHITECTMAGAZINE.COM

**MAKE IT RIGHT HOUSES**
In the wake of Hurricane Katrina, New Orleans's benighted Lower 9th Ward became a symbolic focal point for the reconstruction efforts. Brad Pitt's Make It Right Foundation enlisted noted architects to design houses for the neighborhood, including David Adjaye, Hon. FAIA; Frank Gehry, FAIA; and Thom Mayne, FAIA. With the recent devastation inflicted on the East Coast by superstorm Sandy, the rebuilding efforts in New Orleans, captured by veteran **Esto** photographer Jeff Goldberg, may serve as an inspiration. See more photos of the houses at architectmagazine.com.


Hitoshi Abe

## USER-GENERATED ARCHITECTURE

PUBLISH YOURSELF AT ARCHITECTMAGAZINE.COM/PROJECTS

**The Charmer**
Jonathan Segal, FAIA

**Tabasco 127**
JSª

**Science and Health Careers Center**
Legat Architects

**The Roslin Institute Research Building at the University of Edinburgh**
HDR Architecture

**Scottsdale Fire Station No. 8**
WLC Architects

BOTTOM LEFT: KEVIN SCOTT

# DORMA'S WORLD OF ACCESS TO DESIGN AND AESTHETICS

## A Room Full of Possibilities


DORMA introduces its design center concept—a 360-degree experience in access technology located centrally in New York City. This spacious, beautifully appointed setting is a center of gravity for architects, designers, planners, and business partners.

Interactive displays exhibit the right products for every project and every location, with industry experts on hand to advise on the best possible implementation. More than just a conventional showroom, the design center features an innovative multimedia table, granting access to hassle-free technology with state of the art presentation. **www.dorma-usa.com**

To schedule a visit, call 646-574-7464 or e-mail designctr@dorma-usa.com

Circle no. 189 or http://architect.hotims.com

DORMA World of Access
1040 Avenue of the Americas
22nd Floor
New York, NY 10018

CONTINUING EDUCATION SERIES

reTHINK WOOD

Presents:

# Wood in Buildings: Steps to Durability and Longevity

## How to Use Wood to Its Full Potential

Wood-frame construction has shown strength, longevity and stability, and is widely considered economical, with low material costs, reduced construction time, and availability of resources and labor. Photo: Stephanie Tracey

**CONTINUING EDUCATION**

**Credit: 1 HSW/SD hour, AIA**

Use the learning objectives to the right to focus your study as you read this article.

To earn credit and obtain a certificate of completion, visit **hanleywooduniversity.com** and complete the quiz for free as you read this article. If you are new to Hanley Wood University, create a free learner account; returning users log in as usual.

## LEARNING **OBJECTIVES**

1. Discuss wood's advantages in durability and longevity.
2. Describe strategies for moisture control.
3. Explain how to maintain wood buildings and maximize performance.
4. Explain issues of quality control for wood construction and the architect's role in promoting such control.

Specifying a building material considers structure, functionality and the aesthetics of the built project and environment. However, to ensure the smooth functioning of the construction process, and to satisfy occupant demands and expectations around building durability, an architect should consider quality control such as detailing and maintenance techniques, as well as how the material is handled and installed.

Architects specify wood for many reasons, including cost, availability, ease of construction, thermal performance, aesthetics and design versatility. Thoroughly adaptable, wood can be used as a structural material, offering a cost-effective way to meet code requirements for safety and performance in many types of buildings, from single- and multi-story residential buildings to schools, offices, industrial facilities, recreational centers, and arenas. Wood also offers design flexibility. Its light weight and workability make it easy to apply to specific applications. With the exception of major members that are made to specifications off-site, wood can be adapted in the field, allowing quick solutions if changes are required. Wood is also well suited to additions and retrofits, and wood systems can be dismantled with relative ease and the materials used elsewhere. New buildings can be designed for flexibility and adaptability, and the full service life can be extracted from building materials if they are reclaimed and reused as much as possible. In this way, architects can assume the role of curators, not just creators, of the built environment.

Designers can get maximum performance and service life out of every building material as long as they understand the necessary steps. The performance of all building materials relies on proper detail to prevent bulk water intrusion and moisture entrapment.

Research and new product development have only added to the versatility of building with wood. Structural composite lumber (SCL),glued laminated timber (glulam) and prefabricated paneling systems are among the products contributing to a

The one-of-a-kind Richmond Oval roof structure is comprised of dimensional lumber and Douglas-fir plywood fabricated into WoodWave panels and also includes Douglas-fir glulam beams. Architect: Cannon Design. Engineer: Fast+Epp Structural Engineers.
Photo credit: www.naturallywood.com

wider range of wood buildings, enabling increased dimensional stability, higher strength-to-weight ratios, and greater long-span capabilities. These products, together with new innovations like cross-laminated timber (CLT), are leading the way to realizing the vision of taller wood buildings. New paradigms in this area include Waugh Thistleton's Stadthaus, a nine-story timber structure in London, currently the world's tallest modern residential wood building; the eight-story CLT Limnologen building in Sweden, and the 10-story Forte Building in Melbourne, slated for completion in October 2012, nine months after its start date.[1]

Wood does indeed have many inherent advantages as well as exciting potential that is currently being recognized. Provided it is specified correctly and stored, handled, installed and maintained properly, wood will perform to meet and exceed expectations. This article will present ways in which architects can achieve superior results when they go beyond merely specifying wood to advocating for the right design detailing, construction, and maintenance techniques that enable wood structures to deliver decades, even centuries, of reliable service.

## DESIGN: TOWARD A DURABLE WOOD BUILDING ENVELOPE

Used properly, wood is a building material that is noted for durability and longevity. While concrete and steel may be perceived as more durable, a study of buildings demolished between 2000 and 2003 in the Minneapolis/St. Paul area found no significant relationship between the structural system and building life. Instead, reasons for demolition were associated with changing land values, changing tastes, and lack of maintenance. In fact, wood buildings in the study had the longest life spans, with 63 percent of the wood buildings older than 50 years at demolition and the majority older than 75. More than half of the concrete buildings fell into the 26-50 year category, with only a third of concrete buildings lasting more than half a century. Some 80 percent of steel buildings were not even 50 years old, and half no older than 25 years.[2]

Wood has high longevity expectations, but as with any material, there are potential threats to service life that must be considered. For wood, the key to a long service life centers around the use of pressure-treated or naturally durable wood species, where required by the building code due to its use in applications where decay or termites are likely. Providing quality assurance at all stages of the building process, and controlling moisture and insects are important factors to consider.

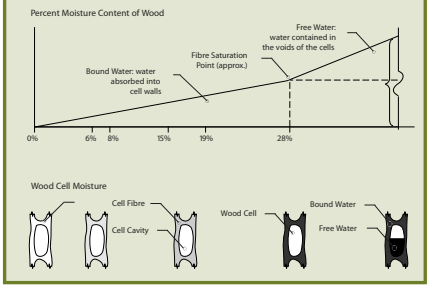
Pressure treated wood is done with Environmental Protection Agency (EPA) approved preservatives and to the strict standards of the American Wood Protection Association (AWPA). The Western Wood Preservers Institute (WWPI) has implemented the CheckMark program to identify code compliant products and the Best Management Practices for treated wood in sensitive environments. Dallin Brooks, Assistant Executive Director of WWPI, summed up the treated wood industry this way. "The longer the wood lasts the lower the costs of repair or replacement."

### Natural Moisture Levels in Wood

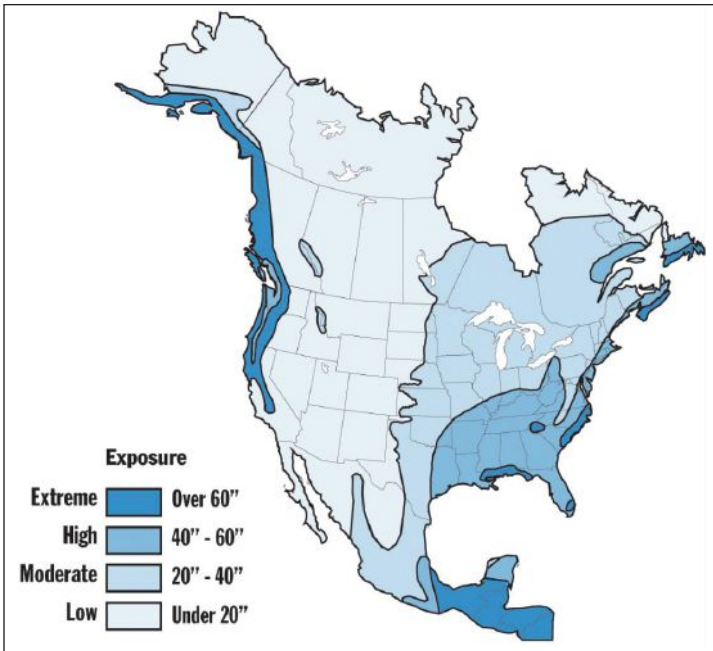
Wood and water are typically very compatible.[3] Wood can absorb and release moisture, however when wood gets too wet for too long there may be problems. If buildings are properly constructed, wood performs well in all types of climates. As testament to this statement, 90 percent of North American homes are built with wood. [4] "All materials have challenges when it comes to moisture; however, when moisture is managed properly, wood exceeds expectations," says Cheryl Ciecko ALA, AIA, LEED AP, Technical Director for Non-residential Construction, WoodWorks.

Moisture content (MC) is a measure of how much water is in a piece of wood relative to the wood itself. It is expressed as a percentage calculated by dividing the weight of the water in the wood by the weight of that wood if it were oven dry. For example, 200 percent MC signifies that a piece of wood has water

FIGURE 1: Moisture Control of Wood




Wood shrinks or swells as its moisture content changes, but only when water is taken up or given off from the cell walls.
Photo credit: Canadian Wood Council and Canada Wood




North America rain exposure zones. Courtesy, American Wood Council

Lumber, including framing studs, roofing trusses, flooring systems and solid timbers, is found throughout residential, commercial, industrial, institutional and recreational construction projects. Photo credit: Stephanie Tracey

twice as much as the weight of the dry wood. Two important MC numbers to remember are 19 percent and 28 percent. A piece of wood is considered dry if it has an MC of 19 percent or less. Fiber saturation averages around 28 percent. Fiber saturation is important because it is the point at which cell walls are holding as much water as they can. Any more water that is introduced will go to the cell cavity where decay and fungi can utilize it. Generally speaking, decay begins only when the wood's MC exceeds the fiber saturation point. It's not the water per se that harms wood, but a consistently raised moisture content that allows fungi to proliferate. Controlling rot means controlling moisture in building practice.

The fiber saturation point is also the limit for wood shrinkage. As MC changes, wood shrinks or swells, but only according to the variation of water in the cell walls, not the cell cavity, meaning that wood only shrinks and swells when it changes moisture content below the point of fiber saturation, or 28 percent.

Below 28 percent, wood expands as it absorbs moisture and contracts as it dries—expansion and shrinkage occurs primarily in the dimension perpendicular to the growth rings, such as in plates and the band joist. Shrinkage in the longitudinal direction, such as a wall stud, is less significant. These naturally occurring movements of wood are not problematic with proper design and construction, yet they can become a critical issue for taller wood buildings of five or six stories and up. The rule of thumb is that for every four percent change in MC, there is approximately one percent change in the radial/tangential direction (horizontal members of buildings) such as plates and joists. [5] Engineered wood products are dryer from manufacturing and also usually have lower shrinkage coefficients compared with lumber, but they may be more susceptible to water absorption and part of the swelling may not be reversible.

Simple construction details, such as ensuring that materials are compatible and leaving gaps between sheathing panels, will accommodate shrinkage and swelling. Given an environment with consistent temperature and relative humidity, the moisture content of wood will stabilize—interior wood at 8-14 percent moisture content; outdoors at 12-18 percent depending on indoor and outdoor climates. This allows wood to perform its inherent humidity control function, releasing moisture in dry conditions and absorbing moisture when the surrounding air becomes humid.[6]

The shortest path to trouble-free use of wood in buildings is to begin with dry wood and then prevent excess moisture intrusion during construction and in building service. By starting with dry lumber, some of the shrinkage will have occurred prior to purchase as the MC drops from 28 percent to 19 percent or even lower. Meanwhile, preventing excessive wetting and allowing the wood to dry during construction will greatly reduce the potential for differential movement that may cause building serviceability and durability issues in a wood building. Dry lumber will be stamped with the letters S-DRY (for surfaced dry, meaning that the MC is 19 percent or lower when it is planed or surfaced to the standard lumber dimension) or KD (for kiln dry). Rough-cut lumber is generally dried and then planed.[7] For kiln-dried softwood framing lumber the MC is typically 12 percent.[8]

### Moisture Loading

Moisture loads are placed on a building and must be accounted for and balanced in the building envelope design. The character of these loads is a function of the climate, surroundings, and type of

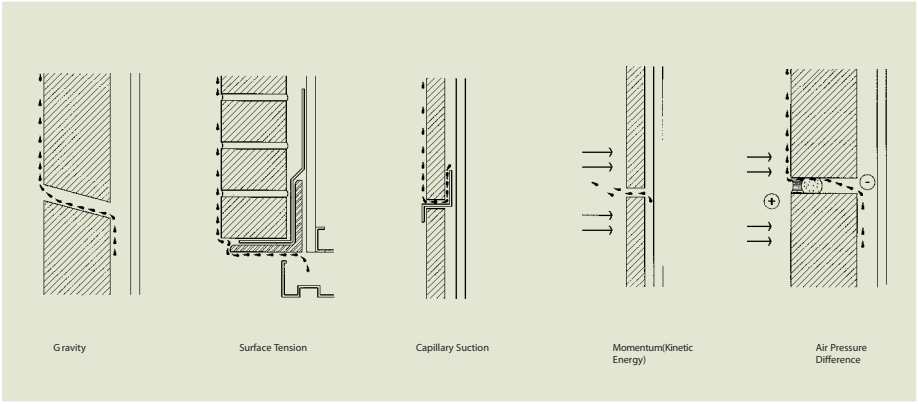
building. Managing moisture in structural wood products is essential in order to control swelling and shrinkage and to prevent problems associated with pests and decay.

## Sources of Water—and How to Control Them

Potential exterior sources of moisture include rain, wind-driven rain and snow, as well as irrigation systems and outdoor air bringing in water vapor. Any design and construction features that may trap moisture and slow down drying should be avoided. Interior moisture sources include building occupants and their activities; poor detailing of the building envelope which results in air leaks and plumbing failures; as well as poor ventilation and thermal design. Studies have found that a four-member family can generate ten gallons of water vapor per day.[9]

The primary objective when addressing moisture loads is to keep water from entering the building envelope in the first place, and to balance the relative humidity of the indoor air within the building itself. Moisture control by means of accepted design details is a function of protecting wood-frame buildings and envelope assemblies against decay, and can be achieved by following the "4 Ds."

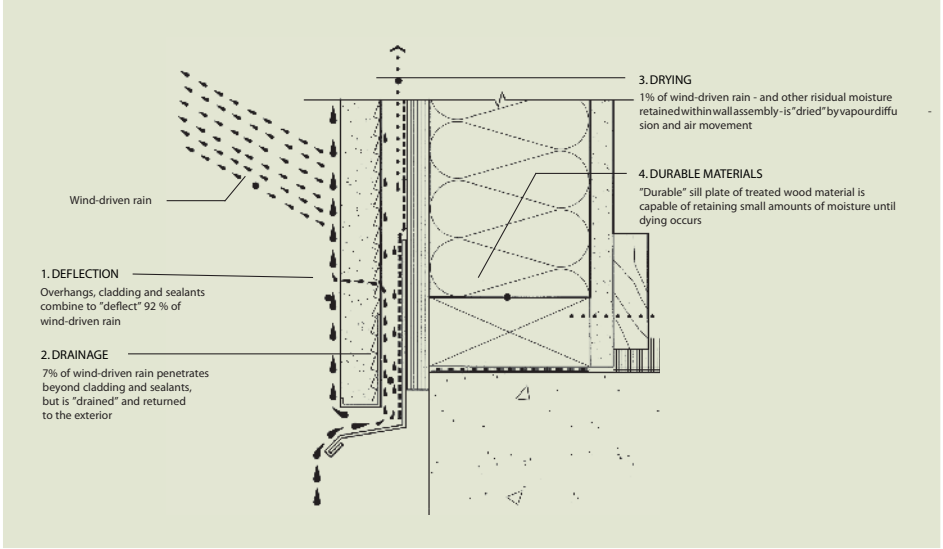
- Deflection: Rain deflection is critical to preventing rainwater from penetrating a wall and roof skin into the building envelope. Pitched roofs, overhangs and flashings should be used to deflect water away from the structure. To minimize the effects of wind-driven rain, architects should design to accommodate diagonal rainfall, and consider rainscreen walls where the moisture load is high.




Development of strategies for rain penetration control is the first priority in designing for durability.
Photo credit: Canadian Wood Council and Canada Wood

- Drainage: For any water that penetrates the cladding, roof shingles, or other building envelope surfaces, a well-designed drainage path, such as the drainage cavity integrated in rainscreen walls and other drainable building envelope assemblies, will allow water in the cavity to flow along a water-resistant plane and then exit the building envelope.

- Drying: Drying is the mechanism by which building envelope assemblies remove accumulated moisture by venting (air movement) and vapor diffusion. If, due to construction or maintenance errors, water penetrates the water-resistant membrane, the wood sheathing, studs, roof truss and other wood elements in the building envelopes can get wet. These elements must be allowed to dry. In properly designed building envelope assemblies, water will evaporate and the resulting vapor will go through the assembly's outer layers, providing vapor permeability has been designed into the building envelope assemblies.




Drainage, drying, and durable materials are principles that deal with the management of water. Photo credit: Canadian Wood Council and Canada Wood

Exterior wall assemblies must be designed to allow sufficient drying to either the exterior or the interior, and the permeability of cladding, moisture barrier, vapor barrier and interior finish materials will greatly affect the wall's overall drying potential. Drainage cavities may also dry the cladding by back venting. The effectiveness of moisture and vapour barrier materials will determine how well the sheathing and framing will dry. Experts caution

Wood should be stored and wrapped properly on a construction site. Photo credit: KK Law

A roof that shelters the wood ensures long-term durability by deflecting precipitation. Branson Convention Center, Branson, MO. Architect: tvsdesign Atlanta, GA. Photo credit: Brian Gassel.

that the drying ability of the barriers should not be relied on to manage moisture since only minimal amounts of water can be given off through drying. The bulk of the moisture protection in a wall stems from deflection and drainage.

- Durability: According to the Forest Products Laboratory based in Madison, Wisconsin, designers should not discount the value of preservative-treated wood or naturally decay-resistant wood for cladding, shingles, sill plates and exposed timbers or glulam beams. Wood, whether it is preservative-treated or not, always offers advantages. "Wood is not only our most valuable renewable resource, it is also prized as a versatile structural material. Its use in construction affects the environment in ways that are not always obvious, such as reducing the effects of climate change by storing carbon," says Carol Clausen, Supervisory Research Microbiologist at the US Forest Service's Forest Products Laboratory.

## Fungi Control

Decay of wood doesn't happen mysteriously or without cause. Wood that is recognizably rotten is the product of a sequence of events with the participation of a succession of microorganisms operating under certain conditions. Understanding the conditions under which wood used in buildings breaks down is a first step in interrupting the process of decay and preventing wood deterioration.

Fungi can be a source of wood deterioration. Not all fungi weaken wood: for example, mold will merely stain it or produce airborne spores that exacerbate certain respiratory conditions. Staining fungi give wood a "blue stain" that goes deep into the interior of the tree and typically occurs before logs are sawn into lumber. According to the Forest Products Laboratory, unlike decay fungi, staining fungi and mold fungi feed off the wood's free water and the sugars but don't impair the strength of the wood.[10] However, if the wood remains wet for too long a period of time, it can be eaten by the decay fungi.

Molds, too, may be a cause for concern. Mold spores are everywhere, and can grow and thrive where there is moisture, including humid air.

Notorious for their contribution to poor air quality, molds can grow on many surfaces, wood included, and signal a deficiency in a building's moisture management program.

The MC of wood is the deciding factor in the growth of fungi. Wood with an MC of 19 percent or less is sufficiently low enough to virtually eliminate the chances of mold growth on wood products. The risk of mold increases with higher moisture content—greater than 30 percent—and relative humidity, particularly when these conditions are sustained for extended times. Humidity levels greater than 80 percent are a cause for concern—even though mold growth can be slow initially, higher humidity levels will accelerate growth. Most fungi grow fastest in the 60-80°F (15-25°C) range; at freezing temperatures they either do not grow, or grow slowly.[11]

This article continues on www.hanleywooduniversity.com. Go online to read the rest of the article and complete the corresponding quiz for credit.

PHOTO: LINCOLN BARBOUR

# AIAVOICES

## THE COLLABORATOR | WORKING THROUGH TRANSITION

*Rico Quirindongo, AIA, is a principal at DKA Architecture and, since September, president of AIA Seattle. For the last 17 years, he has combined design with social justice through his practice and his involvement with the AIA Diversity Roundtable and the Northwest Chapter of the National Organization of Minority Architects, of which he is a founding member. Architecture is undergoing a generational shift, he says, which creates an opportunity to expand its definition. "With 40 percent of architects retiring in the next 10 years," Quirindongo notes, "we need to be thoughtful about what the future holds for the industry and for our clients."*

**AIA SEATTLE HAS DONE A VERY GOOD JOB OF MAKING THE MOST** of its resources. Our city is a saturated design community where the level of geekhood is huge. Our intellectual capital values collaboration and pushes high-performance design—and I think we share those ideals with other AIA components. We're working to make our Public Policy Board accessible to a larger group, and to concretize the relationship between design leaders and policymakers so they see our members as resources. This makes architects more impactful on important issues surrounding places in Seattle like the waterfront, Yesler Terrace, and South Lake Union.

Design in Public [DiP], a new not-for-profit, was created by AIA Seattle to educate the public about what we do, to position architects, and to celebrate design. DiP will elevate discussions by collecting information and creating new datasets. We can then provide that research as a resource to the public and the design community. Our industry has very much been in transition since the economic downturn, which made both clients and architects a little threadbare and wary. It's a good time, though, to broaden the definition of what it means to be an architect. We need to create diverse workplaces desirable to a generation of architecture students who have gone off to make higher salaries working for contractors or as 3D technicians. Let's tap into the reasons they went to architecture school in the first place.

The AIA's Citizen Architect program has become a mainstream conversation as the downturn focused our attention on public projects and engaging the civic realm—and I think there's a desire among architects to remain vigilant about investing in change, rather than just changing the way we talk about what we already do. This gets to the AIA's Repositioning effort as well, which means remaining earnest about our intentions and turning over every stone when looking at how the AIA can be a community.

This time of great challenge is also a time of great opportunity. I hope we step up as an industry. It's hard work and it's certainly more than we get paid for, but as designers and problem solvers we have the skills and the desire to make that positive impact in communities such as Seattle. *—As told to Isla McKetta*

**B101™–2007 SP**

Standard Form of Agreement Between Owner and Architect,
for use on a Sustainable Project

# Sustainable design now comes with an added layer of protection.

New Sustainable Projects Documents let you design sustainably while helping shield your business from risk.

**The Industry Standard is now the green standard.** Introducing AIA Contract Documents' all-new Sustainable Projects (SP) Documents, a coordinated set of documents and contracts for use on traditional A201 family design-bid-build projects. The new sustainability-focused contract documents help mitigate your professional risks by addressing the unique issues specific to green projects. AIA Contract Documents continue to be easy-to-use, widely accepted, and fair and balanced for all parties involved.

**Sustainable Projects Documents includes specialized documents for architects:**

- ***B101™-2007,*** *SP Standard Form of Agreement Between Owner and Architect,*
- ***B214™-2012,*** *SP Standard Form of Architect's Services: LEED Certification,*
- ***C401™-2007,*** *SP Standard Form of Agreement Between Architect and Consultant.*

Available with AIA Contract Documents software and on AIA Documents-on-Demand®.

**Learn more and view sample documents at aia.org/architectsp or call 800-242-3837.**

AIA Contract Documents®
THE INDUSTRY STANDARD.

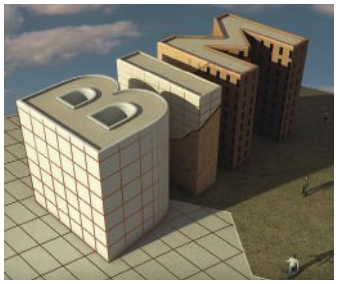
# AIANOW

ACROSS THE INSTITUTE

*Compiled by William Richards*

**2 Domo Arigato**
Rob|Arch2012
Dec. 14–18

**5 Vanishing Vanguard**
Chicago
All month



**4 Doubleheader**
Washington, D.C.
Dec. 3–7

**3 Live/Work**
AIA Cincinnati
Dec. 6


**1 Giant Jernigan**
Los Angeles
Dec. 5

**1** ***Giant Jernigan.*** How many of us can claim they've spent half of their career in any one place? Robert Jernigan, AIA, can—having piloted Gensler's Los Angeles office since 1998. Under his watch, the L.A. office has become the fastest growing in the firm's sizable empire, and this year ranked first on the *Los Angeles Business Journal*'s list of largest architectural firms and largest commercial design firms. On Dec. 5, Jernigan will give an overview of his shop and what's made it a success in his lecture "Explorations within a Global Practice" at L.A.'s SCI-Arc.

↗ Learn more at *sciarc.edu.*

**2** ***Domo Arigato.*** The Association for Robots in Architecture may be based at the Vienna University of Technology, but its big mechanical arms extend to 16 partner firms and universities across Asia, Europe, and North America. Its goal? To make industrial robots accessible for the creative industry, artists, designers, and architects. Find out more about applied research in this growing field at Rob|Arch2012 workshops, which run from Dec. 14–16 concurrently in Vienna, Graz, Stuttgart, Zurich, and Rotterdam, and at a follow-up conference from Dec. 17–18 in Vienna.

↗ Learn more at *robarch2012.org.*

**3. Live/Work.** Artists' communities—live/work havens for fellowship and production—have a rich tradition that includes guilds, colonies, and communes. Dozens of them appeared in the late-19th and early-20th centuries in places such as Peterborough, N.H.; Saugatuck, Mich.; and Saratoga Springs, N.Y.—occupying grand houses, sprawling farms, and lakeside estates. It has been a decidedly rural movement with few contemporary startups, but Cincinnati may change that. This month, AIA Cincinnati and the Over-the-Rhine Brewery District Community Urban Redevelopment Corp. is accepting entries for the LIVE•MAKE Industrial Arts Center Cincinnati design competition, which will add more than 47,000 square feet of residences, studios, and workshops to the Queen City. Registration closes Dec. 6, and the winner will be announced on Jan. 26.

↗ Learn more at *acsa-arch.org.*

**4** ***Doubleheader.*** Can high-performance structures and profitability exist in the same sentence? They will have to if sustainability is going to thrive as a business strategy as well as an environmental mandate. From Dec. 3 to 7, the Washington Convention Center in Washington, D.C., will host two conferences that aim to advance sustainability to those ends. Join AEC Science & Technology for Ecobuild America, sponsored by the National Institute of Building Sciences, as well as the 2012 National BIM Conference.

↗ Learn more at *aececobuild.com.*

**5** ***Vanishing Vanguard.*** Since 1992, British photographer Richard Pare has captured more than 15,000 images of buildings designed and constructed within the former Soviet Union between 1922 and 1932. Long before modern architecture was co-opted by Corporate America or downtown civic boosters, these buildings fulfilled Modernism's original social mandate for communal living and the collective good. From Azerbaijan to Georgia to Russia, Pare covered thousands of miles to produce "The Lost Vanguard: Soviet Modernist Architecture, 1922–1932," which is on view in Chicago through Feb. 16, 2013, at the Graham Foundation for Advanced Studies in the Fine Arts.

↗ Learn more at *grahamfoundation.org.*

IMAGE 3: CINCINNATI HISTORY MUSEUM; IMAGE 4: RANDY LYHUS; IMAGE 5: RICHARD PARE, SHABOLOVKA RADIO TOWER, MOSCOW, RUSSIA. VLADIMIR SHUKHOV, 1922. PHOTOGRAPH COPYRIGHT RICHARD PARE 2007

**Sam Garcia, AIA**
Member Since 2009

# I AM AIA
# I AM AIA
# I AM AIA

**Jim Rains, AIA**
Member Since 1984

**Teagan Andres, Assoc. AIA**
Member Since 2008

## Elevate your career path. Renew your AIA membership for 2013.

As an AIA member, you have access to professional resources that provide the tools you need to enhance and sustain your practice at every stage of your career. Whether it's government advocacy to back your practice, continuing education programs to keep your skills and knowledge current, or the invaluable support of a professional network of almost 80,000 colleagues, AIA membership is an essential investment in your career.

**Win a Trip to the Convention***
Renew your AIA membership before December 31, 2012, and be entered into a drawing to win a trip to the 2013 AIA National Convention, including registration, airfare, and hotel. Two trips will be awarded.

**Free Continuing Education**
Renew by December 31, and you will also receive one free continuing education course from AIA Virtual Convention. With more than 30 online courses, you can earn Learning Units on your schedule.

**www.aia.org/renew**

THE AMERICAN INSTITUTE OF ARCHITECTS

* Review contest terms and conditions at www.aia.org/renew.

# AIACOLLABORATION

SCALING UP

PHOTO: CHRIS LAKE. **LEFT TO RIGHT:** ERNEST WONG, SITE DESIGN GROUP; CHRISTY WEBBER, LANDSCAPES; MARK JOLICOEUR, AIA, PERKINS+WILL; CHRIS LAMBERT, CANNON DESIGN; SUSANNE SCHNELL, ARCHEWORKS; JOHN SYVERSTEN, FAIA, CANNON DESIGN; TOM KENNEDY, ARUP; ASHLEY MARCH, ASSOCIATE AIA, CANNON DESIGN.

## *Jumping social engagement's divides.*

**FOR SEVERAL YEARS NOW, JOHN SYVERTSEN, FAIA, HAS BEEN LEADING** efforts within his Chicago firm to renovate and update what he calls "The Department of Good," also known as his architecture firm's public interest and pro bono efforts.

"We need to reposition this work," says Syvertsen, a senior principal at Cannon Design (whose Chicago office was the separate firm OWP/P until 2009). "The cost becomes not so much a matter of how we pay for it, but how we maximize the ability to make an impact. The cost is effort and the pay is impact."

Syvertsen believes that socially engaged design shouldn't be treated as a feel-good between-assignments nicety, but should be thoroughly integrated into the practice of architecture. His attitude taps into the zeitgeist among architects and other designers who feel social impact is an essential part of the profession. As a board member at Archeworks, a 19-year-old multidisciplinary postgraduate education program in Chicago that emphasizes public-interest design, Syvertsen has spearheaded "New Practice and Civic Innovation," a series of seminars on developing a higher-level model of pro bono work.

"There's a feeling that you can't relegate this kind of work to a one-off or [see it as] ancillary to the core business," says Susanne Schnell, Archeworks's executive director. "There is a great desire among younger designers to make it part of their core business, and we want to respond to that."

Archeworks received a 2012 Graham Foundation grant that helps fund the discussions and will help it to develop its next step: a public forum about the concept. Schnell sees that as a crucial piece of the project, because exposing the concept of integrated, socially engaged design to the larger population—in particular, the sorts of community groups and institutions that could benefit from large-scale thinking about design interventions on their behalf—gets out the word that architecture firms and other design professionals can bring their expertise to tackle civic problems.

Let's say a community group approaches an architecture firm about activating a vacant lot. As a one-off or short-term project, Schnell says, a practice might design an appealing solution for that lot. But when a firm takes on the challenge of looking at the bigger picture of urban landfill and soliciting the help of people in other disciplines, the result might be more like a neighborhood-wide approach to redeploying numerous vacant lots as a new social resource—such as a series of gardens or parks—over the course of several phases, Schnell says.

The integrated approach is also timely, both because younger architects and other designers want it, and because the current economic climate makes it compelling. "Junior staff really have a huge appetite for socially engaged design," Schnell says. "They understand that they're in a business, and they want to understand how to balance the pragmatic needs of running a practice with the desire to make a sustainable difference with their work."

Syvertsen concurs, and furthermore says that firms can reap rewards from elevating pro bono work to a higher status within the firm's framework. The young architects who work on these projects, he says, get hands-on training in developing, managing, and budgeting a project. In a sense, he says, it amounts to a kind of mentoring. "And that has implications for your recruitment and retention," he says, "because there's an increasingly large number of people coming out of school who have the expectation that the firm will support this type of work."

That's especially important during economic recoveries like the current one, he says. "The need is greater when bottom lines are pinched," he says. "But from the firm's standpoint, it keeps workers working and engaged." —*Dennis Rodkin* AIA

# AIAFEATURE

RETURN TO FORM


PHOTOS: STEPHANIE MULLINS

**East Chattanooga.** East Chattanooga's Glass Street is defined by more empty commercial spaces than active ones. If the Glass House Collective has its way, though, that will all change soon.

## *Chattanooga's next chapter is at the intersection of design and economic renewal.*

**AN EAST CHATTANOOGA NEIGHBORHOOD PLAGUED WITH BLIGHT** and crime is setting its hopes of revitalization on two young visionaries and more than three dozen designers and architects who have helped plan the community's future.

Historic Glass Street had no written plan for development before architects visiting Chattanooga during AIA Tennessee's annual convention in late July, titled "Boom Town," participated in the Urban Design Workshop hosted by Glass House Collective.

The collective, led by program director Katherine Currin and communications and outreach coordinator Teal Thibaud, invited AIA members to collaborate with community members to develop a set of ideas that will lead to a larger plan and vision for the future of Glass Street.

Currently, there are more empty buildings on Glass Street than occupied ones, with only a few scattered night clubs, hair salons, and convenience stores filling in storefronts. But residents remember when the Glass Street commercial area was like a small city, with its own grocery store, dress shops, motorcycle shop, post office, doctor's office, and dentist.

They want to bring that vitality back to the community, with businesses—preferably operated by Glass Street residents—filling the empty spaces and giving the more than 10,000 motorists who drive by every day, en route to Enterprise South Industrial Park, a reason to stop.

During the workshop, architects produced near- and long-term plans, with hopes of attracting more businesses and turning vacant lots into parks. Residents are now using those schemes to create a Glass Street master plan for development.

Scheduled for completion by the end of this year, the plan is an important part of the community's revitalization efforts. Glass House Collective has received a $300,000 grant from ArtPlace, a Chicago nonprofit that draws together 11 foundations, eight federal agencies (including the National Endowment for the Arts and the U.S. Department of Housing and Urban Development [HUD]), and six national banks to award grants to local organizations for urban and rural placemaking.

To begin revitalization, Glass House Collective is emphasizing the community's vision for Glass Street by coordinating a series of

transformative creative projects, including bus shelters, benches, and bike racks. Residents have already held three of the 10 planned community meetings to exchange ideas and discuss ways to make Glass Street more marketable to businesses. Repopulating storefronts and restoring old buildings could be the catalyst for economic growth on Glass Street. In January 2013, Glass House Collective plans to start commissioning murals and small green-space improvements.

"We love Chattanooga for what it is, has been, and can become—and we're committed to giving it the attention it deserves," Thibaud says. "We believe a revitalized Glass Street can kickstart positive change in East Chattanooga, ultimately adding to the vibrancy of our city as a whole."

Richard Beeland, spokesperson for Chattanooga Mayor Ron Littlefield, believes the group is moving in the right direction by adding more "curb appeal" to Glass Street. "Developers come to areas that are attractive to them," he says, "and urban designers and architects are key to helping bring revitalization to inner-city communities."

"Glass Street is only one of Chattanooga's community revitalizations influenced by architects and designers," said Christian Rushing, a principal with Studio C.Rushing, an urban design consultancy in Chattanooga. "Main Street in Chattanooga—the place with busy coffee and sandwich shops, retail stores, and a grocery store—was as empty as Glass Street until designers started working in the community."

Rushing points out that it was a student from Chattanooga's Urban Design Studio who first mentioned the idea of the Tennessee Aquarium, designed by Peter Chermayeff, FAIA. It was also designers who came up with the plans for Miller Plaza and the southside community revitalization that transformed a community known for crime and dilapidated houses into a place where professionals and artists want to live.

The architects and designers also displayed their talent in the yearlong Urban Design Challenge. River City Co., the local nonprofit behind much of the city's redevelopment since 1986 (including the $12.3 million riverwalk and $45 million aquarium), asked local architects to create plans to revive some of downtown's bleakest areas. More than 500 people attended a meeting in August where the architects were rewarded and their ideas were presented.

Challenge winner Elemi Architects created a proposal that prompted the Tennessee Department of Transportation to incorporate ideas presented by the architects into its own plan for a portion

of Highway 27 along 4th Street Corridor. Its new plan incorporates the design ideas of enhanced pedestrian connections, expanded public transportation opportunities along 4th Street Corridor, and increased development infill. Other plans showed how to transform a vacant block in downtown Chattanooga into a mixed-use multilevel destination center, and another plan included drawings showing how a historically significant block of market square could include a war memorial park, housing, and retail.

"People may think of architects as people who are trained only to design individual buildings," says AIA Chattanooga Executive Director Lisa Williams, "but part of their education deals with the history of city building and urban planning, and what elements make a city prosperous and successful."

Chattanooga architect Andrew Smith, AIA, said there is still more work to do. Inner city communities such as Alton Park, Piney Woods, and East Lake are still without design assistance, but that may change in the next decade as other Chattanooga neighborhoods serve as precedents for successful, design-driven public–private partnerships. "Residents in those communities see the development in downtown Chattanooga," says Smith of initiatives like Glass Street's revitalization, "and they have hope of living in an area where their children feel safe and can prosper." *—By Yolanda Putman* AIA


# AIAPERSPECTIVE

## THE LANGUAGE OF ABUNDANCE

PHOTO: WILLIAM STEWART

**ARCHITECTURE IS A PROFESSION THAT EVEN IN THE BEST OF TIMES** is challenged. Who hasn't struggled to get out of bed in the morning, knowing that the day will have more than its usual share of hard knocks, making you wonder why in the world you chose architecture as a career? I've been there. But if there's one thing I've seen confirmed this past year, it's how lucky we are. At a time when political, social, and economic capital is so low in much of the rest of society, ours is a profession of abundance: We speak the language and serve the forces for healing, for growing, for optimism, for caring, for beauty, and for joy.

I admit that's not the way that architecture is typically talked about, either by the public, or, even more disturbingly, by us. The stories about our profession in today's mass media tend to land in one of two camps: either architecture as sculpture, one-off mega projects; or the housing bubble and the collapse of the construction industry. The first has little to do with the way most of the public lives their lives; the latter is, well, just depressing. It speaks the language of poverty, and led at least one writer to describe architecture as the fifth worst career to pursue in college.

Interestingly, one of the early findings of the AIA's current Repositioning research is that the public gives architects fairly high marks. They may not be sure what exactly we do, but they like us. Think of it this way: In our interactions with the public, we start off with something money can't buy—respect and goodwill. The challenge is to translate the soft outline of warm and fuzzy into sharp knowledge that communicates the true value of what we can do, and are in fact doing every day.

When I ran for this office, I said I would focus on telling our story—a story about how architects and architecture touch every aspect of our lives. How our profession changes lives was the message I wanted this year's National Convention to communicate. The words needed to be heard as much by those in attendance as those outside the convention hall. At a time when so much news is negative, didn't we need to stop for a moment to reflect on the creativity, the caring, the hard work, the *abundance* of a profession that makes the divine human and the human divine? For me, this was most clearly reflected on the third and closing day of the Convention, when the "architects of healing" were honored—those extraordinary men and women who found the promise of new life in the dust of 9/11.

Next year, under the leadership of President Mickey Jacob, we will see the fruits of the research gathered by the AIA's Repositioning initiative that was launched early last spring—the most expansive and comprehensive effort undertaken by the AIA. Having heard from many of you this past year about what today's and tomorrow's AIA should look like, and how the Institute can best serve the members, President Jacob, his leadership team, and the national staff will roll out a plan carefully designed to give us the resources to tell our story in the 21st century—new ways to practice, with the demographics transforming the face of our profession and the role of leadership in shaping the narrative of how architecture shapes quality environments. It's a story that needs to be heard, if what we have to offer the public and our clients is to be valued, as it should be.

In the meantime, as this year draws to a close, I am thankful for the gift of serving a profession whose abundance has transformed so many lives, including my own. This past year is now a treasured part of my own story. Thank you. AIA

↗ Join our conversation at *aia.org/repositioning*.

*Jeff Potter, FAIA, 2012 President*

# Want to Build Your Business by Building Your Team?

## Get to Class...and Get Your Credits!


www.bluebookuniversity.com

Introducing ***BlueBookUniversity.com*** – the construction industry's newest source for online continuing education. Now you and your team have direct access to one complete, comprehensive online education solution.

*BlueBookUniversity.com* offers an aggregated selection of CE courses, programs and publications targeted to the commercial construction industry. Powered by three of the nation's leading online education providers, *BlueBookUniversity.com* provides the specific course content necessary to meet your license requirements and develop your team.

*The Blue Book University Campus Book Store* provides a broad inventory of reference manuals, code books, DVDs and downloadable content to help keep you up-to-date and informed of industry best practices. Plus, *Blue Book Premier Network Members* are eligible for discounts on all education courses and book store purchases!

Want to build your business? Develop your team *and do it with education.*

**Get to class and visit the new *BlueBookUniversity.com* today.**

THE BLUE BOOK Building & Construction NETWORK®

Building your business through *Education.* *www.thebluebook.com*

Circle no. 262 or http://architect.hotims.com

# REFLECTIVE SERIES

## *IMAGINE THE POSSIBILITIES*


E. DILLON & COMPANY™

AN AMERICAN OWNED COMPANY SINCE 1868

**800-234-8970**

**www.edillon.com**

E. Dillon & Company is a leading manufacturer of Architectural Concrete Masonry including our "Top-Of-The-Line" ***REFLECTIVE SERIES***.

- Unsurpassed Reflective Quality
- 24 Standard Colors
- Wide Variety Of Shapes And Sizes
- Sample Board Available Upon Request

Circle no. 499 or http://architect.hotims.com

# PRODUCTS

## CONCRETE LAMP

Weighing in at 12 kg (26 lbs.), **Unit-Berlin**'s hefty Concrete Lamp was originally handmade from cast-in-place concrete for a Berlin restaurant. A limited number of lamps are now available to the public. The design celebrates the relationship between concrete and reinforcing steel: A steel ring supports the 25cm-diameter shell in a tabletop fixture, while a customized rebar supports the pendant version. The lamp can be fixed at three different angles in the pendant. *concrete-lamp.com* Circle 100

FOR MANUFACTURER INFORMATION ABOUT ANY OF THE PRODUCTS SHOWN HERE, GO TO ARCHITECT.HOTIMS.COM

DESIGN CATALOG

# The Brickhaus Movement

THE MORE WIRED OUR SOCIETY BECOMES, THE MORE WE SEEM TO CHERISH THE OPPOSITE: HANDMADE, LOCALLY SOURCED ITEMS TO FILL OUR HOMES AND CLAD OUR BUILDINGS.

Text by **Brian Libby**

Hand-molded brick (Georgetown shown) by Old Carolina Brick Co.

**BRICKMAKERS ONCE DOTTED** our nation, forming balls of clay by hand into thousands of sand-coated units each day, using little more than wooden molds and sheer force. By the 20th century, many manufacturers had switched to automated, extruded brickmaking techniques in which a die machine presses and wire-cuts long strands of brick into uniform units.

Fortunately, the increasing demand for unique, artisanal goods—coupled with a long list of historic buildings overdue for renovations—has kept traditional brickmaking alive. Hand-formed bricks are distinct in texture, color, and shape, says Art Burkhart, vice president of sales and marketing for Old Carolina Brick Co. in Salisbury, N.C. "Handmade bricks are like snowflakes: Each one is different."

Compared to extruded brick, hand-molded bricks have slightly rounded corners, though designers desiring a more rectilinear geometry can consider pressed brick, says Eric Barnhart, a local markets sales manager at Redland Brick in Williamsport, Md. "We put an extra man on our line to press it into the mold a little tighter, so it doesn't allow for any air space," he says. Popular in older church structures, pressed bricks are slightly more textured than extruded brick.

Water-struck brick (see "Breaking the Mold," at right) is prevalent in the Northeast, says Paul Lachance, vice president for sales at Morin Brick in Auburn, Maine. "Virtually every campus in New England has it," he says. "[It] has a non-uniformity, but it isn't out of control ... and they reflect color and light in a little different way."

At the St. Paul's School Lindsay Center for Mathematics and Science in Concord, N.H., Kallmann McKinnell & Wood Architects used water-struck brick to tie in to the scale and materiality of the campus's 19th-century buildings, says principal Bruce Wood, AIA. "It has the appearance of handmade, but ... it's [also] very durable" and can stand up to New England's harsh winters.

Not surprisingly, handmade bricks require more time and labor to make than do extruded bricks. Old Carolina, the largest handmade brick manufacturer in the U.S., produces 10 to 12 million bricks each year. "Extruded brick plants will produce that many in a month," Burkhart says.

Unit for unit, the bricks cost 50 to 75 percent more than mass-produced bricks. But after accounting for their longer length—8 inches instead of $7\frac{5}{8}$—Barnhart estimates that a wall constructed of hand-molded bricks will cost "about 8 to 12 percent more than a mass-produced product."

Historically, brick sales have paralleled the overall construction market. "This most recent dip, since 2008 or 2009, has been unprecedented," Barnhart says. Redland used the downtime to improve its marketing efforts. "We weren't taking full advantage of this niche product," Barnhart says. The company created a website to feature its handmade brick exclusively, and sales have increased in the past two years. "Once people find handmade brick," he says, "they see the value."

## BREAKING THE MOLD

Shale and sand are the primary ingredients in a traditional brick. Due to natural variations in soil types, each region produces brick with a signature look, from brownish-gray in the Southeast to red in the Northeast. Manufacturers also use ground coal and manganese to enhance brick colors.

Traditional hand-molded brickmaking starts with grinding shale—not clay—into a powder in a pug mill while cold water is added. Workers throw and knead the doughlike mixture, and place it into wood molds. "You get fingerprints and folds like when your mom made a pie," Old Carolina Brick Co.'s Art Burkhart says. After 24 hours of drying, the molds and brick are fired in a kiln at roughly 2,000 F for another 24 hours.

Handmade bricks typically rely on a sand coating to aid their release from the molds. Water-struck brick, however, uses water pressure, which creates a slightly different color and texture. In lieu of a sand layer, the ceramic material becomes the outer surface of the brick, Morin Brick's Paul Lachance says. The color stems from the amount of iron oxide in the clay—which provides the red color—or from the firing process.

# Performance Architecture

With a tradition of craftsmanship and innovation, Glen-Gery offers style and performance to those who design architecture destined to enrich our environment.

Our extensive line of facebrick, glazed brick, thin brick and paving brick includes a full range of colors, sizes, textures and shapes. Glen-Gery provides high quality data-rich BIM images, including wall assemblies, objects and profiles. We also offer Glen-Gery Landmark Stone and a complete selection of masonry products.

*Glen-Gery Brick…Appearing on the finest architecture.*

Glen-Gery Brick

An Oldcastle® Company

610.374.4011 • www.glengerybrick.com

Circle no. 517 or http://architect.hotims.com

Text by **Lindsey M. Roberts**

## PALLAS

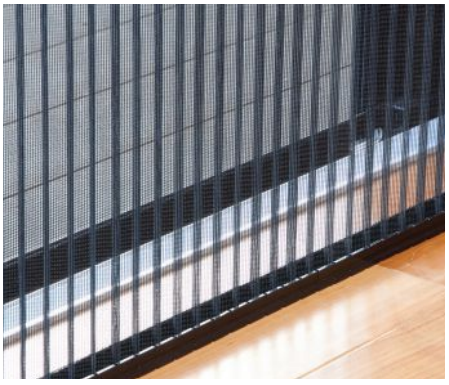
Danish company **Light Years** reinterpreted a traditional chandelier with lasercut sheet metal to create a modern pendant. The 30"-tall-by-29.5"-wide fixture comes standard in a black or white high-gloss lacquer finish, and uses a 200W E27 lamp. *lightyears.dk* Circle 101

## BRECCE COLLECTION

Giving new life—and light—to materials that have seen better days is what Italian designer **Marco Stefanelli** set out to do with his log lamps. The illuminated wood scraps, which are fitted with LEDs embedded in resin, can do double duty as luminescent stools. *marcostefanelli.it* Circle 102

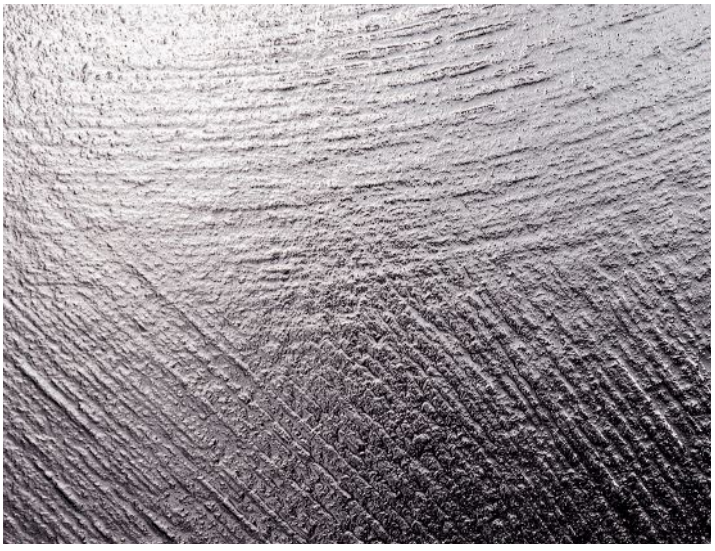
## PLEATED SCREEN SYSTEM

Designed for large building fenestrations, **LaCantina Doors**' screens can span 15' in the single size version, or 29'6" in the double. The screens, which are suitable for use with other LaCantina products, come integrated with the doors, or as retrofit screens for aftermarket installations. www.*lacantinadoors.com* Circle 103



## MOGENS KOCH BOOKCASE SYSTEM

Store media in this modular system of solid-oak units, designed by Danish architect Mogens Koch in 1928 and copied by others ever since. The basic bookcase, now sold by **Carl Hansen & Søn**, can orient vertically or horizontally, and has six openings. *carlhansen.com* Circle 104



## ESSENTIALS SERIES

Handmade cast glass by **Nathan Allan Glass Studio** mimics the look and feel of natural materials in six textures (Sweep shown). Three thicknesses—1/4", 3/8", and 1/2"—come in ready-to-install panels. *nathanallan.com* Circle 105

generation Kingspan 2012

# STUDENT ARCHITECTURAL DESIGN COMPETITION

## Award Winners




### Grand Prize Juried Winner

**KINGSPAN FUTURE – A SUSTAINABLE PROTOTYPE, An industrial zone**

Utkarsh Kumar
The Design School – Arizona State University

This design demonstrates a skin-load-dominated (SLD) building form where the building envelope (encompassing wall systems, doors, and glazing) supports daylighting, natural ventilation and the use of on-site or natural renewable energy strategies.

A focal point is the solar atrium, covered with a sloping sunshade roof with integrated PV panels. This provides a stack effect while visually connecting the office, R&D and event center zones.

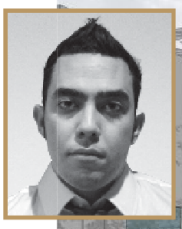
This holistic design adopts an “Envelope First” strategy, thoughtfully incorporating Kingspan’s insulated metal panels to maximize thermal efficiency, environmental sustainability and aesthetics.

Challenging traditional integrated plant-office designs, the entry’s use of innovative zoning provides exciting flow across all corporate functions: manufacturing, R&D, office and exhibition.

### Social Media Winner

**KINGSPAN ‘PROFILE Mixed-Use’ Downtown Phoenix, AZ**

L. Michael Lu
The Design School – Arizona State University





The online vote was certainly influenced by this entry’s compelling modern design aesthetic that incorporated sustainable design strategies. Of the notable environmental design aspects, the sustainable site selection, building orientation and renewable materials usage highlight an integrated design strategy. Kingspan insulated metal panels were skillfully incorporated to maximize building performance and minimize environmental impact.

We want to thank all the entrants, judges, voters, and everyone who helped make Generation Kingspan 2012 a success. We will see you again next year!

Kingspan®

To see all of this year’s entries please visit:
www.GenerationKingspan.com/Entries

**www.KingspanPanels.us**

Circle no. 231 or http://architect.hotims.com

DETAIL

# Solar Sunscreen, Consolidated Forensic Laboratory

THE HIGH-PERFORMANCE FACILITY IN WASHINGTON, D.C., BY HOK USES A DYNAMIC FAÇADE TO DRAW IN SUNLIGHT WITHOUT THE HEAT.

Text by **Wanda Lau**

Architect HOK worked with associate architects Baker Cooper and H.L. Walker & Associates to design a high-performance facility that would visually distinguish itself from other sustainable commercial buildings in the District.

**IT'S THAT TIME OF YEAR,** when sunlight is in limited supply in the Northern hemisphere. The low angle of the sun beaming directly through office windows somehow becomes more tolerable in the winter. By summertime, however, the endearment quickly fades.

For employees in the 350,000-square-foot Consolidated Forensic Laboratory (CFL) in Washington, D.C., a six-story-tall, south facing, glass curtainwall façade would typically result in intense glare, unforgiving solar heat gain, and increased building cooling demand—counterproductive for its occupants as well as for a project that is targeting LEED Gold certification.

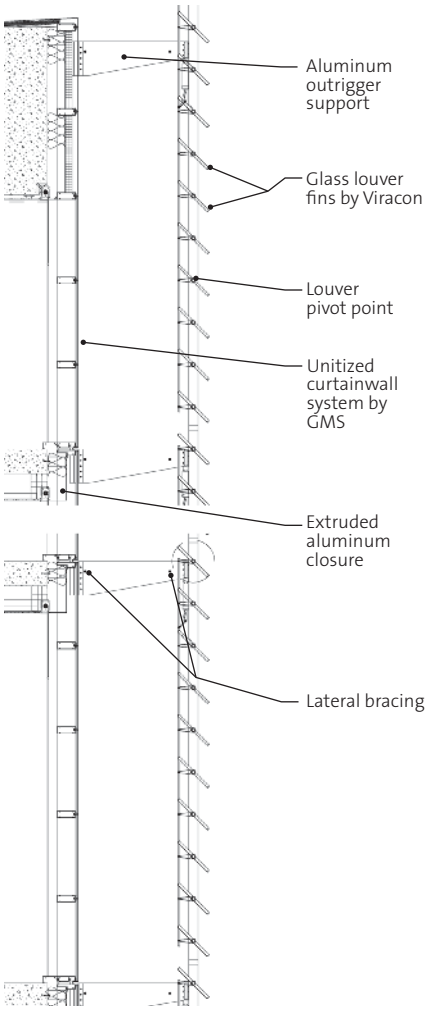
The facility hosts three governmental agencies—the D.C. Metropolitan Police Department, the Office of the Chief Medical Examiner, and the Department of Health. Laboratories—spaces that prefer indirect sunlight due to light-sensitive operations—occupy the north, east, and west elevations, while administrative areas are organized along the south side of the building.

The local HOK office strategized ways to mitigate the solar heat gain to help ensure a high-performance building and to create a distinctive aesthetic from other sustainable commercial buildings in the District, says project manager and senior associate Timothy O'Connell, AIA. "This building is all about celebrating sustainability as part of the design parti," he says.

After researching different energy-efficient building skin systems for the south elevation, the firm selected an exterior automated solar sunscreen that would fulfill CFL's aesthetic, programmatic, and sustainability goals. Covering three-quarters of the south wall, the 24,000-square-foot solar sunscreen comprises glass louvers that adjust automatically to control direct sunlight at the building perimeter while allowing indirect light to penetrate 45 feet inside the open office area.

Manufactured by British company Colt International, the louver operating system encompasses three 90-foot-square bays, each with 648 18-inch-by-64-inch nominal glass fins and 108 half-sized end fins. The $^{11}/_{16}$-inch-thick laminated glass, manufactured by Viracon, has a 50-percent frit pattern to cut the amount of sunlight

**Section**




entering the building by half when the louvers are fully closed.

Structurally, the louvers are supported by vertical mullions spaced 64 inches o.c., which in turn are supported by aluminum outriggers built into the unitized curtainwall. In the vertical direction, the outriggers align with the floor plates.

The louvers operate on low-voltage screw actuators that require 1.7 amps to operate, or a total of 30.6 amps per floor. Every hour, the fins rotate based on a computer-driven system that calculates the sun's angle using the building's location, time of day, and time of year. A roof-mounted weather station equipped with a barometer, thermometer, windspeed monitor, and daylight sensor also informs the fins' position, telling "the system if it is sunny or cloudy outside," O'Connell says.

On cloudy days, at night, and during times of heavy wind, the louvers are completely open, or horizontal. During times of snow or sleet, the louvers close to prevent ice buildup. The sunscreen's controls tie into the building management system and can be manually overridden.

Unlike a double-skin façade, which the team also considered, the solar sunscreen allows the 4-foot airspace between it and the curtainwall to vent. Otherwise, O'Donnell says, "the heat builds up in this climate, and it's ineffective [at reducing heat gain]."

The unitized curtainwall façade was fabricated by Gardner Metal Systems (GMS) in Acworth, Ga., while components for Colt's louver operating system came from Germany and England. "Everything met on site," O'Connell says. In roughly five months, exterior wall contractor TSI Architectural Metals, in Upper Marlboro, Md., erected the curtainwall, installed the sunscreen's vertical supports with actuators and brackets for the glass fins, and fitted the glass fins individually on site.

Along with helping CFL reduce energy usage by 30 percent, as compared to a baseline laboratory building, the mechanics of the automated louver system also appeal to the building's users, O'Connell says. "This is a signature agency that needs to recruit and retain people. Scientists appreciate something as technical as this."

## CORED BRICKS

To reduce the weight and amount of material used in its bricks, **CalStar Products** now offers its modular, utility, and large-format facing masonry units with cores. The lighter bricks, which also ease handling, contain 37% recycled content. *calstarproducts.com* Circle 106

## DALA

In its commitment to design furniture for the outdoors, German company **Dedon** also strives to protect the environment with measures such as a zero-waste supply stream. The lounge chair by industrial designer Stephen Burks uses a fiber made from recycled food-and-drink packaging and recyclable polyethylene. In blue, red, or green. *dedon.de* Circle 107

## BIOPRISM SOLID SURFACE SHEET ROCK

**InPro Corp.** combines acrylic, polyester, and bio-based resins to form a surface suitable for bathrooms, corridors, food service areas, reception areas, and clean rooms. The sheet, available in 28 colors, comes in widths of 30", 36", and 48", and in lengths up to 144". *inprocorp.com* Circle 108

MIND & MATTER

# Innovation via Reinvention

For a textile installation in the Mandarin Oriental Hotel in Tokyo, Nuno Corp. merged cotton with hand-torched stainless steel mesh.

**THE WORLD OF DESIGN** flourishes on technology transfer. Innovative breakthroughs in design occur when different disciplines borrow materials, techniques, and applications from others. This "sideways" approach enables architects to find new sources of inspiration by looking beyond their standard material palettes.

Apparel design has been of particular interest in architecture, which has a long tradition in textiles. As the Torino, Italy–based design firm **Yet/Matilde** demonstrates, furniture design can also benefit from the realm of textiles. Yet/Matilde's **Continuous Function** furniture line explores the latent, multidimensional possibilities of structural fabrics.

The project features a novel use of jute fiber, a vegetable material that is the world's second most utilized fiber after cotton. The designers drape multiple layers of the jute fiber fabric over rectilinear molds and add epoxy resin to create a rigid frame. Additional layers of fabric in the framework provide further support and storage.

The transformation of a soft material from the fashion world into a rigid substance for the interiors realm demonstrates the potential of technology transfer. Although the indivisible marriage of epoxy resin and natural fiber results in an environmentally questionable hybrid, the use of biobased resins could result in a biocompatible and recyclable product.

Textile designer Reiko Sudo frequently turns to a variety of industries for ideas. As the cofounder and artistic director of Tokyo-based **Nuno Corp.**, Sudo keeps tabs on nascent material developments in arenas such as automotive and product design.

In one textile series, Sudo employed the auto industry's sputter plating process, which is used to finish door handles and trim in chrome. Although the method was never intended for use on large, flexible surfaces, Nuno modified the application to coat polyester and other textiles with different metals.

"We developed a large wall hanging called **Deep Roots** out of stainless steel and cotton for Mandarin Oriental [Hotel in] Tokyo," Sudo told me for my book *Matter in the Floating World* (New York: Princeton Architectural Press, 2011). "The back is red and the front is gray. We made a stainless-steel mesh that we then burned by hand using a gas torch. The fiber was originally developed to strengthen radial tires, yet the knitted fabric structure makes it look soft."

In **SOL Grotto**, a pavilion in UC Berkeley Botanical Garden, in Oakland, Calif., designer **Rael San Fratello** arrayed 1,368 glass tubes to project from both sides of the small shelter. The tubes are just a tiny fraction of the cylinders discarded by renewable power company Solyndra when it declared bankruptcy in 2011. By salvaging the glassware, the architects made a significant visual statement on a minimal budget, while paying homage to the Solyndra legacy.

The technology transfer that these firms carried out required an investment in research and development, but the payback has been remarkable. One industry's waste—or one discipline's convention—can be transformed into another's treasure.

24

In millions, the number of cylindrical glass tubes discarded by Solyndra after it declared bankruptcy in 2011.

SOURCE: RAEL SAN FRATELLO

Text by **Blaine Brownell**
Illustration by **Peter Arkle**

MORE PRODUCTS AT ARCHITECTMAGAZINE.COM

SUE MCNAB

MUSÉO®

# Dare To Be Square



## A decorative square trim collection for the Muséo line

The frame puts the finishing touches on a work of art, just like the trim on a door. Corbin Russwin offers this square trim collection with all Muséo decorative levers and 13 architectural finishes.

For more information, scan the tag or visit www.corbinrusswinmuseo.com.

Corbin Russwin®
ASSA ABLOY

ASSA ABLOY, the global leader in door opening solutions

# CENTER



Welcome to architecture school, Moscow style, where the bar is not only part of the institution, but it helps fund it. The Strelka Institute, founded with de facto dean Rem Koolhaas, has attracted plenty of attention for its swanky soirees. But, as Ian Volner contends on page 74, the real question is whether the school can achieve its weightier mission: changing Moscow's urban landscape.

The Islamic Art Wing, its roof rising in the Cour Visconti, which dates to the 18th century, is the final phase of former President François Mitterrand's Grand Louvre project to expand the museum at the historic site.

CRITIQUE

# WAVE OF CONTRAST

MARIO BELLINI AND RUDY RICCIOTTI'S NEW ISLAMIC ART WING, WITH ITS UNDULATING ROOF, BRINGS THE ERA OF DIGITAL DESIGN TO THE SACRED CONFINES OF THE LOUVRE. BUT UNLIKE I.M. PEI'S PYRAMID, THE ADDITION HAS BEEN LARGELY EMBRACED BY PARISIANS.

Text by **Joseph Giovannini**

**ALTERING THE LOUVRE** architecturally is tantamount to operating on the collective French psyche. The former palace embodies much of the French history that every schoolchild learns by rote: Changing it means tampering with inculcated cultural memory. The monumental glass pyramid that I.M. Pei famously built in 1989 in the Cour d'Honneur—among the first changes that former President François Mitterrand initiated for the "Grand Louvre" museum expansion project—polarized the French, eliciting *cris de coeur* on both sides of the controversy. Some still don't accept it.

Twenty-three years later, the Louvre has just opened the last major alteration in Mitterrand's "Grand Louvre" plan: the new wing of the Department of Islamic Art. Winning an international competition in 2005, Italian architect Mario Bellini and French architect Rudy Ricciotti designed a glass-walled pavilion with an undulating roof of metal mesh centered in the 18th-century Cour Visconti. The courtyard, a hallowed precinct of serene classical façades, was the Louvre's last available building site.

Since the September opening of the $130 million addition, controversy has been conspicuous by its absence. The new structure has been accepted and even praised in the general press, without any notable resistance.

In his inaugural comments, the director of the Louvre, Henri Loyrette, noted that the

COURTESY THE LOUVRE


## Todd Evans

LEED AP BD+C

Project Architect

Black & Veatch Corporation

LEED AP BD+C

"Having the LEED AP BD+C credential put my resumé at the top of the pile during my job search, and I was hired within a month."

Learn how Todd's **LEED AP Building Design + Construction** credential sets him apart at www.gbci.org/Todd.

Circle no. 191 or http://architect.hotims.com

The ground floor galleries of the Islamic wing, with views of the historic Cour Visconti, are arranged in a nonlinear fashion that rejects the prescribed "death march" that's so common at museums. Visitors are encouraged to wander and create their own path through the exhibits.

new addition follows in the Louvre's own tradition of architectural innovation: Though France's strict architectural preservation laws give the impression that the country has been architecturally conservative, Loyrette suggests that, to the contrary, the kings and subsequent heads of state were architecturally progressive and always hired the best and brightest of their time to work on the Louvre.

The result is a monument that constitutes a nearly encyclopedic history of official national architecture, from its original medieval origins through its renaissance, baroque, and Napoleonic incarnations.

**LIKE PEI'S GLASS PYRAMID,** the new structure is basically a glazed space frame, composed of some 8,800 metal tubes, which support a sandwich of wire-mesh scrims that filter and evenly distribute natural light. But if Pei's pyramid, as a Euclidean form that shows off the mechanics of structural support, adheres to a 20th-century mechanical paradigm, Bellini and Ricciotti's design belongs instead to a digital design paradigm of the 21st century. Resembling a wafting handkerchief or flying carpet or Bedouin tent, the undulating roof has the iridescence of a dragonfly wing. Flat planes have been warped by computational splines into a floating shell of complex curves. Linear has gone nonlinear.

Visitors peering out classical windows into the majestic Cour Visconti on the Seine side of the palace see the pavilion's roof below, a Saharan topography of gold-tinted mesh dunes. The roof rises and falls in the courtyard without touching the sacrosanct walls or interrupting the view of the façades. The courtyard has gained an unexpected, post-classical geometry that is much kinder and gentler than Pei's more imposing and competitive pyramid. With a keen sensitivity to the existing architecture, the

COURTESY THE LOUVRE

addition has added a chapter on parametric design to the Louvre's eminent history.

The choice of the winning design, in fact, rested on its perceived respect for the Cour Visconti: Bellini and Ricciotti's design was the only entry to build down into the ground beneath the courtyard, rather than up. The architects proposed that the visible part of the pavilion be built at grade with the roof rising only to the lower level of the piano nobile, but they also excavated 12 meters into the court for a subterranean gallery that linked laterally into other existing basement galleries. They added another subterranean level below as a service floor.

Excavating below grade required the pharaonic and costly effort of shoring up and underpinning the palace's existing foundations, but the basement galleries promised the curatorial advantage of connecting the Islamic collections to other thematically related collections, giving added cultural dimension to the displays. Exhibitions of Islamic objects will now complement adjacent galleries of Byzantine art from the Eastern Mediterranean.

Most visitors enter the new addition from the old Denon pavilion, passing through closed metal corridors discreetly inserted, like tubes, through the existing doorways of the old stables that once ringed the court. The compression and the darkness of the corridors heightens the experience of the lightness and spatial openness of the pavilion. The perimeter walls are entirely glazed, allowing in light reflected off the courtyard façades, with the walls of the palace beyond the glass effectively circumscribing the exhibition space. Eight columns, inclined so as to augment the illusion that the roof is floating, support the ceiling, adding a dynamic impulse that contrasts with the static geometries of the classical courtyard.

A masterful staircase, built as a monolith of Ricciotti's signature black concrete, leads from the pavilion to the underground gallery, which is bounded by foundation walls that have been surfaced in the same black concrete, giving a depthless dimension to the space. This lower gallery, without direct natural light, suits the light-sensitive objects in the collection, including ancient carpets and works on paper. The museum parti of a light-filled open-plan pavilion resting on an enclosed bunker recalls Mies's National Gallery in Berlin.

**EXHIBITS IN THE ISLAMIC WING** are "off the wall," so that the objects can all be seen three-dimensionally, from all sides. Each exhibition space is open plan, unlike the wall-bounded galleries in the stately rooms of the masonry palace. The spatial freedom permits curators to plan their exhibits in a nonlinear fashion that allows visitors to create their own path and make connections that are not predetermined by a set sequence—avoiding what curators have called the prescribed "death march" favored by some museums. Bellini, who designed the exhibit installation with architect–engineer Renaud Piérard, fashioned elegant glass vitrines that are variously angled off the orthogonal to encourage this unscripted movement. Bellini—who compares the freely arranged vitrines to "fish in an aquarium"—and Piérard both describe the experience of exiting the historic Louvre and entering the pavilion as embarking on "a trip."

For architects who have followed the influence of the computer on design, the handkerchief-style roof is not ambitiously new, but an iteration of an established typology. A handful of recent projects have featured such undulating roofs, including Norman Foster's monumental airport in Beijing, whose roof also wafts above angled columns. Like most of the precedents, the curvilinearity of the pavilion's roof does not affect the plan of the space inside, which remains an example of orthodox Modernism: orthogonal, square, and planar.

The architects missed an opportunity to open the interstitial space between the Louvre's historic walls and the pavilion's glass perimeter to visitors who might want to experience the two together from the outside.

Nevertheless, from the perspective of the Louvre, the lay public, and even Paris itself, the asymmetrical undulating roof is indeed new and progressive, moving well beyond Pei's pyramid into a brave new computational paradigm. Thankfully, the architects have not resorted to folkloric references in their design of the pavilion, evoking domes, horseshoe arches, or courtyards centered on gurgling fountains, but they have ventured into this relatively fresh architectural territory without historicist sentimentality.

Indeed, the poetry of their response is not achieved by evoking memory, but by using technology to create a light and delicate counterpoint to the surrounding classical framework. Rather than showing off their technological prowess, however, the architects have deployed it to summon a discreet reticence that suits the collection. It prospers in the light-filled and spacious interior that poses no architectural competition to distract museumgoers from the exhibits.

Says Sophie Makariou, the director of the Department of Islamic Art, about the design: "It surpassed all our hopes for transparency and fluidity of spaces and natural light."

THE POETRY OF THE ARCHITECTS' RESPONSE IS NOT ACHIEVED BY EVOKING MEMORY, BUT BY USING TECHNOLOGY TO CREATE A LIGHT AND DELICATE COUNTERPOINT TO THE SURROUNDING CLASSICAL FRAMEWORK. RATHER THAN SHOWING OFF THEIR TECHNOLOGICAL PROWESS, THEY HAVE DEPLOYED IT TO SUMMON A DISCREET RETICENCE THAT SUITS THE COLLECTION.

CONTINUING EDUCATION

# VIRTUALLY SAFE

TO DEFEND MISSION-CRITICAL FACILITIES FROM THE RISING NUMBER OF CYBER ATTACKS, ARCHITECTS MUST NAVIGATE TECHNICALLY COMPLEX TERRITORY WITH ALLIANCES IN MULTIPLE DISCIPLINES.

Text by **Brian Libby**

Designed by Fentress Architects, the 719,000-square-foot Military Department Investigative Agencies Headquarters in Quantico, Va., was designed and built in 30 months. The facility exemplifies the accelerated schedule of mission-critical projects, which want to implement the latest in security technologies expeditiously.

**CYBER ATTACKS HIT RECORD** numbers in 2012. Hackers commandeered contact information for 24 million Zappos customers, breached computer systems at Wells Fargo and JPMorgan Chase, seized 65 million LinkedIn passwords, and acquired social security numbers and banking information for 8,000 employees of the Environmental Protection Agency.

Protecting mission-critical institutions from remote attacks—as well as from acts of terrorism—is a paramount concern in our data-dependent society. Though buildings alone cannot prevent computer warfare, architects must guide project teams comprising everyone from structural engineers to information technology (IT) specialists to provide facilities with the physical and virtual tools to block increasingly sophisticated hacking attempts.

"It's one thing to have a great software security system that's hard to hack into," says David Mecham, an associate at Denver's Fentress Architects. "It's another to provide redundancy to the mechanical and electrical systems."

Software consultant Ted Neward of Irvine, Calif.–based Neudesic says designers must find a balance between security and usability. "If you want to secure something, put it into a safe, and throw the safe in the deepest part of the ocean. But it can't just be secure: It has to be usable. As soon as security becomes an obstacle, people avoid it."

A building with any activity, device, service, or system that cannot fail or be disrupted can be considered mission-critical architecture. NASA first used the term to reference spacecraft components that support life functions; over time, it has grown to refer to critical facilities on Earth as well. Ronald Luman, AIA, vice president of Dallas-based Rees, an architecture firm that has designed mission-critical buildings for public- and private-sector clients, says that the phrase can apply to a

JASON A. KNOWLES © FENTRESS ARCHITECTS

physical or virtual asset that is "so vital ... that its destruction or elimination would have a devastating impact to a company's business or a country's national security."

Though architects will likely not be directly responsible for designing a project's cyber protection, they are crucial in the ultimate goal of preventing data from getting into the wrong hands. Physical and virtual lines of defense are only as strong as their weakest points; by ensuring each subcontractor's and consultant's work satisfies the project's specifications, architects can help prevent a facility, its hardware, and its contents from being breached.

**A Secure Foundation**

Firms pursuing public and private sector mission-critical projects must meet preconditions. Many government agencies, particularly those associated with national defense, require architects and other building team members to follow particular criteria and guidelines. Private-sector clients, such as data centers and other projects with cybersecurity needs, generally require firms to have certification in building-technology security from third-party organizations.

The Uptime Institute (UI), a private-sector consortium of IT companies established in 1993, issues the most common seal of approval in the data-center industry. Similar to the USGBC's LEED rating system, the UI certifies a building's physical and technological security level in a succession of tiers. Each of the four major certification tiers is tied to past levels of infrastructure design.

The UI white paper "Tier Classifications Define Site Infrastructure Performance" describes the system's origins and classifications. Tier 1 certification, the lowest standard, was developed in the 1960s. It indicates that a facility provides 99.67 percent availability—that is, servers are out of operation for only 0.33 percent of the time. This certification level does not require redundant capacity; that is, the facility has only single electrical and water lines connecting data processing equipment for power and cooling rather than duplicate, separate systems. As a result, outages—planned or unplanned—can adversely affect the hardware.

Tier II certification, dating to the 1970s and indicating a server availability of 99.75 percent, requires electrical redundancy that allows components to be taken offline without disruption to the broader array. However, power and cooling are still provided by a single path.

Tiers III and IV both date to the early 1990s, and offer 99.8 to 99.9 percent availability, respectively, as well as redundant components and multiple electrical and HVAC paths serving computer hardware. While Tier III has only one electrical path active at a time, Tier IV makes all power and HVAC paths available to support all server equipment, so that the failure of a single component will not bring down the rest of the system.

An architect interested in becoming an Accredited Tier Designer can enroll in the UI's courses, which are held worldwide. The training is geared toward engineers, design/build team managers, and project owner representatives.

Numerous government criteria documents can also help firms prepare for mission-critical project needs. Unified Facilities Criteria (UFC) documents, for example, provide planning, design, construction, restoration, and modernization criteria for all U.S. military and defense agencies. Created in 2000 by the Department of Defense (DOD), the UFC provides definitions for requirements such as standoffs from parking and from roadways. Nonmilitary government agencies also frequently use the UFC criteria in their RFPs. "The DOD documents have a large amount of design standards one must become comfortable with," Luman says.

The U.S. Army Corps of Engineers, the Naval Facilities Engineering Command, the Air Force Center for Engineering and the Environment, and NASA have established the Tri-Service Committee for Unified Design Guidance to manage the related Unified Facilities Guide Specifications program.

Another important government player is the Interagency Security Committee (ISC), which was created in 1995 by a presidential executive order to set minimum security standards for all federal, domestic, and non-DOD facilities. "That's the overarching design standard," says Les Shepherd, chief architect for the General Services Administration (GSA). The ISC stipulations are guiding the design of the Department of Homeland Security's new St. Elizabeth's campus in Washington, D.C.

Finally, the National Infrastructure Protection Plan, developed in 2006 by the Department of Homeland Security, integrates a range of government-agency efforts designed to enhance the safety of the nation's GSA-defined Critical Infrastructure Sectors, such as food and agriculture, banking and finance, information technology, energy, and critical manufacturing.

**Teamwork Matters**

Pursuing the highly technical market of mission-critical architecture requires more than learning procedures and preconditions. "You've got to know your client and your team," Luman says. Beyond developing expertise in the building design and security requirements, firms need to reach out to the integral trades—


**AIA/CES CREDIT:**
You can earn 1 CEH (Continuing Education Hour) for reading this article and successfully completing the quiz. You must answer eight of 10 questions correctly to earn credit and obtain a certificate of completion. This course is valid through December 2015.

To earn credit and obtain a certificate of completion, visit **go.hw.net/archceu** and complete the online quiz for free. Follow the "Click here to start this course" link for this story to launch the quiz. If you are new to Hanley Wood University, create a free learner account; returning users may log in as usual. Upon completion, you can print a certificate of completion for your records or for self-reporting needs. Credits will be reported to the AIA for AIA members.

After completing this course, you can leave feedback with us directly; AIA members can also leave feedback by logging into the AIA CES Discovery system.

**CUSTOMER SERVICE**
hwuniversity@hanleywood.com

**LEARNING OBJECTIVES**
1. Describe how architects contribute to mission-critical projects.

2. List at least four data security protocols.

3. Identify at least two building design-related security measures.

4. Identify and describe the importance of specialty contractors for mission-critical projects.

The General Services Administration commissioned Schwartz/Silver Architects and CDFL Architects to modernize the building systems and interiors of the Dr. A.H. McCoy Federal Building in Jackson, Miss. The renovation included the addition of a curved entry pavilion clad in glass and metal panels.

namely the MEP and IT specialists. "You've got to coordinate all these people who don't even know how to talk to each other," he says.

Finding an IT partner is essential to the successful pursuit of a project containing any mission-critical aspect, Shepherd says. "Whether it's federal or private, I think you'll see more of a requirement [in the RFP process] that there's security built into your projects to varying degrees," he says. Though the GSA will take an architectural firm's past experience into consideration, he encourages firms to team with an IT consultant. "I can't think of an architectural practice that has an IT specialty or that sort of in-house expertise," he says.

Government clients often prefer the design/build delivery method, in which architectural design and contractor services are rolled into a single agreement, Mecham says. "There is one contact, one person to go talk to when something goes wrong." In this case, he says, the contractor is more likely than the architect to take the lead on the owner's behalf.

However, clients in the private sector, Mecham says, prefer delivery methods such as multiple prime—in which each construction discipline is bid separately—or CM-at-risk, in which the construction manager must deliver the project with a Guaranteed Maximum Price. "Some owners in mission-critical [projects] want to keep some of the specialty consultants under their wing because they have proprietary information" on technical or mechanical systems, he says. Keeping separate contracts makes that discretion easier. "The owner still feels like they control the design," he says, but that only increases the responsibilities of the architect to coordinate and manage the disparate parts of the team.

**Battening Down the Digital Hatches**

Long before any portion of a building is designed, architects can contribute to a mission-critical facility through master planning and site selection; the latter has become particularly important for sustainability and security reasons. Data centers, for example, are increasingly located in temperate, arid climates to reduce cooling loads. Other facilities may require an underground location in order to provide shielding from electromagnetic pulse attacks, which can reveal their location.

From site selection onward, the timeline for mission-critical architecture only accelerates. Fentress's Mecham has worked on projects that have gone from schematic design to final construction documents in six weeks. "The technology industry is constantly changing," he says. "Once you have a new technology, you want to implement it as soon as you can."

ALAN KARCHMER

"ONE OF THE THINGS [ARCHITECTS] CAN DO IN OUR PHYSICAL DESIGN IS SLOW DOWN THE ATTACKER. DELAY THE ATTACK THROUGH SOME TYPE OF FENCING, BERMS, OR MANMADE TYPE BARRIER. THAT GIVES US TIME FOR THE SECURITY PERSONNEL TO REACT."

—RONALD LUMAN, REES

Redundancy—virtual and physical—is a key tenet in protecting mission-critical buildings from cyber attacks. For example, backup electrical power sources and servers are a must in ensuring a system remains in operation, even if a portion of it fails or goes offline. "We give ... that facility and those users time to react to the threat," Luman says. "And we can give our IT professional something critical to his operation: a continuous power feed. It's not only protection of physical systems, but we've got to bring to our facilities multiple sources of power generation: dual feeds to separate grids and stand-alone generator sets." The dual electricity sources should be connected to separate substations.

Though cyberattackers will typically act from a remote location, preventing physical infiltration of a facility remains imperative. High-risk, vulnerable areas such as loading docks, mailrooms, and parking garages must have extra security systems and surveillance capabilities. Structural systems, walls, and windows must often be strengthened. "One of the things we can do in our physical design is slow down the attacker," Luman says. "Delay the attack through some type of fencing, berms, or manmade type barrier. That gives us time for the security personnel to react."

The preventative design may start with the building's landscaping. A minimum 100-

The LEED Gold–certified U.S. Army Forces Command Headquarters in Fort Bragg, N.C., by Fentress Architects complies with the Department of Defense's "Minimum Antiterrorism Standards for Buildings."

**567**

In billions, the number of records containing sensitive personal information acquired in the more than 3,200 security breaches that have occurred in the U.S. since January 2005

SOURCE: PRIVACY RIGHTS CLEARINGHOUSE

foot easement will help reduce the effects of a detonated device on the facility. The most secure and economical wall material is concrete, preferably a foot thick or more. The building can also be divided into a series of concentric layers, such as at the Pentagon, or into secured zones going from exterior to interior, with commensurate security levels required for subsequent entry. Concentrating the most protected assets together rather than in multiple areas will offer the most efficiency.

A building's heating and cooling systems are also areas of interest given their importance in cooling servers and their ability to distribute airborne toxins in the case of a terrorist attack. Segregated HVAC systems can protect sensitive areas. Advanced building management systems that provide real-time data and operate from a central command center are also invaluable. "Having a one-button, easy approach to shutting down the HVAC system is often included as a requirement by mission-critical clients," Mecham says. "And that's part of what architects bring to the table: our increasing ability to provide analytical tools."

**Virtual Barriers**

In terms of IT tools, cybersecurity is a moving target, Neudesic's Neward says. Complex, well-written software can aid in facility protection, as can firewalls and other virtual mechanisms to entry from outsiders, he says. "But no matter how much you put into place, given enough time and energy, someone will be able to hack it." Keeping the systems offline is the only sure way to prevent the systems from being hacked remotely, he says. However, some mission-critical agencies must, to a degree, be online to maintain essential operations.

"Historically, cybersecurity has three tenets: detection, prevention, and response," Neward says. "Our detection mechanisms are very weak. We don't have any sort of response mechanisms. We're left with prevention." Giving personnel physical USB-based cryptographic keys rather than passwords to access certain information systems is one example of how prevention measures are slowly improving, he says.

While total cybersecurity may sound impossible, Neward believes that international and domestic government agencies have their own classified means and methodologies. "Certainly there are a lot of academics and mathematicians looking for secure channels so bad guys can't spy on our communications," he says. "I'm relatively convinced we have this more or less locked down."

His bigger concern is the private sector entities that lack government's sophisticated resources. "One of the things we have to accept is the security of your software system is only as good as the programmers who built it," he says. "Everything today is basically built from scratch. You don't want to buy something off the shelf because each system behaves differently. If you have something customized, you're basically responsible for making sure the software works and is secure."

**An Endless Battle**

The path to securing mission-critical architectural commissions is complex, immersive, and lengthy. Firms must build up credentials, contacts, and collaborative partnerships with specialists in the IT and telecommunications fields as well as other professions. But, most importantly, mission-critical architecture requires architects to manage an ever more diverse and multidisciplinary team. "The challenge for architects and engineers today is to become better informed and more cross-trained to better understand our clients' needs," Luman says. "We can bring leadership, coordination, and our physical design abilities to protect whatever the asset is."

The potential payoff to the research, training, and networking that this highly specialized market requires can be huge. Once a firm throws its hat into the ring successfully, one commission may lead to the next. And with virtual attacks only increasing in frequency, audacity, and magnitude, the demand for secured facilities is bound to rise as well.

PAUL BROKERING

# QUIZ

***1. The phrase or term "mission-critical architecture" can apply to:***
a. A physical or virtual asset.
b. Virtual assets, such as data and account information.
c. Physical assets that support life functions.
d. Spacecraft components.

***2. The Uptime Institute provides a seal of approval for:***
a. Data security.
b. Site infrastructure performance.
c. Private-sector data centers.
d. Government-sector data centers.

***3. True or False: An architect can become an Accredited Tier Designer through the Uptime Institute's training programs.***

***4. Government critical documents that can help firms prepare for mission-critical projects are known as:***
a. Documents of Defense (DODs).
b. GSA Standards.
c. Tri-Service Specifications.
d. Unified Facilities Criteria (UFC).

***5. True or False: Finding an IT consultant with which to partner is essential to the successful pursuit of a mission-critical project.***

***6. Why do some owners in mission-critical projects keep specialty consultants apart from the rest of the project team?***
a. Their work is often too technical for the rest of the team to understand.
b. They have proprietary information that the owner wants to keep private.
c. Specialty service providers often prefer to work alone.
d. All of the above.

***7. Virtual and physical _____ is a key tenet in defending mission-critical buildings against cyber attacks.***
a. Isolation
b. Backup
c. Redundancy
d. Protection

***8. True or False: Separating protected assets and locating them throughout the building, rather than in one area, will be the most efficient method of security.***

***9. True or False: Private sector entities generally lack the government's sophisticated resources for cybersecurity.***

***10. Mission-critical architecture calls for architects to manage diverse and multidisciplinary teams. The challenge is for architects to become:***
a. Cybersecurity experts.
b. Familiar with other disciplines.
c. Programmers.
d. Data-center specialists.

→ To earn credit and obtain a certificate of completion, visit **go.hw.net/archceu** and complete the online quiz for free. Follow the "Click here to start this course" link to launch the quiz for this story. If you are new to Hanley Wood University, create a free learner account; returning users log in as usual.

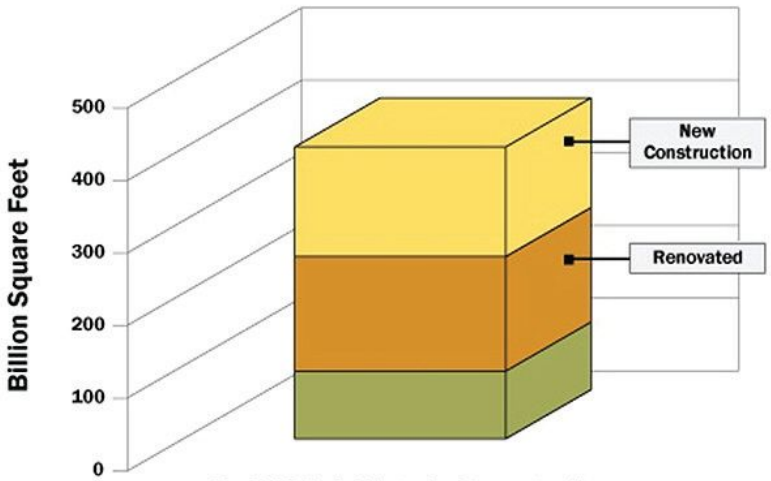
CONTINUING EDUCATION SERIES

MBCI® Metal Roof and Wall Systems

Presents:

# Metal Roofs and Walls for Achieving Net Zero

By: Kathy Price-Robinson




**By 2035: A Historic Opportunity**


Data Source: U.S. Energy Information Administration.

**By 2035, some 75% of the built environment we are walking around in will be either new or renovated.**

Every year in the United States, we construct approximately 5 billion square feet of new homes, offices, healthcare facilities, schools, stores, malls and other spaces.

Every year, we renovate approximately 5 billion square feet of existing buildings, and we demolish about 1.75 billion square feet.

That means that by 2035, some 75% of the built environment we are walking around in will be either new or renovated, according to data from the U.S. Energy Information Administration.

Whether that new and renovated space helps prevent arguably the greatest threat to humankind – catastrophic climate change brought on by burning greenhouse-gas emitting fossil fuels – or adds to that threat is largely in the hands of those who design buildings and specify materials.

Worldwide, building operations and construction consume half of all energy created, and thus cause half of all carbon emitted by power plants. Stop the need for that energy use through conservation and renewable energy creation and you eliminate half the problem.

Few architects likely pursued their career with the express goal of saving humankind from self-destruction. But designers of the built environment are nevertheless in that position, at least to some extent.

That is the message from Architecture 2030, a worldwide initiative spearheaded by New Mexico architect Ed Mazria and then adopted as a goal by the AIA.

This article is an update on that initiative, along with ways to help achieve the Architecture 2030 goal of net-zero buildings by employing the natural pairing of photovoltaics with metal roofs, with the use of cool metal roofs, and with insulated metal wall panels.

With a webcast audience of a quarter million, Ed Mazria reiterated the Architecture 2030 program during a 2007 presentation titled "2010 Imperative Global Emergency Teach-In."

## CONTINUING EDUCATION

**Credit: 1 AIA HSW/SD Hour**

Use the learning objectives to the right to focus your study as you read this article.

To earn credit and obtain a certificate of completion, visit **hanleywooduniversity.com** and complete the quiz for free as you read this article. If you are new to Hanley Wood University, create a free learner account; returning users log in as usual.

## LEARNING **OBJECTIVES**

By the end of this educational unit, you will be able to:

1. List the ways the 2030 Challenge moves us toward net-zero buildings.
2. Explain the natural compatibility between metal roofs and PV systems.
3. Describe how cool roofing contributes to net-zero goals.
4. Discuss the energy efficiency benefits of insulated metal panels.

"We ask that any new building project, development or renovation," he reminded the worldwide gathering, "meet a fossil fuel greenhouse gas emitting energy consumption performance standard of half the regional average for that building type."

"If we're going to design a school," he explained, "you find out what the regional average is in your area, your budget is 50% of that amount, whatever the building type."

"And then we say that at a minimum you renovate the same amount of building area that you build new to half the amount of the regional average (of energy use) for that building type."

After that, every five years energy use is ratcheted down to:

60% reduction in 2010
70% reduction in 2015
80% reduction in 2020
90% reduction in 2025
100% reduction in 2030

"So that by 2030," Mazria said, all buildings designed would be carbon neutral, meaning they use no fossil fuel greenhouse-emitting energy to operate. That doesn't mean they don't use energy."

"We have a job ahead of us," Mazria concluded. But the stakes seem too high for inaction. "If we don't get a handle on the building sector, we just don't make it."

Since then, tremendous progress has been made in building energy efficiency thanks in part to the efforts of architects. Whereas just a few years ago, green building was a vague and misunderstood term, the principles it represents are now part of mainstream vernacular.

Businesswise, it's a winner for the future. Revenue from creating net-zero energy buildings will reach nearly $690 billion by 2020, and $1.3 trillion by 2035, much of that in Europe where net-zero is increasingly becoming part of the building standards, according to research announced by Pike Research earlier this year.

"Following the surge in LEED® and other green building certifications worldwide over the last few years, zero energy building has emerged as the 'holy grail' in green building design," research analyst Eric Bloom stated in a press release.

The research report, titled "Zero Energy Buildings," gives data on the projected growth in such net-zero strategies as roofs, PV systems, wall insulation and HVAC systems.

For the U.S. energy forecast, the chart below shows the Annual Energy Outlook 2012 (AEO 2012), prepared by the U.S. Energy Information Agency (EIA). It presents long-term projections of energy demand based on results from EIA's National Energy Modeling System.

As the AEO 2012 indicates: "The rate of growth in energy use slows over the projection period (2005 to 2030), reflecting moderate population growth, an extended economic recovery, and increasing energy efficiency in end-use applications."

According to AEO 2012, if the 'best available demand technologies*' are incorporated, the projected energy consumption for residential and commercial buildings in 2030 is expected to drop 12% below 2005 levels; $CO_2$ emissions are expected to drop 21.8% below 2005 levels.

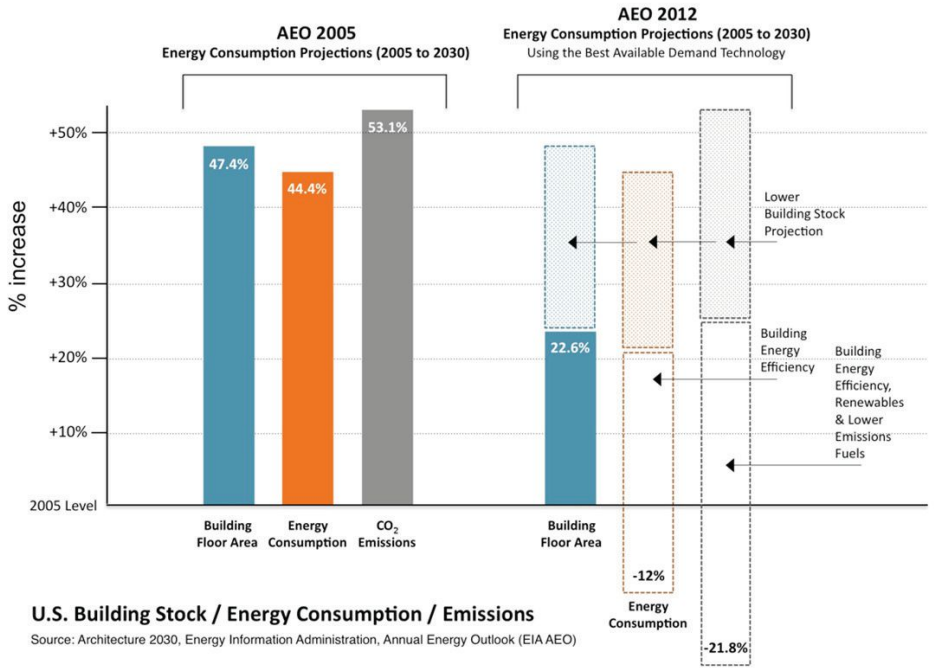
However, as an Architecture 2030 bulletin points out: "AEO projections do not include sustainable planning applications or incorporate passive heating and cooling, natural ventilation, daylighting, or spatial configuration and site design strategies."

But with growing numbers of architects and planners incorporating these strategies to meet the 2030 Challenge targets, "actual energy consumption and emissions in the Building Sector will drop substantially lower," the bulletin states, indicated in the graph below.

## 2030 CHALLENGE FOR PRODUCTS

Carbon-emission reduction efforts within the architectural industry continue. Early last year, Architecture 2030 introduced the 2030 Challenge for Products to further cut down on carbon emissions associated with the built environment. As Mazria pointed out: "We specify almost every material that we use in our buildings."

The 2030 Challenge for Products takes aim at the worldwide architecture, planning, design, and building




**U.S. Building Stock / Energy Consumption / Emissions**

Source: Architecture 2030, Energy Information Administration, Annual Energy Outlook (EIA AEO)

## Milestones of Architecture 2030

- **August 2012** — Pittsburgh launches 2030 District
- **May 2012** — Cleveland launches 2030 District
- **February 2012** — Major carpet manufacturer commits to 2030 Challenge for Products
- **October 2011** — The Boston Society of Architects/AIA and AIA New York, two of the largest chapters in the nation, join 2011's nationwide rollout of the AIA+2030 Professional Education Series. With the addition of these two chapters, the AIA+2030 Professional Education Series is now being offered to 25% of AIA members nationwide. AIA New York will offer a new Sustainability by Design Series for meeting the 2030 Challenge in New York City.
- **September 2011** — Seattle launches 2030 District
- **September 2011** — Launch of 2030 Challenge for Products Information Hub
- **February 2011** — Launch of 2030 Challenge for Products
- **October 2010** — ICC members voted to improve the 2012 International Energy Conservation Code (IECC) standard by 30% beyond the 2006 IECC as called for by Architecture 2030 and a large coalition
- **October 2010** — AIA Portland is the first to present 2030 Challenge Design Awards
- **November 2009** — Ed Mazria receives the first annual Hanley Award for Vision and Leadership in Sustainable Housing
- **June 2009** — The 2030 Challenge targets are included in the American Clean Energy Leadership Act (S. 1462) and the American Clean Energy Security Act (H.R. 2454)
- **February 2009** — Ed Mazria testifies before Senate Committee on Energy and Natural Resources
- **December 2007** — The 2030 Challenge is mandated in all federal buildings by the Energy Independence and Security Act (H.R. 6)
- February 2007 — State of California adopts the 2030 Challenge in residential and non-residential buildings
- **May 2006** — U.S. Conference of Mayors adopts the 2030 Challenge
- **January 2006** — The 2030 Challenge target of 50% energy reduction is included in LEED certification
- **January 2006** — The roughly 80,000-member AIA adopts the 2030 Challenge
- **January 2006** — A New Mexico executive order by Gov. Richardson requires all state funded buildings to meet the 2030 Challenge
- **2003** — Metropolis Editor in Chief Susan S. Szenasy teams up with Ed Mazria to product "Key to the Global Thermostat," a series of conferences in Santa Fe, Los Angeles and New York
- **2002** — Ed Mazria establishes Architecture 2030 as part of his architecture practice

community, and challenges them to specify, design, and manufacture products for new developments, buildings, and renovations to meet a maximum carbon-equivalent footprint.

That carbon-equivalent footprint starts at 30% below the product category average through 2014, then increases to a reduction of 35% in 2015, 40% in 2020, 45% in 2025, and 50% by 2030.

With their specification choices, architects and designers are again in the position to have an impact on the amount of greenhouse gasses that enter earth's atmosphere.

This year, a major carpet manufacturer committed to the standards of the 2030 Challenge for Products, and the program recently finalized standards for concrete products. Other standards and companies are expected.

With the intensifying global push toward designing and specifying net-zero buildings, new and innovative strategies continue to emerge or gain renewed appreciation. The use of metal walls, cool roofs, and metal roofing coupled with photovoltaic systems are up-and-coming strategies toward a net-zero world.

### METAL ROOFING AND PV SYSTEMS AS A NET ZERO STRATEGY

Specifying metal roofing is a step toward a net-zero building or one that meets current Architecture 2030's current goals. And it's an appealing, forward-thinking choice for owners.

Metal roofing requires low maintenance during its lifespan of more than 40 years. It has durability for wind, fire, hail and U.V. And because of its light weight, it is ideal in seismic zones. The material is virtually 100% recyclable, allowing for reduced landfill mass. Most metal panels are comprised of 20% to 35% post-consumer recycled steel. Metal roof panels are available in cool roof colors. And finally, the warranties offered by some companies far surpass those of conventional roofing products companies, and even those of solar module manufacturers.

Coupling PV with a metal roof makes sense on many levels. A PV system's efficiency typically improves when it's installed on a cool metal roof, increasing the energy output of the solar modules. Plus, solar modules can be installed on a metal roof system with no penetrations into the roof. This allows the metal roof warranty to remain intact.

Perhaps most importantly, as nearly 80% of PV installations occur on existing construction, you would naturally want the service life of the existing roof to outlast the service life of the solar array. Because PV systems are typically warranted 20 years and usually last much longer, it makes little sense to install one on a roof system that will need replacing before that time is up. With metal roof systems that last up to 40 years or longer, the need to replace the roof before the PV system is eliminated.
"Building owners should be aware that most roof-mounted PV systems can easily last 30 to 40 years," solar expert Gary Kassem wrote in Construction Specifer's October 2010 issue . "While the commercial roofing systems they are attached to have, on average, life spans between 10 and 13 years."

The graph below compares the lifetime solar roof cost (in dollars per square

| Conventional Roof Service Life | Metal Roof Service Life |
|---|---|
| • BUR / 19.8 years<br>• APP / 16.1 years<br>• SBS / 17.7 years<br>• TPO / 15 years<br>• Maintenance costs of $.03 - $.05 per square foot annually | • 30 - 50 years<br>• Demonstrated life of 50 years<br>• Little to no maintenance |

**Lifetime Solar Roof cost ($ per square foot)**

| 15 Year TPO Single Ply | | Coated Steel SSMR | |
|---|---|---|---|
| Intial cost of roof | $4 | Intial cost of roof | $5 |
| Initial cost of PV | $55 | Initial cost of PV | $49 |
| Yr 15 roof removal & replacement | $8 | | |
| Yr 15 PV removal & reinstall | $7 | | |
| Total 30 yr cost (0 year roof life surplus | $74 | Total 30 yr cost (20 year roof life surplus | $54 |

A savings of 27% over the life of the system!

foot) for a 15-year TPO single-ply roof to a coated, steel, standing-seam metal roof. The initial cost of the conventional roofing is calculated with installed cost of PV as well as replacement of the roofing when it wears out, and along with removal and reinstallation of the solar system, which totals $74 per square foot for 30 years of service.

Conversely, when the initial cost of the standing-seam metal roof is calculated with the initial cost of the PV, the total is $54 for 30 years of service, with up to 20 years of service life left on the roofing. This represents a 27% savings over the life of the system.

These figures do not take into account a few more expenses, such as maintenance and repair of a flat roof, which could add 90 cents to $1.50 per square foot over 30 years, or the downtime for the PV generation system during the reroofing process.

## RIGID MODULES ON STANDING-SEAM ROOFS USING NON-PENETRATING CLAMP ASSEMBLY

It doesn't take an educated and licensed architect or designer to know that penetrating the roof is a bad thing. And those penetrations, necessary to attach PV module racks to conventional roofing, could be a disincentive for an owner to choose a PV array.

The penetrations problem goes away with PV modules attached to a standing seam metal roof with a non-penetrating clamp assembly.

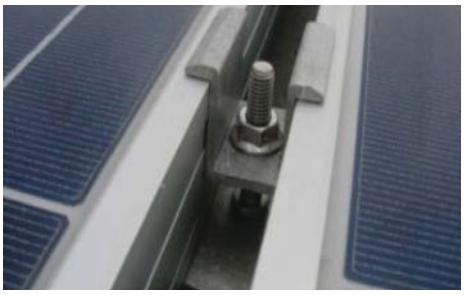
"It doesn't take an educated and licensed architect or designer to know that penetrating the roof is a bad thing."

**New Construction PV Mounting Cost Summary**
($ per square foot)

| PV on Convention Roof | | PV on Standing Seam Roof | |
|---|---|---|---|
| Racking components | $5 | Seam and panel clamps | $1 |
| Anchorage/ waterproofing | $2 | Clamp mounting (labor) | $1 |
| Racking assembly (labor) | $2 | Clamp mounting (labor) | $1 |
| Mounting system cost | $9 | Mounting system cost | $2 |

$6 per square foot savings!

The economics of PV on a metal roof will interest owners. While mounting PV on conventional roof types costs $9 per square foot (assuming 10 watts per square foot), mounting PV on a standing-seam metal roof costs just $3. You can see in the graph below that costs for PV on conventional roof types includes $5 for racking components.



As an example, the solar array shown above required 45 attachments, at about $27 each, for a total of $1,215, or 20 cents per watt. In addition, the racking hardware and labor cost about 70 cents per watt, bringing the total mounting system to 90 cents per watt.

This article continues on www.hanleywooduniversity.com. Go online to read the rest of the article and complete the corresponding quiz for credit.

PROFILE

# DOUBLE AGENT

THE STRELKA INSTITUTE HAS BEEN CELEBRATED FOR ITS GLAM BAR AND COSMOPOLITAN ALLURE. BUT THIS ARCHITECTURE SCHOOL HAS A SERIOUS UNDERLYING MISSION: TO HELP RESHAPE MOSCOW'S URBAN LANDSCAPE.

Text by **Ian Volner**
Photos by **Lily Idov**

The Strelka Institute is located in a half-acre mini-campus on Balchug Island, in a series of buildings that once housed a chocolate factory that thrived in the old Soviet Union. Students gather for lectures in the shadow of the Kremlin.

**THE SCENE AT** the Palazzo Contarini on the third night of this year's Venice Architecture Biennale was—at least by the standards of your typical design-world social function—downright Fellini-esque. Two girls in red dresses frisked around in a narrow reflecting pool. Danish architect Bjarke Ingels distributed champagne to a select circle of intimates. Elegant men and women came and went by a back door where hired boats alighted noiselessly at a private mooring on the *canale*.

The party was sponsored by the Moscow-based Strelka Institute for Media, Architecture, and Design, an institution whose exact nature was a little unclear to many of the revelers present on that warm night in August. Earlier that afternoon, a young man outside the pavilion grounds had been pressing copies of a smart-looking architecture pamphlet, its spine bearing the words "Strelka Press," into the hands of exhibition attendees. Perhaps Strelka was a publishing house? A few Biennale veterans who remembered Strelka's 2010 party discreetly suggested that the whole operation was an elaborate con devised by ultra-wealthy Russian oligarchs looking for a good time in Venice. Given the scowling security guards posted in every corner, the theory seemed more than dimly plausible.

But what is Strelka, really? "One of the interesting aspects of it is that it's hard to define," says Ilya Oskolkov-Tsentsiper, a founding father of the institute. "It's a place and a project." The idea for the

organization first emerged in 2009—in Venice, incidentally, during the Art Biennale—when Oskolkov-Tsentsiper, a digital and publishing entrepreneur, was having a conversation with a small coterie that included the billionaire Russian investor Alexander Mamut and the architect Dmitry Likin. The subject was a compound on Balchug Island in the Moscow River, formerly part of the massive Red October chocolate factory that had thrived in the old Soviet Union. The site's new tenant, Art Strelka, had converted the buildings into mundane studios and galleries, says Oskolkov-Tsentsiper: "It wasn't interesting, and it was dying."

Restaurants had been colonizing the waterfront strip across from the island for much of the last decade; the group gathered that day in Venice was certain that the art galleries (named Strelka, Russian for "arrow", after the island's slender tip) were headed the same way, and that an opportunity would be missed to make the site over into something more inventive, more vital.

The collaborators agreed that Moscow, long bedeviled by poor planning and bad architecture, suffered from an even more essential underlying condition: a paucity of public engagement in the design of urban space. "The problem is the lack of people who are capable of introducing change," Oskolkov-Tsentsiper says.

In no time at all, he had cranked out a 10-page proposal for a dual education-and-events space that would give Moscow a unique cultural hub with international reach—and that would produce the kind of graduates capable of reimagining the city's urban landscape.

Mamut, the billionaire investor, instantly agreed to help underwrite the project. And together the team—joined by a friend named Varvara Melnikova—reached out to Rem Koolhaas, an acquaintance of Melnikova's who was interested, she says, in "trying to create something more critical about Russia." Bringing with him a vision for a research-driven urban laboratory, Koolhaas came aboard as quasi-official dean, and the Strelka Institute was born.

Today, the institute is about midway through its third academic year, with 38 students enrolled in its one-year degree program. It hosts a thriving public schedule of lectures, film screenings, and other events, and its press, headed by English critic Justin McGuirk, has been issuing a series of provocative titles with a focus on long-form architecture journalism.

In Venice, the institute's presence extended beyond the glitzy soiree to include engaging roundtables with Koolhaas and English designer Farshid Moussavi. In Russia, museum exhibitors have turned to Strelka's loose orbit of theorists and practitioners to advise on major exhibitions, while developers have tapped them to consult on high-profile architecture competitions. A restaurant/bar at the institute has become a major hub of Moscow nightlife—particularly in summer, when hordes of locals crowd the rooftop patio to admire the skyline views.

Party in the front, hothouse for design thinking in the back: Strelka's double identity differentiates it from just about every other architectural-pedagogical project. But it remains to be seen how influential Strelka's reformist mission can be in a city like Moscow, where corruption often hides behind a veneer of glamour, and where the local power elite and the institute's progressive thinkers may turn out to be an incongruous match.

**CERTAINLY THE GLITZ** has garnered the organization a lot of positive attention. Lindsay Harkema is the sole American in the class of 2013. While studying for her M.Arch. at Rice University in Texas, she learned about the institute from instructor Laura Baird, who had landed a Strelka lecturer gig through her association with Koolhaas's firm, OMA. "That was the first layer of interest," Harkema says. "The second was, 'Oh, look, there's a bar attached, and they throw really great parties.'"

Indeed, from the perspective of many in Moscow, the social side of Strelka constitutes its entire *raison d'être*: Many of my conversations with Russian media and business figures revealed a pervasive uncertainty about precisely what goes on beyond the dining room. Media coverage both at home and abroad has likewise tended to play up the glitz.

Yet there's a lot more to it than that. Even amidst the chatter of bankers enjoying a morning cappuccino at the restaurant, conversations about design are a constant. One recent Monday morning, David Erixon, co-director of programming for Strelka, was sitting by the bar with his counterpart, Anastassia Smirnova. The two were preparing for a day of lectures and dialogues with the budding design intellectuals, most of them aged 24 to 30, already hard at work in the studios across the courtyard.

Earlier, the Swedish-born and Dublin-based Erixon, a design and branding consultant, and his Russo-Dutch architect partner had given their young charges a pop research assignment, an exercise called "Ideal Place." Students were divided into groups and tasked with investigating a succession of historical epochs, from ancient Babylon to 21st-century Europe, to discover the conception of utopia prevailing in each period. They were then to distill that conception into a single image of their own making and deliver a four-minute presentation.

Smirnova and Erixon are in their first year heading up Strelka's academic program. Erixon joined the institute last year at Smirnova's invitation; Smirnova herself started at its

PARTY IN THE FRONT, HOTHOUSE FOR DESIGN THINKING IN THE BACK: STRELKA'S DOUBLE IDENTITY DIFFERENTIATES IT FROM JUST ABOUT EVERY OTHER ARHITECTURAL-PEDAGOGICAL PROJECT. BUT IT REMAINS TO BE SEEN HOW INFLUENTIAL THE INSTITUTE'S REFORMIST MISSION CAN BE IN A CITY LIKE MOSCOW, WHERE THE LOCAL POWER ELITE AND STRELKA'S PROGRESSIVE THINKERS MAY PROVE TO BE AN INCONGRUOUS MATCH.

founding, recruited through her sometime affiliation with OMA (a leitmotif among Strelka faculty). The fact that both were on campus that morning was hardly typical, since their roles—unlike, say, that of a typical architecture school dean—only require them to be on site once a month or so. "We're not here to teach," Erixon says. "We're here to do programming."

Their job, with the assistance of permanent Strelka staff, is to rustle up prominent thinkers from around the world and marshall that disparate gang of tutors and lecturers into some semblance of order. "We ensure there is a cohesive story for the whole year that everyone sort of responds to," Smirnova says.

Sitting in the restaurant that morning, Erixon produced a fairly passable drawing of a fish in a fishbowl on a piece of paper. "The thing about architecture," he said, handing the doodle to Smirnova, "is that it always deals with either the fish or the bowl. Never the water." It's a metaphor that gives insight into how he and Smirnova are attempting to expand the institute's purview beyond individual designers or building techniques to include broader urban and social issues.

At a studio session later that day, when Erixon tells the students about his work with large commercial clients, he refers to an optimal model for corporate behavior that values "access" over "ownership" and "prosperity of the eco space" over "increased market share." "What we're considering now at Strelka is more like [the last example]," he says. Adds Smirnova, "The context around us is changing so fast, and basically we have to react somehow."

The pace at Strelka is accordingly brisk, with students launched into an immersive nine-month program. In the first semester, students largely work and study as a single unit, participating in workshops such as "Ideal Place," and absorbing voluminous reading packets assembled by instructors. During the second semester, the class is divided into a series of focused sub-studios to tackle an aspect of that year's overarching theme (the 2012 incarnation is "Agents of Change"), with the students reassembling occasionally in a class-wide "Studio Generale."

At the end of the term, the students come together one last time for a symposium, typically open to the public, in which each discusses his or her contribution to their respective studio projects. All in all, the educational regime at Strelka is nimble but by no means light, with students routinely showing up around 10 a.m. and not wrapping up till 8 p.m. or later.

The net effect, according to current student Alexey Mityaev, is "like LSD." Twenty-seven years old and a native Muscovite, Mityaev says his initial weeks at Strelka have been rewardingly bewildering, scrambling his expectations of design and its potential. "It's a ticket to a train, and you don't the know destination until you jump on it," he says.

The open-ended curriculum means there's no knowing what students like Mityaev will take away, or how it will serve their professional lives. Many don't even aspire to be architects at all—Ilya Oskolkov-Tsentsiper cites a 40 percent target rate for students without design backgrounds, with the program especially recruiting grads in fields such as economics and art. Diversity in the program is also bolstered by the array of student nationalities, from Polish to Indian to Swedish to American. Proficiency in English is required, and when Russophone lecturers turn up, the whole class is outfitted with headsets for simultaneous translations—something akin to a very eccentric meeting of the U.N.

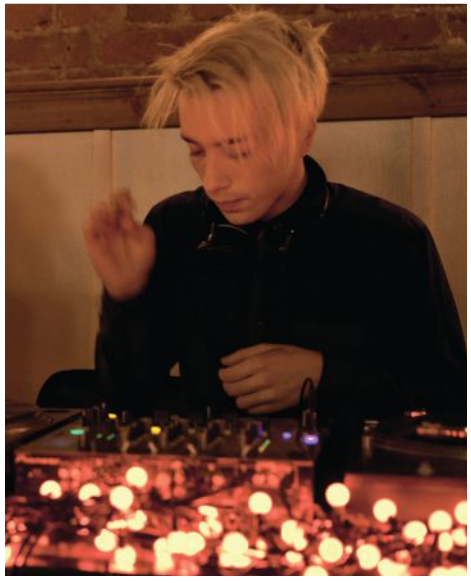
**ONE LATE OCTOBER AFTERNOON,** a detachment of students with a translator in tow followed Kuba Snopek, a Polish-born urbanist and Strelka tutor, and local historian Denis Romodin on a tour of some of the imposing, Soviet-era residential blocks outside central Moscow. A sprinkling of snow covered the panel-built monoliths first erected in the Khrushchev years, mile upon mile of them set in vast parklike landscapes. These microrayons, or mini districts, have been fodder for copious urban analysis at Strelka both this year and last, as tutors and students have delved into the mixed legacy of social housing in Russia and considered new interventions to improve it.

"What I want people to see," Snopek says, "is that these areas are not all the same. Each has individual qualities and its own history." Snopek has even gone so far as to prepare an application for a number of Moscow's microrayons to receive UNESCO World Heritage Site status.

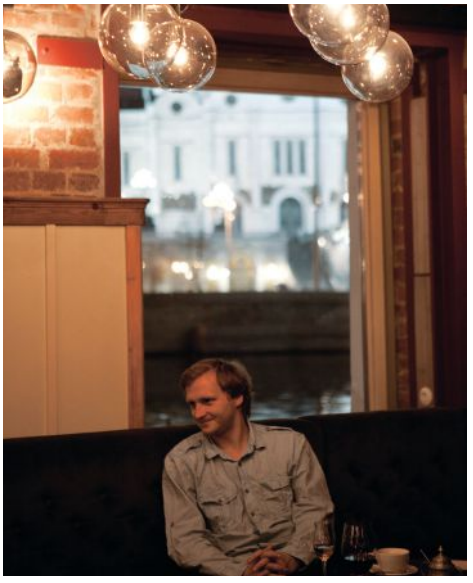
The complex urban environment of the city, population 11 million, is not only an object of study for the institute, but a theater of operations. Earlier this year, OMA deployed Strelka researchers and resources in a competition to help plan a 600-square-mile region newly annexed by the city from the adjacent province. Since then, Koolhaas himself has departed from his de facto deanship, to pursue a new book project for which he's conscripted a number of Strelka grads.

His departure, reportedly amicable (Koolhaas did not respond to an interview request in time for publication), signals a shift at the institute from his research-centric approach to one that favors more real-world problem-solving. Co-director Erixon argues that Strelka's outside engagement has already yielded bona fide results, exerting a measurable influence on the urbanist discourse in Russia well beyond the

From left to right, starting with top row: Strelka's bar is often a haven for design discussions over drinks; the institute hosts a wide range of lectures, given by staff and guests; a DJ cues up tracks in the bar; a table in the bar reserved for the institute; two snapshots of patrons at the restaurant on a recent evening; and a translator at work during a Strelka lecture, a common sight at the institute.




INSTITUTE




AD

HOW CAN STRELKA MOBILIZE GENUINE POPULAR SUPPORT FOR A BETTER PLANNED CITY WHEN ITS PRIME AUDIENCE IS A RELATIVELY SMALL SLIVER OF WEALTHY AND EDUCATED URBANITES? ESPECIALLY WHEN MUCH OF THAT AUDIENCE INCLUDES WELL-CONNECTED BUSINESSMEN AND KREMLIN INSIDERS WITH AT LEAST A NOMINAL STAKE IN KEEPING THE GENERAL PUBLIC AS POLITICALLY UNENGAGED AS POSSIBLE?



design community. "When we started," Erixon says, "the phrase 'public space' did not exist in Russia. Everywhere they talk about public space now. The mayor is running a conference on it."

If Strelka has managed to subtly infiltrate the consciousness of Moscow's thinking classes, it may be largely due to its peculiar combo of idea factory and hotspot—to its colloquia and published essays, yes, but also to the allure of the bar's cushy banquettes. Again and again, from expats and locals alike, one hears the refrain: "It's so *not* Moscow." Dimitry Likin, whose firm, Wowhaus, is responsible for the redesign of the entire site, says his objective was to make restaurant patrons feel that the space had always been there. "We tried to imagine a history of the space," he explains, "as if maybe it used to be a restaurant for factory workers, that then became a dance club, and is now a restaurant for students at Strelka."

It is notable, however, that the bar is not precisely intended for students. Each one receives a monthly stipend from the institute of about $1,300 (students pay no tuition), not a bad figure even in pricey Moscow; yet the restaurant's prices are steep enough that the students don't tend to eat there too often. (There is a kiosk outside with a more budget-conscious menu.) The restaurant does contribute fiscally to the institute's mission: Over $1 million in annual profits go to help cover the school's nearly $6.5 million yearly budget. Then again, that means that every time students give in to a craving for sweet potato hummus, they're participating in a sort of old factory-town economy, spending their scrip at the company store.

More significantly, there's an uncertain relationship between Strelka's educational and public faces that can seem a bit discomfiting. How can Strelka mobilize genuine popular support for a better planned city when its prime audience is a relatively small sliver of wealthy and educated urbanites? Especially when much of that audience includes individuals (well-connected businessmen, Kremlin insiders) with at least a nominal stake in keeping the general public as politically unengaged as possible?

This conundrum is, to a degree, symptomatic. Today, Moscow is a city of sometimes glaring incongruities, and Strelka, with its scruffy scholars rubbing shoulders with oil barons and billionaire investors, reflects this condition as much or more

Students gather for lectures at Strelka's mini-campus, as they have here on this afternoon. But the institute's influence extends well into Moscow itself. Earlier this year, OMA employed Strelka researchers and resources in a competition to help plan a 600-square-mile region that the city of Moscow newly annexed from an adjacent province.

than it attempts to critique or resolve it. As director Anastassia Smirnova sees it, that's part of the point: The institute "exacerbates this paradoxical situation," she says, "and I like it." But while this embrace of paradox makes sense given the organization's founding pedigree (Koolhaas has become synonymous with paradox), only time will tell if Strelka can have a meaningful effect on Russia's built environment and society.

That, ultimately, is the real measure of success, and it's the stated goal of Strelka's prime backer, Alexander Mamut. Calm and understated, and with longstanding relationships with key Russian political figures, Mamut sees the institute as a kind of stealth delivery system for the "Agents of Change" it produces. "In three or five years time," he says, "our graduates from two years ago will become important and visible persons who will make serious contributions."

Already, Strelka alumni have found their way into a variety of influential positions at architecture firms, in the art world, and in Moscow's municipal bureaucracy. Concealed, in part, behind its party image, Strelka may indeed be bringing something to the city that truly is "so not Moscow," an open, cosmopolitan sensibility in tune with critical thinking in cities around the globe. Strelka's inherent contradictions might make it an unlikely force for progress. They might also make it just the thing for the job.

# 2012 ANNU
# DESIG
# REVIE

# BOND GROW LIVE MOVE PLAY WORK

## THE WINNERS OF THIS YEAR'S ANNUAL DESIGN REVIEW—A TOTAL OF 21 PROJECTS IN SIX CATEGORIES—OFFER A SNAPSHOT OF ARCHITECTURE IN THE POST-RECESSION UNITED STATES.

All awards programs endeavor to look at design through a particular lens, set up by the pragmatic strictures of the submission requirements. The Annual Design Review, in the broadest terms, celebrates architecture that is physically located in the U.S. or designed by firms that have an office in the states.

Another consideration is time: All of the projects must have been completed within the past year, meaning that when the jurors sit down to look at the submissions, they are looking at a true picture of the current state of the design industry. Beyond that, it is up to the jury.

The jury members this year were Phoebe Crisman, AIA; G. Martin Moeller Jr., Assoc. AIA; Elizabeth Ranieri, FAIA; Carol Ross Barney, FAIA; and Mark Yoes, AIA. When the five of them assembled in ARCHITECT's Washington, D.C., offices and began to review the projects, a common theme rapidly emerged. "All the really successful projects are striving for a clarity of statement," juror Mark Yoes said. "They're just very clear statements about what their relationship is to their surroundings."

And if clarity of intent was currency for these jurors, they also appreciated economy of means, given that many of the projects were designed during the height of the recession. "We all thought there was some inherent value in projects that achieved a lot with a very low budget," Moeller said—not just because it showed that the architects in question could do more with less, but that they could find moments of true creativity and beauty within the strictures of real-world design. KATIE GERFEN

FOR MORE IMAGES OF THE WINNING PROJECTS, VISIT ARCHITECTMAGAZINE.COM


LINCOLN CENTER THEATER
War Horse
4000 MILES
BEAUMONT
CLAIRE TOW
NEWHOUSE
Arts

"You're messing with iconic architecture here, and the potential to go awry is huge. Yet they did a great job of being respectful of the existing building while still giving you a sense that they were trying to create something that had some identity."

G. Martin Moeller Jr.

**AWARD**
H3 HARDY COLLABORATION ARCHITECTURE

# LINCOLN CENTER THEATER LCT3

**THOUGH ITS CAMPUS** houses many of New York's most preeminent performing arts institutions, Lincoln Center felt it was still missing a small theater amenable to emerging playwrights and more intimate performances. But it was also missing something else: available space to build such a theater. The dense Manhattan neighborhood wouldn't allow any give in the campus footprint, and though there are open plazas, these have become canonical urban areas in their own right. In the end, H3 Hardy Collaboration Architecture settled on an unlikely solution: perching the new 23,000-square-foot Claire Tow Theater, home to Lincoln Center Theater LCT3, atop the Eero Saarinen-designed Lincoln Center Theater.

The rooftop addition rests on six concrete structural columns in the existing building, bridging the gaps between them with steel trusses. The architects punched through one of Saarinen's concrete ceiling coffers to accommodate a channel-glass-enclosed elevator shaft, which connects the new 112-seat theater to the existing lobby. Aluminum screens prevent excessive heat gain and break up the addition's mass. Clad in glass, the orthogonal building corresponds to Saarinen's midcentury aesthetic beneath it. Now there are three main horizontal registers: Saarinen's hulking concrete entablature, with the original glass curtainwall lobby directly underneath, and the new glass addition above. JOHN GENDALL

**AWARD**

WEISS/MANFREDI ARCHITECTURE/
LANDSCAPE/URBANISM

# BROOKLYN BOTANICAL GARDEN VISITOR CENTER

**BLURRING THE LINE** between landscape and architecture, the Brooklyn Botanic Garden Visitor Center comprises two glass-enclosed pavilions that are united by a single roof structure which provides a new public entrance to the 100-year-old gardens along Washington Avenue in Brooklyn, N.Y. From the street, a retail pavilion, topped by a pleated-weathered-copper roof, is the only evidence of the structure, but visitors are quickly ushered through an entry plaza and a breezeway between the retail pavilion and the second, larger volume, which houses exhibition space, a café, and a leaf-shaped event room lined in gingko boards milled from trees felled to make way for the new structure. This larger volume is topped by a 10,000-square-foot green roof, which changes with the seasons, and allows the building to blend in with the bermed gardens.

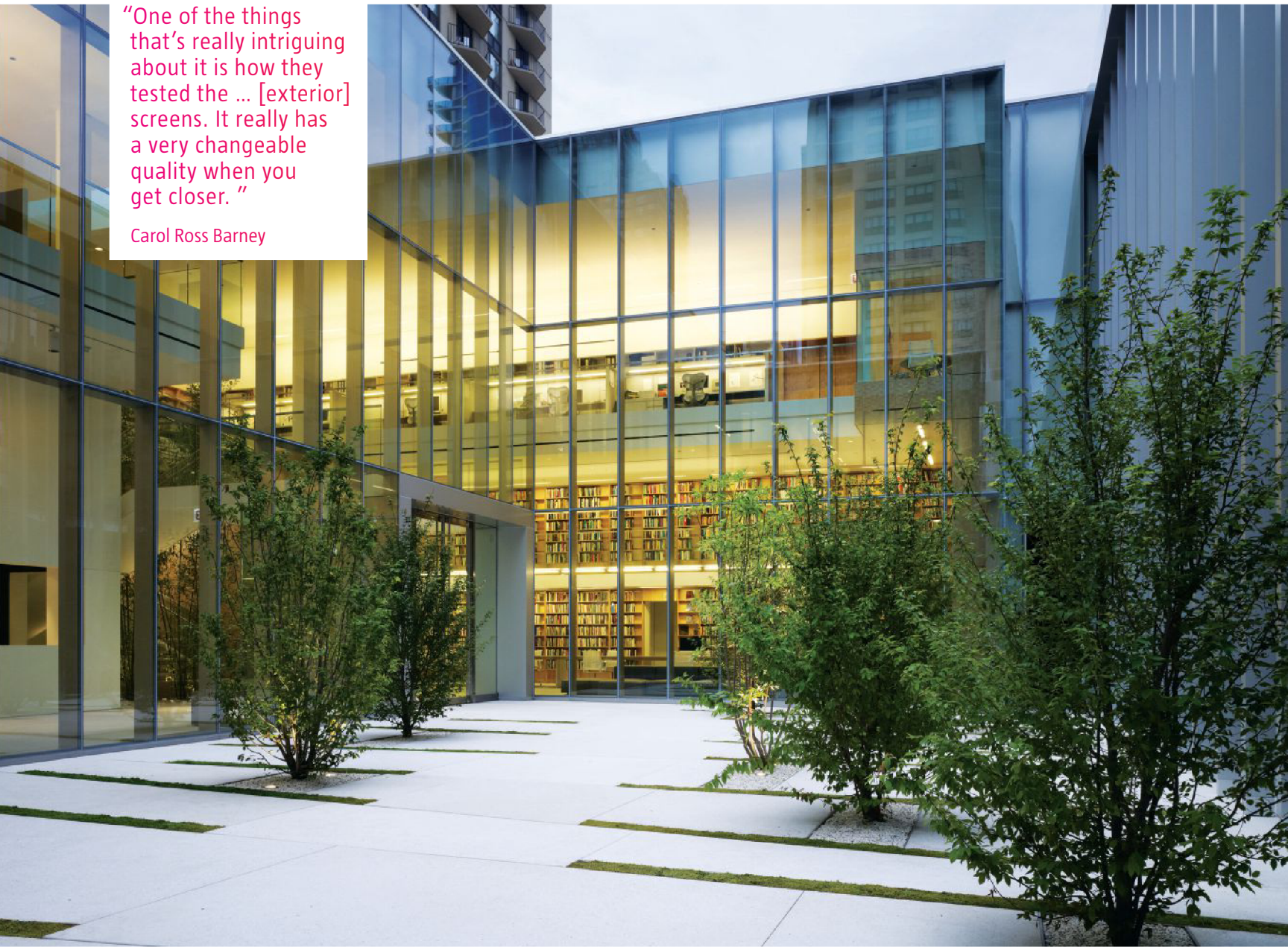
The 26,500-square-foot building's sinuous form is a direct reaction to the site, and the team at Weiss/Manfredi carefully calculated its approach to have as minimal an effect on the existing plantings as possible, as well as to reinforce connections to existing pathways, such as to the garden's famed Cherry Esplanade. An exterior stair wrapping the event space cuts through the building to a second-level terrace that leads to a gingko allée and offers views back to the building's green roof. These reinforced connections make it a thoughtful threshold to the 52-acre garden, and a fitting way to begin the institution's next 100 years. K.G.

"I think there's a little lightness to this in the structural strategy and the fenestration of the building that does make some very beautiful notes inside."

Phoebe Crisman

"One of the things that's really intriguing about it is how they tested the … [exterior] screens. It really has a very changeable quality when you get closer."

Carol Ross Barney



## CITATION

JOHN RONAN ARCHITECTS

# POETRY FOUNDATION

**A METAPHOR FOR** the art form it celebrates, the new home of the Poetry Foundation provides bright, inspiring program spaces for the organization while offering the high visibility and interest needed to cultivate a larger audience. Located in the River North neighborhood of Chicago, the foundation's 26,000-square-foot facility consists of a building that embraces the focal point of the complex: an urban courtyard with human-scaled plantings and spare geometry, which create a serene backdrop for poetry readings.

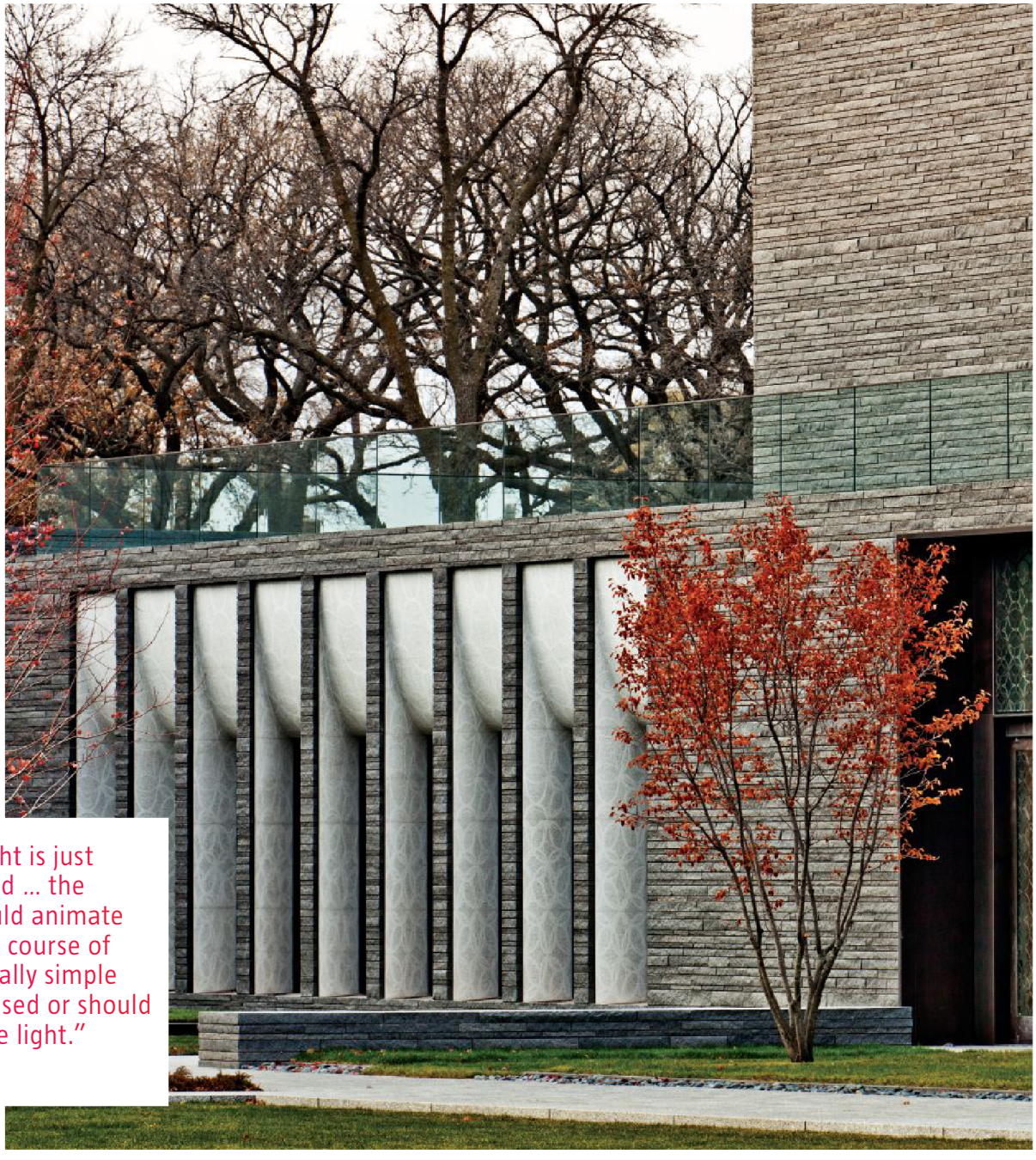
Visitors enter through the courtyard—an urban sanctuary that mediates between the street and the enclosed volumes, blurring the distinctions between public and private spaces. The unfolding spatial sequence first reveals the building's double-height library, which leads into an exhibit gallery and then to the poetry reading room. Conceptually, the building is planned as a series of layers through which people pass: Materially, planes of zinc, glass, and wood define each programmatic zone. The street façade of oxidized zinc is perforated where it abuts the courtyard, allowing glimpses in from the street and enticing visitors. VERNON MAYS

**HONORABLE MENTION**

HGA ARCHITECTS AND ENGINEERS

# LAKEWOOD CEMETERY GARDEN MAUSOLEUM

**SITED IN THE SERENE** landscape of Minneapolis's 141-year-old Lakewood Cemetery, the Garden Mausoleum is a thoughtful construction of traditional funerary materials including granite, marble, and bronze wrought into a contemporary form designed to provide burial space for more than 10,000 people. Public areas occupy a 5,500-square-foot volume at street level, and visitors progress down to the more private 19,000-square-foot lower level, cut into a hillside, that holds the chapel and daylit, marble-lined crypt and columbarium rooms. K.G.



"I think that the light is just so skillfully handled … the way that light would animate the space over the course of the day, so that really simple materials can be used or should be activated by the light."

Phoebe Crisman

**AWARD**
SKIDMORE, OWINGS & MERRILL

# JOHN JAY COLLEGE OF CRIMINAL JUSTICE

**NEW YORK'S JOHN JAY** College of Criminal Justice has been faced with fortunate pressures: surging enrollment and the changing technologies of criminal justice and education. Yet, for years, students and staff continued to work out of several disjointed buildings in Midtown Manhattan. That changed in 2007, when the school broke ground on a new Skidmore, Owings & Merrill (SOM)–designed structure that would not only increase the school's space, but also unify its campus, all while providing sorely needed space for student life, auditoriums, lecture halls, and the technological setup for a 21st century school.

The existing academic building sits on the opposite end of the block and the other side of the street from the school's historic Haaren Hall, so SOM designed a city-block-length elevated landscaped area as a way to connect the disparate buildings and grade changes in a cogent circulatory system. At the site's western terminus, SOM included a tower for academic departments and science facilities—a distinctive building, but also one that responds to its context. The steel frame is clad in glass with aluminum fins, which not only cut solar gain, but also customize the building's finish. On one face, silver-specked mica-flake paint melds with the glass towers along the building's western edge, while red-dotted silk screens on the eastern façade correspond to the school's Haaren Hall brick cladding. J.G.

"The skin of the building is very successful in terms of being a system, on the one hand, but also creating a lot of variety."

Mark Yoes

"I think it's extraordinary in terms of resurrecting some earlier modern motifs and materials, and yet doing it in a way that feels pretty fresh and appropriate for the context."

G. Martin Moeller Jr.

**CITATION**
PERKINS+WILL

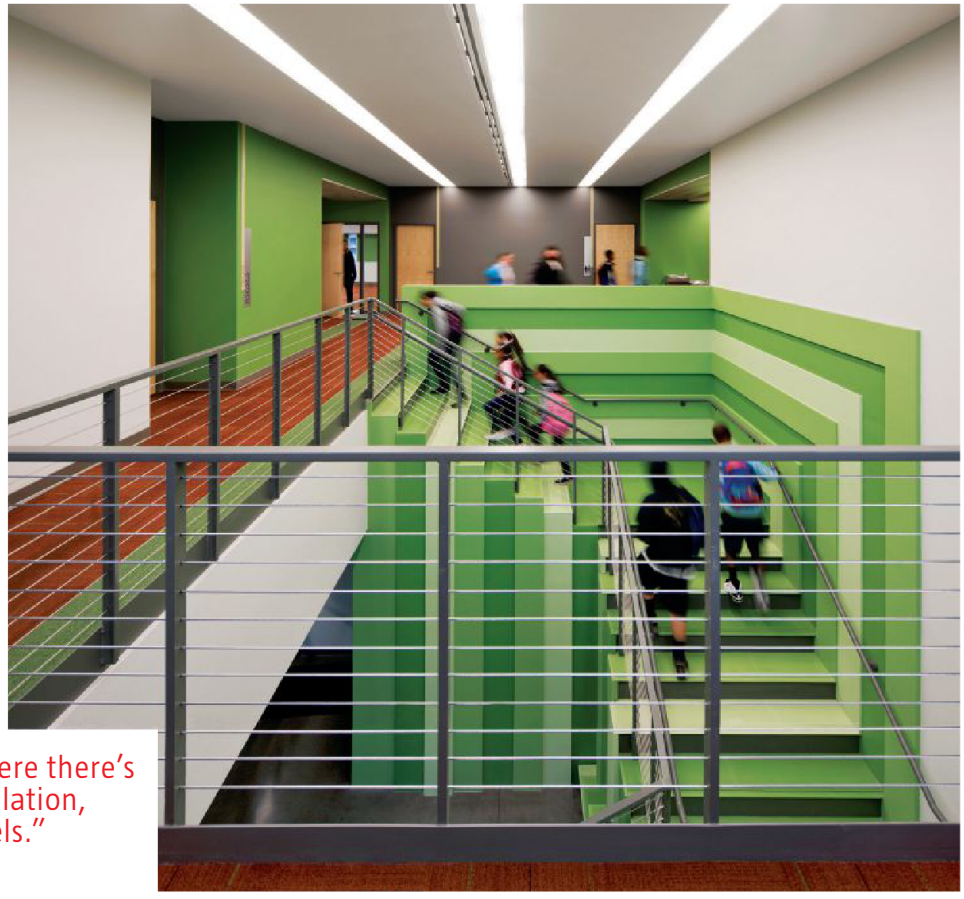
# UNIVERSIDADE AGOSTINHO NETO

**SEEKING TO CENTRALIZE** higher education and retain talent, the government of Angola funded the construction of a new university campus, designed by Perkins+Will, on a previously undeveloped savanna site outside the capital, Luanda. The architects created a pinwheel master plan, concentrating the recently completed first phase—including a new central library and four classroom buildings—at the center of the site, with room for expansion along the "spokes." Cooled by natural ventilation, the classroom buildings are linear concrete bars oriented to capture prevailing winds. The library, sunken below grade, is the only building with air conditioning. The campus's defining feature is an undulating louvered roof canopy that spans the classroom buildings and the courtyards between. Its angles function much like the wings of an airplane, creating pressure differentiation to maximize airflow. MURRYE BERNARD

## HONORABLE MENTION

ORCUTT | WINSLOW

# T.G. BARR SCHOOL



**T.G. BARR ELEMENTARY SCHOOL** in Phoenix was offered a rare opportunity to shed two aging campuses and merge them into one LEED-certified community school. Local firm Orcutt | Winslow was tasked with creating the new 87,720-square-foot campus, using pre-engineered metal buildings, on the existing playing fields of the old schools. Despite a minimal budget ($174 per square foot), the firm maintained connections to the site's fast-disappearing heritage: On-site gardens recall the area's history in citrus and flower production, as well as provide play areas for the children. K.G.

"There are memorable moments where there's intense color and there's high articulation, particularly in the offset green panels."

Elizabeth Ranieri


"I think because of the climate, it really engages the opportunity to be an interior–exterior flow of space."

Elizabeth Ranieri

## HONORABLE MENTION

RUHL WALKER ARCHITECTS

# HAWAII WILDLIFE CENTER

**OCCUPYING A SITE** that was formerly part of a sugarcane plantation, the new Hawaii Wildlife Center is a care-and-response facility that caters to the needs of injured animals, many of them endangered species. Because of the flat and barren nature of the landscape, the 3,420-square-foot wood structure had to provide its own shade, which it does with a 1,116-square-foot covered lanai, and a rainwater catchment system that provides water for all on-site irrigation needs. The building, which was constructed for $250 per square foot, is naturally ventilated by trade winds, and all electricity needs are met by rooftop photovoltaic arrays. K.G.

**AWARD**

LORCAN O'HERLIHY ARCHITECTS

# FLYNN MEWS HOUSE

**ONCE A SHELTER** for carriages and servants, a mews house on the grounds of an 1847 Georgian manor in Dublin is serving its second life as a luxurious 2,600-square-foot four-bedroom residence. Before renovations began, the local planning council requested the preservation of the mews house's Neoclassical façade and that views of it be maintained from the main house. Lorcan O'Herlihy Architects met these requests with its design for the addition, which sits low on the landscape, yet boldly contrasts new with old.

The entrance to the house is off an alley and through a new front elevation composed of black-stained concrete and glass. A contrasting white plaster passageway funnels guests through the volume of the mews house and the restored Neoclassical façade, and finally into a split-level landscaped courtyard. The architects widened an existing opening in the historic façade to accommodate a glass-and-steel bridge that connects the mews house to the new glass curtainwall-clad addition.

The addition sits lightly on the landscape, literally and figuratively, incorporating sustainable features such as an underground heat pump system that uses recycled graywater for radiant floor heating, as well as rooftop solar panels for domestic water heating. MURRYE BERNARD

"It's unpretentious: They've deferred to the existing architecture just enough."

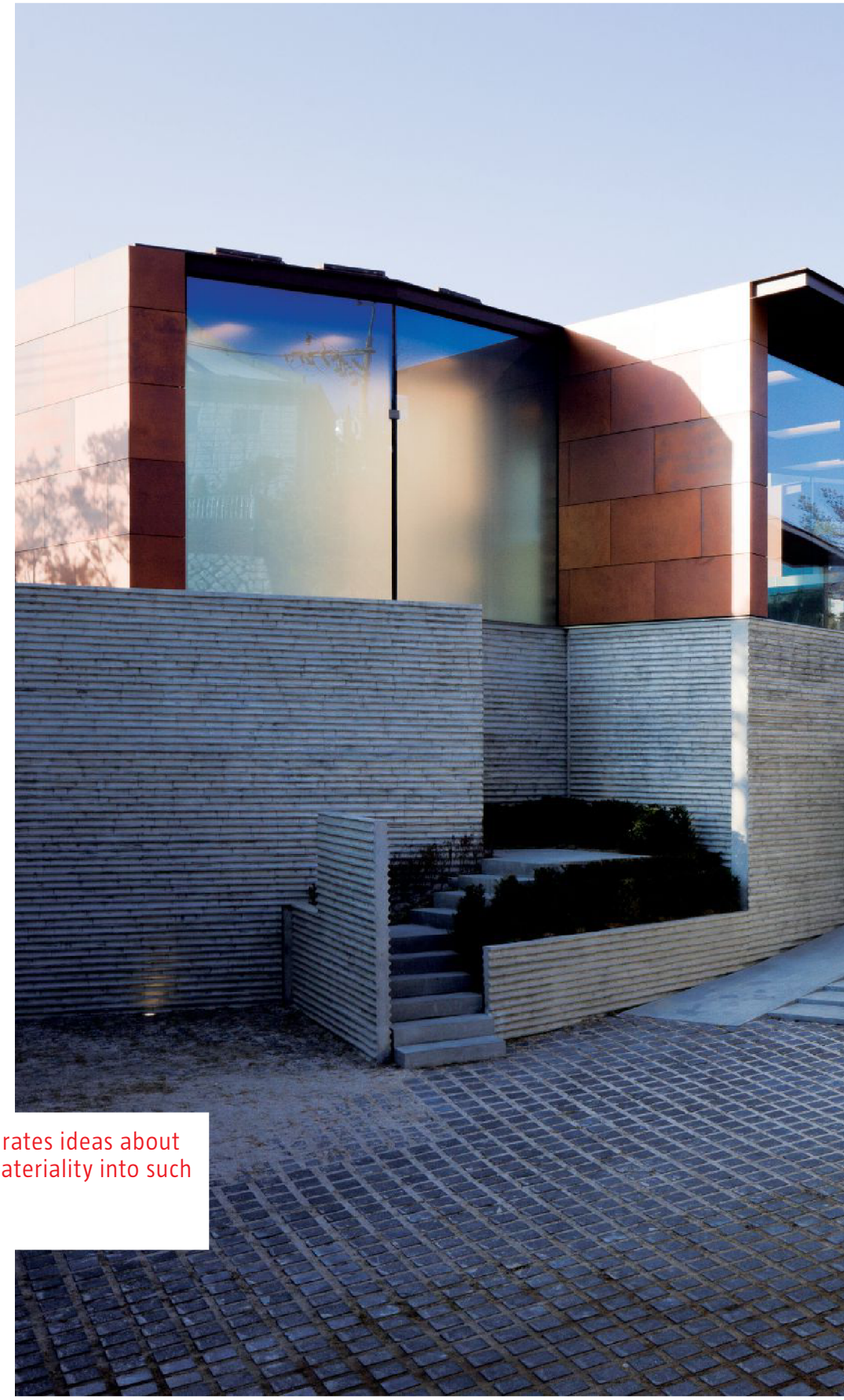
G. Martin Moeller Jr.

**AWARD**

STEVEN HOLL ARCHITECTS

# DAEYANG GALLERY AND HOUSE

**STEVEN HOLL'S DAEYANG GALLERY** and House on a residential hillside outside of Seoul, South Korea, draws inspiration from composer Istvan Anhalt's 1967 sketch of three fragments of a musical score entitled "Symphony of Modules." In its built form, Holl's 10,703-square-foot gallery and house comprises three distinct pavilions—one each for the actual residence, an entry hall, and an event space—all on top of a gallery volume that unifies the structure. The pavilion volumes are tied together by a thin film of water in the form of a shallow reflecting pool on the gallery roof; rectangular skylights under the water allow light to penetrate down to the gallery's interiors. The datum of the reflecting pool is also evident from the entry gate, with grade-level bamboo-formed concrete walls, which contrast with the treated copper cladding of the pavilions above. Thin skylights in the pavilions' ceilings echo those in the gallery below, and the charcoal-stained wood interiors in the pavilions, combined with full-height glazing, add light and warmth to the residence and reception areas. DEANE MADSEN



"It's fantastic the way the project integrates ideas about natural light, water, landscape, and materiality into such a coherent statement."

Mark Yoes

"The client's statement was important to me here—that these units that serve over 500 students 'were taken in just over an hour during the room selection process!'"

Elizabeth Ranieri

**CITATION**

KIERANTIMBERLAKE

# CHARLES DAVID KEELING APARTMENTS

**THIS 160,000-SQUARE-FOOT,** LEED-Platinum housing complex for 510 students at the University of California, San Diego, is designed to promote life-changing understanding about issues of sustainability. Student residents are immersed in a year-long, live-and-learn setting focused on environmental responsibility. Each six-person apartment is configured to benefit from natural ventilation, with daylighting and framed landscape views.

The design facilitates the active use of exterior spaces, encouraging student interaction through circulation that fosters chance encounters, and spaces that are well-suited for individual and group activity. The white concrete exterior ties the building visually to the existing campus architecture, provides comfort through thermal mass, and increases reflectance of natural light. Harsh afternoon sun is blocked either by precast concrete panels or through the innovative use of an industrial fiberglass grating. In addition, stormwater is managed on site through courtyard basins, a vegetated roof, and the natural arroyo. V.M.

## HONORABLE MENTION

P-A-T-T-E-R-N-S + MSA

# JUJUY REDUX

**LOCATED ON A SMALL** corner lot adjacent to the downtown and riverfront neighborhoods in Rosario, Argentina, Jujuy Redux is a mid-rise apartment building designed by Los Angeles–based practices P-A-T-T-E-R-N-S and Maxi Spina Architects. The poured-in-place concrete structure, which boasts 13 apartments, a marble-clad lobby, and a rooftop terrace, is lined with balconies that open out onto the street corner. The articulated form of these balconies break up the massing of the building, and with apertures, integrated benches, and LED lighting, the design provides social spaces that can be tailored to the needs of each resident. K.G.

"The sense that the building desires to acknowledge the corner I thought was beautiful. It felt Argentinian to me—a country where they dress up to take out the garbage."

Elizabeth Ranieri

**AWARD**
EL DORADO

# TROOST BRIDGE

**MORE THAN JUST** another city street, Troost Avenue is the racial and economic dividing line of Kansas City, Mo. So when it came time to replace the 150-foot-long bridge spanning Brush Creek, the city and the Kansas City Area Transit Authority turned to El Dorado. Along with local lighting designer Derek Porter, the firm created a pedestrian experience—part infrastructure, part public art—that connects the communities on either side of the waterway.

By enhancing the barrier that separates cars from people, the team was able to break down the barrier between people and the surrounding site. To that end, the architects lined the perimeter of the bridge with 10-foot-tall, five-ply laminated glass panels—held in place by embedded stainless steel hardware and compression clamp plates—enclosing an 8-foot-wide poured-in-place sidewalk on the western edge, and a 10-foot-wide walkway to the east. Animating the experience, convex reflective stainless steel panels are affixed at ground level to heavy concrete dividing walls that separate these pedestrian zones from the central traffic lanes and create a fun-house mirror effect, which bus passengers see reflected in the glass panels from their elevated seats. Embedded linear LEDs provide pedestrian lighting—their effect amplified by the glass and steel panels at night. K.G.

"A remarkably subtle job for this big hunk of infrastructure. You could pass by this and could see this multiple times, and see something different each time."

G. Martin Moeller Jr.

**CITATION**

POWERS BROWN ARCHITECTURE

# ROY KELLY MULTIMODAL TERMINAL

**THE ROY KELLY MULTIMODAL TERMINAL,** designed by Houston-based Powers Brown Architecture, has become an important connective force in Bryan, Texas, stitching together different parts of the area's civic center. The facility's program includes new county offices, a 900-car parking garage, a bus terminal, and ground-level retail, and the project addresses the many parking demands of nearby employees, courthouse visitors, and commuters catching buses at the terminal. Located in a district of mostly low-lying, two- or three-story buildings, Powers Brown worked to avoid imposing a hulking parking garage that would overpower the district. Taking cues from fire stairs suspended from the façades of buildings in Bryan, the architects animated the garage elevation with what they call the "hyper stair"—a series of stairs that protrudes from the metal scrim suspended from the precast concrete structure—bringing around-the-clock activity to the façade. J.G.

## HONORABLE MENTION

DEBARTOLO ARCHITECTS

# POWER PARASOL LOT 59

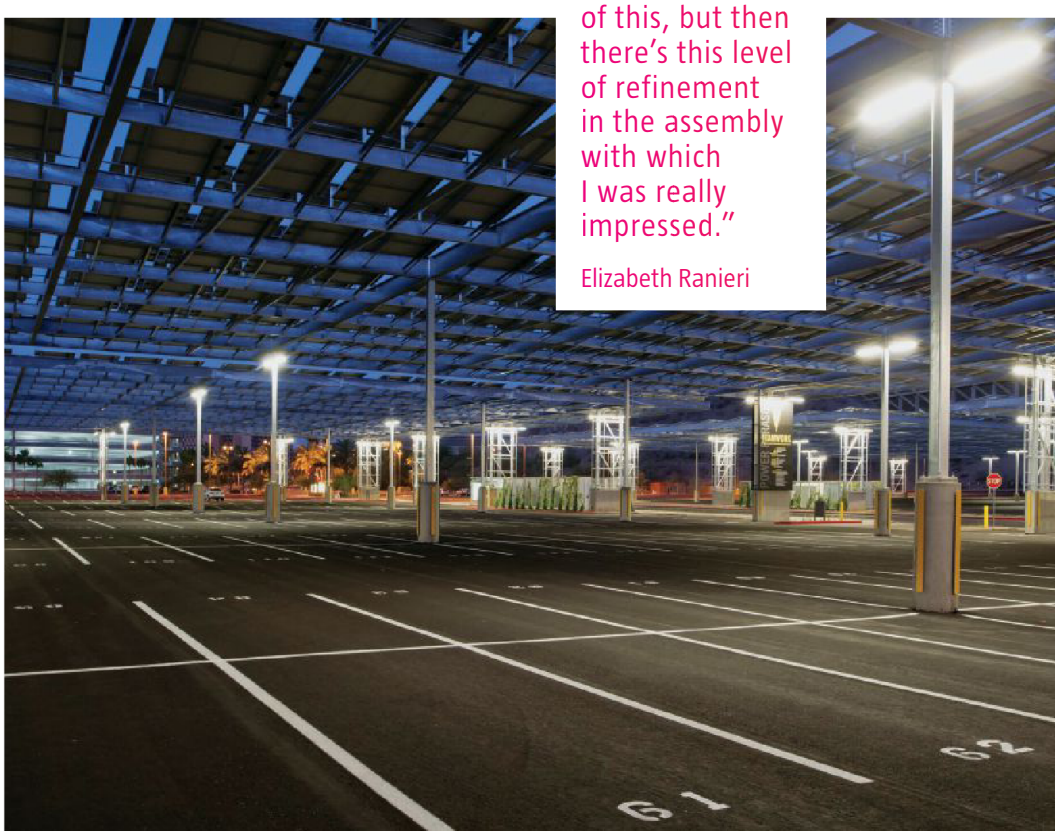
**PART CIVIC SHADE STRUCTURE,** part energy generator, and part billboard, Power Parasol Lot 59 is a galvanized steel structure topped by 7,600 photovoltaic panels that covers an existing parking lot for 800 vehicles at Arizona State University's Tempe, Ariz., campus. Designed by Phoenix-based Debartolo Architects, who worked in concert with a team of structural and electrical engineers, the 227,700-square-foot canopy generates over 2.2 megawatts of electricity. It is supported by slender columns that provide the supporting armature for hanging banners, advertisements, and lighting. K.G.

"It's one of the more successful buildings that makes a connection from the perimeter of the building to the bigger context, like the argument about linking to the pedestrian circulation and the way the building layers out and takes the sidewalk as part of the building."

Mark Yoes

"It's a 5-acre project, so I'm thinking about the colossal scale of this, but then there's this level of refinement in the assembly with which I was really impressed."

Elizabeth Ranieri



"I don't know a child who wouldn't want to stay in those bunkhouses."

Elizabeth Ranieri

**AWARD**
EL DORADO

# TRAIL CENTER AT CAMP PRAIRIE SCHOONER

**CAMPING ONCE MEANT** roughing it, but Girl Scouts in northeast Kansas and northwest Missouri can now earn badges without giving up modern comforts. The new Trail Center at Camp Prairie Schooner, designed by El Dorado, allows girls to camp in a natural setting while enjoying amenities such as Wi-Fi, indoor plumbing, and air conditioning. Located in a wooded area 19 miles southeast of downtown Kansas City, Mo., traversed by creeks and nature trails, the camp features two bunkhouses with kitchens, flexible spaces, a public restroom and shower facilities, accommodating up to 40 girls and eight parents or staff members.

The architects placed the two parallel, bar-shaped bunkhouses, totaling 4,430 square feet, adjacent to an existing dining hall to form an outdoor courtyard. Simple wood-framed scissor trusses support the bunkhouses' roofs, which are clad in corrugated metal panels in alternating neutral colors that wrap the building's long elevations. By contrast, the shorter, east- and west-facing end walls are as bright as the boxes of the Scouts' famous cookies, layered with fluted, colored polycarbonate glazing and painted concrete board over a rainscreen. At night, the colorful end walls glow like lanterns, and during the day they allow light to penetrate. Light wells bring additional daylight into the center of each bunkhouse, and the color theme continues along a series of interior walls and the surfaces of the custom bunkbeds. M.B.

"There's an effort to represent each nationality living in the neighborhood through follies or specific programs … that is a lot of bang for the buck at $34 per square foot."

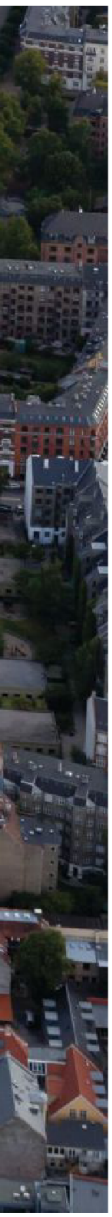
Elizabeth Ranieri

**CITATION**
BIG

# SUPERKILEN

**AT THE EDGE OF** Nørrebro, Copenhagen, a former rail yard has been reclaimed in an effort to bring together the surrounding communities. In the most ethnically diverse part of Denmark—boasting residents of more than 60 nationalities—this narrow, 1-kilometer-long tract of land acknowledges this melting pot through collections of community-selected found objects that represent each culture. The architects at BIG arranged these items within a scheme of three brightly colored, and programmatically diverse, zones: the Black Market offers a space for dining al fresco, the Red Square encourages the sports activities held at the adjacent Nørrebrohall to spill outdoors, and the Green Park provides playing fields and bermed landscapes for family relaxation.

BIG's design for the 323,000-square-foot site, completed on an extremely limited budget, delineates distinct zones through color coding, splashing every surface with its own hue, from murals on buildings, down to the gravel surrounding tree roots. The end product is an exaggerated urban garden, with bright colors that bring liveliness and activity into the public park. D.M.



**HONORABLE MENTION**
COOPER JOSEPH STUDIO

# WEBB CHAPEL PARK PAVILION

**PART OF A PROGRAM** to introduce new architectural pavilions into Dallas's neighborhood parks, the new Webb Chapel Park Pavilion, designed by New York–based Cooper Joseph Studio, provides shaded seating and eating areas for community gatherings. The architects took programmatic constraints—the public site is in a high vandalism area, so it required clear sight lines through the structure—and turned them into an opportunity, creating a sculptural poured-in-place concrete canopy that is set into a low berm and supported solely on three concrete piers. Inside the canopy, four vivid yellow-plastered voids culminate in uniquely shaped skylights that filter natural light into the area beneath, while still offering protection from rain. K.G.

"I would imagine that this would have a very long lifespan. There's something kind of primeval about it—it's kind of like Stonehenge. It has a kind of mysterious, inexplicable quality that I love."

Phoebe Crisman

**AWARD**

LORCAN O'HERLIHY ARCHITECTS

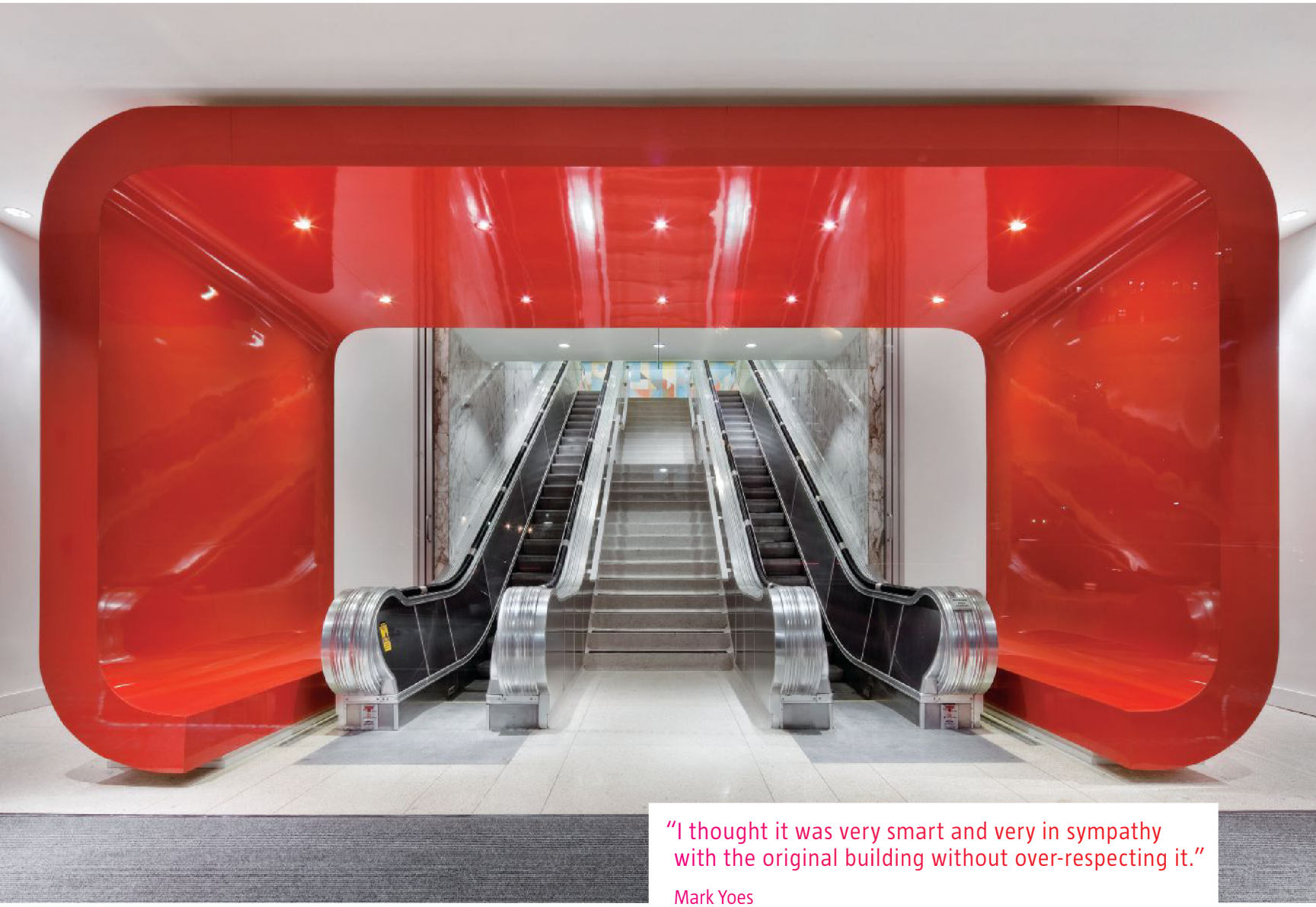
# SKID ROW HOUSING TRUST PROPERTY MANAGEMENT OFFICES

**THANKS TO THIS REPURPOSING** of a former hotel storage space into its new offices, Skid Row Housing Trust is now better equipped to develop, manage, and operate housing for the homeless of Los Angeles. In addition to its emphasis on housing, the organization also provides support services to help its residents move beyond poverty, illness, and addiction. Its goal: to create change by coupling permanent housing with the assistance needed to break the cycle of homelessness.

This 4,100-square-foot tenant improvement houses the nonprofit's new management offices, including a library, conference rooms, and a flexible training and event space. A ground-floor storage area, peppered with heavy steel columns, provided the raw space. Lorcan O'Herlihy embraced the columns as a creative opportunity, devising a series of "trees" that conceal the structure while providing the framework for a custom lighting installation. Made from off-the-shelf components, the lights consist of white aluminum tubes that brighten and enliven the multipurpose space—an informal area where staff and community members interact. The architects also uncovered existing clerestory windows in the building, tapping into an additional natural light source. Custom glass partitions dividing the private offices and conference rooms allow the newfound daylight to penetrate deep into the space, while providing the desired level of privacy inside the offices. V.M.

"You're using the ready-made performance of architecture to really create a scene in that space—an incredibly memorable scenographic experience."

Elizabeth Ranieri



"I thought it was very smart and very in sympathy with the original building without over-respecting it."

Mark Yoes

## CITATION

MCKINNEY YORK ARCHITECTS

# MCGARRAH JESSEE OFFICE

**ORIGINALLY BUILT IN 1954,** the former American National Bank building in Austin, Texas, had become a long-vacant relic of an earlier age, landing in the crosshairs for demolition (and earning an unenviable spot on Preservation Texas's list of "Most Endangered" buildings). Despite these challenges, there were reasons aplenty to save the structure—including its central location, original Florence Knoll interiors, and flexible floor plan.

When a local developer acquired the property and chose to reuse the historic structure, it hired Austin-based McKinney York Architects to redesign the interior for a new tenant—McGarrah Jessee, an advertising agency and the building's new namesake. The design team recycled original materials, including parking grates, plate glass, teak paneling, and marble, wherever possible. Taking cues from an original Seymour Fogel mural on the atrium wall, the architects animated the space with colorful partitions, Knoll furniture, and a new surround for the original, now-restored escalators—the first ever installed in Austin. J.G.

**CITATION**
EL DORADO

# BOULEVARD BREWING COMPANY CELLAR 1 EXPANSION

**TUCKED BETWEEN TWO** busy traffic throughways in Kansas City, Mo., is the 100-year-old building that serves as the home for Boulevard Brewing Co., one of the area's largest microbreweries. When it came time for the company's operation to expand with eight new 40-foot-tall tanks for beer brewing, they turned to local firm El Dorado to fit the new equipment into an existing space, which was only 15 feet high. The resulting glass-and-perforated-aluminum-panel-clad vertical addition encloses the tanks, making them accessible for monitoring and for adding ingredients 24 hours a day, during all seasons.

In addition to providing shelter for the new brewing tanks, the structure—which is chamfered at its northern end in a nod to the path of an underground river on the site—serves as a light monitor, evacuates hot air from the rest of the facility through its roof, and allows natural daylight to permeate adjacent brewing spaces in the complex. K.G.

"You're going to put in eight 40-foot vats. So what do you do? You put them on top of the roof and you make a hood ornament out of them. It calls attention to this gritty part of town."

Carol Ross Barney

# PROJECT CREDITS



## BOND

**Project** Lincoln Center Theater LCT3, New York
**Client** Lincoln Center Theater
**Architect** H3 Hardy Collaboration Architecture, New York—Ariel Fausto, AIA (partner); Hugh Hardy, FAIA (founding partner); Mercedes Armillas, AIA (associate); Sara Silvestri, Angela Chi, Margaret Sullivan (director of interiors); Lissa Evans
**M/E/P/F Engineer** Arup
**Structural Engineer** Severud Associates
**Theater Consultant** Fisher Dachs
**Acoustical Consultant** Jaffe Holden
**Vertical Transportation** Van Deusen & Associates
**Lighting Consultant** Fisher Marantz Stone
**LEED Consultant** Ambrosino DePinto Schmieder
**Code Consultant** William Vitacco Associates
**Signage/Graphic Design** MTWTF
**Contractor** Yorke Construction Corp.
**Size** 23,000 square feet
**Cost** Withheld
**Photographer** Francis Dzikowski/ESTO

**Project** Brooklyn Botanic Garden Visitor Center, Brooklyn, N.Y.
**Client** Brooklyn Botanic Garden
**Architect** Weiss/Manfredi Architecture/Landscape/Urbanism, New York—Michael A. Manfredi, FAIA; Marion Weiss, FAIA (design partners); Armando Petruccelli (project architect/manager); Hamilton Hadden, Justin Kwok (project architects); Christopher Ballentine, Cheryl Baxter, Michael Blasberg, Paúl Duston-Muñoz, Michael Steiner (project team); Patrick Armacost, Jeremy Babel, Caroline Emerson, Eleonora Flammina, Kian Goh, Michael Harshman, AIA, Aaron Hollis, Hanul Kim, Hyoung-Gul Kook, Lee Lim, Jonathan Schwartz, Na Sun, Jie Tian, Yoonsun Yang (additional team members)
**Structural and Civil Engineer** Weidlinger Associates Consulting Engineers
**M/E/P/FP/IT Engineers** Jaros, Baum and Bolles Consulting Engineers
**Landscape Consultant** HM White Site Architecture
**Glazing Consultant** R.A. Heintges & Associates
**Sustainability/Commissioning Consultant** Viridian Energy and Environmental
**Geothermal/Geotechnical Consultant** Langan Engineering and Environmental
**Lighting Consultant** Brandston Partnership
**Acoustical/Audiovisual/Security Consultant** Cerami & Associates/TM Technology
**Exhibit Consultant** Thinc
**Food Service Consultant** Ricca Newmark Design
**Building and Fire Code Consultant** Code Consultants
**Concrete Consultant** Reginald Hough
**Waterproofing Consultant** James R. Gainfort
**Retail Consultant** Jeanne Giordano
**Building Department Consultant** Design 2147
**Specifications Consultant** Construction Specifications
**Construction Management** Liro Group
**General Contractor** E.W. Howell
**Size** 22,000 gross square feet
**Cost** $28 million (total construction cost)
**Photographer** Albert Vecerka/ESTO

**Project** Poetry Foundation, Chicago
**Client** Poetry Foundation
**Architect** John Ronan Architects, Chicago—John Ronan, AIA (lead designer); Tom Lee (project architect); Evan Menk (senior technical coordinator); John Trocke, Marcin Szef, Wonwoo Park (design team)
**Interior and Graphic Design** John Ronan Architects
**Structural Engineer** Arup
**M/E/P/FP Engineer** dbHMS
**Civil Engineer** Terra Engineering
**Landscape Consultant** Reed Hilderbrand Associate
**Lighting Consultant** Charter Sills
**Acoustical Consultant** Threshold Acoustics
**General Contractor** Norcon
**Program Manager** U.S. Equities Realty
**Size** 26,000 gross square feet
**Cost** $10.2 million
**Photographer** Steve Hall/Hedrich Blessing

**Project** Lakewood Cemetery Garden Mausoleum, Minneapolis
**Client** Lakewood Cemetery Association
**Architect** HGA Architects and Engineers, Minneapolis—Daniel Avchen, FAIA (principal-in-charge); Joan Soranno, FAIA (design principal); Stephen Fiskum, AIA (project manager); John Cook, FAIA (project architect); Nick Potts, AIA, Michael Koch, AIA, Eric Amel, AIA, Steve Philippi, Jay Lane, Ross Altheimer, Robert Johnson Miller (project team)
**Structural Engineer** HGA—Paul Asp, Soon Sim Hakes
**Mechanical Engineer** HGA—Craig Lemma
**Civil Engineer** HGA—Jim Husnik
**Electrical Engineer** HGA—Ben Gutierrez
**Lighting Designer** HGA—Tao Ham
**Interior Designer** HGA—Rich Bonnin
**Graphic Design** HGA—Gretta Fry
**Owner's Representative** Nelson, Tietz & Hoye
**General Contractor** M.A. Mortenson Co.
**Landscape Architect** Halvorson Design Partnership—Craig Halvorson, Bryan Jereb
**Master Plan** Elizabeth Vizza
**Mausoleum Consultant** Carrier Mausoleums Construction
**Acoustic Consultant** Kvernstoen, Rönnholm & Associates
**Audiovisual Consultant** Electronic Design Co.
**Reflecting Pool Consultant** Commercial Aquatic Engineering
**Mosaic Tile Consultant** CSI—Tom D. Lynch
**Size** 24,500 gross square feet
**Cost** $25.2 million (including 4-acre site)
**Photographer** Paul Crosby

## GROW

**Project** John Jay College of Criminal Justice, New York
**Clients** City University of New York, John Jay College of Criminal Justice, Dormitory Authority of the State of New York
**Architect** Skidmore, Owings & Merrill, New York—Mustafa K. Abadan, FAIA (design partner); T.J. Gottesdiener, FAIA (managing partner)
**Owner's Representative** Turner Construction Co.
**Structural Engineer** Leslie E. Robertson Associates
**M/E/P Engineer and Vertical Transportation** Jaros Baum & Bolles
**Laboratories Planning** GPR Planners Collaborative
**Civil and Geotechnical Engineer** Langan Engineering & Environmental Services
**Lighting Designer** SBLD Studio
**Higher Education Programming** Scott Blackwell Page Architect
**Landscape Architect** Quennell Rothschild & Partners
**Food Service** Romano Gatland
**Acoustical/Audiovisual/Telecom/Security Consultant** Shen, Milson & Wilke
**Graphics** Lebowitz Gould Design
**Door Hardware Consultant** Ingersoll Rand
**Environmental and Energy Consultant** S.D. Keppler & Associates
**Building Maintenance** Lerch Bates
**Zoning** Development Consulting Services
**Expediting Services** RPO
**Cost Estimating** AccuCost Construction Consultants, Turner Construction Co.
**Size** 625,000 square feet
**Cost** Withheld
**Photographer** Eduard Hueber

**Project** Universidade Agostinho Neto, Luanda, Angola
**Client** Ministry of Urban Affairs and Public Works on behalf of the Ministry of Education and Culture
**Architect** Perkins+Will, Chicago—Ralph Johnson, FAIA (design principal); William Doerge (principal-in-charge); Todd Snapp, AIA, David Gutierrez, Thomas Demetrion, Cengiz Yetken, AIA, Mark Hartmann, AIA, Kenneth Soch, AIA, Marius Ronnett, AIA, Nathalie Belanger, Bryce de Reynier, AIA, Angel Ortiz, Flavia de Almeida, Lori Day, AIA, Todd Accardi, AIA, John Ruthven, Jeffrey Hayner, Michael Weiner, Michael McPhail, AIA; Interiors—Karen Schuman, Paula Pilolla, Chinatsu Kaneko, David Carr, AIA, Linda Swain, Austin Zike
**M/E/P, Structural, and Civil Engineer** Dar Al-Handasah, Shair and Partners—Yousef Motar (engineering project director)
**Environmental Engineer** Battle McCarthy—Guy Battle (principal)
**Landscape Architect** Dar Al-Handasah, Shair and Partners—Yousef Motar; Battle McCarthy—Guy Battle
**Lighting Designer** Schuler Shook—Emily Klingensmith
**Library Consultant** Paulien & Associates—John Bengston
**General Contractors** Grinaker LTA (infrastructure); Soares da Costa (core & shell); JiangSu International (interior fit-out); Somague Engenharia (library); China Jiangsu International Economic Technical Cooperation Corporation (colleges)
**Size** 330,000 square feet (phase 1); 1.2 million square feet (expected full build-out)
**Cost** Withheld
**Photographer** James Steinkamp

**Project** T. G. Barr School, Phoenix
**Client** Roosevelt School District No. 66
**Architect** Orcutt | Winslow, Phoenix—Vispi Karanjia (partner-in-charge); Mike Sundberg, AIA (education studio director); Jeff Kershaw (project architect); Stacia Ledesma (project designer); Matt Johnson, Roxana Morales (team)
**General Contractor** CORE Construction—Dave Tucker (project manager), Robin Sandidge (project superintendent)
**Structural Engineer** Caruso Turley Scott—Richard Turley (principal); Juan Carrillo (engineer)
**Civil Engineer** Hess-Rountree—Doug Osborn (principal); Percy Myron (engineer)
**M/P Engineer** Kraemer Consulting Engineers—Don Balach, Jacque Dallas (engineers)
**Electrical Engineer** Zee Engineering—Shyamuk Sidwa
**Landscape Architect** Arcore Group—Yash Chaudhry
**Food Service** James Brockman Associates
**Metal Building Supplier** Metallic Building Company—Bryan Blagg (project manager)
**Metal Building Installer** Architectural Building Systems—Wynn Pratt
**Size** 87,720 square feet
**Cost** $12.9 million
**Photographer** Timmerman Photography

**Project** Hawaii Wildlife Center, Halaula, Hawaii
**Client** Hawaii Wildlife Center
**Architect** Ruhl Walker Architects, Boston—William Ruhl, AIA (principal-in-charge); Sandra Baron, AIA, Grant Scott
**Associate Architect** Rhoady Lee Architecture & Design, Kamuela, Hawaii—Rhoady Lee, AIA, Aaron Spielman
**Landscape Architect** Umemoto Cassandro Design Corp.—Jason Umemoto
**General Contractor** Tinguely Development
**Structural Engineer** William Blakeney
**Civil Engineer** Peter J.K. Dahlberg
**Mechanical Engineer** Mark Morrison
**Solar + Wastewater Engineering** Kohala Engineering
**Electrical Engineer** Smithsonian/SAO—John K. Maute
**Size** 3,420 square feet
**Cost** $970,742
**Photographer** Ethan Tweedie

## LIVE

**Project** Flynn Mews House, Dublin
**Client** Ella Flynn
**Architect** Lorcan O'Herlihy Architects, Los Angeles—Lorcan O'Herlihy, FAIA (principal); Donnie Schmidt (project designer); Alex Morassut (project manager); Po-Wen Shaw
**General Contractor** Oikos Builders—David Coyne
**Structural Engineer** Casey O'Rourke & Associates—John Casey
**Executive Architect** ODOS Architects—Darrell O'Donoghue
**Landscape Architect** Doyle Herman Design Associates—James Doyle
**Size** 2,600 square feet
**Cost** Withheld
**Photographer** Enda Cavanagh

**Project** Daeyang Gallery and House, Seoul, South Korea
**Client** Daeyang Shipping Co.
**Architect** Steven Holl Architects, New York—Steven Holl, FAIA (design architect); JongSeo Lee (associate-in-charge); Annette Goderbauer, Chris McVoy (project advisers); Francesco Bartolozzi, Marcus Carter, Nick Gelpi, Jackie Luk, Fiorenza Matteoni, Rashid Satti, Dimitra Tsachrelia (project team)
**Local Architect** E.rae Architects—Inho Lee, Minhee Chung, Hyoungil Kim
**Structural Engineer** SQ Engineering
**Mechanical Engineer** Buksung HVAC+R Engineering
**Lighting Consultant** L'Observatoire International
**General Contractor** Jehyo
**Size** 10,703 square feet
**Cost** Withheld
**Photographer** Iwan Baan

**Project** Charles David Keeling Apartments, San Diego
**Client** University of California, San Diego
**Architect** KieranTimberlake, Philadelphia—James Timberlake, FAIA (design partner); Stephen Kieran, FAIA (design partner); Joanne Aitken, FAIA (associate-in-charge); Kate Czembor, AIA (project architect); Richard Hodge, AIA, David Feaster, AIA, Zinat Yusufzai, AIA, Elizabeth Kahley, AIA, Randy Knight, AIA, Andrew Schlatter, Derek Brown, Roderick Bates (design team)
**Landscape Architect** Spurlock Poirier
**Electrical Engineer** Sparling
**M/E/FP Engineer** IBE Consulting Engineers
**Structural Engineer** Inertia Engineers
**Civil Engineer** Nasland Engineering
**Cost Estimating** International Consultants
**Specifications Consultant** Technical Resources Consultant
**Environmental Consultant** Atelier Ten
**Lighting Consultant** Candela
**Construction Manager** Swinerton Builders
**Aerial Photographer** Lenska Aerial Images
**Size** 159,600 gross square feet
**Cost** $50 million
**Photographer** Tim Griffith

**Project** Jujuy Redux, Rosario, Argentina
**Client** D.R.S. Construcciones
**Architect** P-A-T-T-E-R-N-S + MSA, Los Angeles—Marcelo Spina, Intl. Assoc. AIA, Georgina Huljich, Maximiliano Spina (principals-in-charge); Rick Michod, Nathaniel Moore, Giuliana Haro, Daniele Profeta, Mike Wang (project team)
**Interior Designer/Landscape Architect/Lighting Designer** P-A-T-T-E-R-N-S + MSA
**Mechanical Engineer** Juan Carlos Vaz, Alfa Ascensores; Ingeniero Daniel Leon
**Structural and Civil Engineer** Jose Orengo Ingenieros
**Electrical Engineer** Osvaldo Cichirillo
**Construction Managers** Marcelo and Maximiliano Spina
**General Contractor** D.R.S. Construcciones
**Code Consultants** Oscar Coniglio and Martín Gascón
**Lighting Consultant** Lorena Beltran, Serra Luz Rosario
**Landscape Consultant** Estilo Natural
**Window Consultant** Carlos Piro
**Fabrics Consultant** Emanuel Presas
**Signage Consultant** Liliana Silvano, Letreros Silvano
**Furniture Consultants** Forcén Design—Juan Angel Forcén; Nosten—Juan Ignacio Forcén, Javier Forcén
**Stone Consultant** José María Liebanas
**Metal Consultant** Fabián Aimino
**Size** 13,500 square feet
**Cost** $1.65 million
**Photographer** Gustavo Fritegotto

## MOVE

**Project** Troost Bridge, Kansas City, Mo.
**Client** City of Kansas City, Mo. (glass panels); Kansas City Area Transit Authority (stainless steel panels)
**Architect** El Dorado, Kansas City, Mo.—David Dowell, AIA, Chris Burk
**Artist** Derek Porter
**Engineer** Genesis Structures—Dave Rogowski
**Glass Panels** Carter Glass—Bill Carter
**Stainless Steel Panels** Zahner—Bill Zahner, Tom Zahner, Don Kirby
**Bridge Engineer** HNTB—Jim Truesdell, Wayne Feuerborn, Robert Krewson
**Bridge Lighting Designing** Light Works—Kathi Vandel
**Bridge Contractor** Pyramid—Mark Holmes
**Community Liaison** Brush Creek Community Partners—Carol Grimaldi
**Size** 80 linear feet (west side); 110 linear feet (east side)
**Cost** $580,500 for glass panels; $89,780 for stainless steel panels
**Photographer** Mike Sinclair

**Project** Roy Kelly Multimodal Terminal, Bryan, Texas
**Client** The District
**Architect** Powers Brown Architecture, Houston—Jeffrey Brown, AIA (principal of design); Nazir Khalfe (project manager); John Cadenhead, AJ Breneman, Ada Ho, Amna Ansari, Alaina Dixon (project designers)
**Contractor** D.E. Harvey
**Structural and Civil Engineer** Walter P. Moore
**M/E/P Engineer** Infrastructure Associates
**Landscape Engineer** Clark Condon Associates
**Size** 87,000 square feet
**Cost** $4.3 million
**Photographer** Dror Baldinger, AIA

**Project** Power Parasol Lot 59, Phoenix
**Owner** NRG Solar—Thomas Reagan
**Host** Arizona State University, Tempe Campus
**Developer** Strategic Solar Energy
**Architect** Debartolo Architects, Phoenix—Jack DeBartolo III, AIA
**Contractor** Hardison/Downey Construction—Kevin Vander Molen, AIA
**Structural Engineer** Rudow + Berry—Mark Rudow
**Electrical Engineer** Taylor Rymar Corp.—Dan Simpson
**Civil Engineer** Evans Kuhn & Associates—George Evans
**Landscape Engineer** JJR Floor—Kris Floor
**Geotech Consultant** Speedie & Associates
**Size** 227,700 square feet
**Cost** Withheld
**Photographer** Michael Nothum

## PLAY

**Project** Trail Center at Camp Prairie Schooner, Kansas City, Mo.
**Client** Girl Scouts of northeast Kansas and northwest Missouri
**Architect** El Dorado, Kansas City, Mo.—Douglas Stockman, AIA (principal-in-charge); Sean Slattery, AIA (project manager); Brandon Froelich (project designer)
**General Contractor** Haren Laughlin Construction
**M/E/P Engineer** PKMR Engineering
**Structural & Civil Engineer** Wallace Engineering
**Landscape Architect** Confluence
**Code Consultant** Code Consulting Services
**Furnishings** Custom bunk bed design and fabrication by El Dorado's 2011–2012 graduate architecture studio at Kansas State University (co-taught by Douglas Stockman, AIA, and David Dowell, AIA)
**Size** 4,430 square feet
**Cost** $797,400
**Photographer** Mike Sinclair

**Project** Superkilen, Copenhagen, Denmark
**Client** Copenhagen Municipality, Realdania
**Authorship** BIG, Topotek1, Superflex
**Collaboration** Lemming Eriksson, Help PR & Communication
**Architect** BIG, New York—Bjarke Ingels (partner-in-charge); Nanna Gyldholm Møller, Mikkel Marcker Stubgaard (project leaders); Ondrej Tichy, Jonas Lehmann, Rune Hansen, Jan Borgstrøm, Lacin Karaoz, Jonas Barre, Nicklas Antoni Rasch, Gabrielle Nadeau, Jennifer Dahm Petersen, Richard Howis, Fan Zhang, Andreas Castberg, Armen Menendian, Jens Majdal Kaarsholm, Jan Magasanik (project team)
**Landscape Consultant** Topotek1—Martin Rein-Cano, Lorenz Dexler (partners-in-charge); Ole Hartmann, Anna Lundquist (project leaders); Toni Offenberger, Katia Steckemetz, Cristian Bohne, Karoline Liedtke (project team)
**Art Consultant** Superflex—Jakob Fenger, Rasmus Nielsen, Bjørnstjerne Christiansen (project team)
**Size** 322,917 square feet
**Cost** Withheld
**Photographer** Iwan Baan

**Project** Webb Chapel Park Pavilion, Dallas, Texas
**Client** City of Dallas
**Architect** Cooper Joseph Studio, New York—Wendy Evans Joseph, FAIA (principal-in-charge); Chris Cooper, AIA (principal-in-charge); Chris Good (project manager/design team); Read Langworthy (design team)
**Associate Architect** Quimby McCoy Preservation Architecture, Dallas, Texas—Nancy McCoy, FAIA (principal-in-charge); Susan Bruns (project manager)
**Structural Engineer** Jaster-Quintanilla Engineering—John Hoenig
**Electrical Engineer** Gerard & Associates Consulting Engineers—Walter Gerard
**Concrete Consultant** Reginald D. Hough, FAIA
**General Contractor** Phoenix I Restoration & Construction
**Size** 903 square feet
**Cost** $250,000
**Photographer** Eduard Hueber/Arch Photo

## WORK

**Project** Skid Row Housing Trust Property Management Offices, Los Angeles
**Client** Skid Row Housing Trust
**Architect** Lorcan O'Herlihy Architects, Los Angeles—Lorcan O'Herlihy, FAIA (principal); Donnie Schmidt (project designer); Alex Morassut (project manager)
**Structural Engineer** Franceschi Engineering—Paul Franceschi
**M/P Engineer** MNS Engineering—Mehrdad Rokni
**Electrical Engineer** Amelect—Amos Slutzky
**Lighting Designer** Lorcan O'Herlihy Architects—Lorcan O'Herlihy, FAIA
**Executive Architect** ODOS Architects—Darrell O'Donoghue
**General Contractor** Tsuchiya Construction Co.—Rob Schlief
**Size** 4,100 square feet
**Cost** $266,500
**Photographer** Lawrence Anderson

**Project** McGarrah Jessee Office, Austin, Texas
**Client** McGarrah Jessee and Kemp Properties
**Architect** McKinney York Architects, Austin, Texas—Heather H. McKinney, FAIA, Will Wood, AIA, Al York, AIA, Michelle Rossomando, AIA, Sarah Bullock McIntyre, Aaron Taylor
**General Contractor** AKA Builders
**Structural Engineer** CBM Engineers
**M/E/P Engineer** MEJ & Associates
**Size** 35,700 square feet
**Cost** Withheld
**Photographer** Thomas McConnell

**Project** Boulevard Brewing Company Cellar 1 Expansion, Kansas City, Mo.
**Client** Boulevard Brewing Company
**Architect** El Dorado, Kansas City, Mo.—Josh Shelton, AIA (principal); Chris Burk (project manager); Steve Salzer, AIA (envelope design)
**General Contractor** El Dorado
**M/E/P Engineer** PKMR Engineering
**Structural and Civil Engineer** Genesis Structures
**Lighting Consultant** Derek Porter Studio
**Brewing Infrastructure, Design, and Installation** Boulevard Brewing Company
**Size** 2,000 square feet
**Cost** Withheld
**Photographer** Mike Sinclair

Volume 101, number 12. December 2012. ARCHITECT® (ISSN 0746-0554; USPS 009-880) is published monthly by Hanley Wood, LLC, One Thomas Circle, NW, Suite 600, Washington, DC 20005. 

Periodicals postage paid at Washington, DC, and at additional mailing offices. POSTMASTER: Send address changes to ARCHITECT, P.O. Box 3494, Northbrook, IL 60065-9831.

Canada Post Registration #40612608/G.S.T. number: R-120931738. Canadian return address: Pitney Bowes Inc., P.O. Box 25542, London, ON N6C 6B2.

**DISCLOSURE** ARCHITECT® will occasionally write about companies in which its parent organization, Hanley Wood, LLC, has an investment interest. When it does, the magazine will fully disclose that relationship.

**PRIVACY OF MAILING LIST** Sometimes we share our subscriber mailing list with reputable companies we think you'll find interesting. However, if you do not wish to be included, please call us at 888.269.8410.

# JURY



ELIZABETH RANIERI, FAIA
A founding principal of San Francisco–based Kuth | Ranieri (with partner Byron Kuth, FAIA), Ranieri holds degrees in architecture and fine arts from the Rhode Island School of Design, and has taught at California College of the Arts and Harvard University's Graduate School of Design (GSD). She is also a founding member of the Deep Green Design Alliance.

CAROL ROSS BARNEY, FAIA
Ross Barney is principal and founder of Ross Barney Architects, which she opened in Chicago in 1981. In addition to winning several AIA Honor Awards for projects from the last three decades, including the Oklahoma City Federal Building, she is also the recipient of the 2005 AIA Thomas Jefferson Award for Public Architecture.

MARK YOES, AIA
Yoes earned degrees from Rice University and Yale, as well as an AIA Gold Medal for students, before founding New York–based WXY Architecture + Urban Design with partner Claire Weisz, AIA. In addition to his practice, he currently serves as a lecturer for the University of Toronto's John H. Daniels Faculty of Architecture, Landscape, and Design.

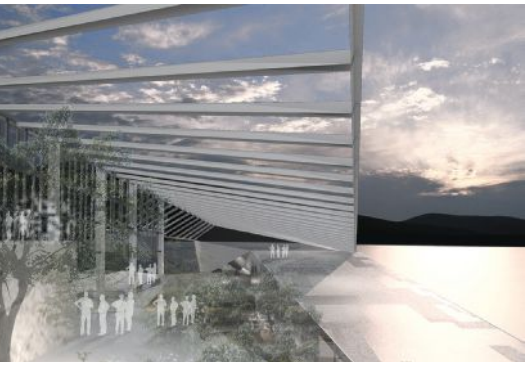
PHOEBE CRISMAN, AIA
Crisman is an associate professor of architecture and associate dean for research at the University of Virginia (UVA) School of Architecture in Charlottesville, Va.; she also leads UVA's India Initiative as director of the Global Sustainability Minor program. She has degrees from Harvard GSD and Carnegie Mellon, and completed a Fulbright fellowship in the Netherlands.

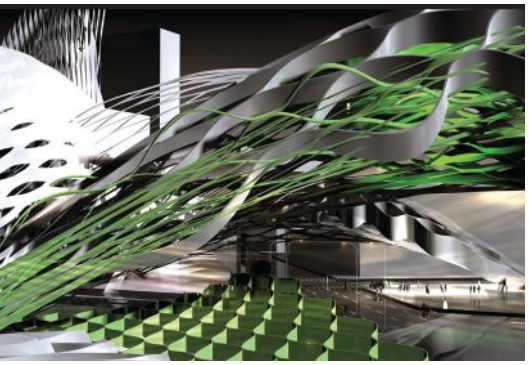
G. MARTIN MOELLER JR., ASSOC. AIA
Moeller is the senior vice president and curator at the National Building Museum in Washington, D.C., and in that position, he has compiled exhibits such as "Unbuilt Washington" and "Unbuilt–Built: The Influence of the Progressive Architecture Awards"—a look at the 60-year history of the awards program for unbuilt work, which ARCHITECT took over in 2007.

ELI KAPLAN

# ACADEMY *of* ART UNIVERSITY®

FOUNDED IN SAN FRANCISCO 1929 BY ARTISTS FOR ARTISTS





## STUDY ONLINE OR IN SAN FRANCISCO

Acting*
Advertising
Animation & Visual Effects
**Architecture**
Art Education
Art History
Fashion
Fine Art
Game Design
Graphic Design
Illustration
Industrial Design
Interior Architecture & Design
Jewelry & Metal Arts*
Landscape Architecture
Motion Pictures & Television
Multimedia Communications
Music Production & Sound Design for Visual Media
Photography
Visual Development*
Web Design & New Media

## ENROLL NOW

EARN

YOUR AA, BA, BFA, MA, MFA OR M.ARCH ACCREDITED DEGREE

ENGAGE

IN CONTINUING ART EDUCATION COURSES

EXPLORE

PRE-COLLEGE ART EXPERIENCE PROGRAMS

**WWW.ACADEMYART.EDU**

**800.544.2787 (U.S. Only) or 415.274.2200**

79 NEW MONTGOMERY ST, SAN FRANCISCO, CA 94105

Accredited member WASC, NASAD, CIDA (BFA-IAD, MFA-IAD), NAAB (M.ARCH)

**Acting, Jewelry & Metal Arts and Visual Development degree programs are not available online.*

Visit www.academyart.edu to learn about total costs, median student loan debt, potential occupations and other information.

*Photo credits, clockwise from top left: Huiyi Xu, Pat Panupaisal, Arash Archer Firouzi and Kylee Keller*

# Classifieds/Resource

## SEEKING EXPRESSIONS OF INTEREST
## BONDED WATERPROOFING SYSTEMS

Moffat & Nichol is accepting Expression of Interest ("EOI") letters for participation in a testing program that will be used to pre-qualify bonded waterproofing systems ("BWPS") for an upcoming public works construction project in the United States of America. The project will include large-scale application of a BWPS to the interior surface of a concrete tunnel, with an estimated coverage of 1.2 million square feet. The BWPS is anticipated to include a membrane bonded to the concrete tunnel, with a shotcrete layer applied over most or all of the membrane to achieve the necessary fire rating of "non-combustible" or to otherwise protect the membrane. Products or systems that are not currently in use will not be considered.

***Vendors who submit an EOI and whose BWPS passes the subsequent screening and testing program successfully are advised that their BWPS will be eligible for the construction contract.***

***Manufacturers of products suitable for:***

- Tunnel applications
- Bonding to a concrete wall (inside face of tunnel)
- Spanning cracks that have opened after application of the membrane
- Resisting negative (exterior) hydrostatic pressures up to 60 psi
- Applying a shotcrete layer over the membrane without reducing the quality of the membrane

***are encouraged to submit EOIs.***

To receive a package of detailed criteria and complete submittal requirements, send your EOI on company letterhead, with contact name and postal and email address, in writing no later than

**December 18, 2012**

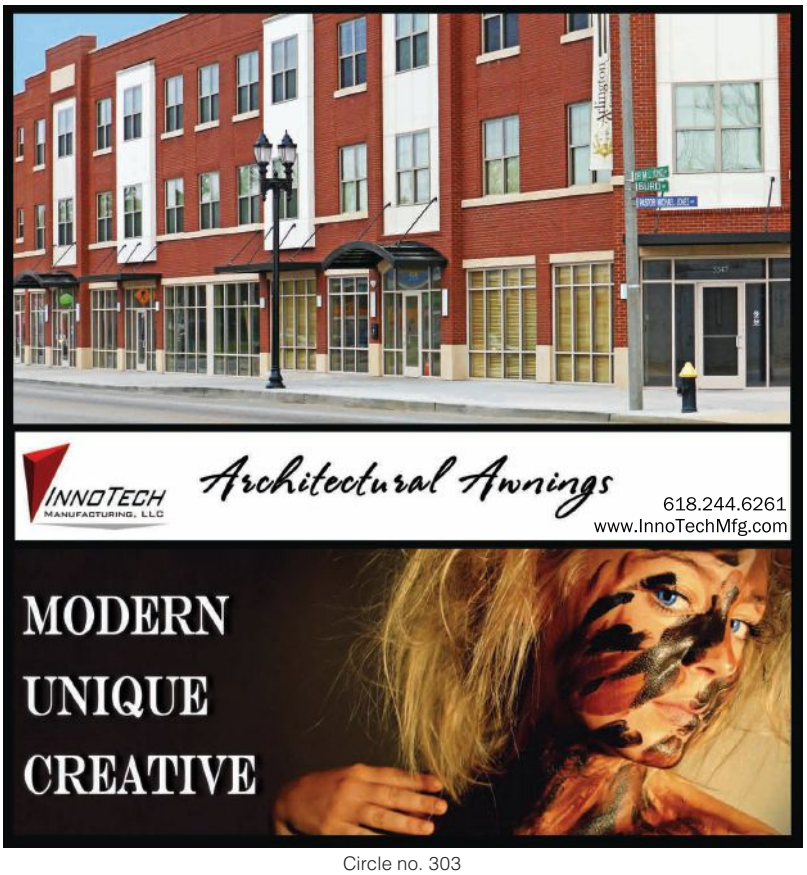
Moffatt & Nichol
2185 N. California Blvd. Suite 500,
Walnut Creek, CA 94596-3500
Attention of "Membrane EOI"

Letters may be emailed to
**membrane@moffattnichol.com**

Your EOI letter MUST include the full trade name of your existing commercial bonded waterproofing material or waterproofing system.

Circle no. 300


Circle no. 301




Circle no. 303


Circle no. 302


Circle no. 304

## Magnet for Top Talent

JR Walters Resources, premier A/E/C recruiting firm, can assist in growing your company and your career. Direct and Contract – National and International

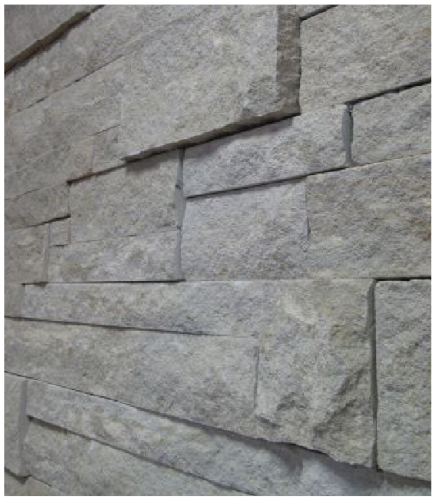
**www.jrwalters.com**
**or call 269.925.3940**

Circle no. 305

# Resource

## ARRIS.stack™ Thin Stone Veneer

*Simply Stone™*



Now, the beauty of Arriscraft stone is available in a thin veneer that adheres like tile. ARRIS.stack™ Thin Stone Veneer has the look of full bed stone, with the ease of installation of thin stone.

www.arriscraft.com
800.265.8123

Arriscraft
Building Stone · Brick · Limestone

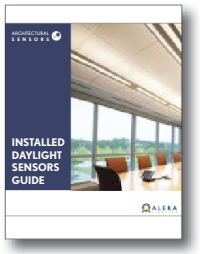
Circle no. 306

## EHV-Vanity Brackets

Rakks Vanity Brackets simplify and reduce the cost of installing ADA sinks with millwork enclosures. Brackets are supplied with wooden strips on the front faces for easy installation of panels. Available in both stocked and make-to-order sizes.


Rangine Corporation | 330 Reservoir Street
Needham, MA 02494 | www.rakks.com

Circle no. 311




**Alera Lighting's Daylight Sensors** are now pre-installed in a variety of popular Alera Architectural Luminaires, further expanding their commitment of incorporating sustainable technology into energy savings solutions. Alera's Architectural Sensors offering helps facility and business owners address the Department of Energy's (DOE) daylighting and occupancy control code compliance requirements stated in ASHRAE 90.1.

ALERA LIGHTING

**www.aleralighting.com**

Circle no. 307

ARCAT®
The Building Products App

amazon apps — Available at amazonappstore for Android

Available on the App Store

GET IT ON Google play

Circle no. 309

## Bradley's New Advocate™ Lavatory System Employs Touchless "All-in-One" Design

Bradley Corp. introduces its new Advocate™ Lavatory System — the first lavatory unit to provide a sink, soap, faucet and dual-sided hand dryer all in one sleek, touchless unit. The "all-in-one" design simplifies hand-washing while maximizing a safer restroom environment because water goes down the drain — not on the floor or down the walls.

**800-BRADLEY**
**www.bradleycorp.com/advocate**

Circle no. 312

## O'Connor Shelf Support

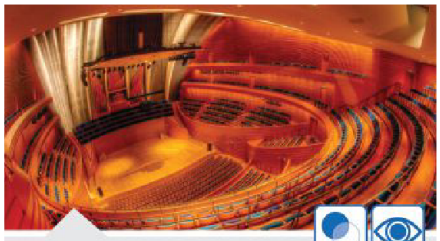
Unique extruded design featuring an arched bottom piece connected by several smaller slats, creating stability from underneath as well as an overall aesthetic. Suitable for shelves up to 10″ deep.

MOCKETT
DOUG MOCKETT & COMPANY, INC

www.mockett.com • (800) 523-1269

Circle no. 308


Circle no. 310



## Kauffman Center for the Performing Arts

This Kansas City building posed a unique challenge. Exposed concrete bays, dramatically curved to mirror the building's exterior, required and acoustically-sound material finish. GKD designed stunning, metal mesh panels nearly 70 feet high and radiused from top to bottom in a concave shape.

www.gkdmetalfabrics.com

GKDMETALFABRICS

Circle no. 313

# Resource

# connect to newsletters

## Request these e-newsletters and receive industry news as it's happening


**ARCHITECT Newswire** is a FREE comprehensive daily e-newsletter compiling Web articles, blog posts, and other information on the business and design of architecture. Also included is content from various social networking tools and opinions from leaders across the Web.


**ARCHITECT Weekly** is a FREE once-a-week e-newsletter that features industry news, design inspiration, market intelligence, and business and technology solutions for the architectural industry.

**SIGN UP TODAY!**
**www.omeda.com/arch/1M1ENBD**

**ARCHITECT**

# BUILDING LEADERS

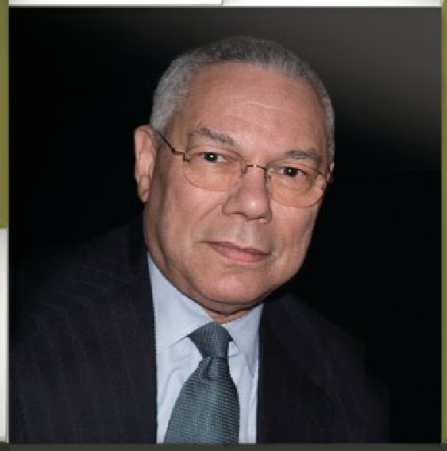
2013 AIA Convention
June 20–22, Denver

**Blake Mycoskie**

TOMS Founder and Chief Shoe Giver

**Cameron Sinclair**

Architecture for Humanity Co-Founder and Chief Eternal Optimist



**General Colin L. Powell, USA (Ret.)**

Former Secretary of State (2001–2005)

leadership for architecture

leadership beyond architecture

Our keynote speakers at the AIA National Convention are leaders who, like you, build a better world—one day, one project at a time. Come to the AIA convention, and develop the knowledge and professional contacts you need to elevate your practice and your career.

REGISTRATION OPENS IN JANUARY
www.aia.org/convention

THE AMERICAN INSTITUTE OF ARCHITECTS

| Advertiser | Page | Circle | Website | Phone |
|---|---|---|---|---|
| Academy of Art University | 113 | 523 | www.academyart.edu | 800.544.2787 |
| American Institute of Architects | 40 | – | www.aia.org/architectsp | 800-242-3837 |
| American Institute of Architects | 42 | – | www.aia.org/renew | |
| American Institute of Architects | 118 | – | www.aia.org/convention | |
| ARCAT | 9 | 430 | www.arcat.com | |
| Architect Project Gallery | 17 | – | architectmagazine.com/projects/list | |
| Architect Magazine | 117 | – | www.omeda.com/arch/1M1ENBD | |
| ASHE | 16 | 295 | www.pdcsummit.org | |
| Belden Brick | 7 | 82 | www.beldenbrick.com | 330-456-0031 |
| Blue Book Network, The | 47 | 262 | www.thebluebook.com | |
| Brick Industry Assn. | 16a-o | – | www.gobrick.com | 703-674-1544 |
| Building Systems Design | 19 | 23 | www.speclink.com/arch | 888-BSD-SOFT |
| Cascade Coil Drapery | 12 | 44 | www.cascadecoil.com | 800-999-2645 |
| Corbin Russwin | 58 | 552 | www.corbinrusswinmuseo.com | |
| DORMA | 33 | 189 | www.dorma-usa.com | 646-574-7464 |
| Doug Mockett & Company, Inc. | 18 | 516 | www.mockett.com | 800-523-1269 |
| E.Dillon & Company | 48 | 499 | www.edillon.com | 800-234-8970 |
| Endicott Clay | 20 | 540 | endicott.com | 402-729-3315 |
| Firestone | 78 | 206 | firestonebpco.com | 800-428-4442 |
| Forestry Innovation Investments | 34-38 | 288 | www.rethinkwood.com | |
| Glen-Gery Brick | 51 | 517 | www.glengerybrick.com | 610.374.4011 |
| Hanover Architectural Products | 8 | 480 | www.hanoverpavers.com | 800.426.4242 |
| Harmonic Environments | C3 | 481 | www.HarmonicEnvironments.com | 800.497.3529 |
| Hewlett Packard | 23 | 450 | hp.com/go/newdesignjet | 888.772.9897 |
| Hunter Douglas Contract | 27 | 47 | HunterDouglasContract.com/Techstyle | |
| Hunter Douglas Contract | 29 | 49 | HunterDouglasContract.com/RB500 | |
| Hunter Douglas Contract | 31 | 51 | HunterDouglasContract.com/NBK | |
| Kalwall | 67 | 484 | kalwall.com | |
| Kingspan | 53 | 231 | www.KingspanPanels.us | |
| Kolbe Windows & Doors | 66 | 40 | www.kolbe-kolbe.com/architectlibrary | |
| Lutron | C4 | 510 | www.lutron.com/esb | 800-523-9466 |
| Marble Insititute | 69 | 44 | marble-institute.com | |
| MBCI | 70-73 | 402 | mbci.com | |
| Metl Span | 57 | 208 | metlspan.com/innova3 | 877.585.9969 |
| Musson Rubber | 67 | 403 | www.mussonrubber.com | 800-321-2381 |
| Nichiha | 5 | 380 | nichiha.com/projectgallery | 866.424.4421 |
| Oldcastle BuildingEnvelope® | 2-3 | 52 | BIMIQ.com | 866-OLDCASTLE |
| PPG Industries | 1 | 423 | ppg.com | |
| Rockwood Manufacturing | 10 | 47 | www.rockwoodmfg.com | |
| Safti First | 13 | 515 | www.safti.com | 888.653.3333 |
| Stonetec | 79 | 233 | www.stonetec.ca | |
| Taktl | 11 | 584 | www.taktl-llc.com | |
| USGBC | 61 | 191 | www.gbci.org/Todd | |
| VT Industries | 25 | 53 | VTDoors.com | 800-827-1615 ext 512 |
| W.R. Meadows | 15 | 255 | wrmeadows.com | 800-342-5976 |
| YKK AP America | C2 | 599 | ykkap.com/design | 800-955-9551 |

# PAST PROGRESSIVES



1959 P/A AWARD CITATION

## Ground Control

THE ROBERT MUELLER MUNICIPAL AIRPORT IN AUSTIN, TEXAS, HAS BECOME A NEW URBANIST COMMUNITY, BUT ITS CONTROL TOWER REMAINS A WELL-LOVED ICON.


JURY
**1959 P/A Awards Jury**
Milo S. Ketchum
Ladislav Rado
Hugh Stubbins
Philip Will Jr.
Minoru Yamasaki

Text by **Thomas Fisher, Assoc. AIA**

**ARCHITECTS FEHR & GRANGER** designed an airport terminal for Austin, Texas, that the 1959 P/A Awards jury voted as "the runner-up to the First Design Award," praising it as "an excellent solution in planning, as well as design expression." The architects envisioned the terminal as "a large unified shelter providing flexibility and openness," with 5-foot-deep steel trusses, 24 feet on center, tied together with diamond-shaped trusses that created a scalloped roof. Exterior columns maximized the flexibility of the one-story interior, which had a centralized outdoor court, concourse, and waiting lounge, flanked by ticketing on one side, and a baggage claim area and restaurant on the other. A control tower rose out of the roof of the building.

When Austin moved its airport, this terminal became obsolete and a new mixed-use community began to infill the former airport grounds. The terminal was torn down, but the community's developers restored the concrete control tower's light-and-dark-blue porcelain panels, which flare out at the top to provide a base for the former control room.

The replacement of a former airport with a new urbanist community represents a good use of open land near cities, but it also reveals how quickly technology can render airport facilities obsolete. Fehr & Granger, in their awards submission, said that they hoped their terminal would "express something of the spirit of progress which exists in air travel today." This restored, but unused and somewhat forlorn, control tower, barely 50 years old, shows just what that spirit of progress can mean for older buildings.

AUSTIN HISTORY CENTER, AUSTIN PUBLIC LIBRARY

# The World's Finest Water Feature

# The Harmonic Cascade® Waterfall

Custom Designed • Precision Crafted • Available Worldwide

Exclusively from Harmonic Environments®

Harmonic Environments®
the premier maker of custom waterfalls

www.HarmonicEnvironments.com
800.497.3529

Circle no. 481 or http://architect.hotims.com

# Lutron systems help the Empire State Building achieve sustainability goals.

Lutron lighting controls and sensors **save up to 65% of lighting energy.***

- **Wireless** – simplifies installation and minimizes disruption
- **Flexible** – for easy retrofits or new construction
- **Expandable** – add to a system or reconfigure at any time

"Lutron products are state-of-the-art, cost effective, and architecturally beautiful. We worked with Lutron to develop wireless solutions for the Empire State Building — now you can buy our choice for energy-saving light control."

**Anthony Malkin**
Empire State Building Company

| Empire State Building sustainability goals | |
|---|---|
| Building energy reduction | 38% |
| Building carbon emission reduction (over the next 15 years) | 105,000 metric tons |
| Annual building energy bill reduction | $4.4 mil |
| **Lutron contributions toward overall goals** | |
| **Projected lighting energy reduction** | **65%** |
| **Projected lighting controls installed payback** | **2.75 years**** |

For more information please visit **www.lutron.com/esb** or call 1.800.523.9466 for 24/7 support.

* Compared with manual (non-automated) controls, up to 65% lighting energy savings is possible on projects that utilize all of the lighting control strategies used by Lutron in the ESB project (occupancy sensing, high-end trim, and daylight harvesting). Actual energy savings may vary, depending on prior occupant usage, among other factors.

** Estimates based on Lutron controls installed in ESB pre-built tenant space. Payback claims assume 65% reduction in energy costs and energy rates of 22 cents per kwh. Actual payback terms may vary.

The Empire State Building design is a registered trademark and used with permission by ESBC. Empire State Building sustainability goals are provided by ESBC and contain energy saving strategies in addition to lighting control.

Learn about our other energy-saving projects at
**www.honestbuildings.com/lutron**

LUTRON®

save energy with Lutron™ ®

Circle no. 510 or http://architect.hotims.com