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### BARCLAYS CENTER

SHoP Architects has created something greater than spectacle with its eye-catching Brooklyn, N.Y., arena: It has created a good neighbor.

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### YOUTH CENTER OF QINGPU

Atelier Deshaus's complex of pavilions and courtyards is an oasis for children amid the megadevelopments in this district of Shanghai.

### REVA AND DAVID LOGAN CENTER FOR THE ARTS

At the University of Chicago, Tod Williams Billie Tsien Architects takes inspiration from the city's famous skyscrapers and prairie landscape.



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# DIALOGUE



HURRICANE SANDY MIGHT JUST SERVE AS A WAKE-UP CALL TO THOSE WHO LIVE IN A STATE OF DENIAL ABOUT THE CONSEQUENCES OF CLIMATE CHANGE AND THE URGENT NECESSITY FOR INVESTMENT IN INFRASTRUCTURE.

# **NO DERYING** ARCHITECTS STAND ON THE FRONT LINE IN THE WAR AGAINST CLIMATE CHANGE AND EXTREME WEATHER.

**COMPARISONS TO KATRINA** were inevitable as Hurricane Sandy tore across the Eastern Seaboard. Eyewitnesses documented the storm's effects via Twitter and Instagram, as schools and stock markets were closed, communities were evacuated, nearly 8 million were left without electricity, some 16,000 flights were canceled, an estimated \$20 billion in property was damaged or destroyed, and dozens of people died, including the captain of the HMS Bounty, who went down with his ship off Cape Hatteras, N.C.

Storms are called acts of God for a reason. There was nothing in the short term that anyone could have done to stop Sandy. To the contrary—discounting the well-organized government response and many individual acts of heroism—humanity actually made the situation worse. How? Through neglect of our infrastructure and our ongoing failure to reduce carbon emissions, which aggravate climate change and encourage extreme weather events.

"Anyone who thinks that there is not a dramatic change in weather patterns is denying reality," New York Gov. Andrew M. Cuomo said at a press conference on the day after the storm. "We have a new reality, and old infrastructures and old systems."

The U.S. military and the global insurance industry are in accord with Gov. Cuomo (as is the scientific establishment, not surprisingly). The U.S. Department of Defense and all four branches of service cite climate change as a threat to national security; insurers, for their part, consider it a threat to the bottom line.

Yet shortsighted commercial, political, and religious interests have made it their mission to discredit climatologists and other scientists, misinform the American people about the clear and present danger of climate change, and block national and international efforts to address the problem. And in so doing, they've gone far beyond the limits of healthy skepticism or reasonable doubt. The willful ignorance and self-interest of climate change denial threatens our republic just as profoundly as terrorism does.

The American Society of Civil Engineers' 2009 Infrastructure Report Card gave the United States a grade of D, and estimated that it would cost \$2.2 trillion over five years to set matters straight. Meanwhile, the U.S. spent an estimated \$7.8 trillion on defense and homeland security in the decade following 9/11, including on the wars in Afghanistan and Iraq.

It's not a matter of resources, it's a matter of priorities. Imagine the United States engaged not in the War on Terror or the War on Drugs, but in a War on Climate Change, with architects proudly serving on the front line. In this alternate America, the adoption of sustainable technologies is a policy imperative, not a political football; support pours into R&D that can revolutionize the building sciences; and all new construction and major renovation would target the highest environmental standards and energy performance.

Authorities might even embrace the kind of brilliantly counterintuitive design thinking that architects, landscape architects, and urban planners exhibited in the 2010 Museum of Modern Art show *Rising Currents: Projects for New York's Waterfront*. One team, led by Stephen Cassell, AIA, and Adam Yarinsky, FAIA, of Architecture Research Office and Susannah Drake, AIA, of dlandstudio, proposed replacing Lower Manhattan's concrete periphery with wetlands and permeable concrete streets designed to absorb both rapid storm surge and slow sea-level rise. This biomimetic buffer would have come in handy when Sandy came calling.

Hopefully some good will come of this national catastrophe. Hurricane Sandy might just serve as a wake-up call to those who live in a state of denial about the consequences of climate change and the urgent necessity for investment in infrastructure. A policy swing toward scientific reality and environmental responsibility would have profoundly positive effects on our ecosystem and our economy. How many disasters will it take to make the case?

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# LETTERS



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#### The Next Term, October

In our October issue, we asked two seasoned political writers to argue for which presidential candidate would most benefit architects and other design and construction professionals — Philip Klein of The Washington Examiner defended the Republican ticket of Mitt Romney and Paul Ryan and Jamelle Bouie of The American Prospect defended the Democratic ticket of Barack Obama and Joseph Biden. Readers continued the debate online in the story's comments section as well as on ARCHITECT's LinkedIn page. At press time, we didn't know who would hold the 45th presidency, but we did know that you were as eager to find out as we were.

You are all wet. Obama is killing us with his policies. Have you noticed how many architects are out of work? K. ANTHONY HAYEK, AIA, YOUNGSTOWN, OHIO

My vote will be to enable the Democrats to actually run things, rather than fight a handful of programs through an obstructive opposition whose signature aim has been to oust the president rather than work together to run the country. PHIL KABZA

Try this. Go out and spend up your credit cards to their limit. Then, ask for a credit line increase. Spend that to the limit. Go out and buy a car, a new house, and a new color laser-jet printer—a good one. When the bills do come in, ignore them. Buy some more stuff. After a couple of months, print some money up on your laser printer to pay for all of those bills. Oh, that's criminal? Yes, you're right! It is criminal! TR DESIGN GROUP ARCHITECTURE, RIVERSIDE, CALIF.

The only plan to create jobs I've seen from Gov. Romney is to cut taxes for individuals and businesses. The only way I see to create jobs is to create demand. The only way to create demand is for some entity (the government!) to purchase large quantities of products and services across a large spectrum of industries. ANDREW VANHOOSER, STUART, FLA.

As long as we tolerate a government that confiscates our earnings in increasing amounts, our incomes will be diminished as well as our quality of life. What rational and thoughtful person can believe that increasing our nation's debt burden will increase our prosperity and happiness? If this were the case, we could triple our debt and thereby greatly increase our well-being. But why stop at trebling? Isn't infinity a state we should seek? DAVID SMITH

I think that many of us older architects who lived through the end of Reaganomics, and now are witnessing the end of Bushonomics have little desire to see the economy return to the slash-and-burn policies of those previous administrations. It seems to me that the economy is becoming more stable under the present administration and that the policies are working. ANONYMOUS

Voting for Romney could be ruin for architects? The majority voting for Obama four years ago has already brought me ruin. Why would the majority vote for even more ruin from Obama again? No thanks, I've had enough. I'll take my chances on Romney. HAPPYCUSTOMER62409

The most telling comment that can be made on the difference between Romney/Ryan and Obama/Biden is that Osama is dead and GM is alive thanks to Obama. BURTON ROSLYN, FAIA, NEW YORK CITY

Supporting a platform that demonizes hard work and success should not be one that architects support. RAY CUDNEYRAYC

Obama or Romney? Incur the infantile wrath of the moneyed class, or worship a few shriveled dollars by sacrificing everything else? ARCHBART\_DAN

"The budget should be balanced, the Treasury should be refilled, public debt should be reduced, the arrogance of officialdom should be tempered and controlled, and the assistance to foreign lands should be curtailed lest Rome become bankrupt. People must again learn to work, instead of living on public assistance." —Cicero, 55 BC —Romney/Ryan, 2012 CE GERALD MARTIN

Philip Klein, you are correct in one statement: Broader growth in the private sector is paramount. But you are mistaken that cutting taxes will lead to this goal. STEVEN JONES

The working poor do not pay income taxes, but when the Bush tax cuts expire, the lowest income tax bracket of 10 percent will be increased to 15, a 34 percent increase—the highest percent increase when the cuts expire of all the tax brackets. WATSON

I am a sole proprietor in my architecture (small business) firm. No one like me earns over \$250K! Get real! ELIZABETH BOUGART-SHARKOV

### 0

Tabitha Ponte @tcpg: Funny reading @architectmag yesterday ... Stanley Tigerman's interview with the new IIT Arch Dean. Using the word "integrative." PshHa!

HONBLUE @HONBLUE: Stupid politicians. RT @architectmag: AIA says the impending fiscal cliff could be devastating to archs and engineers.

Mark Hogan @markasaurus: I'm unclear on what A. Betsky thinks tall bldgs should look like, not boxy but not sculptural?

Randy Deutsch @randydeutsch: Will the day arrive when there aren't 50 firms to make up the @architectmag ARCHITECT 50 Ranking?

Elevator View @Elevator View: I think @barclayscenter interacts well w/street, and transit focus may set standard for future arenas.

DavidZach @DavidZach: @architectmag Agreed. Access to #education is a human right. Knowing what to do with it is a human responsibility.

Amanda Kolson Hurley @amandakhurley: Yep, & next gen of firm leaders is thin on the ground RT @ architectmag Baker: 14% architects > 60yrs old. Addt'l 30% btw 51 and 60yrs #AR50

**ARCHITECT THE AIA MAGAZINE NOVEMBER 2012** 

I believe there is a political chasm among architects. Those who practice in the public sector are generally in support of more government spending on infrastructure in the form of transit systems, education, and city, county, state, and federal buildings, and will be more closely aligned with Obama/Biden. Those who practice in the private sector rely on capitalism as their fountainhead for projects in housing, commerce, and industry, and cast their lot with Romney/Ryan. ROBERTALLENHARR

Well, Obama might benefit me the most, but Romney would surely benefit my clients. DLH

How many of your clients would rehire you for another project if you promised them that the first one would come in under budget at \$5 trillion or less, but came in \$11 trillion over budget? RICHARD

Just remember, that for every \$1.00 the U.S. spends on a project, it costs the taxpayers \$1.40 due to the size and interest on the national

debt, so with government projects, we do not get our money's worth. ROY NOGGLE

The Bush administration is directly to blame for the economic collapse. There is no excuse for it. TERRY WALKER, SEATTLE

I can't wait to see Obama gone because of the whole dependency atmosphere in Washington. CARLOS SANTIAGO, CHICAGO

Corrections: In the September issue article, "User-Generated Architecture", Ricci Greene was misspelled. In October's Detail, "Reading Between the Lines," the algorithm used for the column spacing between layers should have been "the general formula of x plus or minus y, where x ranged from 30 to 90 centimeters and y from 15 to 30 centimeters." Reading between the Lines was one installation in Z33's Pit project, which comprises a series of art installations that encourages visitors to see the landscape of the Borgloon-Heers region of Belgium in a different light. ARCHITECT regrets the errors.

Nick Thorn @nickjthorn: I look forward to this every morning! RT @architectmag: Mornin', architects! bit.ly/QffmeM

Chris Mulholland @CJ mulholland: A museum on suburbia could be interesting, but an abandoned Walmart feels most appropriate as a home for it.

#### CSC

GrandValleyChptr @CSC GV: Will it happen? Could be interesting "Frank Gehry plans to build his largest development yet in Toronto."

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Project: Velti

**ARCHITECT** NOVEMBER 2012

# CONTRIBUTORS



**WANDA LAU** is the associate editor for technology at ARCHITECT.

READ LAU'S DETAIL STORY ON AN UNDULATING WOODEN FAÇADE AT **KILDEN PERFORMING** ARTS CENTER ON PAGE 56 AND THE COLUMN ON THE RAPID RISE OF DATA CENTERS, WHICH SHE EDITED, ON PAGE 102.

Lau received her bachelor's degree in civil engineering at Michigan State University, where she graduated with high honors. She went on to study building technology at the Massachusetts Institute of Technology, where she earned a Master's degree and was named a Presidential Fellow. Not content with two degrees, Lau also earned a Master's degree in journalism from Syracuse University. When not pursuing academic honors, Lau

has served as a civil engineering intern with SmithGroupJJR and as an engineer at Simpson Gumpertz and Heger. Her work in journalism includes internships with both Men's Health and Boston Review magazines. She has freelanced for The Post Standard (Syracuse, N.Y.) and worked as the communications director at KSS Architects in Princeton, N.J.

In her spare time, Lau runs a stationery design and letterpress studio, Aptly Noted, from Washington, D.C.'s Capitol Hill neighborhood, where she lives with her husband.

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KARRIE JACOBS

READ JACOBS'S PROFILE OF RAPHAEL SPERRY AND HIS CAMPAIGN TO CHANGE THE AIA'S CODE OF ETHICS TO BAN ARCHITECTS FROM DESIGNING DEATH CHAMBERS OR SOLITARY CONFINEMENT CELLS, ON PAGE 134. **KARRIE JACOBS** has written one-and-a-half books: *The Perfect \$100,000 House: A Trip Across America and Back in Pursuit of a Place to Call Home*, published by Viking in 2006, and *Angry Graphics*, written with Steven Heller and published by Gibbs Smith in 1992.

While working on these book efforts, Jacobs launched *Dwell* magazine as its founding editor-in-chief. Prior to *Dwell's* debut in fall 2000, Jacobs was the architecture critic of *New York Magazine*, and in the early 1990s, was the founding executive editor of United Colors of Benetton's Colors Magazine.

She is a contributing editor at *Metropolis* magazine, where she writes a monthly column, "America," about how strategies in architecture and design play out on the landscape. Jacobs is also a contributing editor at *Travel + Leisure*.

Jacobs is a faculty member of the design criticism graduate program at the School of Visual Arts, where she sends students out onto the streets of New York City so they can learn for themselves the differences between a good building and a bad building.

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- Mixed Patterns Often times the same Tile of Spain collection will feature Moorish geometric shapes next to French revolution damask and Celtic tartans. And somehow this period fusion all fits together and looks like it was always meant to be.
- New Neutrals Many Tile of Spain collections feature complimentary neutral tones meant to work together to create a unique neutral canvas. Stripes, solids and patterns in the same color tones allow for spaces to be as unique as the people that inhabit them.
- Textures Just as TVs, movies and smartphones are moving into the 3D, so too are ceramics. Spanish tiles are offered in multiple textures to further the ability to personalize spaces. Contrasting layers of thin and thick, bent or warped and pulled or stretched formats create dynamic landscapes for light to play with and create a nuanced space that connects with the individual.



Tile today is anything but flat or square, it's all about adding depth and interest to environments. Tile of Spain manufacturers are constantly presenting materials and solutions that empower and inspire their clients to use tiles in creative ways. Here's a look at what's trending now.





 Bright Accents Accent colors that remind us of childhood are here. They are the bright, saturated colors of creamsicles and cherry
pops. These strong, vibrant

tones give an uplifting punch

of color to ground and



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# FRONT



# **IT'S TIME TO WOW US AGAIN** NO MORE BLAND BOXES, SAYS AARON BETSKY. IT'S TIME FOR ARCHITECTURE TO AMAZE US AGAIN.

I am so bored by boxes. I know, I know, we need more options than buildings that contort themselves and ask us to look at them. We need buildings that are well behaved, efficient, and blend into the background. We need building blocks for better urbanisms, not urban-scaled sculpture. But do we really need more boxes?

Case in point: Earlier this year, the developer David Levinson announced that he was asking some of the world's best architects (at least by his definition) to design a mixed-use high-rise on Park Avenue in New York. Zaha Hadid, Hon. FAIA, was one of those contending to do her first skyscraper, along with OMA and Richard Rogers. Would one of those three have given New York its first exciting skyscraper since, well, Rockefeller Center? We will never know. Instead we are going to see the latest in a long line of well-dressed, tall rectangles in the tradition of the Lever House, Seagram's, and, if you are kind, the New York Times Building.

If you are willing to accept the logic of such boxes of absence (absent of solid form, of expression, of distinguishing characteristics, of life) as the right and proper thing, then you can be pretty sure that Norman Foster, Hon. FAIA, will create something blandly elegant. The renderings promise as much: three rectangles, separated from each other by glass-sky lobbies, and the obligatory knife's-edge top that is all the rage these days.

Beyond that, there is just floor after floor rising up in bands of glass and what looks to be metal coating against a service backbone. The wonders of renderings make the building look as transparent as Lever House (or like three of those piled on top of each other, without the generous public space) and as sharp as Seagram's, though we are also promised the now also de rigeur LEED Gold certification.

So, why should I be so disappointed not only when I see these pictures of a building, or when I browse through any architecture site or magazine (including this one)? Certainly I do not wish for a flood of blobs inundating the landscape, nor do I hope for an arms race of torqued towers and triangulated thrusts cutting apart our cities. What I dream of is ... well, I would like somebody to show me. I fell in love with architecture for its ability to amaze, to open new spaces and new vistas in the world that I thought I knew. I am ready for another shot, not another tombstone to the maximization of real estate values. AARON BETSKY

MY POSITION IS GUIDED BY THE BELIEF THAT WE SHOULD CONSTANTLY STRIVE TO BUILD A BETTER FUTURE. AS WE HAVE THROUGHOUT OUR HISTORY, EVERY TIME CHICAGO REBUILDS, WE BUILD A STRONGER, MORE GLOBAL CITY. IT IS CLEAR THAT THE CURRENT [PRENTICE WOMEN'S HOSPITAL] BUILDING CANNOT ACCOMMODATE THE GROUNDBREAKING RESEARCH FACILITY THAT NORTHWESTERN NEEDS TO BUILD, AND I SUPPORT THE DECISION TO REBUILD ON THE SITE.

-CHICAGO MAYOR RAHM EMANUEL



**TORONTO BY FRANK GEHRY** WITH THE BACKING OF A DEVOTED TORONTO DEVELOPER AND ART MAVEN, FRANK GEHRY IS LOOKING TO BUILD HIS LARGEST COMPLETED PROJECT IN HIS CHILDHOOD HOMETOWN.

To most critics, the architecture of Frank Gehry, FAIA, is inseparably linked to a free-thinking, artsy milieu in Southern California. But if you ask the man himself, it was during his childhood in Toronto, Canada, where he formed his sensibility. Now, the 83-year-old is poised to make a major mark on that city: Early in October, he and a local developer announced plans for a mixed-use complex in downtown Toronto, with a new art gallery, retail and educational space, and three residential towers of 82, 84, and 86 stories, respectively.

"I walked around these streets in my childhood. I have an image of a Toronto that doesn't exist anymore," Gehry said at the project's unveiling. "All that is in my DNA, and I hope it will come out positively in the design of this project."

The newly proposed project would be grand in scale and form. Gehry and his client, developer David Mirvish, have proposed a complex that would cover more than a city block. It would have the three towers, which would be Toronto's tallest residential buildings; a substantial complex of high-end retail; a 60,000-square-foot gallery for Mirvish's art collection; and gallery and classroom lecture space for the nearby Ontario College of Art & Design University.

Speaking in a grand event space he designed for the Art Gallery of Ontario, Gehry said: "Each building type has its limitations and possibilities, so you explore the possibilities and you solve the limitations. I think I do that with every building, no matter how high it is or where it is. I think if you look at the Beekman Tower [8 Spruce Street in New York], it pretty much lived up to what I was trying to do. It works. I don't want to be Pollyanna, that limitations are opportunities, but in a way they are."

The towers would be defined by different formal languages and perhaps different materials. After the first tower's construction, the second phase will include the remaining two towers, the gallery, and commercial space in a mid-rise base adorned with metallic ribbons.

Mirvish spoke of the scheme as a work of art. "I am not building condos," he said. "I am building three sculptures for people to live in." His motivations are to work with Gehry and to do a transformative piece of city-building. "I love architecture because it tells us who we are as a people," he said. "And on that basis, I've been talking to Frank Gehry for years." ALEX BOZIKOVIC





#### **California Girls**

The saying "what's old is new again" is apropos in talking about the latest exhibition at the Museum of California Design in Los Angeles. For example, Elizabeth Eaton Burton's Arts and Crafts shell lamp (shown)-inspired by the Santa Barbara, Calif., seaside setting where she spent her teenage years would look right at home in a trendy apartment today. The show California's Designing Women: 1896-1986, celebrates Burton and 45 other innovators who helped shape California into a design epicenter, while also shifting femaledominated crafts into a more gender-neutral and desirable pursuit. Through Jan. 6, 2013. • mocad.org ALEXANDRA RICE

GEHRY INTERNATIONAL TOM: COURTESY MUSEUM OF CALIFORNIA DESIGN

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# WOOD

**"Wood is a symbol** of elegance and warmth, and connects to nature," says Marc Margulies, AIA, principal of Margulies Perruzzi Architects in Boston. "It's one of the most expressive materials available: It can represent a traditional vocabulary or it can be sleek and contemporary. It can range in color from blond to ebony, and it can reflect light or absorb it. It can seem rough-hewn and natural or almost manufactured."

In addition to those attributes, wood can also improve our mood. According to a University of British Columbia study by researcher David Fell, people spending time in spaces with wood surfaces had lowered stress responses than others.

Sustainably harvested, wood boosts the environment. "It's the only major building material that grows with solar energy, takes carbon dioxide out of the atmosphere, and releases clean oxygen," says Cheryl Ciecko, AIA, senior technical director of WoodWorks (a Wood Products Council member). "Substituting wood for other more fossil fuel–intensive materials can make a significant positive impact on the environment."

Architects choose from all-natural and engineered materials for both decorative and structural use. Alan Metcalfe, AIA, principal of Philadelphia's Metcalfe Architecture and Design, actually favors Black Locust over pressure-treated wood. "Originally used for wood posts by farmers, it can last in the ground for 18 years."

Adds Ciecko, "Innovative wood materials and building systems such as post-frame, cross-laminated timber, mid-ply shear walls, posttensioned and braced-frame timber structures and LifeCycle Towers are reducing the carbon footprint of the built environment while allowing wood to reach new heights, create safe havens in seismic zones and maximize energy efficiency." MARGOT CARMICHAEL LESTER

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U.S. Wood Products Industry Annual Revenue, 2012 SOURCE: IBISWORLD

-2,9% U.S. Wood Products Industry Growth, 2012 SOURCE: IBISWORLD

\$17 billion U.S. Wood Paneling

Industry Annual Revenue, 2012 source: IBISWORLD

-6,8% U.S. Wood Paneling Industry Growth, 2012 SOURCE: IBISWORLD

COURTESY SANAA AND OLIN

# SANAA DESIGNS 'RIVER' BUILDING FOR GRACE FARMS FOUNDATION

A MEANDERING SERIES OF PAVILIONS UNDER A SINGLE ROOF WILL AIM TO BLEND INTO THE NEW CANAAN, CONN., LANDSCAPE.



The winner of the 2010 Pritzker Prize, Sanaa (the Tokyo-based practice of Kazuyo Sejima and Ryue Nishizawa) has designed a new building with Olin for the Grace Farms Foundation in New Canaan, Conn. The new structure will twist along more than an acre of the 75-acre Grace Farms property, with multiple pavilions housed beneath a single continuous roof. One end of the proposed "River" building-so named for its meandering, sinuous form—will house a sanctuary for the Grace Community Church, while other pavilions will provide spaces for children, a small library, and meeting rooms. Sanaa designed the building to "become part of the landscape without drawing attention to itself" through its minimal form comprised of glass, concrete, steel, and wood. The proposal awaits approval by the New Canaan Planning and Zoning Commission, with a ruling expected by the end of this year. DEANE MADSEN



### NEW AIA PUBLIC DIRECTOR TO JOIN IN DECEMBER

Mindy Fullilove, a research psychiatrist at New York State University Psychiatric Institute, sees a connection between the ways our cities are designed and the health of their inhabitants. Fullilove, 62, also a professor of clinical psychiatry and public health at Columbia University, first saw it when doing research on AIDS in 1989: she was surprised by a proposal that the urban policies of the '70s—including planned city shrinkage—had been instrumental in spreading the disease. "At first, I thought about AIDS as a personal behavior," she says, "but this [paper] was saying that there are also larger contexts." Since then, Fullilove has kept her research focused on the relationship between the collapse of communities and the decline in health. Her most recent book, *Urban Alchemy: Restoring Joy in America's Fractured Cities*, which will be published in March, profiles three architects—Dan Rothschild and Ken Doyno of Pittsburgh's Rothschild Doyno Collaborative and Michel Cantal-Dupart of France's Atelier Cantal-Dupart—who are creating urban interventions that knit communities back together, and in turn, encourage healthier citizens. Fullilove will be public director for the AIA through 2015. "I think that there's a huge amount that architects and planners can do to help us," she says. **LINDSEY M. ROBERTS** 

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#### **Skyline Adrift**

While the architecture community waits to see how the National Art Schools controversy will be resolved, Ricardo Porro, one of the architects of the midcentury Cuban landmark, is co-curating an exhibition focused on the next wave of Cuban architects. **Skyline Adrift: Cuban Art** and Architecture at New York's Omi International Arts Center highlights the work of architects Yilena Lourdes Fietó Echarri and Yoandy Rizo Fiallo and artists Alexandre Arrechea and Armando Mariño Calzado. The architects recently left Cuba-for the first timefor a six-week residency in Vermont, resulting in site-specific installations for the Arts Center. "I do believe that an architect should be a painter and a sculptor and this, in essence, is what this show is asking these young architects to be," Porro says. Through May 2013. • artomi.org L.M.R.

# **RIBA NAMES 2012**

A LABORATORY BY LONDON-BASED FIRM STANTON WILLIAMS GETS THE NOD AS THE U.K.'S BEST NEW BUILDING.



The Royal Institute of British Architects announced the winner of its 2012 Stirling Prize for architecture: the Sainsbury Laboratory, by the London-based firm Stanton Williams. The building, a highly sustainable and adaptable design for the University of Cambridge, beat out five other designs to be named the best new building in the U.K.

It was tempting to describe the Stanton Williams project as a dark horse, compared with the London 2012 Olympic Stadium by Populous. But Stanton Williams is no slouch: The firm designed a venue of its own for the Games, Eton Manor, the only dedicated Paralympics venue. And Stanton Williams is on deck to design a new public square for King's Cross Station. KRISTON CAPPS

"IN CONTRAST TO THE 1990S, AND CERTAINLY INTO THE NOISY AUGHTS, COVERAGE OF BUILDINGS AND THE PEOPLE WHO DESIGN THEM IS NO LONGER FOCUSED SO TIGHTLY ON A SELECT COHORT, AN ELITE. WE SEE FAR LESS REFLEXIVE FEAITY TO 'STARCHITECTS' NOW. EVEN THAT INSIPID TERM SEEMS DATED, PERJORATIVE." -PHILIP NOBEL





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**ARCHITECT THE AIA MAGAZINE NOVEMBER 2012** 

# LEBBEUS WOODS

THE LEGENDARY DRAUGHTSMAN AND EXPERIMENTAL DESIGNER, WHO DIED IN OCTOBER, IS THE SUBJECT OF A MAJOR SFMOMA SHOW OPENING IN 2013.



Lebbeus Woods, experimental architect, writer, professor, and visionary, died on Oct. 30 in his Manhattan loft. He was 72.

Woods exhibited, lectured on, and published projects worldwide, but he was best loved for his drawings. The architect was widely known for his distinctive rendering technique and embrace of heavy subject matter: anarchy and the politics of space; death and destruction; and crisis and conflict. He was a prolific critic of architecture theory and practice.

The architect began his career in the office of Eero Saarinen and Associates in 1964, but he soon went out on his own. In 1976, Woods began his long publishing career, printing his own work and contributing to various magazines and journals. He would go on to author several dozen books—including *Anarchitecture: Architecture Is a Political Act* and *System Wien*—and was widely profiled in mainstream press.

Woods began exhibiting his work in 1980, and to date his drawings and projects have been shown in at least 85 individual and group shows. His works are in the permanent collections of several major institutions, including, in New York, the Museum of Modern Art, the Whitney Museum of American Art, and the Cooper-Hewitt National Design Museum. He was the founder of the Research Institute for Experimental Architecture, an organization devoted to the advancement of experimental architecture.

Into his final days, Woods was busy with several projects, including his only constructed building, the Light Pavilion, an "experimental space" designed in collaboration with Christoph A. Kumpusch inside the Sliced Porosity Block by Steven Holl, FAIA, for the Raffles City complex in Chengdu, China. Woods had also been teaching an "Architectonics" course at the Cooper Union, where he has served as a professor of architecture most years since 1988.

His work is currently being exhibited in the San Francisco Museum of Modern Art (SFMOMA) show "Field Conditions" as well as at the Museum of Modern Art's "9+1 Ways of Being Political" (see page 112). A major exhibit of Woods's work will open at SFMOMA on Feb. 16, 2013.

While it is a grim thought, it is perhaps appropriate that Woods would pass during an event such as Hurricane Sandy's landfall, a storm that transformed familiar Eastern Seaboard settings into sites of chaos and disorder. A world upended is one that Woods always strove to depict. MERCEDES KRAUS



#### SHADES OF GRAY

On-site graywater treatment systems offer an efficient solution for water conservation, if designers are willing to invest the time and effort. Despite the science behind the design of wastewater treatment systems, some designers, building officials, and occupants still view them with skepticism. The solution to water scarcity ultimately does not lie in codebooks or technical drawings. (*1 AIA HSW/SD*)

#### CONSIDERATIONS FOR ADVANCED GREEN FAÇADE DESIGN

Green façade technology has evolved into a viable design component that can provide multiple benefits and aesthetic value to a wide variety of project types. This paper describes successful strategies that include system selection, design, plant selection, maintenance and client/ owner education. (*i AIA HSW/SC; 1 GBCI CMP; 1 ASLA*)

#### STEEL FRAMING FOR COMPOSITE DECKING

The introduction of composite deck boards transformed the decking industry more than 20 years ago. However, one factor in the deck assembly did not see a change: the framing. Architects and builders specify and install composites that will not twist, splinter, or get eaten by termites, but most frames are still being built with wood. This article describes benefits of steel deck framing, how to design with, plan, and install steel deck framing. (*I AIA*; *I ASLA*)

#### THE ARCHITECT'S ROLE ON A LEED PROJECT COURSE

Architects play a key role in the success of a LEED project, but often that role is not well defined. This session defines the architect's role as project team leader without LEED project administrator duties, including decision making, owner/client relationship, quality assurance checks, documentation responsibilities, and much more. Best practices and lessons learned from actual LEED building projects are included. (*1 AIA HSW/SC; 1 GBCI CMP*)

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#### JOSEF FRANK REVIVAL

Josef Frank (1885–1967), an Austrian-born designer who argued for a more humane style of Modernism at the height of the machine age, will have his legacy deservedly embellished by **The Enduring Designs of Josef Frank** at Chicago's Swedish American Museum. Through Nov. 25. • *swedishamericanmuseum.org* ERIC WILLS

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# FISCAL CLIFF DIVING

A REPORT FROM THE AIA WARNS THAT THE DESIGN AND CONSTRUCTION INDUSTRY COULD SUFFER \$2 BILLION IN LOST WORK BECAUSE OF FALLOUT FROM THE ONCOMING FISCAL CLIFF.

In October, the American Institute of Architects released a five-page report detailing the impact of the Budget Control Act of 2011, which was the end result of the debt-ceiling standoff last summer, and its impact on the design and construction industry. That act, the byproduct of tense negotiations, stipulated \$1.2 trillion in nearly across-the-board budget cuts, which would go into effect in lieu of a compromise bill tasked to a bipartisan "supercommittee." (That committee adjourned a few days before Thanksgiving of last year with no plan, and so the cuts detailed in the Budget Control Act are

scheduled to go forward on Jan. 2, 2013.) According to its press release, the AIA looked at an Office of Management and Budget report and identified 48 accounts that currently fund federal construction, and from there analyzed the effects of the scheduled cuts to those budgets. According to the U.S. Census Bureau, and cited by the AIA in its report, federal agencies accounted for a seasonally adjusted annual rate of construction

totaling \$25.2 billion as of August. (And this is down from \$31.8 billion from a year before.) The AIA extrapolated that the scheduled cuts would cost 66,500 full-time architecture and engineering jobs.

Furthermore, the AIA's report only covers the effects of cuts to direct spending on building design and construction, not those that also allocate buildingrelated funds, such as energy efficiency. "If these other accounts were included," the report's authors write, "the impact on the build [sic] environment would likely be significantly higher." In addition, there are a host of tax credits for Congress to take up before the end of the year that have either expired already, such as the research and experimentation tax credit, or are scheduled to be concurrent with the sequestration going into effect.

The full report, with charts detailing the amount of money currently allocated to the 48 budget lines and how much will be cut through sequestration, can be found on the ARCHITECT website. GREIG O'BRIEN

# \$27.4 billion

Deficit reduction in 2013 if austerity is imposed SOURCE: BANK OF AMERICA MERRILL LYNCH

Potential reduction to GDP under sequester SOURCE: BANK OF AMERICA MERRILL LYNCH

Small businesses who reported being 'very concerned'' about fiscal cliff SOURCE: SURVEY, U.S. CHAMBER OF COMMERCE

Number of accounts that currently fund federal construction projects SOURCE: U.S. CENSUS BUREAU

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#### TYPOLOGY **REVERSE CORPORATE CREEP** AS THEIR WORKFORCE FLOCKS BACK TO CITY CENTERS. SUBURBAN OFFICE PARKS NO LONGER PROVE THE



The suburban office park phenomenon got its start in the post-war 1940s, when white-collar workers traded city life for the 'burbs and companies such as AT&T and General Electric followed suit in seeking the "pastoral ideal,' according to Louise Mozingo, author of Pastoral Capitalism: A History of Suburban Corporate Landscapes. She writes, "Corporations heralded the verdant pleasures of their new locations as substitutes for urban enticements." In their new parks, these corporations gained both privacy and prestige while widening the gap between management and manufacturing.

But the grass is not always greener. Though suburban office parks—which range in program from plush corporate headquarters to sprawling research campuses -- constitute over half of America's office space today, they are suffering higher vacancy rates than their urban counterparts. Companies are choosing to move downtown once again, for reasons ranging from plummeting suburban real estate values to the migration of younger workers.

"I wouldn't say that this is necessarily a widespread phenomenon—it's a regional phenomenon," cautions Mozingo. But evidence builds across the country in suburbs near major cities. In Chicago, according to Crain's, overall suburban vacancy rates have reached nearly 25 percent, while overall downtown rates are under 15 percent. Other cities, such as Cincinnati, are squelching the construction of new office parks and the giant parking lots that accompany them by revising codes to promote walkability and increase public transportation options.

Some companies are changing course. Google's Silicon Valley headquarters typifies the office park typology, as does Apple's planned headquarters in Cupertino, Calif. (pictured). But Google provides a bus system for employees from San Francisco that covers more miles than the Bay Area Rapid Transit (BART) system. MURRYE BERNARD

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#### The Lieber Meister's Leiber Meister

Frank Furness (1839–1912) designed hundreds of buildings in the Philadelphia region. Many of those structures have since been demolished, though Furness's legacy endures in the designs for the University of Pennsylvania Fisher Fine Arts Library, the Pennsylvania Academy of the Fine Arts, and the First Unitarian Church of Philadelphia. His legacy also endures because of the influence he wielded over a young Louis Sullivan. Learning from Frank Furness: Louis Sullivan in 1873, an exhibition at the Philadelphia Museum of Art, chronicles the powerful influence that a 17-year-old Sullivan's brief stint in Furness's office had—as Sullivan himself later admitted. Through Dec. 30. • *philamuseum.org* E.W.



PROJECTS



THE NEW DEPARTMENT OF FORENSIC SCIENCES WILL SHARE A HIGH-TECH, GREEN FACILITY WITH THE OFFICE OF THE CHIEF MEDICAL EXAMINER AND THE METROPOLITAN POLICE DEPARTMENT'S CRIME SCENE UNITS

IN WASHINGTON, D.C.

Washington, D.C., Mayor Vincent C. Gray and other district officials cut the ribbon—or in this case, the ceremonial yellow crime scene tape—to open the Department of Forensic Sciences headquarters near L'Enfant Plaza. The new 350,000-square-foot Consolidated Forensic Laboratory and office building will also house the Office of the Chief Medical Examiner, as well as the Metropolitan Police's crime scene unit.

HOK's D.C. office served as the principal architect on the project, working with associate architects Baker Cooper (now Philip S. Cooper & Associates) and H.L. Walker & Associates, and interior architects McKissak & McKissak, to produce this LEED Gold facility. The Consolidated Forensic Laboratory offices are housed under a 32,000-square-foot green roof and stormwater catchment system, as well as ground-level bioswales to reduce rainwater runoff.

Inside, a full autopsy suite with toxicology and X-ray labs are supplemented by other forensic spaces such as a firing range with a bullet recovery water tank. Offices with generous floor-to-ceiling heights receive ample daylight through the southfacing façade, which has exterior fritted glass louvers on hydraulic mounts that rotate according to readings from a roof-mounted weather monitoring system.

This project won the 2011 AIA Technology in Architecture Practice BIM Award for BIM Excellence. d.m.
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### THE [BARCLAYS CENTER] ARENA CONSTITUTES ONLY THE FIRST PART OF MR. RATNER'S 22-ACRE, \$4.9 BILLION ATLANTIC YARDS DEVELOPMENT. SO WHAT WE SEE TODAY IS LIKE SEEING A NAKED MAN WITH JUST HIS SOCKS ON—NICE SOCKS, BUT WE STILL CAN'T BE SURE WHAT HE'S GOING TO LOOK LIKE WHEN HE GETS DRESSED. —MICHAEL KIMMELMAN, *THE NEW YORK TIMES*



#### SKETCH, FILTER, AND FORGET

Design studios are filled with digital devices, but when architects congregate for a pin-up or desk critique, someone is bound to unfurl a roll of trace. The Morpholio Project hopes to bridge the digital-physical divide with Trace (mymorpholio.com), a free iPad app that essentially digitizes its namesake. WANDA LAU

## **AIA GOES TO INDIA**

U.S. ARCHITECTS ARE LOOKING TO EXPAND THEIR REACH DURING SEVERAL SPONSORED TRIPS OVERSEAS. THE AIA IS ACCOMMODATING THEM.

Not only does India have three of the world's largest cities, it also has three of the world's fastest growing cities. (To be clear, those are six disparate cities.) And while economic growth is rarely frowned upon, it can be disconcerting for the city's sustainability record when it happens at such an intense pace, a new report states.

The AIA, in an effort to help the architecture profession grow alongside India's expanding economy, is conducting its firstever trade mission in the country, connecting U.S. architectural firms with state and local government officials as well as potential clients across various sectors, including healthcare and transportation.

Backed by the U.S. Department of Commerce, the AIA sent representatives from some 20 firms overseas for a five-day networking trip starting on Oct. 15, according to Lorri Crowley, a Commerce Department public affairs specialist. While there, the architects met with public and private sector developers to discuss growing and updating the country's infrastructure as part of a \$299,139 Commerce grant, according to *Engineering News-Record*.

"This trade mission aims to help build America's competitiveness by raising the profile of U.S. innovative design in worldwide markets," AIA first vice president/presidentelect Mickey Jacob, FAIA, said in a statement.

Jacob also visited Chennai, Kolkata, and Bangalore along with representatives of U.S. firms to discuss work opportunities. India is particularly keen to develop its infrastructure, and the government planning commission has launched an effort to spend \$1 trillion on infrastructure over the next five years.

In addition to infrastructure, the trade mission focused on master planning, mixeduse development, healthcare, airports, and educational institutions. A.R.

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150 Number of new commitments generated at the Clinton Global Initiative 2012 Annual Meeting

\$2 billion Total value of new commitments

Number of total commitments garnered by the Clinton Global Initiative

400 million Estimated number of people reached by Clinton

Global Initiative commitments

Number of countries reached by Clinton Global Initiative commitments

### THE IMPACT

THE DAW'AN MUD BRICK ARCHITECTURE FOUNDATION IS JUST ONE CGI COMMITMENT. HERE'S HOW ITS IMPACT IS LIKELY TO PLAY OUT.

**WHAT** 

Earth Architecture:

HOW MUCH Estimated Total Value:

HOW MANY

residents

As many as 43,000

Endorsing the Future of

Urban Culture (CGI 2012)

\$1.5 million over 2 years

#### **WHO**

Daw'an Mud Brick Architecture Foundation

#### WHERE

Yemen

WWW.ARCHITECTMAGAZINE.COM

#### HOW LONG

Project Start: Dec. 1

#### SOURCE: CLINTON GLOBAL INITIATIVE

# THE 2012 CLINTON GLOBAL INITIATIVE 2012 ANNUAL MEETING

ACKNOWLEDGED THE ROLE OF ARCHITECTURE IN GUIDING THE WORLD'S LONG-TERM DEVELOPMENT. YEMEN IS JUST ONE EXAMPLE.

#### When an international community that

includes heads of state, business leaders, and foundation directors convenes to discuss the most challenging issues we face as a planet, and they invoke the word "design" as a potential solution, it's a seminal moment for the design profession. In late September, the Clinton Global Initiative (CGI) opened its annual meeting on the topic "Designing for Impact" with this question: How are we designing our lives, our environments, and the global systems we employ to impact the challenges at hand?

Throughout the CGI conference, in sessions on topics ranging from "Influencing Behaviors and Attitudes" to "Turning Inspiration Into Action," architects were named as integral players in re-imagining both spaces and systems. With an international focus on "Designing for Impact," it would be tempting to simply view this as reason to insert ourselves center stage after a tough downturn.

Globally, however, architects are already leading that conversation. For more than 3 billion people living in poverty around the world, architecture means access: access to schools, access to safe water and sanitation, and access to the economic and physical security that comes with effective education.

One case in point: the Daw'an Mud Brick Architecture Foundation, located in Yemen. Founded by Salma Samar Damluji, an Iraqi architect, the Daw'an Mud Brick Architecture Foundation is dedicated to preserving and developing the architecture, urban culture, and extraordinary local heritage of Wadi Daw'an in the Hadramut of Yemen.

This arid plateau region is characterized by sophisticated mud brick structures rising 10 stories above its deep valley floors. Thick walls, sky terraces, and extensive tiered irrigation channels create "tower houses" deeply in tune with the surrounding climate and geographic context. Daw'an acts as an original archetype for sustainable architecture.

Both artform and building technology, the ancient methods used to create these structures are rapidly disappearing; the architecture that remains is in immediate need of rehabilitation. Abandonment and modernization have created a condition in which the old methods are no longer esteemed or readily understood. With no municipal authority to enforce codes and protect the 500-year-old urban fabric, there has been a rapid disintegration of the cultural practices inherent in ancient, vertical living.

For Damluji, the fear that this tradition will be forever lost is palatable. "Since we started losing our Islamic cities, quarters and edifices early on in the 1960s and 1970s, it was important as an architect to fight for the continuation of the urban culture, the vernacular architecture in towns and cities that are built of earth," she says.

For its commitment to CGI, the Daw'an Mud Brick Architecture Foundation is actively facilitating the architectural rehabilitation of local mud building traditions by working directly with Yemeni and Hadrami building disciplines. The foundation pledges to restore this unique cultural tradition and the urban culture associated with it.

In this way, the foundation hopes to regenerate substantial social and economic resources that will allow the Daw'an community to safeguard its unique cultural history. "It is about engaging the communities in cultivating their urban culture, by creating tangible results and projects that serve as landmarks for future inspiration and development," Damluji says.

The question at hand at CGI—how are we designing the world?—conveys that design is a key tool for problem solving on everything from widgets to coalition governments and an undiscovered conduit of change for those that see design as a luxury rather than a necessity. It can also be tempting for architects to do nothing in the face of such immense challenges in unfamiliar regions and circumstances. But what many architects are proving today is that they have the ability to lead by, with, and for design—making its principles essential to any conversation about change.

Architects such as Damluji are demonstrating their willingness to proactively create more sustainable environments initiatives recognized by the Clinton Global Initiative in this year's annual assembly. They are leading by design, building for impact, and not waiting for instructions. ERINN MCGURN



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## A TALK WITH ...

After a decade of research on Andrea Palladio, Peter Eisenman, FAIA, presents a new take on the 16th-century master.



How did your research turn into the recent Yale University exhibit?

In addition to practicing architecture, I teach and write. I've been working on research on Palladio for maybe 10 years, and making analytic drawings. I have over 700 analytical drawings that we made. At a certain point, [Yale architecture school] dean Robert Stern asked me to prepare an exhibition, which we did do. And I think it's a very lovely exhibition, and we're finally finalizing a book coming out next year.

#### How did Palladio's forms evolve over his career?

The buildings evolve from merely isolated buildings to buildings that reach out into a landscape. The compositions are much more complex and intricate and deal more with the idea of the urban in a pastoral setting. There's nothing ideal about what he did.

### Do you think your conclusions will change the way architects and architectural historians look at these villas?

It's bound to. They can't ignore the work we've done. They have to look at it and respond to it. There'll be controversy, surely. But whether they agree or not, they can't ignore it. Ask me in six months what people thought, especially when we get the book out.

#### How does Palladio inspire your own work?

I can't answer that. It's too much a part of my research and my architectural work. I just don't know.

#### Where will you take your research from here?

I've been working on [researching] the Italian architect Piranesi. I never lack for things to do.

#### Are you done with Palladio?

I'm tired of it. I don't want to even think of it. In the end, it's done. Good or bad. L.M.R.

#### ➔ FULL INTERVIEW AT ARCHITECTMAGAZINE.COM

ESTO EDITIONS Famed architectural photo house Esto, founded by Ezra Stoller, will display a sampling of its works at the new Boston Society of Architects (BSA) Space gallery in Boston. Esto Editions features the works of photographers Francis Dzikowski, Jeff Goldberg, Anton Grassl, Peter Mauss, David Sundberg, and Albert Vecerka as part of Esto's first release of limited-edition, fineart-quality digital prints of select works from its extensive collection. The BSA Space, designed by Boston's Höweler + Yoon Architecture, hosts the show through Dec. 14 • bsaspace.org D.M.



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#### **OGASSIAN TILES**

With expertise in glazing technology, artist and designer Daniel Ogassian created a collection of ceramic and concrete tiles for **Ann Sacks** that features bold geometries, deep relief, and glazed finishes. Available in many patterns, colors, and sizes (12" Japanese Geo in metallic antique gold shown), the tiles are suitable for vertical installation indoors. Flat designs may be used for flooring. *annsacks.com* Circle 100

45

#### SUPER PERVIOUS PAVERS

Managing stormwater can be problematic in areas with expansive paving. The natural stone pavers from **Xeripave** allow a flow rate of more than 1 gallon per second per square foot, and provide a nonslip surface for pedestrians, bicycles, and cars. The 50mm-thick tile comes in two standard sizes: 300mm square and 400mm square. *xeripave.com* Circle 101



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#### HEXAGON ACOUSTIC TILE

When looking for a material to dampen its workspace acoustics, Stockholm design studio **Form Us With Love** found Träullit, a Swedish manufacturer of wood-wool cement board. The mixture of wood slivers, water, and cement is dried into shape in a mold. Hexagon comes in eight colors. *formuswithlove.se* Circle 104



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Decommissioned decades- and centuriesold warehouses, docks, and gymnasiums are just some of the buildings from which Viridian Reclaimed Wood recovers beams for these tabletops. The structural beams' long lengths, tight grain patterns, and occasional nail holes make for sturdy and interesting surfaces. Offered in three varieties (mixed grain shown), the tabletops are up to 48" wide, 12' long, and at least 11/2" thick. viridianwood.com Circle 103





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Text by Jennifer Brite



WHITE STONECROP (SEDUM ALBUM) Good for: Year-round color Zone: 5 to 8 Height: 2 to 6 inches Sun: Full Blooms: Varies Tolerant of shallow planting media and intense sunlight, sedums are frequently used on green roofs. The hardy, low-growing plants come in many varieties, says Jennifer Bousselot, a former researcher at Iowa State and Colorado State universities. "Depending on the cultivar, the winter colors are endlessranging from orange to pink to yellow."



PRICKLY PEAR (OPUNTIA HUMIFUSA) Good for: Color and low maintenance Zone: 2 to 10 Height: 8 inches Sun: Full Blooms: May to July

No "plant it and forget it" species exists, Bousselot says, but the prickly pear comes close. Its drawbacks include pedestrianunfriendly spines and slow growth, but it can endure frigid climates. Native and widespread in the eastern U.S., it produces waxy yellow flowers that are followed by edible fruit.



**NODDING ONION (ALLIUM CERNUUM)** Good for: Year-round color Zone: 4 to 8 Height: 1 to 3 feet Sun: Full **Blooms: June to August** 

For use in milder climates, this evergreen plant adds height and interest to roof gardens, Bousselot says. "It has grasslike but thick leaves with a beautiful flower. Its flower head dries and creates excellent winter interest." Once abundant on the Chicago River banks, the plant features edible leaves, bulbs, and bulblets.



#### HARDY ICE PLANT (DELOSPERMA COOPERI) Good for: Year-round color Zone: 7 to 10 Height: 3 to 6 inches Sun: Full **Blooms: June to September**

Though it requires a well-drained substrate, this fast-growing plant has succulent foliage that turns purple in the winter, Bousselot says. Suitable as a ground cover, it produces fuchsia flowers from late spring until the first frost. However, as a native of Southern Africa, it is not reliably winter hardy north of zone 7.



#### HENS AND CHICKS (SEMPERVIVUM SPP.) Good for: Low-maintenance Zone: 3 to 8 Height: 3 to 6 inches Sun: Full

This plant lives up to its Latin name sempervivum, which means to live forever. Though hens and chicks can take longer to establish than sedums, the payoff is worth it once the plants take root. Not only are the evergreen succulents drought resistant and low-maintenance, but they also provide color, producing purple-red flowers in midsummer.



**MIDDENDORF STONECROP** (SEDUM MIDDENDORFFIANUM) Good for: Roofs without irrigation Zone: 3 to 9 Height: 8 to 10 inches Sun: Full Blooms: Summer

Well suited for roofs with limited additional load capacity, this colorful sedum tolerates soil depths as shallow as 1 to 3 inches, says Kristin Getter, a floriculture outreach specialist at Michigan State University (MSU). White Stonecrop is another option, but it does not withstand hot summers, Getter says.

## **Ş10—Ş24**

The estimated cost per square foot for an installed, extensive green roof. Because the cost depends on several factors, project teams should consult a green roof professional. SOURCE: GREEN ROOFS FOR

MASSYN; DEREK RAMSEY; PAVEL KA

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PRAIRIE DROPSEED (SPOROBOLUS HETEROLEPIS) Good for: Kid-friendly, hightraffic areas Zone: 3 to 9 Height: 2 to 3 feet Sun: Full Blooms: August to October

This plant, native to Chicago, produces pink flowers with brown tints in the late summer. Its foliage turns gold and orange in the fall and fades to light bronze in the winter. "The grass ... has a strong fragrance in late summer into early fall that has been likened to popcorn," says Chicago Botanic Garden horticulturist Emily Shelton.



#### **CREEPING PHLOX (PHLOX SUBULATA)** Good for: Kid-friendly, high-traffic areas Zone: 3 to 9 Height: 6 feet Sun: Full sun to partial shade

The Chicago Botanic Garden is examining the durability of this semi-evergreen ground cover, which grows into a dense mat, Shelton says. "It can handle some foot traffic and is a carpet of blooms in the spring"-good news for a plant that must withstand frigid winters, frequent handling by students, and up to 1 million annual visitors to the garden's Daniel F. and Ada L. Rice Plant Conservation Science Center.



STONECROP (SEDUM KAMTSCHATICUM) Good for: Storing carbon Zone: 4 to 9 Height: 6 to 12 inches Sun: Full sun to partial shade Blooms: Early summer

All plants store carbon, but some are more effective than others, says MSU horticulture professor Brad Rowe. Carbon storage potential is directly related to biomass-for example, a tree will store more than a perennial. Stonecrop, Rowe says, is a larger rooftop plant that can be planted in shallow soil. It produces long-lasting, half-inch yellow flowers.

#### IN THE ZONE

Plant selection depends on a few factors First a project team should determine what type of green roof is best suited to its project: intensive or extensive. Intensive green roofs have deeper planting media depths and are similar to traditional landscaping. Extensive green roofs, designed to boost building performance and environmental sustainability, use shallower depths and require less maintenance.

Next, teams should microclimate, which is determined by several factors, including average temperatures, wind levels, sun intensity, and rainfall. The U.S. Department of Agriculture publishes its Plant Hardiness Zone Map (planthardiness.ars.usda. gov) based on the average annual minimum winter temperatures, divided into 10-degree zones: lowernumbered zones are colder.



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**ORNAMENTAL ONION (ALLIUM** SENESCENS) Good for: High-salinity environments Zone: 4 to 8 Height: 6 to 8 inches Sun: Full sun to partial shade Blooms: Mid to late summer

In coastal applications and on roofs in which de-icers are used, plants that can tolerate high salinity are a must. In his research, Rowe has found ornamental onions to be very salt tolerant. With blue-green leaves that smell like onion when bruised, the plant grows in clumps and produces lilac-pink flowers.



#### MINT (MENTHA) Good for: Bulk food source Zone: 3 to 10 Height: 1 to 4 feet Sun: Full sun to partial shade

For the Ledge Kitchen & Drinks restaurant in Dorchester, Mass., Recover Green Roofs worked with Green City Growers to create a rooftop kitchen garden, whose abundance of produce includes mint-traditional, chocolate, pineapple, spearmint, and peppermint. The fast-growing, continually harvestable plant is "easy to apply to a menu," said Recover project manager Brendan Shea.



**TWO-ROW STONECROP** (SEDUM **SPURIUM)** Good for: Storing carbon Zone: 4 to 9 Height: 2 to 6 inches Sun: Full sun to partial shade **Blooms: Summer** 

Rowe also pointed to this sedum variety as another excellent carbon-storage plant that can grow in shallow planting soils. The semievergreen sedum produces white or purplish star-shaped flowers in the summer. Its foliage turns burgundy in the fall. Like Stonecrop, the plant also provides good ground cover.

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#### TREMOLO

For this vinyl wallcovering in his eponymous collection for **Maya Romanoff**, interior designer Roger Thomas was inspired by a scrap of industrial material covered in 18-karat gold. Layers of metallic pigment are hand applied to the embossed base. Custom colors and lengths are offered. *mayaromanoff.com* Circle 106



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#### BENCHMARK FAÇADES

**Kingspan Insulated Panels** recently released this highperformance, universal barrier wall system, which features multiple cladding options, including glass, ceramics, wood, cementitious boards, and metals. The wall assembly comprises a rail substructure, insulated panels, and a rainscreen. Kingspan plans to add other materials and finishes. *kingspanpanels.us* Circle 107



#### PLAY OF LIGHT

The Mohawk Group combined light and dark motifs with geometric patterns in this modular collection, inspired by the "rurban" trend in which urban cultures are embracing rural values. It is manufactured with SmartStrand Contract with DuPont Sorona, a recyclable, rapidly renewable, biobased fiber that requires 30% less energy to manufacture than does nylon. Nine colorways and three patterns are available. mohawkgroup.com Circle 108



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# Green Cleansing

#### EVERY PRODUCT SEEMS TO HAVE A SUSTAINABLE STORY THESE DAYS. ENVIRONMENTAL PRODUCT DECLARATIONS WERE CREATED TO VET MANUFACTURERS' CLAIMS. HAVE THEY BEEN SUCCESSFUL?

Text by KJ Fields Illustration by Lauren Nassef

**IN A MARKET WHERE** manufacturers tout all kinds of environmental claims, it's hard to decipher what's really green. In 2006, the International Organization for Standardization (ISO) published standards for Environmental Product Declarations (EPDs)-scientific, third-party validated reports that disclose a product's life cycle assessment (LCA); carbon footprint; land, water, and air impacts; and ozone depletion potential. Now fairly common in Europe and parts of Asia, EPDs are relatively new in the U.S., but a groundswell toward certification is under way.

Certification alone does not make a product eco-friendly. Rather, EPDs track and report a product's progression from cradle to grave (or back to cradle). EPDs are based on the product's LCA, which is guided by specific Product Category Rules (PCRs) that describe the LCA parameters for scope, data collection, methodology, and presentation format. Independent agencies, or program operators, help manufacturers navigate the certification process and comply with ISO standards. Because standardization is critical for comparing products worldwide, EPD program operators should first look for existing PCRs specific to the industry sector; if none exist, they can develop and publish new PCRs.

To date, approximately 45 EPDs have been issued in the U.S.-and the number is rising. Architects and specifiers want objective and accessible product information that doesn't greenwash. The Architecture 2030 Challenge for Products encourages manufacturers to file EPDs, and the latest draft of LEED v4 rewards the use of products that have EPDs.

UL Environment, a business unit of Underwriters Laboratories based in Marietta, Ga., and one of the few program operators in the U.S., has registered approximately 30 EPDs in four industries to date. Strategic development and innovation group lead Heather Gadonniex has seen a surge of interest and growth in the program in the past two years. "Although the U.S. is just getting started, we are working with a large number of manufacturers and industry associations to address demand for EPDs," she says.

Cost and complexity are among the reasons why U.S. manufacturers have been slow to report EPDs. Certification costs vary depending on the program operator's role, but the real cost lies in conducting the LCA. EPD education remains a challenge. No single entity oversees EPDs or their approval process, so it's important to delve into which PCRs were followed to ensure consistency when comparing products.

Carpet manufacturer Interface has attained EPDs for 90 percent of its product lines globally. Director of sustainable strategy Melissa Vernon notes two program shortcomings: an absence of both performance thresholds and of benchmarks for many products. "But there's a lot of excitement about the concept and we are working through these ideas," she says. Meanwhile, EPDs do provide "environmental indicators across multiple categories, so you can ... find products that address your values."

#### PIECES OF FLAIR

Labels, seals, and certifications may offer at-a-glance environmental approval, but they track varying criteria, and some are only single-attribute claims. Here is a sample of the ecolabel programs and sustainability standards that are offered today.

The International Living Future Institute's Declare database - and label lists a building product's composition, source, and manufacturing locations and color codes potential hazards. The Pharos database

identifies a product's VOCs toxicity, renewable material content, energy sources, and reflectance.

Greenguard certifies low-emissions materials and interior products to promote indoor air quality (IAQ) and reduce chemical exposure.

**Scientific Certification** Systems independently verifies items such as life cycle assessment, forestry management, and furniture and flooring emissions.

Green Seal develops life cycle-based sustainability standards and offers thirdparty certification.

To receive the Energy Star label, products must meet specific energy efficiency requirements and be certified by an EPA-recognized certification body.

MBDC Cradle to Cradle Certification evaluates products based on their use of materials with closed-loop life cycles. It assesses products in five categories: material health, material reutilization, renewable energy use, water stewardship, and social responsibility.

Developed in Germany, the Passivhaus or **Passive** House Institute requires buildings to meet stringent energy and IAQ standards.

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**ARCHITECT THE AIA MAGAZINE NOVEMBER 2012** 

# Kilden Curved Façade

IN SOUTHERN NORWAY, A PERFORMING ARTS CENTER BY HELSINKI FIRM ALA ARCHITECTS EMBRACES AND AMAZES VISITORS WITH A WOODEN WALL THAT CANTILEVERS TO THE HARBOR'S EDGE.



#### Text by Wanda Lau

The geometric, darkgray aluminum panels cladding the building's rear and side elevations juxtapose the warmth and curves of the Kilden Performing Arts Center's main façade, which emulates a rippling stage curtain or the wooden hulls of ships pulling into harbor. **TURNING A BUILDING TYPOLOGY** on its heels can take a lot of conviction. Luckily, an unincorporated team of architecture students and recent graduates had no shortage of conviction when they entered an international competition to design a performance hall for a symphony orchestra, regional theater group, and opera in Kristiansand, Norway. As it turns out, the group's idea to manifest the diverse program for the Kilden Performing Arts Center on the building façade was selected, leading to the foundation of ALA Architects in Helsinki.

Theaters often emphasize a "blank tower on the building that nobody will recognize," says Samuli Woolston, a partner at ALA. "We wanted to bring out ... the bellies of the actual shapes of the auditoriums, and how the seats rise and become visible on the surface."

Designed in collaboration with local firm SMS Arkitekter, the 24,600-square-meter (265,000-square-feet) structure hosts a 1,200seat concert hall, a 700-seat theater and opera hall, a 150-seat experimental theater hall, and a 235-seat multipurpose hall. The suite of spaces, which align in a row behind the lobby, is delineated by the undulating 3,500-squaremeter (37,700-square-feet) wooden façade, which spans from the lobby floor to the 22meter-tall cantilevered roof. The curves draw visitors into the performance halls, as if they were being "sucked into a cave," Woolston says.

The dynamic surface is derived from two lines: the curved one that outlines the auditoriums at its base and the austere, 95-meterlong straight edge of the roof. Creating the double-curved form between the lines—with the curved line nearly twice the length of the straight one—tested the limits of modeling, fabrication, and construction.

The challenge fell to Zurich-based architectural and technology consultant Designtoproduction, which Norwegian timber contractor Trebyggeriet brought onboard, along with a Norwegian shipbuilder, Risør Trebåtbyggeri.

Steel framing, hung from the building's concrete structure, supports the curved wood

### 55,438 The number of seat cuts made in the glulam

in the glulam beams to ensure the continuity of the gaps between the finished oak planks

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wall structurally. To create the furring system between the steel framing and the finished oak planks, Designtoproduction proposed using 10-meter-long glue-laminated spruce beams, which could be milled by CNC fabrication machines to within a  $^{1}/_{2}$ -millimeter tolerance, says partner Fabian Scheurer.

Digitally fabricating the 1,803 glulam beams and 12,248 oak finished boards, which together comprise the wooden façade, required the consultants to model every aspect of the wall "down to the last screw hole," Scheurer says. The team divided the furring system into 126 decklike elements, each comprising two straight header beams with nine to 13 curved beams in between. Seat cuts to align the oak planks were milled into the glulam beams, which average 120millimeters-by-280-millimeters in section. Fabricated in Switzerland by timber consultant Blumer-Lehmann, the curved beams were transported to a shipyard in Norway, where they joined the Trebyggeriet-fabricated header beams and the Risør Trebåtbyggeri–fabricated oak planks.

The 21-millimeter-thick, 3-meter-long planks made from Norwegian oak—a reference to Kristiansand's founding in the 17th century as a harbor to export wood to Europe for shipbuilding—were milled in sets of four on a five-axis CNC machine. To compensate for the differences in length between the wall's defining curved and straight lines, the planks taper in width between 120 millimeters and 55 millimeters, but maintain the 10-millimeter gap between boards. "At some point, the boards would become too small," Scheurer says. Once the planks taper to 55 millimeters, a new 120-millimeter board picks up where two planks left off.

The long edges of the oak planks were also angled to accommodate the surface's inward and outward curves. As many as 180 planks fit on each furring element. Each plank was slightly bleached and then re-dyed to help preserve its rich, uniform color from fading due to exposure to the sun and Norwegian winters, Woolston says.

Risør Trebåtbyggeri then preassembled the elements in its shipyard, where the prefabricated assemblies could be easily transported on barges to Kilden's waterfront site 100 kilometers away. If all went as planned, the assemblies would "snap into place, just like an Ikea building kit for 126 façade elements," Scheurer says.

To mitigate the difference between the 15-millimeter tolerance in the steel-frame construction and the 2-millimeter tolerance allowed in the finished ceiling gaps, Designtoproduction fabricated each furring element with eight connection points that allowed for some play during the wall installation. "Unfortunately, the human eye is pretty good at seeing non-straight lines," Scheurer says. In the end, the team's meticulous planning and assembly paid off: Only one of the 126 elements required a slight modification.

While the wooden façade appears to run continuously from the building interior to exterior, the glass curtainwall actually truncates the oak planks, creating a clean break between inside and outside members. The curtainwall stops shortly once it disappears above the finished wood surface to avoid interfering with the steel framing. The curtainwall is supported on grade, allowing the wooden façade to move freely, not only to accommodate thermal loads but also loads from "heavy winds blowing down from the fjord," Woolston says.

The intersection of the glazed and wooden façades at the outside corners of the building also proved to be one of the design's greatest fabrication challenges. The return of the curtainwall into the cantilevered wooden façade creates a diagonal intersection that runs the height of the glazing. "In those corners, you have double-curved elements" where the furring elements are no longer planar curves, but spatial curves that bend in two directions, Scheurer says.

The graceful movement and materiality of the wave wall, which took about 18 months to complete, belies its complexity. Downplaying the wall as a "huge eaves structure," Woolston says that "the most interesting part was the collaboration with Designtoproduction and the way of using two very simple lines to create a big surface."

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### OTHERS WALK THE WALK.

Sustainability has become a major factor in the construction market. And the domestic structural steel industry has been making environmental improvements for decades by:

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Using a mobile device's camera feature, Urbasee Project superimposes virtual models—in this case, HWKN's Wendy onto the camera image.





**REMEMBER THE HYPE** around virtual reality? The movement to create digitally constructed environments that stand in for real experiences took off in the 1990s with the development of computing technologies and gaming software. For architects looking to communicate their designs with greater realism, an immersive, stereoscopic visualization technique holds much appeal. However, virtual reality (VR) has been cumbersome to implement; VR labs often rely on the Cave Automatic Virtual Environment model—a small enclosure that limits the experience to one person at a time. Consequently, not many people have been seen wearing VR headsets lately.

But VR is far from extinct—in fact, it's finally gaining traction, garnering increased interest from Hollywood as well as the military, aerospace, medical, and gaming industries. The proliferation of mobile computing, wireless, and GPS technologies has enabled VR to escape the lab. Now, architects can use VR as a productive, on-the-go tool, untethered from the cumbersome hardware of the past.

GPS-enabled mobile electronic platforms on tablet computers or smartphones can simulate a live, digital "slice" of another environment—like a mobile aperture depicting an alternate world. The most compelling VR applications augment reality, layering invisible or simulated data onto the visible world.

The French company Urbasee has released two such architectural applications. **Urbasee Project** brings 2D drawings to life, tethering virtual models to tabletop plans for enhanced design meetings. Meanwhile, **Urbasee Future** superimposes virtual building models to scale onto their proposed sites. Both programs require KMZ-format georeferenced files, such as those produced by SketchUp. Otherwise, the tools are ready to go—no headset or cables required.

These aperture-style VR tools do not provide stereoscopic immersion, but the development of wireless technologies that can deliver large amounts of real-time data has enabled the first generation of full-immersion VR systems in a semi-mobile format. At the University of Minnesota, where I teach, faculty in the College of Design and the Digital Design Consortium have developed such a tool (see "For Real," at right).

Despite their capabilities, the tablet and wireless VR-based tools have their limitations, including seamless tracking. In my experience, the smoothness of Urbasee's operation varies with the strength of the GPS signal. The University of Minnesota VR tool also has time-delays in its delivery of wireless data — a problem that the team is currently troubleshooting.

Economics is another challenge. While the visualization of one project is free, Urbasee charges more than \$1,000 per year for additional projects. Although the Minnesota system is free for university faculty, staff, and students for educational purposes, non-university entities must pay a resource fee.

Nevertheless, these approaches demonstrate the extent to which VR—now freed from the dark recesses of the cave—is becoming significantly more accessible and publicly visible. Soon, we may all be stepping into our designs.



#### FOR REAL The University of Minnesota Virtual Reality Design Lab (VRDL) recently installed a VR system in Rapson Hall, where the schools of architecture and landscape architecture reside. The brainchild of architecture associate professor Lee Anderson, the VRDL platform allows multiple users to experience immersive. stereoscopic VR while roaming about Rapson Courtyard with wireless headsets. The platform offers more than 900 square feet of tracked area with room to grow. "We're pushing the boundaries in several areas, including the size of the space that we're using, which is really big for a virtual reality system," Anderson told the Minnesota Daily.

1968 The year in which Ivan Sutherland created the "headmounted three dimensional display." The heavy forerunner of virtual reality headsets had to be suspended from the ceiling.

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Text by Blaine Brownell Illustration by Peter Arkle

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Rem Koolhaas, the OMA team and Figueras worked hand-in-hand to create a multipurpose auditorium for Milstein Hall at Cornell University. Used primarily as a meeting room for university trustees and as a teaching space, the hall can also be transformed into an open space where a wide range of events can be held.



Milstein Hall Cornell University Design: OMA team, Rem Koolhaas

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# AIAVOICES

HISTORY BUFF | PRESERVATION AND PLACE IN CHARLESTON

Glenn Keyes, AIA, is a preservation architect based in Charleston, S.C., who has consulted with communities affected by hurricanes, including Hugo in 1989 and Katrina in 2005. He is a former staff architect for the South Carolina Department of Archives and History and a current adviser to the National Trust for Historic Preservation. Since 1986, he has restored more than 150 churches, commercial buildings, museums, and houses in Charleston.

#### **CHARLESTON UNDERWENT A MAJOR CHANGE IN ITS APPROACH TO** preservation after Hurricane Hugo in 1989. The requirements for buildings, reflected in the codes, reinterpreted preservation in the way we treat windows, roofing, and seismic retrofits. Codes required us to tie down roof structures when possible in historic rehabilitations and to protect window openings. The earthquake of 1886 was also a pivotal moment—and the subsequent reconstruction gave us a lot of the buildings we seek to protect today—but we're still on a fault line and continue to have tremors. So, with our historic buildings, we do what we can.

Take the Charleston County Courthouse, completed in 1792, which had been gutted seven times in its history. After Hugo, the county asked us to seismically retrofit the building as part of a major restoration. Of course, by that time the interior was not considered historic—having been gutted so many times—so we gave it a concrete-and-steel-framed structure (recessed into the 32-inch-thick masonry walls) to comply with the county's request. We then reconstructed a period interior based on research and the investigation of the existing physical conditions.

There is always a desire to put things back to the way they were as quickly as possible after a disaster, and I think that's done to the detriment of buildings sometimes. Scrambling to replace a roof quickly isn't always the best idea until you've had a chance to assess the situation. The roofs needed to be dried in quickly, but people often hired the first roofer that knocked on the door. Since that time, we have replaced many expensive slate and metal roofs that were installed improperly after Hugo hit. So a measured approach is always best in a disaster recovery situation. Charleston's Board of Architecture Review was great about material requirements after the hurricane. It was tempting for the city to say, "OK, you can put on an asphalt shingle roof." Instead, it said, "If you had a slate roof, you have to put a slate roof back on," thus protecting the historic integrity of the city's architecture.

There is a future for architects trained in preservation. There has been so much research on historic materials and methods done on so many successful preservation projects completed over the last 30 years. As architects, it's a great time to be involved in a growing field. -As told to William Richards

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# AIANOW

ACROSS THE INSTITUTE Compiled by William Richards

1. *Style Profile*. Call it arbitrary or call it fundamental, but style—the design rules a building follows or breaks—is a calculation in the process of creating architecture. But how does style contribute to the definition of design excellence? After the taxonomies of the 19th and 20th centuries, does style even matter anymore? If sustainability is the measure of excellent design these days, can we consider it a style unto itself? Join the AIA Committee on Design and the AIA Historic Resources Committee to investigate these questions and others in Seville, Spain, from Nov. 11 to 17.

#### Learn more at network.aia.org/committeeondesign.

#### 2 Critical Regionalism. Russian

Constructivist architecture combined rationalism, collectivist planning, and new ways of thinking about industrial materials. It laid the groundwork for Soviet Modernism, which flourished within what is now Russia and throughout Eastern Europe—from Tallinn to Tarnovo—as well. "Soviet Modernism 1955–1991" at Vienna's Architekturzentrum takes up the Soviet periphery, showcasing regional differences. The show runs from Nov. 8 to Feb. 25.

#### Learn more at azw.at.

FERNANDO ALDA FOTOGRAFÍA S.L.; PHOTO 2: © EDUARD GABRIELYAN (CNA FPSR); IMAGE 3: Q DRUM (PTY) LTD

PHOTO 1:

4 More Than an Apple a Day. The World Health Organization has named Nov. 14 "World Diabetes Day" and Nov. 16 "World Chronic Obstructive Pulmonary Disease Day" to raise awareness of two diseases that affect a combined 410 million people worldwide. Architects may drink too much coffee, but more and more health experts are looking to them to help reduce the impact of these diseases and others through the design of healthful environments. Join salutogenic design expert Tye Farrow at Architecture Exchange East in Richmond, Va., on Nov. 8 to find out how.

**7** Learn more at *archex.net*.

3 Giving a Damn. The number of licensed architects may be holding steady, but the definition of architecture is surely expanding. Architecture for Humanity's third annual "Design Like You Give a Damn: LIVE!" conference, which includes workshops and discussions, aims to explore just that. Panel topics include eco-development for low-income communities, neighborhood security, microfinance, and disaster reconstruction. The event takes place Nov. 12 to 13 in San Francisco.

#### Learn more at

#### architectureforhumanity.org/events.

5 Feedback Loop. When The Atlantic proffered a cover story in May titled "Is Facebook Making Us Lonely?", it crystallized a debate that's been stirring since the Palo Alto, Calif.-based social networking site launched in 2004. Even if how we connect to one another has evolved (or, as some say, devolved), why we connect with each other remains foundational. From Nov. 8 to 10, the Association of Architecture Organizations will slice open the idea of connectivity at its annual conference in Dallas and examine not only how our communities have changed in relation to ourselves, but how organizations which promote architecture can respond to this change.

**7** Learn more at *aaonetwork.org*.





# **Field Survey**

Where are the gaps in preservation education?

BY KIM A. O'CONNELL

ILLUSTRATION: CHRISTOPHER LABROOY

#### THIS FALL, FOR THE FIRST TIME EVER,

graduate students studying historic preservation at the University of Southern California won't actually get a degree in preservation. Reflecting the global awareness and diversity of the student body, as well as the broad nature of the preservation field, USC will instead award a Master of Heritage Conservation degree. The name change speaks to the ongoing challenge in the academy to find a cohesive purpose and place for historic preservation-and to train architects to work with existing buildings.

"Historic preservation," says Trudi Sandmeier, director of USC's graduate programs in historic preservation, "is a uniquely American term.

Conservation is the more recognized term worldwide, and it's important for us to be globally relevant." When used as an umbrella,

she adds, the term "preservation" is also something of a misnomer because it also refers to a specific treatment approach to old buildings-maintaining existing character-defining features and materials as they are, with minimal intervention-that preservation architects almost never follow. The real work, she says, is in adaptive use.

Why are we still so confused by historic preservation? Perhaps because of the widespread and persistent view of its domain: a marginalized special interest within architecture's academy, which de-emphasizes design and original thinking. The architectural critic Reyner Banham once quipped,

"I am not a preservationist. [It] is largely a

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question of keeping out of the idiotic preservationist panics over insignificant buildings that waste so much of everybody's time."

Compared to the male-dominated field of architectural history, the early historic preservation movement was commonly stewarded by amateur women's groups that anti-preservationists often attacked

THE AMERICAN INSTITUTE OF ARCHITECTS

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as being guided solely by emotion and sentiment. Daniel Bluestone, director of the University of Virginia School of Architecture's historic preservation certificate program, argues that the advent of New Urbanism and sustainability has brought preservation closer to the center of architectural production and challenged the idea that "preservation architect" is an oxymoron. Designing and working within a historic context, he says, are not mutually exclusive processes.

More than a decade later, that is still often the case. Architects interested in preservation often have to choose between going for a Master of Architecture degree or a Master of Historic Preservation. Rarely can they get both without a major outlay of time and money. The multidisciplinary nature of historic preservation (some might call it fragmented) also means that preservation programs are housed not only in architecture schools, but also in history or urban planning departments, museum studies majors, or as standalone programs.

"Within undergraduate architectural education, preservation is almost nonexistent," Sandmeier says. "That is a puzzle to me. Most architectural schools are looking to train architects, but they're giving the students only studio topics that deal with creating something new on a blank site with no context, or in a fake environment. There's certainly a place for think-

> ing outside the box, but 95 percent of graduates will be working on projects that have to do with existing structures, with context in an urban environment, or in a historic landscape.

Students aren't getting the whole picture. I'm trying to change that within our school,

because what we do is not preservation as a treatment approach but rehabilitation, which is a much more interesting concept to architects."

"The architecture profession is inclusive—we work in teams comprising many specialties, and the schools should reflect this reality," says Ashley R. Wilson, AIA, currently the Graham Gund Architect for the National Trust for Historic Preservation and a professor in the Clemson University/College of Charleston master's program in preservation. "A love of place and historic buildings tends to be the gateway drug that gets young people interested in architecture in the first place," Wilson says.

Typically, 25 percent of applicants to the Clemson program were what Wilson calls "frustrated architecture students." These students had formal architecture training, and, after earning their preservation degrees, they usually went on to work in architecture firms, she says. "Yet they had lost their opportunity to become licensed architects because they weren't receiving a Master of Architecture."

Without architects in leadership roles in historic preservation, buildings suffer and education suffers, according to Hugh C. Miller, FAIA, a former chief historical architect for the National Park Service and a professor and thesis director for Goucher College's Master of Arts in Historic Preservation program (of which this author is a graduate). "The profession is complicated, and the whole building industry is very complicated," he says. "The trend in preservation education is that we're really training generalists. They get a pretty good immersion in the preservation process, but they don't get very much in terms of its application to the practice of architecture."

The concepts of preservation related to culture and context are inherent in most theory, history, and design studios already, Wilson adds. "It probably isn't presented as preservation, but it is there."

Without preservation training, architects naturally have less appreciation for character-defining features of historic buildings, or their historic context, says Bruce D. Judd, FAIA, principal of the Bruce Judd Consulting Group in Seaside, Fla., and an adjunct assistant professor in the Goucher program. "Many people think that, if you're a 'real' architect, you can design something that is magnificent and put your ego into it; and if you're a preservation architect, you subvert your ego in many ways," he says. "It may be that you need both those elements to work on historic buildings successfully."

"Preservation education gives you a much better understanding when you have to interface with an existing building," Judd says. "Many people do a terrible job—they overwhelm the original building with large unsympathetic additions, or don't understand the importance of character-defining features."

Architecture schools also provide a fertile environment in which to explore a deeper understanding of the intersection between preservation and sustainability. As architects chase after LEED points, architecture and preservation students are increasingly being challenged to consider alternative definitions of sustainability that take cultural issues, building and material life cycles, and economics into account. "When people talk about green buildings and existing buildings, my sense is there is a lot of mythology," Miller says. "Is the greenest building the one that's already built? It depends. How do you improve the envelope performance? Are there outdated systems that need to be replaced?"

Several architecture schools and stand-alone preservation programs are adding a sustainability element in the form of a course or an additional certificate. The Goucher's program, for example, has a two-semester course on preservation and sustainability that requires students to produce a publishable, vetted white paper on some aspect of the field.

"I think there's increasing interest in this world, due to environmental and resource issues and contextual issues," says U.Va.'s Daniel Bluestone. "As society is becoming increasingly global and homogenous, we are more intensely interested in feeling rooted in place, and that means tapping into the heritage of particular localities."

### **AIA**FEATURE

The down economy, ironically, has been a boon to preservation architects as well. "When the economy is not doing very well, people have a tendency to go back and work on their existing buildings," Judd says.

That may be true, but if current trends in preservation education persist, will architects know what to do with them? Next year, the AIA, the National Architectural Accreditation Board, the Association of Collegiate Schools of Architecture, the American Institute of Architecture Students, and the National Council of Architectural Registration Boards, among others, will participate in the quinquennial Accreditation Review Conference. Already, the AIA is soliciting input from members about what the conference should cover and how architectural education should evolve. Where historic preservation will fit in remains to be seen.

"The preservation field is thriving," Wilson says. "It is the architecture programs that are losing out by not taking ownership of the discipline. The preservationist and the architect share the ultimate belief: that we are serving something bigger than ourselves-that we create places where people can flourish." If that is true, then the academy is perfectly poised to help those two professions to coexist.

**7** To learn more about preservation issues, including education, visit *aia.org/hrc*.

#### Undergraduate programs in historic preservation

American College of the Building Arts, Applied Science in the Building Arts, Charleston, S.C. Boston Architectural College, Design Studies, Boston, Mass. Belmont College, Building Preservation and Restoration, St. Clairsville, Ohio College of Charleston, Historic Preservation, Charleston, S.C. Roger Williams University, Historic Preservation, Bristol, R.I.

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Georgia State University,

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California State Polytechnic University, Architecture, Pomona, Calif. Colorado State University, Public History, Fort Collins, Colo. George Washington University, American Studies, Washington, D.C. Middle Tennessee State University, Public History, Murfreesboro, Tenn. University of Delaware, Urban Affairs & Public Policy, Newark, Del.

#### Certificate programs in historic preservation

Bucks County Community College, Historic Preservation, Newtown, Pa. National Center for Preservation Technology and Training, Materials Science, New York, N.Y. **RESTORE**, Materials Science, New York, N.Y. Rutgers University, Historic Preservation, New Brunswick, N.J.

Savannah College of Art & Design, Historic Preservation, Savannah, Ga.

School of the Art Institute of Chicago, Historic Preservation, Chicago, Ill.

Texas A&M University, Historic Preservation, College Station, Texas Tulane University, Preservation Studies, New Orleans, La. University of Colorado, Historic Preservation, Denver, Colo. University of Georgia, Historic Preservation, Athens, Ga. University of Maryland, Historic Preservation, College Park, Md. University of Pennsylvania, Historic Preservation, Philadelphia, Pa.

University of Minnesota, Architecture-Heritage, Conservation and Preservation, Minneapolis, Minn. University of Oregon, Historic Preservation, Eugene, Ore. University of Pennsylvania, Historic Preservation, Philadelphia, Pa. University of Southern California, Historic Preservation, Los Angeles, Calif. University of Texas, Historic Preservation, Austin, Texas University of Vermont, Historic Preservation, Burlington, Vt. Ursuline College, Historic Preservation, Pepper Pike, Ohio

University of Illinois, at Urbana-Champaign, Architecture, Champaign, Ill. University of North Carolina at Greensboro, Several Programs Greensboro, N.C. University of Texas, several programs, Austin, Texas

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Historic Preservation, Los Angeles, Calif. University of Arizona, Heritage Conservation, Tucson, Ariz. University of Cincinnati, Historic Preservation, Cincinnati, Ohio University of Florida, Historic Preservation, Gainesville, Fla. University of Hawaii, Manoa, Historic Preservation, Honolulu, Hawaii University of New Mexico, Historic Preservation and Regionalism, Albuquerque, N.M. University of North Carolina at Greensboro, Historic Preservation, Greensboro, N.C. University of Texas at San Antonio, Historic Preservation, San Antonio, Texas University of Utah, Historic Preservation, Salt Lake City, Utah University of Virginia, Historic Preservation, Charlottesville, Va. University of Washington, Historic Preservation, Seattle, Wash.

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# AIAPERSPECTIVE

FROZEN MUSIC



LATE IN AUGUST, THE BALTIMORE SUN RAN THE HEADLINE "Plans for Mechanic Theatre Site Stir Controversy." The theater in question was designed by legendary Modernist John Johansen, FAIA, in the style of Brutalism. As might be expected, a proposal to demolish a building by an acknowledged midcentury master has provoked no small controversy. It doesn't help the case of Johansen's building that it's been vacant for eight years, or, as one blogger wrote, "I'd come close to heart attack walking up all the stairs in that damn place just to get a seat where you couldn't see the stage or hear the actors."

The most passionate defense of Mechanic Theater seems to be more a matter of respect than love, which puts me in mind of a similarly challenged midcentury building in Boston.

Almost from the first day it was opened to the public, the Boston City Hall, designed by Kallman McKinnell & Knowles, has ignited fierce passions. Architects admire it; the public and those who work in the building admire it less so. Part of the issue here, and in Baltimore, stems from the negative impact both buildings have had on the existing urban fabric: Boston's ragged but much beloved Scollay Square was erased, and in Baltimore streets were eliminated around the theater to create superblocks.

The ultimate fate of these two buildings—indeed of much of the architecture of the middle decades of the 20th century—raises difficult questions: What of our architectural heritage is worth preserving, and why? Who makes these decisions, and what are the criteria? When do such discussions begin? After 10 years, 20 years, 50 years?

The U.S. Secretary of the Interior's "Standards for the Treatment of Historic Properties" helps shape an informed discussion. But even this resource raises the question of what is worth preserving. Take, for example, this sentence from "Criteria Considerations" published in the *National Register Bulletin*, which attempts to guide nominations: "A property achieving significance within the past 50 years if it is of *exceptional* [italics added] importance." For architects, "exceptional" can mean something quite different from how the general public sees it, and we can get into real trouble if we argue that our experience and training qualify us to be the final arbiters.

Humility and openness are perhaps wiser qualities to call on when discussing how a building contributes to a community's quality of life and special sense of place. After all, was it so long ago that Victorian architecture was roundly despised? Yet imagine for a moment how much poorer our towns and cities would be without the sheer delight of Arts and Crafts, Italianate, and the purple prose of Queen Anne architecture. On second thought, it's not so difficult to imagine, because so much of it actually was lost.

One block from the AIA's Washington, D.C., headquarters is the Old Executive Office Building (1888), designed by Alfred Mullett. Work began on the building at the height of the fashion for French Second Empire architecture, but by the time it opened its doors, Congress and the public had lost its taste for the style. Right up to Eisenhower's presidency, there were several proposals from Congress, the public, and architects to tear it down, or at least to modify it. Fortunately, by the time the money was found to do the job, people discovered they rather liked the flamboyance of Mullett's work. Today, it's an esteemed neighbor to the White House.

In the end, questions of what we bequeath to future generations are perhaps best answered by our grandchildren. Whether by neglect or intent, once a building disappears a piece of our architectural legacy is irretrievably lost.
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# CENTER

Unveiling Johnston Marklee 74 Will Detroit embrace its future? 88 Data centers: Taming an energy hog 102 MoMA takes a stand 112 The smarter parking garage 120 Is it wrong to design a prison? 134

Chinese artist and activist Ai Weiwei shows his middle finger to the Middle Kingdom in "Study of Perspective — Tiananmen Square" (detail, this page). The photograph appears in the Museum of Modern Art exhibition 9+1 Ways of Being Political: 50 Years of Political Stances in Architecture and Urban Design, reviewed on page 112.

# ON THE INSIDE LOOKING OUT



Mark Lee and Sharon Johnston, AIA, in a conference room in their firm's Los Angeles office. The two architects just secured the commission for the Drawing Institute on the legendary Menil Collection campus in Houston, beating out an impressive list of contenders. JOHNSTON MARKLEE IS HAVING A BREAKOUT YEAR. BUT UNLIKE THE PREVIOUS GENERATION OF OUTSPOKEN LOS ANGELES ARCHITECTS, THE FIRM'S INFLUENCES EXTEND WELL BEYOND SOUTHERN CALIFORNIA

### Text by Christopher Hawthorne

**OF ALL THE QUESTIONS** I posed to the Los Angeles architects Sharon Johnston, AIA, and Mark Lee, who run an increasingly busy practice together under the name Johnston Marklee & Associates, the one that elicited what I found to be the most telling response had to do with their relationship with other emerging firms in Southern California. We were sitting in a long, all-white conference room in their office, which is located just north of Wilshire Boulevard in West Los Angeles. On a table in the middle of the room were totems of the firm's current obsessions: a mock-up of the cover of their book House Is a House Is a House Is a House, which will be published next year by Springer Vienna, and a model of a preliminary design for the Drawing Institute at the Menil Collection in Houston.

Johnston Marklee won the Drawing Institute commission last summer, giving the two partners by far the biggest break of their 14-year career together. They prevailed in a competition that produced one of the most intriguing architectural shortlists of recent memory; the other finalists were Tokyo's Sanaa, London's David Chipperfield Architects (who had already produced a larger master



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The Hill House in Pacific Palisades, Calif, a 3,600-square-foot single family residence completed in 2004, was designed for an irregularly shaped hillside lot. The program sought to maximize the allowable volume permitted by zoning regulations while minimizing the house's foundations and footprint. plan for the Menil campus), and the Mexico City architect Tatiana Bilbao.

As Johnston clicked through a series of images of the firm's recent work—a mixture of houses, small pavilions, competition entries, and installation designs in the U.S., Europe, and South America—it quickly became apparent that the pair, married since 1998, is in some ways more closely associated with a group of well-traveled youngish architects from around the world than with its home city of L.A.

Again and again, she'd introduce a project—Ordos in Mongolia, the Solo Houses in Spain, the post-earthquake META pavilions in southern Chile—in which Johnston Marklee contributed a design along with a small group of other firms. And the same names kept coming up: Office, the firm run by Kersten Geers and David Van Severen in Belgium. Bilbao, their competitor at the Menil. Studio Mumbai of India. Sou Fujimoto, from Tokyo. Given their membership in this multinational group, I asked Lee and Johnston, did they feel any similar connection or sense of kinship with L.A. architects around their age?

Johnston's response was immediate. "Not really," she said with a shrug.

Later, in a phone interview, she elaborated on that answer. "I think for architects of our generation, this sense of community is more global," she said. "There is more opportunity for that kind of engagement across continents because of publications, because of technology—all the things that make the marketplace bigger."

Lee added, "We always feel a bit like outsiders in L.A., but not complete outliers. We find more of a community outside the U.S. In Europe or Latin America, it's more possible for very open dialogue than with our L.A. colleagues."

Lee, who is 45, grew up in Hong Kong and moved with his sister to Claremont, a tree-lined college town about 30 miles east of downtown Los Angeles, near the end of high school. He studied architecture at the University of Southern California. He met Johnston—who is 47, grew up in Malibu, and graduated from Stanford Universitywhen both were earning master's degrees at Harvard University's Graduate School of Design. The pair opened their office in 1998, after Johnston moved back to Los Angeles. Lee had been living in Switzerland, teaching at the Swiss Federal Institute of Technology (ETH) in Zurich. That set the tone for a practice that continues to have one foot in California and the other somewhere else.

It was hard not to think of how different this mild estrangement from their local colleagues is from the generation of Southern California architects who came

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The 2004 Sale House in Venice, Calif., a singlefamily residence, was commissioned after the previous house on the site was destroyed in a fire. An adjacent garage and studio designed by Californiabased Morphosis Architects in 1978 survived the blaze and helped inform Johnston Marklee's design.

CENTER

before them: the so-called L.A. School, made up of Frank Gehry, Eric Owen Moss, Franklin Israel, and Thom Mayne and Michael Rotondi of Morphosis, among others. This group of architects not only emerged together from the same place—the west side of Los Angeles, specifically Santa Monica, Venice, and Culver City—in the 1980s, but their work shared a number of formal and conceptual preoccupations.

One should be careful not to overstate the collegiality of the L.A School. Its architects were fiercely competitive with one another and often conflicted, as self-styled rebels, about accepting membership in any movement or collective. ("The first time I heard of Frank Gehry I was 38 years old," Mayne once said.) Still, at least as viewed from the outside-from New York, say, or Tokyo—the L.A. School made up a coherent group that took American architecture in a specific and barbed direction. And in the days before the Internet arrived to distribute images of new architecture instantly around the world, the L.A School architects worked in relative geographic isolation. Their primary audience was one another.

Nothing similar could be said about the current crop of L.A. architects now in their 40s and 50s, who make up a diffuse group. There are the sunny, effortlessly savvy houses of Barbara Bestor, deeply connected to place and L.A.'s Modernist heritage; the macabre digital fantasies of the cigar-chomping Hernan Diaz Alonso; and the wide-ranging work of Michael Maltzan, which formally owes a debt to Álvaro

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The 2,600-square-foot Mound House, completed in 2002 in Marfa, Texas, was designed with traditional adobe bricks and steel spanning frames. The main living spaces open onto a V-shaped courtyard. Siza but has found patrons in Southern California as diverse as the former super-agent Michael Ovitz and the nonprofit Skid Row Housing Trust.

Johnston Marklee's architecture, meanwhile, stands out for its coolness and efficiency, and for initially appearing simpler, or less layered, than it actually is. In all three of those ways, it is a reaction against the sculpturalism, machismo, and occasional histrionics (architectural and personal) of the L.A. School. Johnston and Lee know that work well: Almost a decade ago, their firm was hired to design and build a ground-up bungalow on the same property as a 1978 Morphosis studio known as "2-4-6-8," and they studied the older building obsessively. But they are outspoken about how different the L.A. School sensibility is from their own.

"That generation really strived for spectacle or excessiveness, but often at the cost of something else," Lee told me. "It was almost a case of overpromising and underdelivering architecture that hawked itself to gain attention. Maybe historically it was good because it was an adrenaline shot for architecture, but in the long run it did more damage than good."

Or, as Johnston put it, "Maybe in contrast to a Thom [Mayne] or an Eric [Owen Moss], we're really excited when we can make one move that does two things. And if it does three or four, we're even happier."

Examples of that strategic economy are not hard to find in the firm's built work. In the Hill House, a three-story residence cantilevered out over Santa Monica Canyon in the Pacific



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Walden Wilson in Culver City, Calif., an 800-square-foot studio and garage completed in 2003, features a baffled skylight and an exterior clad in cement fiber board panels.

Palisades section of Los Angeles, it is evident in the building's dramatic rhomboid form.

The house, completed in 2004 and widely published since, was a spec project. Though the owners of the lot appreciated contemporary architecture and sought out Johnston Marklee, they also wanted to maximize their square footage. At the same time, the new house had to meet L.A.'s rigorous, even oppressive, hillside building ordinance, which mandates significant setbacks from the lot line and strict height limits. The setbacks are measured from where the house comes out of the ground, not from how far it hangs over the hillside. As a result, Lee and Johnston pushed the main floor out as far as they could, then pinched the lower level back toward the hill.

The pinching both produced the house's most memorable moment—when you stand at the corner of the living room, looking out over the canyon, with a tiny sliver of Pacific Ocean visible above the treetops to the west, you feel that you're on the prow of a ship, with no architectural mass beneath you—and allowed the architects to pack 3,600 square feet of interior space into a building that seems to touch the steep hillside not with work boots but with ballet slippers.

"We tried to see the hillside ordinance not as a policing device, but as a design opportunity," Lee said matter-of-factly.

The Hill House is also very much an L.A. design. The waterproof cement finish that wraps the exterior is tinted a very faint lavender to pick up the colors of the Eucalyptus trunks that rise around it. And the use of the stucco-like material itself, and the rather banal way it sheathes this otherwise otherworldly architectural shape, is a nod to all kinds of local precedents, most notably Gehry's deadpan early buildings (the Danziger Studio, say) and the L.A. streetscape photography of the artist Ed Ruscha.

Similarly flexible in both its materials and its relationship to Los Angeles is Johnston Marklee's retail outlet, on Santa Monica Boulevard in Beverly Hills, created for the Belgian designer Martin Margiela. The shop, which opened in 2007, features a façade covered with shimmering white plastic discs. The choice was inspired by the architects'

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View House in Rosario, Argentina, completed in 2009, makes use of natural light and passive ventilation to minimize the need for mechanical systems. The 3,000-square-foot, torus-shaped structure also has expansive views of the surrounding landscape.

immersion in Margiela's archive, where they discovered dresses covered in plastic sequins. The discs Johnston Marklee specified are made in Germany and used as reflectors on road signs, embedding in the design a sly nod to L.A. car culture.

Taken together, these projects and others like them—including a chiseled concrete house finished in Rosario, Argentina, in 2009, and a series of buildings in Marfa, Texas—suggest a firm, like many of Johnston Marklee's generation, that is picking up momentum but still finding its voice. That's one reason the Menil commission came as such a surprise.

"They are young, and they haven't built that many things," said Josef Helfenstein, the Menil's director. "There is a tendency in these commissions to choose a big name. I think it took some courage on the part of our trustees not to do that."

The plans for the Drawing Institute remain preliminary and have not yet been released to the public. Johnston Marklee has proposed a single-story building, encompassing roughly 20,000 square feet, wrapped in gray brick and snaking around three courtyards, each containing a large existing live oak tree. Like Renzo Piano's Menil galleries and the other buildings that make up the museum campus, such as the Rothko Chapel by Philip Johnson and Houston architects Howard Barnstone and Eugene Aubry, the design has a frankness and a domestic character, and it takes advantage of the parklike setting. Though the scale is small, the program incorporates not just exhibition space for works on paper but studios and conservation rooms.

According to Helfenstein, the clarity of Johnston Marklee's competition entry made the firm a good fit for that context: "There was a minimalism and efficiency in their proposal, very much serving the cause and not advertising itself or pointing out itself. I thought that was encouraging and refreshing. And very much in the spirit of this institution."

I know what Helfenstein means when he says that, but it wouldn't be entirely accurate to call Johnston and Lee simply minimalists, as if



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## IN PERSON AND IN THEIR ARCHITECTURE, JOHNSTON AND LEE AIM FOR A KIND OF ACCESSIBLE MYSTERY; THE WORK IS VEILED, BUT THE VEIL IS LIGHT AND EASILY REMOVED.



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they were Southern California devotees of Tadao Ando or John Pawson. There is a geometric and conceptual complexity to their work—subtle, but present all the same. It's visible in the firm's proposal for the huge Grand Traiano Art Complex just southeast of Rome—a hillside stack of big boxes—and in its design, still awaiting funding, for new University of California at Los Angeles graduate art studios in Culver City, which call for a vaulted polycarbonate roof covering a kind of interior city.

I'm also not sure I'd agree with the *Houston Chronicle*, which in a headline announcing the results of the Drawing Institute competition described Johnston and Lee as "glam L.A. architects." Their connections in the fashion and art worlds and their own sense of style might lead one to that conclusion. (Lee was wearing suspenders over a black T-shirt the day we talked at the office, and both architects are prominently bespectacled even by the standards of the profession.) But in person and in their architecture, Johnston and Lee aim for a kind of accessible mystery; the work is veiled, but the veil is light and easily removed.

As Lee put it, "We do strive for a certain reticence, but it's not an aloofness. It's not being elitist. I think in a way it's an aura we use as a kind of protection. But if people want to penetrate it they can."

To get a final reading, I emailed Kersten Geers of Office, which has often worked side-by-side with Johnston Marklee on group projects. He described their architecture as "part pragmatism, part show, part tongue in cheek, but most of all very intelligent."

Geers knows Southern California well; he and his Office partner, Van Severen, met while living in Southern California in their 20s. As a result, he zeroed right in on the complicated relationship Johnston and Lee enjoy with Los Angeles and the L.A. firms that came before them. In their work, he wrote, "It is possible that there are some connections with [older] L.A. architects—Owen Moss, perhaps, Gehry—but always without the forced exuberance. More dry, less outspoken."

He added, "L.A. has always been a strange place, a kind of Western Eden, as much artificial as it is aware of it. Mark and Sharon are a perfect product of that ambivalent scene."

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**ARCHITECT THE AIA MAGAZINE NOVEMBER 2012** 

THE CITY

**MAPPING MOTOWN** 

DETROIT WORKS IS UNVEILING A LONG-TERM STRATEGIC VISION TO COMBAT THE CITY'S ILLS. TWO LOCAL ARCHITECTS WERE GIVEN THE DIFFICULT TASK OF GETTING RESIDENTS AND OFFICIALS TO BUY IN.

Text by **Anna Clark** Photograph by **Ian Allen** 



Dan Kinkead (left) of Hamilton Anderson Associates and Dan Pitera of the Detroit Collaborative Design Center stand amid newly planted trees in a stormwater-infiltration forest at Detroit's Latham Park. The two architects helped manage the long-term arm of Detroit Works. **IT'S IMPOSSIBLE** to talk about Detroit without talking about poverty. What relevance does design have in neighborhoods lined by miles of abandoned bungalows, where families navigate patchy streetlighting and unreliable bus service? In April, the city government's ongoing fiscal crisis led to a brokered consent agreement with the state, a last stop before emergency management and bankruptcy.

With the usual systems of power cracked at the core, numerous artists, entrepreneurs, and urban thinkers are experimenting in Detroit, infusing the streets with a slow-burn creativity. But it's naive—and offensive—to pretend that Detroit is a "blank canvas," as many newcomers and reporters have suggested. It's not. More than 700,000 residents live in the city's 139 square miles. But most haven't yet benefited from the revival of investment in downtown and Midtown—where companies such as Chrysler, Quicken Loans, and Twitter are relocating thousands of jobs.

A host of neighborhood groups, nonprofits, and other organizations are trying to alleviate the city's ills, but without the benefit of a strategic framework. Enter Detroit Works, an exceptionally comprehensive—and controversial—planning effort unveiled in 2010 by Mayor Dave Bing and supported by funding from the Kresge Foundation, a \$3.1 billion philanthropic organization headquartered in Troy, Mich. The project's initial launch was inept and acrimonious,

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CENTER



with Mayor Bing telling a reporter, "We will depopulate some neighborhoods." The comment confirmed residents' fears that the *real* plan was to force them out of their homes. (Portions of the raucous town halls are captured in the documentary *Detropia*.)

The city backed off its explicit message of relocation, but the outcry threatened to collapse Detroit Works. So, after some behind-the-scenes restructuring orchestrated by Kresge and the city, the project split into halves. A city-led team is focusing on short-term planning, pursuing immediate resident needs. In August, for example, Mayor Bing announced a multi-year plan to fix the city's street lights, prioritizing major thoroughfares and stable neighborhoods. The final phase calls for the removal of obsolete fixtures, as a new lighting authority decides the needs of each neighborhood.

"You have to identify those neighborhoods where you want to concentrate your population," Chris Brown, Detroit's chief LOW VACANCY MODERATE VACANCY HIGH VACANCY population 317,070 300,884 88,911 mean household \$45,358 \$35,632 \$27,922 % of city by 41% 39% 21%

### **MAPPING DETROIT**

Detroit Works includes a comprehensive assessment of vacancy rates throughout the city. Most of the lowvacancy areas are in historic districts or are along the outer edge of the city. The high-vacancy regions, on the other hand, are often close to current environmental hazards or contaminated land and closed schools. But, in many cases, they are also close to some of the city's best assets. The Detroit Works framework suggests ways to maximize land-use and assets in each of the zones, strengthening already stable neighborhoods and making productive use of vacant land. Suggestions range from boosting community patrols as a crimefighting tactic to zoning recommendations; from creating surface lakes that capture stormwater in high-vacancy areas to creating forested buffers around industrial zones. The buffers would serve as visual and sound barriers and would help lessen the impact of pollutants on adjacent neighborhoods.

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THE PROJECT'S INITIAL LAUNCH WAS INEPT AND ACRIMONIOUS, WITH MAYOR BING TELLING A REPORTER, "WE WILL DEPOPULATE SOME NEIGHBORHOODS." THE COMMENT CONFIRMED RESIDENTS' FEARS THAT THE *REAL* PLAN WAS TO FORCE THEM OUT OF THEIR HOMES.

operating officer, told a *Bloomberg BusinessWeek* reporter in May. "We're not going to light distressed areas like we light other areas." In other words, with the declining tax base, the city simply cannot afford to provide the same level of services to every block, requiring decisions that will have a clear effect on residents in "distressed" areas.

Meanwhile, a team of planners is focusing not on the city's day-to-day, but on its future. The long-term planning arm of Detroit Works is crafting a strategic framework for decision making—not a master plan—that assumes the need to "raise the quality of life for all," as the program's leaders defined its primary goal.

Detroit Works could be a game-changer. It could help residents chart a course for their own neighborhoods, become a guide for businesses looking to expand in the city, and help city officials (members of the planning commission and development departments are on the long-term arm's steering committee) come up with strategic approaches for the investment of scant resources.

Or Detroit Works could sit prettily on a shelf, largely unused. With the final results soon to be released, we're about to find out whether City Hall will buy in to the long-term vision. The project's effectiveness depends on the quality of conversations that its champions have with city officials, as well as with business owners, nonprofit leaders, investors, activists, and, of course, the hundreds of thousands of residents who, as one east-sider put it, have "the brilliance of lived experience." How calibrated Detroit Works is to that brilliance will define its future as rhetoric, or reality.

### We Are You, You Are Us

Dan Kinkead makes a point of mentioning that he lives in Detroit when he meets with city residents. He's raising a daughter here. His stake in the city's future as a member of the Detroit Works planning team is not just professional, it's also personal. This is an important point. As a young white planner in a city dominated by working class black people, he's viewed as an outsider telling locals what to do. His personal asides are meant to communicate an alliance with residents as he presents data that emerged from nearly three years of planning work.

Kinkead is an architect with Hamilton Anderson Associates (HAA), a firm founded in Detroit in 1994 with a holistic approach to architecture, landscape, and planning. HAA was chosen to help lead the technical team of Detroit Works' long-term arm by Kresge, which is bankrolling the effort with \$2.7 million. (The Ford and W.K. Kellogg foundations added \$3 million to aid the technical team and community outreach.) Kresge officials have already pledged support for initiatives that arise from the project's research.

HAA's office is in Detroit's Harmonie Park, a part of town with a charged history of urban planning failure. Locals are cultivating the revival of the area's legendary Paradise Valley arts district, adjacent to the Black Bottom neighborhood (named for its rich soil) where much of Detroit's black community lived prior to World War II. In Black Bottom, boxer Joe Louis grew up, trained, and, as reigning world champion, sponsored the Brown Bombers softball team. Jazz and blues clubs thrived, as did theaters and speakeasies.

But, in the name of "urban renewal," the city began demolishing swaths of Paradise Valley and Black Bottom in the 1940s and '50s. In their stead came the I-75 and I-375 freeways and the 78-acre Lafayette Park complex, designed by Ludwig Mies van der Rohe as a model neighborhood (and is home to, more recently, Comerica Park and Ford Field). With no relocation plan, many displaced residents moved into housing projects. The community's decimation is a charged memory that fuels suspicion about Detroit Works. Hence the need for Kinkead to send the message to residents: We are you, you are us.

Kinkead reports to Toni Griffin, who heads long-term planning and, like HAA, was handpicked by Kresge. Griffin also directs the





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NOTHING WILL IMPROVE QUALITY OF LIFE MORE THAN THE REINVENTION OF THE ECONOMY, THE PLAN SAYS. DETROIT NEEDS JOB GROWTH WITHIN CITY LIMITS AND A STRENGTHENED TAX BASE. WHILE MOST U.S. CITIES HAVE BETWEEN 35 AND 75 JOBS PER 100 RESIDENTS, DETROIT HAS 26.



City University of New York's Bond Center on Design for the Just City, so she comes and goes from Detroit. As the on-the-ground lead, Kinkead fields questions and explains the project's tentative findings at community meetings, where he starts conversations with a 50-minute presentation. At a recent meeting, the piles of information proved overwhelming to some residents, who, poised to take notes, slowly put down their pens.

One attendee said that Kinkead made an impressive effort to be transparent by "putting all the cards on the table," a crucial counter to obfuscating tactics of past planning projects and residents' suspicions that Detroit Works was only looking to sell a plan it had already made. But, the attendee added, "You don't need to show all the cards at once."

This is one of the project's biggest challenges: sharing a large amount of data in a way that engages residents instead of overwhelming them. "We're trying to take this massive thing and land it so precisely on the ground," Kinkead says.

The project's long-term effort considers 14 quality-of-life factors, such as safety, health, and mobility. It introduces a goal for each (for example, crime-free neighborhoods) and suggests metrics (a reduction in crime relative to total population) and strategies to achieve those goals (forming effective community watch groups, say). The framework emphasizes that residents can define their own priorities and their own ways to measure progress. The analysis moves from hyperlocal to citywide, encompassing land use, sustainable neighborhood revitalization, and infrastructure; it details ways that government, private, and other Detroit-focused initiatives can be better aligned with each other.

Nothing will improve quality of life more than the reinvention of the economy, the plan stipulates. Detroit needs job growth within city limits and a strengthened tax base. While most U.S. cities have between 35 and 75 jobs per 100 residents, Detroit has 26, according to data from the U.S. Census Bureau and the nonprofit Initiative for a Competitive Inner City. Twenty percent of Detroiters don't have a high school degree. And even though the volume and usage of Detroit's industrial land surpasses that of

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### THE PROJECT DOESN'T RE-CREATE DETROIT BUT AMPLIFIES EXISTING RESOURCES, DAN PITERA SAYS. "WE HAVE A CHANCE TO CREATE A 21ST-CENTURY ECOLOGICAL AND EQUITABLE CITY."



peer cities, 22 percent is underutilized.

As effective models for aggressive job creation, the framework cites organizations such as TechTown, a local nonprofit that incubates more than 250 research and technology businesses. Since 2007, TechTown has created 1,085 jobs and has partnered with a community organization in Brightmoor, a struggling neighborhood, to provide business support to area entrepreneurs.

The framework advises targeting industry for growth, as well as the creative economy, edsand-meds, and entrepreneurship in a variety of sectors. Ubiquitous images of vacant factories notwithstanding, Detroit Works documents how city businesses that process, manufacture, repair, and distribute physical goods employ 27,000 people. The framework suggests more investment—particularly in the Eastern Market, Mt. Elliott, and Southwest neighborhoods, where industry will be supported by access to an airport, freight lines, highways, waterways, and the international border with Windsor, Ontario, Canada.

The framework details 11 other imperatives in addition to economic growth, including promoting a range of sustainable residential densities and attracting new residents to the city. It maps community assets (such as historic districts and libraries) and identifies strategies to bolster already-strong neighborhoods and make productive use of vacant land in lowoccupancy neighborhoods (an effort that would be aided by better coordinating the city agencies responsible for land use). Prioritize stabilization of neighborhoods within a half-mile of schools, the framework advises. Target absentee landlords and owners with code enforcement programs. Incentivize multifamily housing.

One unexpected detail from the Detroit Works research: Only 88,911 residents live in high-vacancy neighborhoods, compared to the nearly 619,000 in more stable areas. But high-vacancy areas make up 21 percent of the city's footprint. It's a cruel triptych: a glut of single-family homes, low market demand, and buildings that become more dangerous the longer they're vacant. For immediate support of high-vacancy areas, the framework suggests boosting resources for existing community patrols, revising zoning to allow a wider



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spectrum of land uses, and constructing a citywide network of greenways and bike lanes.

But the larger goal is to turn land and properties over to productive uses. Detroit Works spotlights reimagined spaces such as urban farms (large and small, commercial and community) and the Power House project led by Design 99, a local design firm that turned a foreclosed house into an off-the-grid power production facility fueling a new artist colony.

Forced relocation is off the table, though incentives may not be. When a woman at a community conversation asked how Detroit Works intended to get past what she portrayed as the stubborn stance of residents who "have this attitude of 'I'm not moving,'" Kinkead replied, "We don't need to move [people] ... There are a series of options, from moving the house to land swapping to remaining [in the house], but disconnected from some systems not with less services but with different services, like a rural environment. People can remain and still be part of the infrastructure."

By providing multiple, simultaneous views of the city, Detroit Works will help leaders make decisions that don't work at cross-purposes with others. For example, Detroit Public Schools administrators may need to close schools in areas with fewer children. But if they see momentum in Neighborhood A—perhaps it has amenities that appeal to families, and some commercial shops are finding success—the administrators might keep Neighborhood A's school open and instead close Neighborhood B's school, which, they see in the framework, is in an increasingly industrialized area.

Kinkead is especially interested in how more sensitively chosen infrastructure can interweave neighborhoods with landscape, in contrast to Detroit's history of big infrastructure investment—namely, freeways—which he calls "devastating."

"Now we have the opportunity to do soft infrastructure—seamless with the community," he says. Detroit has 37 square miles of open space—more land than all of Manhattan. The framework suggests creating holistic blue and green landscape systems, adding trees and lakes with both recreational and infrastructural value. Dispersed ponds, for example, can aid stormwater management, easing the burden on city services while ensuring that residents don't face flooded streets on rainy days.

But all of this is an idea, not an agenda. No planning trend will solve Detroit. No pet project translates into the transformation of an entire city.

The Man Behind the Civic Outreach When you meet Dan Pitera, you can hear the hum of his live-wire energy. As the leader of

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Percent of the potential workforce that is black.

the community-engagement arm of Detroit Works' long-term planning team, he needs the charge. Pitera, who directs the Detroit Collaborative Design Center at the University of Detroit Mercy School of Architecture, is partnering on the engagement effort with two area nonprofits, Michigan Community Resources and the Community Development Advocates of Detroit.

Extraordinary civic engagement was essential for building the legitimacy of Detroit Works after its horror of a debut. So, from their cheery Detroit Works storefront in Eastern Market, Pitera and his team organized community conversations in multiple neighborhoods, as well as a traveling "road show" and telephone town halls. They posted presentations online before they were refined and made data visualizations of public feedback. They created "Detroit 24/7," an online game where players envision the city's future. And they launched an oral history project fashioned as an elegant online gallery. ("It's a myth that to have community engagement, you have to have mediocre design," Pitera says.)

"It's really about building relationships,



not just getting information," Pitera says. When he started with Detroit Works, he was "as critical as anyone" about the clumsy way conversations about poverty and policy happened. Pitera says he understands the cynicism of many residents. "It's very valid," he says, based on the mixed messages that they've heard so far.

Pitera is intrigued by the project's potential not to "re-create" Detroit, but to amplify existing resources—its people, most especially, and its land. "We have a chance to create a 21st-century ecological and equitable city," he says.

One of the many things architects have learned over the last century is that there's no way to plan equitable spaces if the process itself is not equitable, if it does not reflect a deep and broad interaction with citizens and an honest accounting of those conversations. The civic engagement of Detroit Works is groundbreaking in its scope, reaching tens of thousands of residents. How meaningful those conversations have been will be seen in whether or not the project helps guide decision making by residents on street corners, at dinner tables, and in block clubs, to say nothing of City Hall. Poverty is a distortion of power, after all, and it is difficult to have an equitable conversation across that line.

Charity Hicks, a local health activist, describes poverty as "people who have profound capacities, but no opportunity. Poverty truncates you." Hicks has served on a Detroit Works advisory board, but she's critical that more "local brain cells" are not in leadership positions at Detroit Works, aside from HAA. "Find those people who are visionary and innovative, and marry them with planners," she said. "Take a group of citizens through Planning 101. Why not?" More than just a performance of representative leadership, she argues, such an approach would have added additional depth to the many discussions about the city's future.

Will the city merge the recommendations from the long-term plan with its short-term vision? So many strategies that the framework describes will, at some point, necessitate city participation. But Kinkead sidesteps the idea of it requiring top-down implementation, saying success depends on a "mosaic implementation, from a design perspective."

"This is fundamentally collaborative," Kinkead said. "Everybody, from the state to the city to the citizen, is an important decision maker. The problems [here] are too deep, too systemic, for any participant to be missing in the solution. ... We need everyone to rise up to the challenge. We have to make deliberate decisions. We have to move beyond ourselves and think of the city as a whole."

Kinkead sighs, leans back in his chair, and adds: "There's a bit of a leap of faith in that.

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The number of watts in billions that data centers worldwide use roughly equivalent to the output of 30 nuclear power plants.

SOURCE: THE NEW YORK TIMES

Pionen, a 1,200-squaremeter (13,000-square-foot) data center designed by Albert France-Lanord Architects, is located in a former nuclear bomb shelter 30 meters under bedrock in Stockholm.

### Text by Rose Eveleth

**FROM THE OUTSIDE**, NY4 doesn't look like much. Its ambling, concrete façade is dotted with tinted windows, not unlike many industrial buildings here in Secaucus, N.J. But that's where the similarities end. Inside, the lobby is empty except for a wall-mounted telephone that dials straight to a security desk. If—and only if—you have an appointment, they'll let you through the doors and into a waiting room tinged with a red glow. A glass wall separates you from two security guards studying a wall of five video monitors, each showing multiple surveillance feeds.

It was here in this interstitial space that I met a tall man with white curly hair. Michael Poleshuk is the senior director of Northeast data center operations for Equinix, a company that owns and operates data centers across the country, including this one. I apologize to him for being nearly an hour late, explaining that I hadn't expected the journey from Brooklyn to take two hours in rush hour. "I knew it would," he says with a laugh, as he escorts me through the third and final door.

Walking into the heart of NY4 is like entering the future—or the guts of a megascale computer. The space is vast: 343,000 square feet, the size of nearly six football fields. Its core is packed with machines, and offices line its perimeter. We make our way down a long, straight corridor, illuminated by blue LEDs— Equinix's trademark, Poleshuk says—and flanked by glass doors that allow us to see into the server cages.

The servers are dizzying arrays of flashing blue and green diodes. Each one releases a mess of rainbow-colored spaghetti; the wires miraculously sort themselves into



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Bahnhof, an Internet service provider, wanted Pionen to appear both welcoming and futuristic. In retrofitting the space, Albert France-Lanord Architects envisioned the granite rock as a living organism. bundles onto cable trays above us. Inside the cages, the roar of fans, hard drives, and air conditioners is deafening. Noting my discomfort, Poleshuk says with another laugh, "It's not a pleasant place to be."

### Data Surge

Last year, the world processed 9.57 zettabytes of information. That's 9.57 million million gigabytes. Yes, that's million million. By 2015, "that number is expected to quadruple," says Cullen Bash, the director of the Sustainable Ecosystems Research Group at Hewlett-Packard (HP), based in Palo Alto, Calif. Processing this data — banking transactions, search queries, cloud computing — requires a tremendous amount of space, power, and design innovation. The architects who can make these data-crunching powerhouses energy efficient are key to the success of the modern data industry.

Around the world, more than 13,000 large data centers are up and running, according to market research firm IDC in a 2011 USA Today article; about 7,000 are located in the United States. Data centers generally fall into one of two categories: colocation or enterprise. A colocation center, such as NY4, hosts servers from different companies—banks, Internet startups, small businesses — that rent space for their servers and trust that the facility will provide uninterrupted power and connectivity. Enterprise centers, meanwhile, are run by a single entity, such as Yahoo, Facebook, and Google, for its own use.

Poleshuk knows his way through NY4 as though it's his own home. But he doesn't know what the servers are processing. And he doesn't want to, he says. "That's not our business." His business is keeping the facility online. Upon discovering that one biometric handprint reader out of dozens was malfunctioning, he hails someone to fix it immediately. As we continue down the spotless corridors, he stops in midsentence to fix a crooked lock, and kicks aside stray wires that have meandered out of place.

Everything here has to run smoothly, continuously. And it does. During the 2003 Northeast blackout, Equinix's nearby NY2 facility didn't miss a beat. "You would never have known there was a blackout," Poleshuk says. "People working here didn't want to go back to their [temporary shelters]." For 28 hours, NY2 ran on backup generators, he says. "We were the only place around with power."

This is why data centers use a lot of energy: They are always running. One cabinet — a 7-foottall box housing between 35 and 42 servers consumes roughly the same amount of power as the average house. A typical data center may contain 1,800 to 3,000 cabinets.

But data centers need power not just to run the computers. Like a personal computer, each server generates heat. Put thousands of servers in one space and you have a lot of hot air; temperatures can reach 90 F. If the cooling system goes down in NY4, Poleshuk says, temperatures in the server area will rise by one degree every minute. Too much heat can mean a server meltdown, and a meltdown of servers handling global-scale transactions would be catastrophic. Consequently, data centers, for many years, were consuming as much power to run their servers as they were to cool them.

### A Typology Unlike Any Other

For architects, data centers pose a unique challenge, technically, spatially, and programmatically. Albert France-Lanord, founder of his eponymous architecture firm in Stockholm, learned this when designing Pionen, a data center for Bahnhof, which is the Internet service provider that hosts the Wikileaks data. Bahnhof wanted a welcoming and futuristic space in a bunker deep in the White Mountains underneath Stockholm. The site, a former nuclear bomb shelter, was chosen for its visual impact: The James Bond–esque setting has an immediate effect on prospective clients—building users who might never

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For its first enterprise data center, located in Prineville, Ore., Facebook had an internal infrastructure team that worked with Sheehan Partners Architects to design everything from the building form to the servers. Though data centers are typically nondescript buildings, Facebook modeled this LEED Gold-certified facility after the traditional residential architecture found in the region's arid desert climate.

step foot inside again. "What is different from other projects is that [a data center is] not designed for people; it's really designed for machines," France-Lanord says.

Depending on the client and the project, architects can have little or nothing to do with the building's computing components. For Bahnhof's newest data center in Stockholm, which opened in mid-October, France-Lanord was given only the server cabinet dimensions, around which he essentially designed the space. In other projects, firms may work with mechanical engineers and technology consultants from day one to design the space and to determine how to marry energy efficiency with immense computing demand.

To address energy efficiency, architects have two primary options: improve server performance through scheduling or incorporate more efficient cooling systems into the building. Using the first tactic, architects can work with the client's IT team to assess when the servers require the most power, and then batch which servers run at full capacity and which stay dormant. Operations such as routine backups can wait a few hours or even a few days. HP, for one, is trying to optimize power consumption and capitalize on off-peak rates by altering which servers are used and when, Bash says.

It's on the cooling side of the equation, however, where architects can have the greatest effect. "A data center is essentially a great big box full of hot air," says Neil Sheehan, AIA, a principal at Chicago-based Sheehan Partners, which designed NY4. Exhausting the hot air efficiently comes down to design decisions.

### The Big Chill

One way to tackle cooling is through strategic site selection. Mild climates help keep server temperatures down naturally. Data centers can also capitalize on their surrounding environment: A building on Lake Erie can take advantage of cool lake winds, while an underground building, such as Pionen, can benefit from the milder temperatures subgrade.

Companies are also allowing their servers to run a little hotter to reduce the building's cooling load. Facebook is elevating its data centers' operating temperatures a few degrees above the standard 70 F. Increasing the running temperature of a data center by a single degree can save 2 percent on utility costs, says Garr Di Salvo, an associate principal in the New York office of Arup. This handful of percentage points is significant considering that data centers can consume upwards of 50 megawatts of energy per year and generate annual utility bills that run easily into the millions.

Architects can also design the building shape and form to exhaust heat more effectively. Completed in 2009, Yahoo's data center in Buffalo, N.Y., "looks very much like an oversized chicken coop," Di Salvo says. Controlled louvers clad the entire building exterior. "The idea is that they allow the building to exhaust all that heat in an energyefficient manner," Di Salvo says.

The cooling systems themselves can also be improved. "Based on the selection of the mechanical system, the architects can provide both experience and innovation in wrapping that building around that mechanical system,"

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Sheehan says. In Prineville, Ore., his firm recently completed Facebook's approximately 333,000-square-foot data center, which is cooled entirely with evaporative misters instead of the standard, megasize chillers. Facebook reports that the facility is 38 percent more efficient overall than the industry average, but does not specify how much of the energy savings is attributable to its cooling system, Sheehan says.

All of these efficiency measures come with a catch. Measuring actual efficiency in a data center is quite difficult. Many engineers and architects turn to the Power Usage Effectiveness (PUE) ratio, which compares the amount of power consumed by the entire building to the amount of power that goes to the servers. For a long time, this number was 2.0, meaning that data centers used just as much power to operate and condition themselves as they did to run their servers. Now, the number hovers around 1.4. Reducing this number by just another onetenth of a point is a big deal, Sheehan says. For a data center spending \$7 million per year on electricity, going from 1.4 to 1.3 can save roughly \$600,000 per year. But PUE isn't standardized among firms—everyone includes slightly different metrics—and without a standard, it's hard to compare centers.

Because high performance and data centers have not traditionally gone together, only a few buildings in this typology have achieved LEED certification. Its machine-first, people-second program doesn't lend the project type well to the current bookshelf of LEED standards. "We do only a few LEED buildings because it's good marketing—not because it's good data center design," says Peter Norris, an associate at Boston-based Integrated Design Group, an architecture and engineering firm that specializes in data centers. Rather, the firm's motivation to design efficient data centers comes from money—as in potential savings in operating costs for its clients.

Corey Enck, a LEED specialist with the USGBC, is helping lead the charge to craft guidelines tailored to data centers, which will be included in the forthcoming release, LEED v4. One challenge, he says, is that architects











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Just two years after opening the 343,000-square-foot NY4 data center in Secaucus, N.J., Equinix is building NY5, a 400,000-square-foot data center just two doors down. Both NY4 and NY5 are designed by Sheehan Partners.

often have no say regarding the types of computing equipment used within the building shell. If one server style is far more efficient, the architect can't ask the remaining server owners and operators to emulate that particular configuration. As a result, data centers conceived in collaboration with the IT consultants from the project outset are far more successful in pursuing sustainability goals.

This is where the difference between a colocation data center and an enterprise data center matters. The most-efficient data centers often fall into the latter category, where the building owner not only has input on the facility's design, but also in its implementation and use. When Google designs a center, Google gets to pick what kind of servers it uses, when to use them, how to cool them, and where the energy comes from. If a company owns the entire center, and all the processing within it, it can be bold in its approach. So, HP can batch its server usage to coincide with down times in demand, and Facebook can run its servers at a slightly higher temperature.

At NY4, these options don't exist. Poleshuk has his job because he can guarantee his clients three things: first, they can run whatever processes they need at whatever time of day; second, their servers will remain a specific temperature; and third, power will be supplied. When asked about the amount of power NY4 uses, Poleshuk shrugs. "We need these computers," he says. "We need these centers."

#### **Shapeshifters**

The evolution of data center design remains open-ended. Some architects believe that data centers will become smaller and more modular. They might be little boxes on telephone poles, or they might be mobile and cater to user demand. The advent of cloud computing might result in fewer, larger data centers where processing is pooled or, conversely, it might lead to smaller, scattered data center facilities owned by individual businesses. Colocation centers will then have to find ways to increase the flexibility of their internal structure.

Regardless of the form data centers take, one thing is certain: they will continue to rise in sheer numbers. Two years after NY4's completion, Equinix is building NY5, a 400,000square-foot data center, just two doors down.

Despite interacting with them thousands of times each day, communities for the most part will remain oblivious to the existence of the data centers that are quietly multiplying in their backyards. This suits data center owners just fine. For security and safety reasons, they embrace the anonymity of their buildings.

Two hours after first pulling into NY4's parking lot, I begin my trip home to Brooklyn. At a stop sign, I type my address into my phone. In a split second, a little blue line appears, plotting my route through the Holland Tunnel and across Manhattan. And somewhere in the world, a server deep inside an unmarked building is spinning frantically to process my request.

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**ARCHITECT THE AIA MAGAZINE NOVEMBER 2012** 



Pedro Gadanho, who previously served on the faculty at the University of Porto, in Portugal, joined MoMA's architecture and design department in December 2011.

#### CRITIQUE

## **POLITICS AND PROSE**

PEDRO GADANHO'S FIRST MOMA SHOW HIGHLIGHTS ARCHITECTURE'S POLITICAL SIDE. BUT HIS ATTEMPT TO PROMOTE CURATION AS THE NEW CRITICISM IS HAMPERED BY A LESS THAN ACCESSIBLE PRESENTATION.

#### Text by Mark Lamster Photos by Noah Kalina

IN 1931, when the Museum of Modern Art (MoMA) was still in its infancy, Philip Johnson sent a letter outlining his curatorial philosophy to Mary Quinn Sullivan, one of the institution's founding trustees. Give him credit for brass. At the time, the museum had neither a department of architecture nor plans to start one, and Johnson was but a 24-year-old with exactly zero curatorial experience. He did, however, have some very concrete ideas about the way the museum should address its audience. "I believe every show should have a point," he wrote. "An exhibition planned with the idea of explaining and developing a certain problem or aspect of modern art is much more certain to attract the public."

Two years later, he set the standard for how one might actually curate such an exhibit, and won himself a department. A bloodless title was just about the only nonpolemical thing about the landmark *Modern Architecture: International Exhibition*—aka the "International Style" show. For a century, we've been living with the consequences of its aestheticized vision of a modern architecture removed from the realm of politics.

That history struck me as especially pertinent when thinking about 9+1 Ways of Being Political: 50 Years of Political Stances in Architecture and Urban Design, the inaugural show from the newest member of MoMA's architectural department, Pedro Gadanho. In the sense that it is clearly conceived to make a point, 9+1 falls squarely within the Johnsonian tradition, though Gadanho is trying to locate rather than efface the politics



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within architectural practice. "Current shifts in the profession announce the rebirth of political engagement as an essential element of architecture's social relevance," he writes in the show's opening panel.

Gadanho has been quite explicit about his polemical ambitions at MoMA. In a recent interview in the magazine *Domus* headline: "Curating Is the New Criticism" he pronounced criticism dead, its function assumed by the curator. "We can mobilize materials to which the general public can react to more effectively than criticism can," he said.

He's right, in a sense. The power of traditional criticism has, inarguably, diminished with the fall of print journalism and the rise of the Internet, although I would suggest that this power was never that great in the first place. Though there are now countless outlets for criticism, there are few with a large readership or the funds to support a full-time professional. Critics, meanwhile, seem to be engaging in curatorial activities as never before. This past year Evening Standard critic Kieran Long served as assistant director of the Venice Architecture Biennale. The American entry to that event was curated by a team of current and reformed writers, including the editor-in-chief of this magazine.

Who wouldn't envy the steady stream of bodies filtering through MoMA's architectural galleries? The question is, what exactly is Gadanho telling them? Even after viewing his show several times, I wasn't quite sure, though I found it well worth the repeated visits.

The essential premise of *g+1* is that, despite economic pressures, the architectural avantgarde has been, for the past half century, deeply politicized. Gadanho has mined the museum's collection to illustrate the various forms of this engagement. Somewhat arbitrarily, he has divided the strategies of that activism into nine chronological but overlapping thematic categories (hence the show's title), making it at once a survey of the collection and an operating manual for contemporary practice. (A pair of related video works constitute the "+1.")

The effect is not unlike a lecture delivered by a particularly gifted member of the architectural professoriat, which is no accident. Gadanho is Portugese by birth, but hails from the borderless nation that is architectural academia. (He has a doctorate in architecture and mass media from the University of Porto, and served on its faculty.) Behind a lectern, the breadth of his knowledge, his sympathy for architectural culture, and his native optimism make him a sympathetic propagandist. But those qualities don't seamlessly translate to the walls of MoMA's galleries.

One of the ironies of this show is



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Gadanho mined the museum's collection to mount his exhibition, which features such projects as Peter Eisenman's houses, Mazzanti Arquitectos' library in Medellin, and Michael Rakowitz's paraSITE Homeless Shelter. that, while it promotes a most proactive architectural culture, its own language—and there is a lot of expository wall text—is rather anemic and prone to academic jargon. A good example: Gadanho's rubric for a thematic section devoted to radical experiments in home design is "Interrogating Shelter."

This might seem like splitting hairs, but it gets to an important issue: Just who is the intended audience of the exhibit, and what is the best way to reach it? In his *Domus* interview, Gadanho references Umberto Eco's theory of the "open work" as a source of his curatorial philosophy, specifically arguing that it is possible in a single show to "address different audiences with differing cultural baggage, allowing them to respond to what is there in their own ways."

That may be a necessary approach today, but it seems unrealistic to mount a show using the insular language of the architectural academy and then expect a population not versed in that language to grasp its meaning. The curator's job, or at least one of them, is to bridge that gap, to frame the ideas of the profession in a visible and verbal language that is at once accessible and inclusive. MoMA will always be subject to a certain charge of elitism—its recent *Foreclosed* show received unduly harsh criticism on this front—but surely the best way of countering the charge is through clear and straightforward presentation.

There are moments when the show achieves this, and takes almost literal flight. Among the works Gadanho has salvaged from obscurity is Max Peintner's "Take-Off," a 1974 perspective drawing of a passenger jet lifting off from an urban highway, which I read as parody of Le Corbusier's images of planes





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#### CENTER

flitting amidst his modern towers. Gadanho, betraying his subtle humor, has cleverly packaged it with Hans Hollein's looming "Aircraft Carrier City in Landscape" collage of 1964, itself a wry note on modern urbanism.

But I began to wonder, as I toured the show, if Gadanho's "open" philosophy was just a little too open. For every trenchant juxtaposition and surprising discovery—and there were many—there were corresponding moments when I was puzzled by precisely what I was intended to take away.

In a section entitled "Enacting Transparency," for instance, Gadanho presents an array of projects that feature glass façades, some well known (Jean Nouvel's Cartier Foundation) and some less so (Reiser & Umemoto's House at Sagaponac). The wall text suggests that these models, inadequately displayed on a knee-high plinth, are shown as "projects with political potential," ostensibly in their use of glass as a metaphor for political opacity. But it was hard to see how, especially in the case of that Sagaponac project—a luxury spec house—some of these projects could be seriously reconciled with any notion of political dissent.

I happened to run into Gadanho in the gallery, and he explained that the display's assembled projects were actually there to serve as foils for Dan Graham's 1978 "Alteration of a Suburban House," a model presented adjacent to them as a commentary on transparency's dystopian potential for social control. Of course, very few gallery-goers will have such access to the curator.

I was similarly unconvinced by Gadanho's argument that Skidmore, Owings & Merrill's proposed National Commercial Bank in Jeddah, Saudi Arabia, a punctured prismatic tower designed by Gordon Bunshaft, might be construed as a critique of architectural branding because it offers "a challenging spatial experiment." That seems to me an overly generous way of looking at such a deliberately iconic work of corporate design—a dubious equation of formalist spacemaking with genuine political activism.

The question inevitably arises: What does it mean to be political? Gadanho provides one answer in the show's first panel, defining it as "an interaction with the urban realm." That is a very broad and very forgiving definition, the kind of wide-bore perspective that one might expect from a curator. Critics, on the other hand, tend to be less expansive and more jaundiced in framing their responses. Which is to say, even as these two disciplines collapse into one another, or perhaps as one collapses into the other, there remain distinctions between them. It seems unfortunate to think of the two engaged in a zero-sum battle for supremacy, rather than working in parallel—if not always harmony—toward a common goal. Sometimes the truth hurts, but please don't shoot the messenger.



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#### PARKING GARAGES HAVE RECENTLY GARNERED NEWFOUND DESIGN ACCLAIM, BUT THEIR POTENTIAL TO BECOME CENTERS FOR COMMUNITY GATHERING AND TECHNOLOGICAL TRAILBLAZERS REMAINS OPEN FOR EXPLORATION.

In Santa Monica, Calif., Brooks + Scarpa renovated eight parking garages surrounding the Third Street Promenade, a popular shopping, restaurant, and entertainment district. To improve the pedestrian experience, the firm left large expanses of the facade open for art and cultural installations. including Cradle by design and fabrication studio Ball-Nogues.

LARGE, LOOMING, AND DIMLY LIT parking garages are a fact of life in cities and suburbs across the U.S., where the automobile reigns as our favorite mode of personal transportation. Worldwide, the number of vehicles on the roads surpassed 1 billion in 2010, according to WardsAuto Group, and will only continue to increase. Providing space for this burgeoning fleet is an ongoing challenge for communities, particularly as they become denser.

Generally considered the province of engineers and design/build contractors, parking structures have long been a rote sort of project that is often ruled by the mandates of zoning laws, building codes, and the bottom line. Other than physical proximity, they have largely been conceived separately from the buildings that they serve. And that thinking has resulted in the utilitarian steel-andconcrete behemoths that interrupt the flow of the urban fabric with long stretches of

barren-walled sidewalk. "When I started doing parking garages 10 to 15 years ago, when you would tell a story about the structure, folks would say, 'Why even have an architect?'" says George Hibbs, AIA, a principal at Trenton, N.J.based firm Clarke Caton Hintz. "It seems like an engineering job."

But the parking garage is entering a renaissance. The New Urbanism movement has emphasized walkable environments and multi-modal transit, and the design profession has transitioned from the machinelike efficiency and compartmentalization that underpinned Modernism to more humanistic spaces. Fresh approaches to the typology can be seen in the slew of high-design parking structures that have landed in Miami, designed by the likes of Gehry Partners, Herzog & de Meuron, and Arquitectonica. Parking structures are no longer just a means to multiply the surface parking lot; rather, they



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#### LEARNING OBJECTIVES

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2. Describe how parking structures have changed over time.

3. Describe the benefits of integrating parking structures into the urban fabric.

4. Identify how automation and advances in automobile design will affect the design of parking structures.

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Designed by Clarke Caton Hintz, the Ruppert Plaza Garage in New York blends into the surrounding environment and hosts the Macombs Dam Park on its roof. Pedestrian bridges built over a berm connect the park with the neighboring Heritage Park. can be key to the urban fabric and a vital piece of infrastructure that can profoundly affect how we plan for a more sustainable future.

"We're at a point now where, while there are certainly folks who don't see the typology as being at the forefront, it's come a long way," Hibbs says. "We are now seeing the integration of light, of color, the integration of mass transit, and the belief that it's something that adds to the complexity of the urban environment."

#### The Shift to Functionalism

At the dawn of the parking garage in Chicago in 1918, the building typology had little distinction from other structures. Automobiles of this era were not designed or built to weather the elements and had to be housed much in the same manner as people. As a result, garages' façades looked virtually identical to the apartment buildings that they abutted, complete with ornamental embellishments such as pilasters, gargoyles, arches, and rosettes.

Inside the structures, service staff operated elevators and turntables, lifting vehicles up multiple levels and depositing them in tight spaces for long-term storage. From the outside, the parking structures appeared as just another thread in the urban fabric.

By the mid-20th century, innovations in building technologies, such as precast concrete

structural members, along with newer automobiles that were more durable made it feasible as well as cheaper to build the for-carsonly, open-steel, and concrete-decked parking structures that we know today. At the same time, city zoning laws began to mandate that new developments include off-street parking.

Despite the obvious connections between parking structures and the buildings and urban environments that they served, the two entities were mostly conceived separately. The building was architecture, the streetscape was a part of urban planning, and the garage was an engineering exercise whose goal was little more than satisfying functional requirements. In the words of Lawrence Scarpa, FAIA, principal at Los Angeles—based firm Brooks + Scarpa, "Parking garages evolved into utilitarian structures for stacking cars."

Logistically, parking structure designs must fulfill several requirements. Parking geometries are based on the sizes, heights, and turning radii of contemporary automobiles, which in turn determine the road and individual parking space dimensions as well as the structure's floor-to-ceiling heights. Zoning dictates the number of spaces, and traffic flow on the surrounding streets determines entrance and exit placements. Many structures also incorporate spaces to accommodate staff and maintenance facilities, offices, and tollbooths. Ventilation systems to



The number, in millions, of cars and trucks sold in the U.S. in 2011. In 1931, the first year on record, 2.2 million vehicles were sold. The number of sales peaked in 2000 at 17.8 million.

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February 5 - 8, 2013 • SEMINARS: February 4 - 8 Las Vegas Convention Center • Las Vegas, Nevada "PARKING GARAGES LOST THE MAGIC—THE POTENTIAL TO BE BETTER CIVIC BUILDINGS— AND BECAME BLIGHT IN OUR CITIES." —LAWRENCE SCARPA exhaust vehicular emissions are also critical, and even more so for underground or semienclosed garages.

A parking garage design team—typically comprising an architect, civil engineer, and structural engineer—has a fairly standardized kit of parts at its disposal. The kit includes basic ramp configurations, such as dedicated spiral "up" and "down" ramps, or the more common interior two-way cutback ramps.

The de facto structural systems include steel, poured-in-place concrete, and precast concrete, all with standardized bay dimensions. In short, a team can design and construct a cost-effective, self-sustaining, efficient, long-lasting, and low-maintenance facility without reinventing the wheel—and without exploring new ways that the facility can benefit its environment.

In this conventional—albeit simplified design process, the architect does little more than stamp the engineer's drawings. And by and large, the parking garage construction industry remains content with the status quo.

#### A Better Neighbor

"Parking garages lost the magic—the potential to be better civic buildings—and became blight

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in our cities," Scarpa says. He notes exceptions such as Paul Rudolph's Temple Street Parking Garage in New Haven, Conn., which "is better architecturally, [but] even that [structure] didn't house any uses that contributed to the urban fabric," he says. "Today, there's an effort to make garages that are part of the urban fabric."

While the basic functional requirements of parking structures cannot be ignored, architects can design neighborhood-friendly facilities by adding programming that goes beyond housing cars. Commercial or institutional space on the structure's ground floor perimeter can minimize pedestrian dead zones. Including other modes of transit in the facility, such as bus or light rail links, increases pedestrian activity throughout the day, as do visitor amenities such as public restrooms and local information stations.

These additions to building programs work both in new construction as well as in renovations. Brooks + Scarpa recently retrofitted eight parking garages surrounding the popular Third Street Promenade in Santa Monica, Calif. "The garages were typical of the 1970s," Scarpa says. "Just there to house cars."

These concrete behemoths total more than 2 million square feet, so to transform them into pedestrian-friendly destinations in the downtown region, the firm worked with the city to replace some ground-floor, perimeter parking spaces with 8-foot-deep, kiosk-style retail shops. They also implemented a bicycle rental program alongside the retail space at the garages' northeast and southwest corners and improved pedestrian access by adding new exterior stair towers that open the structures' five levels to the street. Venice, Calif.—based Cliff Garten Studio designed a system of color coding on the structures' ceilings and sculptural signage to improve wayfinding.

The garages also received an exterior makeover. New façades comprising patterned, textured screens of cement board panels maintain the required 50-percent openness for natural ventilation while breaking up the mass of the structures. LED lighting on the garages' interiors and exteriors increases safety at night. The architects also left large portions of the façade open for a public art program, which turns the structures into giant canvases for art and cultural installations. A future phase of the project will add 1,000 solar panel–outfitted canopies to the roof, providing both electricity and shade for vehicles.

#### Weaving Into the Fabric

For new construction projects, architects can strategically configure structural elements to increase the amount of daylight entering the parking garages. For the 3,400-space Terminal C

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Parking Garage at Newark Liberty International Airport, Clarke Caton Hintz created an open atmosphere by working with Mt. Prospect, Ill.based Consulting Engineers Group to reduce the number of shear walls in the structural design and relying, instead, on precast momentresistant frames for the primary lateral forces. The design team also specified 11-foot-9-inch floor-to-ceiling heights to allow more light and air through the facility, which is significantly taller than the typical code mandate of 7 feet as well as the ADA requirement of 9 feet 6 inches. The designers also broke up the facility's massive floor plates and added 40-foot-by-80foot light wells that penetrate all four garage levels, shedding natural light on the garage's rock gardens and pedestrian benches at grade.

Perhaps the most significant architectural gesture of the facility is Clarke Caton Hintz's design for the facility's vertical circulation. "We added glass elevators and escalators so that folks rushing to catch their plane would see the parking garage as an extension of the terminal and not so much as [a] separate experience," Hibbs says. The glass elevators, combined with the parking structure's precast concrete structure, mimic the swooping concrete ceilings and glass curtainwalls of the 1970s terminal.

The firm's penultimate neighborhoodfriendly parking garage may be the Ruppert Plaza Garage in New York. Sited on 7.2 acres, the two-story, 1,500-space facility sits directly across from the home plate entrance of the new Yankee Stadium in the Bronx, adjacent to Heritage Field, the public baseball field located on the site of the former Yankee stadium.

To extend the experience of Heritage Field as an attraction for the communityand to compensate for parkland lost to development-New York City specified that the parking structure's roof would host Macombs Dam Park. The rooftop park, which covers the structure's entire footprint, features a synthetic football/soccer field, a running track, and basketball and handball courts. The west side of the field has bleacher seating for 600 people as well as restrooms and storage facilities, while a fitness circuit and misting stations occupy the park's south end. On the perimeter, landscaped gardens planted with a mix of ornamental grasses and trees buffer the park from the city.

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#### CENTER



For the 40-space, automated vehicle storage system at One York, a residential building in New York by Ten Arquitectos, Park Plus installed a palletless comb exchange that can convey a car from its parking space to its driver within a minute.

To blend the parking structure into its green context, the architects sunk the grade of the site 11 feet beneath the grade of Heritage Park and clad the exterior precast concrete columns and spandrels in brick veneer glazed in four hues of green. They also specified a warm gray tone to the precast concrete mix to help it complement the greens. "It feels very naturalistic, like dappled sunlight," Hibbs says.

To connect Heritage Field and Macombs Dam Park, which are separated by a significant difference in elevation, the architects designed a berm against the retaining wall of a 700-footlong-by-12-foot-wide airshaft, which provides daylight and natural ventilation into the parking facility, and spanned the shaft with pedestrian bridges. Visitors can move effortlessly between the two recreational areas by climbing the berm and crossing the bridges with hardly any notion that a parking garage is in the vicinity.

#### **Faceless but Functional**

Architects can contribute significantly to integrating parking garages into the community fabric, improving the user experience, and supporting the urban continuum. However, a renewed trend of parking garages exhibiting for-vehicles-only functionalism is emerging in the form of automated mechanical facilities.

Mechanical car storing systems have been around since at least the 1920s, but recent innovations in computing and robotics have opened up new possibilities for advanced parking garages that no longer require



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operations personnel. Users simply drive their vehicle onto a steel pallet, exit the car, and swipe a card through a reader. The system does the rest, carrying the vehicle horizontally and vertically to a designated storage cubby.

Automated systems are more expensive to build, but several factors mitigate this upfront cost. Their primary advantage is that they need less space to store the same number of cars than a conventional parking garage does since space for roadways, ramps, and pedestrians is unnecessary. This space savings can be a real boon, particularly where zoning codes mandate a set number of parking spaces for developments that otherwise couldn't accommodate that number of spaces on site.

For underground parking structures, this saved space translates to cost savings:



Automated systems require less excavation. Finally, and perhaps an ancillary point, project developers can write-off automated systems on their taxes. "It's like a computer, and not a building," says Shannon Sanders McDonald, AIA, an assistant professor of architecture at Southern Illinois University and the author of The Parking Garage: Design and Evolution of a Modern Urban Form. "In terms of your business model," she says, "when you buy machinery, it has a different financial structure: It's deductible."

Automated parking facilities have long been popular in the space-starved and highly populated regions of Europe and Asia, and they are now catching on in the United States; companies such as Park Plus and Automotion are manufacturing and selling systems here. Many high-density cities such as New York have a few in place, while other cities, including Los Angeles, have them in the pipeline. Though these systems do not call upon the skills of architects, they are yet another tool architects can use when planning parking for a project.

#### **Unlocking the Future**

The next innovation in parking will likely stem from innovations in the vehicles we drive, McDonald says. The increasing popularity of the electric car, as well as the diminishing size of the automobile, will influence the designs of the structures that architects build to house them, in terms of both physical size and function.

The way we interact with our vehicles will also change. Whether we all start riding Segways or sit back as our cars drive themselves will affect how architects design the spaces we inhabit. Just as the advent of the automobile led to the need for parking structures in cities and to garages in single-family residences, the evolution of motor vehicle technology will also influence the built environment.

"We're going to have vehicles in buildings," McDonald says. "Think about the airport [where vehicles navigate through corridors]. You've already got electric cars. We're going to have to start training architects and urban designers how to design for these new technologies."

From facilities with minimal design thought to crowd-pleasing attractions and expressions of automobile technology, parking garages have gone from formulaic to futuristic. Once the ugly duckling of building typologies, they have emerged as multifaceted, multipurpose structures with immense potential.

Despite the recent project exemplars, McDonald predicts that parking structures won't universally meet their design and technology potential anytime soon. But she is optimistic for the future generations, she says: "The kids I'm teaching are going to get to see an exciting new world."









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## 

1. Parking geometries are based on which characteristic of automobiles?

a. Size b. Height c. Turning radius d. All of the above

2. True or False: Designers and planners can use parking structures to multiply the surface parking lot, enhance the urban fabric, and help create a more sustainable future.

#### 3. Parking structures are a project type that is often ruled by the mandates of:

- a. Zoning laws.
- b. Building codes.
- c. The bottom line.

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d. All of the above.

4. True or False: For the most part, parking structures and the buildings that they serve are designed and planned together.

#### 5. Which of the following is not a way to improve the integration of a parking structure in the neighborhood?

- a. Adding commercial space on the ground floor
- b. Including other modes of transit to the facility
- c. Adding more levels for parking
- d. Providing visitor amenities

#### 6. For the Terminal C Parking Garage at Newark Liberty International Airport, why did the design team specify 11-foot-9-inch floor-to-ceiling heights?

- a. To meet code mandates
- b. To comply with ADA requirements
- c. To accommodate larger vehicles
- d. To increase daylight penetration

7. True or False: To extend the experience of Heritage Field as an attraction for the local community, the architects designed the Macombs Dam Park on the parking structure's ground floor.

#### 8. Through thoughtful design and planning, parking structures have the potential to:

- a. Strengthen the community fabric.
- b. Improve the user experience.
- c. Support the urban continuum.
- d. All of the above.

#### 9. Even though automated systems are more expensive to build, which of the following factors help mitigate this up-front cost?

- a. They need less space to store the same number of cars.
- b. They do not require a lot attendant.
- c. They can be written off on the architect's taxes.

d. They do not need to comply with the same zoning laws.

10. True or False: Changes and advances in automobile technology will influence the design of parking structures in the future.



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Raphael Sperry, a Bay Area-based architect, in front of San Francisco's Hall of Justice, home to police headquarters, courtrooms, and a jail. Sperry has launched a campaign to revise the AIA's code of ethics. Text by Karrie Jacobs Photo by Noah Kalina

**ONE OCTOBER AFTERNOON** in downtown Toronto, a small band of protestors clustered outside the Hilton holding handmade signs with slogans like "Food not Prisons" and "Housing not Prisons." The so-called Prison Moratorium Action Coalition was denouncing a sprawling piece of legislation passed in Canada's Parliament earlier this year, one that imposed mandatory minimum sentences for many offenses and authorized a multibilliondollar program for prison construction.

The target of this demonstration, however, wasn't government officials or law enforcement agencies. Instead, it was the annual fall meeting of the Academy of Architecture for Justice. The protestors had decided to go after "others who profit from locking people away." In this case, the "others" were architects—specifically, the Toronto-based Zeidler Partnership, including senior partner Alan Munn and several of his colleagues—who were at the Hilton presenting their newly completed maximum security Toronto South Detention Centre. Munn, for his part, argues that the "ragtag group" was off-base in its efforts because Toronto South had nothing to do with the federal crime initiative. Rather, the crisply modern facility with its Miesian entry pavilion was the solution to a provincial problem, a replacement for older Toronto prisons, one of which dated back to 1858. "It's really a response to some terrible conditions in existing facilities," Munn insists.

Rightly or wrongly, it seems almost unprecedented to hold architects accountable for decisions that are political in nature. Normally, the only dissent heard at AIA events comes from the architects themselves.

In fact, deep inside the Hilton, the protestors had an ally. On the agenda was a panel called "Long-Term Solitary Confinement in the U.S.: Design and Implications." One of the panelists, Raphael Sperry, a 38-year-old Berkeley, Calif.—based architect, has dedicated the past 10 years of his life to persuading his colleagues to stop designing prisons. Currently, he has a grant from the Open Society Foundations, a nonprofit founded by George Soros, to focus on his mission—the first architect selected as one of that organization's Justice Fellows. TERRAZZO earns an A+ at Brooks Elementary in Brooks, Kentucky



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#### CENTER



The maximum security Toronto South Detention Centre, designed by the Zeidler Partnership, features a light-filled entry pavilion and a bright reception area. The Prison Moratorium Action Committee, as part of its protest against the facility, initiated a letter-writing campaign to all Zeidler employees, calling them to task for profiting from a system that locks people up.

The points he made that day in October were simple: "Long-term solitary confinement is torture. Execution chambers kill people. Architects should not be party to torture and killing." He then announced his campaign to amend the AIA's Code of Ethics and Professional Conduct to "prohibit the design of spaces intended for long-term solitary isolation and execution."

At first glance, the idea that the AIA would take a stand on incarceration practices or capital punishment seems counterintuitive, the issue too far removed from the organization's mission. But Sperry framed his argument using the existing language of the code, pointing out that Ethical Standard 1.4 says that "members should uphold human rights in all their professional endeavors."

"The Jailing-ist Country on the Planet"

In truth, what Sperry is proposing is the outgrowth of the debate that has long been an undercurrent of the profession: Do architects have an obligation to improve the human condition? From the Bauhaus's promise of cheaper, better dwellings for all, to the current generation of do-gooder architects designing emergency shelters and affordable housing, the profession's humanitarian impulse is never far from the surface. On the other hand, we can all name architect-designed buildings that have been portrayed as cruel in ways big and small. Minoru Yamasaki's Pruitt-Igoe housing project in St. Louis comes to mind. As does Philip Johnson's Bobst Library at New York University with its vast, vertigo inducing atrium that seemingly acted as an inducement to three recent student suicides. Not to mention that architects routinely act as enablers and promoters of the worst excesses of commercial development.

Arguably, the watershed moments in prison design have generally been more philosophical than architectural in nature. In 1776, the Philadelphia Quakers introduced the idea of solitary confinement at the Walnut Street Jail, to give prisoners ample time to reflect. And in 1787, philosopher Jeremy Bentham proposed the penitentiary panopticon, with a circular layout that placed an unseen jailer at the core of the building, giving him "invisible omniscience" as he watched over 1,000 prisoners.

Bentham's panopticon was never built, but variations on the circular plan were popular throughout the 19th century and well into the early 20th century. Today, the architecture of many prisons has to do with the theory of "direct supervision," in which the inmate population is divided, based on behavior or needs, into smaller groups, each with its own unit, day room, and guards. As a result, prisons often take on an amorphous quality, a group of podlike buildings strung together.

The problem with today's prisons has less to do with architecture than it does with social and political issues. We live in what former journalist and television producer David Simon—creator of HBO's acclaimed drug-war drama, *The Wire*—has called "the jailing-ist country on the planet." We have 5 percent of the world's population, but 25 percent of its prisoners. A Pew Center on the States study showed that at the beginning of 2008, roughly 2.3 million Americans were doing time, up from about 600,000 in 1982.

This spike in the U.S. prison population has occurred even as crime rates have dropped by some 40 percent, but the two phenomena are not universally viewed as cause and effect. According to Pew, the increased prison population has to do with "state policy choices," such as locking up citizens who commit nonviolent drug offenses. Statistically speaking, you're much more likely to be incarcerated if you live in Georgia (1 in 13 adults) than if you live in New Hampshire (1 in 88). Director Eugene Jarecki, in his searing documentary on incarceration, The House I Live In, points to racially motivated drug statutes and the fact that locking people up has become a highly profitable enterprise. Whatever the reasons, the design of jails and prisons now effects the lives of an astonishing number of Americans.

#### Supermaxes and Solitary

Sperry sees prisons as examples of our society's default position: Violence is a way to solve our problems. "Architects build thousands and thousands of prisons to enable mass incarceration," he says. "And those buildings cause a lot of violence. I mean, it's kind of built into their structure."

The most controversial prisons in the U.S. are the supermax security facilities intended to house the most violent or highest-risk offenders, some 25,000 such inmates held around the country. The issue is that supermaxes such as ADX Florence in Colorado and Pelican Bay State Prison in California were designed specifically for long-term solitary confinement—some inmates are kept in solitary for decades. But recent studies have prompted such human rights organizations as the United Nations to declare that solitary confinement should be banned after 15 days. The destructive effect of long-term solitary confinement on the brain has been widely documented. As Atul Gawande wrote in a 2009 New Yorker article, "Without sustained social interaction, the human brain may become as impaired as one that has incurred a traumatic injury."

Moreover, Sperry points out that supermaxes are almost anti-architecture: "It's the only building you might ever encounter where there's no space for group activity of any kind," he says. "Which is actually antithetical to most of what the rest of the profession spends its time doing: trying to figure out how to do spaces that bring people together."

Nonetheless, supermax facilities, though commissioned by state and federal correctional authorities, are designed by architects. Pelican Bay, for example, currently the target of a lawsuit for violating the Eighth Amendment prohibition against "cruel and unusual punishment," was designed by KMD Architects, a San Francisco–based firm. The photo of Pelican Bay on the firm's website is an aerial view that shows an alien arrangement of jagged concrete buildings.

KMD principal Jim Mueller, director of the firm's justice and corrections division, describes the design in some detail: "The inmates have no contact with other inmates during the vast majority, if not all, of the day. They are only allowed out of their cells for very short periods of time for constitutionally required exercise periods. The cell construction is slightly different in that you don't have a single door into a cell. You have a small vestibule into the cell, so there's two doors, with a small intervening space between the corridor side and the cell side. Everything in the cell itself is attached, so you can't move anything. In some of them, you put a grating above the cell so

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Of course, not all architecture firms that design jails and prisons also design supermaxes. For example, Kenneth Ricci, FAIA, president, and Laura Maiello, associate principal, of the New York–based specialists Ricci Greene Associates, design jails for roughly the same reasons Sperry thinks architects should shun those commissions. "Laura and I have devoted our entire lives to improving environments for the incarcerated," Ricci says. "So, far from thinking that we would boycott, we rolled up our sleeves and decided at a very early point in our respective careers that we were going to improve the criminal justice



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system. We were going to bring new ideas."

Still, Sperry argues that the criminal justice system is so corrupt that it can routinely overwhelm architects' best intentions: "The architects who have built the prisons over the past 30 years intended to make it better. But we didn't. What we did is far, far worse." He sees architects as enablers, supporting a system that warehouses more and more people in remote rural prisons, despite evidence suggesting that most offenders would fare better if they were kept closer to their own communities.

Which is precisely what Ricci thinks. With some exceptions, the firm steers clear of state and federal prisons, as well as most privately built and run facilities. Most of its work is designing lockups where individuals await trial, and, as Ricci points out, still retain their constitutional rights. "We stay away from clients that are not buying what we're selling," he says. And what they're selling are facilities in urban environments where they are visible and accessible, such as the Van Cise-Simonet Detention Center in downtown Denver, or the award-winning Union County Juvenile Detention Center in Linden, N. J., where daylight and connections to the community are part of the program.

Studies by the National Institute of Corrections show that the "direct supervision" model that the firm favors, says Maiello, "has reduced inmate-on-inmate violence, inmatestaff altercations, and has improved staff morale." She also points out that neuroscience research has affirmed the obvious, that access to daylight is good for both inmates and jailers, reducing stress.

Unlike Sperry, Ricci sees an upside: "We believe in the American justice system. We don't think its perfect, but if you're going to go to jail, there are worse places to go."

Similarly, in Toronto, Munn argues, "If architects don't design these facilities, who will? Are we going to relinquish that to engineers? Okay, we'll let the civil engineers design jails because the architects are too haughty to do it. That's a total abdication of what I think the role of the architect is in society."

#### **Clean Hands or Dirty Hands?**

So is Sperry right? Should architects steer clear of prison design until we eliminate injustice from society? Or are Ricci and Munn right? Do architects have a role to play in advancing civilization forward? In moral philosophy, there's a term for this kind of question. It's a clean-hands/dirty-hands debate, says Victoria Beach, AIA, a Monterey, Calif.-based architect who chairs the AIA's National Ethics Councilwhere, she says, Sperry will file his proposed amendment. The question, according to Beach,

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Van Cise-Simonet Detention Center in downtown Denver, designed by Ricci Greene Associates. The facility features a variety of housing units designed for shorter-term stays for pre-trial occupants. is this: "At what point is it moral to intervene or not intervene?"

She points to a hypothetical paradox known as the Trolley Problem. A runaway trolley car is poised to mow down and likely kill five people. But you can pull a lever to switch the car onto a side track where only one person is standing. Do nothing and five people die, but your hands are clean. Take action and one person dies, but you are personally responsible for that one death—your hands are dirty. "Is the moral obligation to walk away? Or is it the opposite?" asks Beach.

Sperry, who argues for the clean-hands approach, would like architects to help change society's agenda from being "tough on crime" to building communities that prevent crime. Much like the protestors in Toronto, he argues that instead of spending money on prisons we should pour our resources into affordable housing, health clinics, and centers for drug rehabilitation.

In the short term, Sperry's campaign to change the AIA's code of ethics won't be easy. Such changes are rare, but additions to the document over the past decade tend to increase the degree of social responsibility expected from architects. "Members should be environmentally responsible and advocate sustainable building and site design," says one recent standard. They should do pro bono work for "indigent persons," or in cases of disaster or emergency, says another.

In that context, Sperry's ban on designing cells for solitary confinement or death chambers doesn't seem so far-fetched. However, the newer standards are based on the assumption that architects can and do make things better. They advocate a dirty-hands approach. And so Sperry's ban may be a difficult position for the AIA to embrace.

But his long-term solution is all about asking architects to do more rather than less. "We can't wait for our public clients to stop asking for prisons and start asking for the design of community projects," he says. "As most clever students learned in architecture school, we need to challenge the program we've been handed in order to make a really successful design solution."

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### BARCLAYS CENTER SHOP ARCHITECTS' NEW ARENA OPENS TO GREAT FANFARE AT THE

ATLANTIC YARDS DEVELOPMENT IN BROOKLYN, N.Y. Text by **Philip Nobel** 

Photos by Bruce Damonte

"DON'T BE AFRAID—it's only Brooklyn." That was Jay-Z's shouted message to the Barclays Center crowd one night during his run of sold-out shows scheduled to celebrate the opening of the new arena. It's unclear which aspect of the booming, ever-more-gentrified borough he thought might scare the audience; the lights were all killed at the moment he spoke, and the interior as designed by New York's SHoP Architects is black-on-black, so perhaps it was just the dark? But in the context of that building, on that site, the implications of the remark felt much broader.

Fear has been a constant at the Atlantic Yards, an enormous development-in-progress that spans the open cut of a rail terminal at one of Brooklyn's major crossroads. Since 2003, when the block-closing, eminent domain-wielding, multi-use project was first unveiled, there has been constant, litigious, and at times very effective resistance, principally from spooked residents of Fort Green, Prospect Heights, and Park Slope—the neighborhoods adjacent. There was fear that their houses and businesses would be demolished (some were). There was fear that the original designs proposed by Frank Gehry, FAIA, would be out of place (he's only involved in a planning capacity now, so we'll never know). There was even fear that mainstream glamour at the scale proposed—an alien zone of towering condos with a shiny new basketball arena at its heart—might undermine Brooklyn's hard-won reputation for leafy, laid-back cool.

The developer, Brooklyn's own Bruce Ratner, had his fears too. In 2009, with filing deadlines to meet and an expiring tax rule looming at the end of the year, he began to worry that the competent but






Previous spread: A new plaza at the junction of Atlantic and Flatbush avenues marks the entrance to the new Barclays Center in Brooklyn. This image: The curving form of the arena is clad in more than 12,000 raw, weathered steel panels and in ribbons of glazing.



mundane arena proposed by Ellerbe Becket (now AECOM), would not make it through the then fully politicized public approvals process. "Ellerbe is the expert in stadia, arenas," Ratner said when I spoke to him in October. "They're not design architects."

So Ratner called a friend for advice. "When I sat in the arena the night Jay-Z opened and I thought of everyone who had been a part of this," he said, "the name that kept flashing in my mind was David Childs." Childs, FAIA, had surprised Ratner by suggesting SHoP, a respected firm then and very well known, but sometimes still thought of more as promising than accomplished. Ratner was skeptical. "I didn't know if they were large enough or experienced enough to do a civic project of this magnitude," he says. "We took a chance."

Despite some early reports likening the Barclays Center to "an angry clam" or "a rusty alligator skull" (The New York Times requested and received dozens of nicknames from readers), Ratner's gamble has paid off in a decidedly un-fearsome building. Architecturally at least-the jury is still out on local crowding and post-game mayhem—it is a very good neighbor. The sidewalks are partially sheltered and lined with benches and new retail, including a crossbranded flagship for Jay-Z's Rocawear and a brand standards-busting Starbucks cleverly detailed in repurposed gym flooring. Not very New Brooklyn, perhaps, all that mainstream branding and re-branding. But inside the Barclays Center, the concessions are rich in the precious local fare. And the building is bringing big entertainment (Leonard Cohen! Barbara Streisand! Rush!) and two pro teams (the Islanders recently announced that they would join the Brooklyn Nets there; the arena has the capacity to transform into an ice hockey rink to support them) to a Manhattan-averse populace who would otherwise have to brave a trip to the enduring awfulness of Madison Square Garden.

Even the aggrieved neighbors may come to admit in time that this smart new building is better than a big, dumb hole in the ground. And the smartest, most neighborly move of all? The pre-weathered raw-steel exoskeleton that wraps the body of the arena—the feature that had observers reaching for dramatic similes in the first place.

It is, at its roots, a deeply functional structure. Not in the usual sense—it doesn't keep out the rain; it doesn't hold anything up—but in terms of psychology, experience, and urbanism. The bones of Ellerbe's arch-roofed stadium, a design derived from its Conseco Fieldhouse in Indianapolis, were largely a given when SHoP first got the job: The steel had already been ordered. Ratner, to his credit, recognized that the bland brick exteriors (also harkening back to Indianapolis) wouldn't fly here; a retail development across Atlantic Avenue had gone the banal route decades earlier and has been loudly detested since. So he asked Childs, and then called SHoP.

Over the life of the job, SHoP's purview came to encompass the whole interior—the building reads and performs as an organic whole—but at first the firm was a little hamstrung by the arrangement. So it made the steel exoskeleton do everything—create a suitable identity for the arena, manage its scale, turn inside as a soffit that gives the major concourses an urbane character and a strict structural meter that really classes up the joint. And then finally (adding new steel that Ellerbe never dreamed of) reaching out away from the mass of the building in a prodigious cantilever, 225 feet wide and 85 feet deep, at the entrance.

The gesture is appropriately monumental. Through it, the building becomes a celebratory civic icon in the grand manner, especially when the construction is seen from below as one emerges from the matching subway entrance on the far side of a broad new public plaza. It also stretches one's impression of the massing, easing it into the gently sloping hillside site. From afar, the shadow-banded, rust-brown exterior serves to further undercut the arena's bulk, letting it settle, in color as well as scale, into the predominant fabric. The huge LED sign lining the interior faces of a basketball-court-sized aperture in the cantilever plays the same game: It lords over the plaza, a little Times Square sizzle for a corner of Brooklyn that can take it, but it recedes from view, largely concealed behind the raw steel facade, at the neighborhood scale. "We were trying to match the tonalities of Brownstone Brooklyn in a gritty, natural material," SHoP principal Gregg Pasquarelli, AIA, says. "Why should an arena have to look like a glitzy shopping mall or an airport?"

Judging from the proliferation of nicknames, the public fear of Barclays's grit may still be out there. ("What's a piece of architecture if people aren't talking about it?" counters Jonathan Mallie, a firm principal and managing director of SHoP Construction.) But Bruce Ratner's fears are long gone. Any lingering anxiety vanished during the construction process as SHoP deployed well-integrated data systems, including a proprietary iPhone app that allowed delivery and installation progress to be rendered and tracked in real time, to marshal the 12,000 unique façade panels into place. "They know how to make technology work for them: I would sit there and watch their app all the time," Ratner says. "We got a firm that was extraordinary, and we got them at a time when they were blossoming."



Main Concourse–Level Plan



**Concourse-Level Plan** 

Upper concourse ·

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**East–West Section** 

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40/40 club

Suite-Level Plan





Top: The Barclays Center faced community opposition from the early stages of the process, largely from neighbors concerned about how the larger Atlantic Yards development might change the neighborhood. But the south and east façades, seen here from Flatbush Avenue, demonstrate the consideration that SHoP Architects gave to scale and materials, in order to ensure that the arena does not overwhelm its surroundings. Bottom: At the rear of the arena, the façade peels away to enclose the loading dock.





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VIP ENTRY



**Opposite:** After passing under the 85-foot-deep cantilever and through the main entrance, visitors arrive in the atrium, where they can pick up tickets and get their first glimpse into the arena proper. **Top left:** Along the concourse, public areas are marked by a rhythmic progression of strip lights across the ceiling plane. Concessions are wrapped in warm wood to counter the overall black and gray interior. **Top right:** Several bars and lounges were designed into the Barclays Center, each with its own visual identity. **Bottom:** With black seats, walls, floors, and ceiling, the main bowl of the arena is a multifunctional space (here hosting an exhibition game for the Harlem Globetrotters) that can seat nearly 18,000 for a New York Nets game and 19,000 for a concert.

**ARCHITECT** NOVEMBER 2012





## WEBB CHAPEL PARK PAVILION





NEW YORK–BASED COOPER JOSEPH STUDIO'S NEW CONCRETE SHADE PAVILION IS MORE THAN A SIMPLE STRUCTURAL CANOPY, IT CREATES A NEW SCULPTURAL LANDMARK IN A PUBLIC PARK IN DALLAS.

#### Text by John Gendall Photos by Eduard Hueber

IN MANY MUNICIPALITIES, public shade structures can be an afterthought: Prop a canopy on some posts, and shade you shall have. Not so in Dallas, Texas. Two bond referenda there, in 2003 and 2006, allocated money to replace some 30 of the city's park pavilions, and Dallas Park & Recreation assistant director Willis C. Winters, FAIA, envisioned something rather ambitious: The city would treat each pavilion as a distinct commission, hiring architects—including firms such as Lake|Flato Architects, Elliott and Associates, and Snøhetta—to design the park structures. For Webb Chapel Park, in a residential area northwest of downtown, Winters tapped New Yorkbased Cooper Joseph Studio, which had earned acclaim in Dallas with the Women's Museum, designed by partner Wendy Evans Joseph, FAIA.

The commission came with loosely defined program requirements: shade, seating, durabil-

ity, and ample sightlines through the space. The old pavilions being replaced were simple concrete T-beam shade canopies. Cooper Joseph turned to the same material for its Webb Chapel Park Pavilion. "Dallas is known for the quality of its concrete industry, so for us, it was the perfect material for a small structure with integrity and boldness," Evans Joseph says. But the architects modified their approach in formally and functionally inventive ways.

Rather than follow the precedents for a minimal profile, Cooper Joseph went maximal. "We didn't want thin," says partner Chris Cooper, AIA. "We went robust." But the impressive volume of the pavilion's crown is no mere flourish. Within the concrete roof, the architects embedded four hollowed-out voids, each culminating in a uniquely shaped vent. Together, these create an airflow through the pavilion, drawing hot air out from under the roof. Painted bright yellow, these cavities animate the pavilion space and cool it as well. A berm hugs the seating area on three sides and serves as a thermal mass that reinforces the cooling effect.

Thanks to the pavilion's boxlike form, the architects were also able to minimize the visible supports and promote a visual seamlessness between the enclosure and its surroundings. A thin concrete canopy would demand a grove of columns, but the volumetric roof allowed the architects to embed bracing beams within, minimizing the structural demands underneath. "By going with this robust depth, we could achieve a cantilever," Cooper says, which wouldn't have been possible with a thin concrete profile.

While the form allows for ventilation and a simple structural resolution, it also accomplishes one of the central objectives of the Park & Recreation design excellence program: It establishes a striking visual landmark. "We tried to make something of consequence," Cooper says, but also "something that didn't seem to just drop from the sky." Nestled as it is into the landscape, the pavilion seems anything but.

#### Previous Spread: The poured-in-place concrete roof structure of the Webb Chapel Park Pavilion provides shade from the intense Dallas sun. Opposite: The cantilvered structure sits on just three structural piers, allowing for sightlines across the park. This image: Inside the pavilion, four voids each framed in exterior cement board and coated with a fine-grained plaster that is painted a vivid yellow—draw out hot air, cooling the seating area below.

The canopy provides shade for benches and tables made with Ipe wood seats on painted-steel supports. The terraced concrete seating is nestled into an earthen berm that absorbs heat and helps choreograph views.



# PIERRESVIVES

ZAHA HADID'S NEW MUNICIPAL BUILDING ADDS TO THE ARCHITECTURAL RENAISSANCE OF MONTPELLIER, FRANCE, AND DRAWS TOGETHER THREE PUBLIC AGENCIES UNDER A SINGLE CONCRETE, GLASS, AND GOLD-LOUVERED ROOF.



Text by Joseph Giovannini Photos by Iwan Baan

**THE ANCIENT FRENCH** city of Montpellier is no stranger to urban development: An ornate 19th-century opera house commands an impressive Beaux Arts ensemble on the Place de la Comédie in the heart of the old town. For well over a decade in this century, civic leaders have taken the cue from the city's own urban precedent by using architecture to revitalize and reshape the city, calling on Jean Nouvel, Hon. FAIA, Christian de Portzamparc, Paul Chemetoff, Ricardo Bofill, Hon. FAIA, Massimiliano Fuksas, Hon. FAIA, and other European talents to invigorate the city with special architectural moments that help catalyze new urban fabric. A de facto exhibition of contemporary architecture, Montpellier is one of the few French cities where new quarters are as compelling as the historic core. The civic leaders adhere to the modernist theology of bettering lives through architecture and urban planning.

Citizens driving northeast toward the community of La Paillade now round a hill and confront a building by Zaha Hadid, Hon. FAIA, that commands the broad valley from its position on a rise. With flowing lines, rounded corners, and an overall vectorial list to the west, the monumental structure seems like a moored ship. In the landscape, Hadid's design is a completely unexpected apparition.

Hadid does not design down to her audience, and in Montpellier the client himself set the bar high. The driving spirit behind the project, which is called Pierresvives, was Dr. André Vezinhet-president of the province's General Council and a former chief city planner-who cites the humanist agenda of Rabelais: "I build only living stones [pierres vives]-men." The idea is to build people, in this case through architecture that houses an enriching mix of cultural and athletic programs. The building, dubbed "City of knowledge and sports," unites and relates three departments-regional archives, sports headquarters, and a multimedia library-all under one long roof that is several football fields in length. The separate agencies had all outgrown their respective facilities, and Hadid won the competition in 2002 by proposing to bring them together in a single building, rather than leaving each one isolated on different parts of the same campus.

In addition to the agenda of creating an environment that forms individuals—Vezinhet cites, in Latin, the Roman poet Juvenal's admonition for a sound mind in a sound body—there was the social agenda. The council president made a gesture to a disadvantaged minority neighborhood with a program of social outreach housed in a building that makes a grand and serious architectural gesture. The building has the presence of a cathedral, and will organize the town now being built around it. Vezinhet conceived and sited Pierresvives as a commanding player on an urban chessboard. The building will serve as the centerpiece in a new eco-city of about 900 apartments, that will link to La Paillade, an existing neighborhood with some 25,000 people—including a large Maghrebian population living in public housing.

Pierresvives now anchors the entire community with an institution open to all. Vezinhet sited the building strategically, where it mattered, in an overlooked, low-income area separated from more affluent parts of town: "My passion was to integrate La Paillade with the rest of the city by building a hyphen," he says. Hadid mixed her punctuation by grafting an exclamation point to the hyphen. Sometimes considered an elitist starchitect dedicated to rarefied commissions such as museums, the socially responsible Hadid, in fact, has always designed her public buildings with a democratic agenda aimed at expanding the public sphere. Her open geometries invite the public into and through structures that extend the street.

Hadid frequently bases her projects in organizational diagrams. At Pierresvives, working with project architect Stephane Hof, she based the plans in a concept of branching. The organizational concept quickly adopted a metaphor—the tree of knowledge—worked out not only in plan but also in section and on the façade, where glazing outlines corridors and public spaces that branch through the building. In between, opaque concrete volumes house archives constituting a full 60 percent of the building. The flow of spaces represents not only the trunk and branches but also the flow of sap.

The programs inside, and especially the public spaces legible on the exterior, effectively open the institutions to the public. Smooth pre-cast concrete panels enclose volumes that are separated by glazed interstitial spaces that in turn track the path of public spaces through the building. Hadid maps the interior on the exterior, and even projects the vertical map of the façade horizontally onto the front plaza and back parking spaces as a "shadow" in plan.

Visitors enter Pierresvives under a cantilevered amphitheater, which serves as a canopy, and progress into a twolevel, three-story hall whose ceilings, angled at 36 degrees, rise to very generous public spaces that then flow up to the mediathèque. The open spaces seem to carve out a procession through the solid form. With obsessive systematicity, the architects make the notion of tree sap graphic, recessing striated lighting whose traces flow through spaces that themselves are visibly fluid. The architect has made a career out of urbanizing the interiors of her buildings and architecturalizing the surrounding public spaces, so that the underlying fabric continues outside and inside.

Vezinhet says that what he likes most about the building is its "transparency—it's a big building, but still light and transparent." A monument with such a declarative architectural presence at the service of a social mission naturally attracted attention and, with it, opposition. The project was criticized as too expensive, and even "too beautiful," but Vezinhet continued to support the project, even through difficult cost negotiations that eventually yielded an affordable price within budget.

Having seen the project to completion, Vezinhet has also initiated an outreach program of architectural seminars, workshops, exhibitions, and lectures, and an active program of visits to explain the structure and its program to the community. "My goal was an appropriation of this building by the people." Crowds now perceive it as theirs, not his. The public owns the building.

When Pierresvives opened in September, it was visited by thousands of residents, many of them Maghrebian women wearing headscarves. At the opening, Hadid spent hours with people from La Paillade, fielding questions, sometimes in Arabic, and introducing the building by introducing herself. The response was clear: Vezinhet recalls one visitor from the neighborhood, wearing a head scarf, telling him: "Thank you for giving us beauty."







On the north face of the building, the projecting volume of the médiatheque cantilevers over the main entrance. The paving pattern echoes the geometry of the façade.



On the south face of Pierresvives, concrete volumes project at different depths from the building's flank. Each volume, including a loading dock, is separated by a ribbon of aluminum brise-soleil.

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#### **Curtainwall Section with Brise-Soleil Detail**



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#### North–South Section



#### **Ground-Floor Plan**



#### Second-Floor Plan





Third-Floor Plan



Fourth-Floor Plan



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Pierresvives serves as an architectural bridge between the center of Montpellier and the outyling community of La Paillade, with its 25,000 residents, many of whom live in public housing. Some 900 new apartments are being constructed around Hadid's concreteand-glass structure.





### YOUTH CENTER OF QINGPU

SHANGHAI-BASED ATELIER DESHAUS'S ASSEMBLAGE OF PAVILIONS AND COURTYARDS CREATES A HUMAN-SCALED OASIS FOR CHILDREN AMID THE MEGADEVELOPMENTS OF THIS EXPANDING CHINESE CITY.

Text by **Aric Chen** Photos by **Yao Li** 

**IT'S HARDLY WORTH REPEATING** that these days China tends to build big. A number of economic, political, and planning imperatives ensure that the megaprojects that have defined the 21stcentury Chinese city probably aren't going away anytime soon. But with their Youth Center in the historic river town of Qingpu, about an hour's drive from Shanghai, the architects at Atelier Deshaus saw an opportunity within the bigness to create an urban pocket that's more human scaled.

Commissioned by a state-owned real estate developer, the Youth Center occupies a 2.7-acre site tucked between a small river and a park in a new section of the city. Alongside creating a greater sense of intimacy, the project aimed to integrate vernacular qualities to counter the cookie-cutter sameness that's also common among contemporary Chinese cities. What's more, against the backdrop of an education system that's better known for rote memorization, the center came with a brief to accommodate extracurricular programming for the area's growing number of children and teenagers: namely by including facilities for theater, music, painting, calligraphy, and new media. "We decided to put [the various functions] into different building-objects, and arrange them like a community," says Liu Yichun, who in 2001 founded Shanghai-based Atelier Deshaus one of China's leading emerging practices-with fellow Tongji University graduate Chen Yifeng (and a third founder, Zhuang Shen, who has since left the practice).

Indeed, the project's 155,000 square feet are divided into 15 volumes, each no more than three stories high, to form a villagelike cluster. To the extent that Atelier Deshaus wanted to evoke the region's traditional typologies and buildings—the latter with their whitewashed façades and gray-tiled roofs—the Youth Center creates something akin to a modern palimpsest. Huddled together, its buildings, each at a slightly different scale, offer not so much a historical re-creation as they do a fuzzy template of pure, rectilinear forms—some whitewashed, others seeming to dissolve behind detached, outer façades of white perforated metal. Through these metal screens, one can see flashes of the inner walls, painted green and yellow, while cutouts reveal irregularly placed, rectangular windows that correspond to the spaces inside.

Like other architects in China, Atelier Deshaus often draws from Chinese philosophy in addressing contemporary spatial issues. In this case, the "building-objects"—or more accurately, the relationships between and among them-reference Li (an aesthetic principal of detachment), being both defined and blurred by the compound's pavered passageways, reflecting pond, courtyards and bridges, which wind around, through and above them. As they go, they lead from unambiguous, tightly defined spaces (a theater, a two-story library, dance studios, classrooms, and offices) to more ambiguous ones (an outdoor amphitheater, a rooftop pavilion, and a walled courtyard with rectangular planters that seems not quite a room nor entirely a garden). Put another way, for Atelier Deshaus, the Youth Center is not so much an assemblage or accumulation of volumes but a juxtaposition of autonomous yet interrelated fragments. "We realize that architecture can be an expression of detachment," Liu says. And the end result, compared with a more regimented, conventional space, may well be a better, more stimulating learning environment for its users.



**Previous Spread**: The low, human-scaled volumes that make up the new Youth Center together create a campus of structures connected by courtyards, paved walkways, and a series of bridges. **This image**: Many of the building volumes are clad in perforated metal screens attached to brightly colored concrete walls. Cutouts in the screens reveal insulating low-E glazing from Zhuogao Glass. The perforated-metalscreen-clad volumes of the Youth Center are interspersed with whitewashed volumes, which the architects used, in combination with the gray brick pavers, to nod back to the traditional building typologies of the region. The windows not only admit daylight, but also help express the interior spaces and program on the minimalist façade.





This image: The voids between the building volumes allow for exterior gathering spaces, like this gravel-lined courtyard filled with planters. **Opposite left**: Much of the circulation around the Youth Center complex is outdoors, in gray-paved alleys and over bridges that run like streets through the site. **Opposite right**: A courtyard with a large reflecting pool serves as a hub for several of the building volumes, such as a theater and dance studios.





#### **Ground-Floor Plan**



#### **Third-Floor Plan**



#### Second-Floor Plan



**Roof Plan** 





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West–East Section



#### South–North Section Through Classrooms



North–South Section Through Theater



**Opposite:** Color is introduced to the interior primarily through vivid walls that are coated in Dulux paint. The internal hallways feature selfleveling concrete floors. **This image:** In the library, wood flooring from Armstrong lends warmth to the white double-height space. Circular windows on the lower level look out into one of many courtyards, and terraced seating areas provide gathering spaces for the children.


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## **REVA AND DAVID LOGAN CENTER FOR THE ARTS**

TOD WILLIAMS AND BILLIE TSIEN SPEAK WITH LEE BEY ABOUT THEIR FIRST PROJECT IN CHICAGO, WHICH COMBINES THE FINE AND PERFORMING ARTS DEPARTMENTS AT THE UNIVERSITY OF CHICAGO INTO A BUILDING THAT PAYS HOMAGE TO BOTH THE SKYSCRAPER AND THE PLAINS.

#### Interview by **Lee Bey** Photos by **Tim Hursley**

#### What is the program of the Reva and David Logan Center for the Arts?

**Billie Tsien, AIA:** We took different people [from] different parts of the arts and put them all together in a tower, so that it would mix kids practicing the piano with kids putting on a play with kids dancing. And that would get a sort of synergy happening between both the faculty and the students. So it's the tower of the arts.

#### Let's talk a little bit about the form of the building from the exterior. As a guy from the Midwest, it reminds me, in a way, of a silo.

**Tsien:** That's interesting because that's one of the images we first used when we talked about the building. Tod talked about the vertical building as the silo and the horizontal building as the Plains. But of course the vertical building is a Chicago tradition, so we're also referring to the city.

#### The exterior is comprised of what look like Roman bricks, which we see with the work of Wright and the Prairie School.

Tod Williams, FAIA: [We used] long bars of stone that are like horizontal bars and also bricklike, so we were definitely thinking about Frank Lloyd Wright when we made the building. And, as he did, we were thinking about the ... sense of compression where the building is wedded to the ground. Tsien: We wanted to relate to the limestone buildings of the University of Chicago's Neo-Gothic campus. At the same time, we wanted to say [that] we're on the other side of the [Midway] Plaisance [from the main campus]; we're a new building. So we looked for a limestone that was not the traditional Indiana limestone. We wanted something much more variegated in its color. There are tones of orange and gray; it's much warmer.

#### How much of a free hand, or lack thereof, did the university give you in the design of the building?

**Tsien:** This was done through a competition. Many times in competitions, the buildings themselves are not exactly built. I think the basis of our scheme remained intact. The departments had strong needs. So we needed to balance their requirements with the idea of a sense of wholeness.

Williams: The number of arts elements that are packed together in this tight base and tower are amazing. If you were to really belt out music ... [in a music ensemble room], the spaces adjacent would not hear it. You could have, next door, a dance performance going on, and you wouldn't feel it. But you could go out into the hallway and have these two groups come together. So it was a struggle to put all these things together and have it be as technically advanced as it is.

#### How much did the views of the city factor in to how you shaped this space?

Williams: A lot. If we're standing in a space looking north and east, we get to see [Lake Michigan]. But if you go to the other side of the building you'll also see that we have interesting views to the south, so we're trying to address both the life of the north of Chicago and the life of the south of Chicago, and make it come together here in the building. The building looks very solid on the outside, but as you walk through, you'll find that really every space has some dramatic window that connects you to the outdoors.

#### What freedoms did this site across the Midway Plaisance from the campus core afford you?

**Tsien:** It allows us to break free of a Neo-Gothic style. It also [lets us] look back to the campus, but to the south as well. There are two front doors: the door that opens on the Plaisance and the door [that] opens onto the South Side. The entrance to the south is also a drop-off, and it leads to the main lobby of the three major performance spaces. This is a public entrance, and those are probably the most public aspects of the building. This is a kind of gateway ... a kind of [a] door opening.

**Williams:** It may not seem that way now, but the reality is that the future of Chicago is actually in the South Side. And the University of Chicago recognizes that, both for itself and for the whole community.



Previous spread: The penthouse performance space in the Reva and David Logan Center for the Arts overlooks the Midway Plaisance, a relic of the 1893 World's Fair, toward the Collegiate Gothic core of the campus. **This image:** The Logan Center comprises a tower and two wings (capped in saw-toothed and green roofs, respectively). The façades are clad not in the traditional Indiana limestone of other university buildings, but in a warmer-toned version that is quarried in Missouri.

4'I





Architect Tod Williams describes the Logan Center's lower, horizontal volume as representing the Plains; its saw-toothed roof admits natural light into painting and other fine-arts studios. The northern façade, with the tower, is closest to the campus core.







0



**Opposite:** The southern façade is the public face for the residential communities on Chicago's South Side. An entrance underneath the projecting glass-and-metal volume leads to a lobby from which the performance venues can be accessed. **This image:** The eastern courtyard, with concrete pavers designed to mimic the shape of the building's stone block, can be used for casual gatherings or performances. A bridge overhead connects a roof terrace atop the theater volume to the third floor of the arts tower.





This image: This lobby anchors what Billie Tsien terms a "Main Street" for the building—the path connecting the north and south entrances. The translucent panels enclosing the stair can double as a projection surface. **Top:** The penthouse-level performance hall in the tower can serve as a classroom, a rehearsal space, or a music venue. Micro-perforations in the walnut-lined walls expose acoustic material that absorbs sound. **Middle:** Several break-out study areas are contained within the complex, many lined with either tile from Heath Ceramics or felt liners. **Bottom:** The fire stairs serve as the building's main vertical circulation, and offer views of the campus.











**Ground-Level Plan** 

Second-Level Plan





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# ARCHITECT NOVEMBER 2012

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Painting and other fine-art studios are filled with natural light thanks to windows and skylights, but less visible are the high-tech systems behind the walls. "This building is a place where people make art. It can be very dirty," Tod Williams says. "All of that dust, and dirt, and sound can be troublesome to people who are trying to play music at the highest level or print something in a clean way, so the filtration system, the air system, all of these things are crucial to be state-of-the-art." 10

10

E .

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# **Project Credits**

#### **Barclays Center**

Project Barclays Center, Brooklyn, N.Y. **Client** Forest City Ratner Companies Architect SHoP Architects, New York-Christopher R. Sharples, AIA, William W. Sharples, AIA, Coren D. Sharples, AIA, Kimberly J. Holden, AIA, Gregg A. Pasquarelli, AIA, Jonathan Mallie, AIA (principals); Ayumi Sugiyama, AIA, Nadine Berger, Christopher Lee, Adam Modesitt (project managers); Sean Bailey, Assoc. AIA, Zach Downey, Rajiv Fernandez, Dickson Fogelman, Youngmoo Hur, Isaiah King, Jan Leenknegt, Tim Martone, Paul Miller, Krista Ninivaggi, Anabelle Pang, Gene Pasquarelli, Daniel Plonski, Brandon Quattrone, Mariano Recalde, Ryan Salvas, Lisa Schwert, Todd Sigaty, Zack Snyder, Tiffany Taraska, Maria Wong, Georgia Wright, Wontae Yang, Bill Yeung (design team); SHoP Construction, New York—Brian Sweeney, John Cerone (project managers); Peter Adams, Tomek Bartczak, Lindsey Cohen, Jon David, Russell Davies, Adham ElGhatit, Jesse Embley, Adam Gerber, Alexis Gonzalez, Konrad Graser, John Gulliford, Kyla Farrell, Asmita Jani, Julie Jira, Emily Johnson, Taek Kim, Mathew Kirkham, Alexis Lenza, Steve London, Tom McInerney, Mark Ours, Ildiko Ozavath, Mark Pollock, Joseph Reyes, Jason Roberts, Luke Smith, Foteinos Soulos, Hashim Sulieman, Assoc. AIA, Caroline Young (team) Architect of Record AECOM; Ellerbe Beckett Design Builder Hunt Construction Group Structural Engineer Thornton Tomasetti; Stantec (plaza) M/E/P Engineer WSP Flack + Kurtz ADA Consultant McGuire Associates Acoustical Engineer Acoustical Design Group Audiovisual Parsons; WJHW Code Consultant FP&C Consultants Facade Consultant ASI Limited; SHoP Construction Façade Steel Monitoring Admetco; Dissimilar Metal Design Geotechnical Langan Graphics/Signage/Wayfinding Pentagram LEED Consultant e4 Lighting Goldstick Lighting; Tillotson Design Vertical Transportation VDA/Lerch Bates Size 675,000 square feet Cost \$675 million

#### Webb Chapel Park Pavilion

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, P.E.

Concrete Consultant Reginald D. Hough, FAIA General Contractor Phoenix I Restoration & Construction Size 903 square feet Cost \$250,000

#### **Materials and Sources**

**Concrete** Cast-in-place concrete: 40% slag mix, 10.8% flyash

Finishes Fine-grained exterior plaster; yellow paint Furniture Painted steel benches and tables with Ipe wood tops

Walls Exterior cement board framing (light cones)

#### **Pierresvives**

Project Pierresvives, Montpellier, France Client Departement de l'Herault Architect Zaha Hadid Architects, London-Zaha Hadid, Hon. FAIA (architectural design); Stephane Hof (project architect); Joris Pauwels, Philipp Vogt, Rafael Portillo, Jaime Serra, Renata Dantas, Melissa Fukumoto, Jens Borstelman, Thomas Vietzke, Patrik Schumacher, Kane Yanegawa, Loreto Flores, Edgar Payan, Lisamarie Villegas Ambia, Karouko Ogawa, Stella Nikolakaki, Hon Kong Chee, Caroline Andersen, Judith Reitz, Olivier Ottevaere, Achim Gergen, Daniel Baerlecken, Yosuke Hayano, Martin Henn, Rafael Schmidt, Daniel Gospodinov, Kia Larsdotter, Jasmina Malanovic, Ahmad Sukkar, Ghita Skalli, Elena Perez, Andrea B. Caste, Lisa Cholmondeley, AIA, Douglas Chew, Larissa Henke, Steven Hatzellis, Jesse Chima, Adriano De Gioannis, Simon Kim, Stephane Carnuccini, Samer Chamoun, Ram Ahronov, Ross Langdon, Ivan Valdez, Yacira Blanco, Marta Rodriguez, Leonardo Garcia, Sevil Yazici, Hussam Chakouf, Marie-Perrine Placais, Monica Noguero, Naomi Fritz, Stephanie Chaltiel (design team) Local Architect Blue Tango (design phase); Chabanne et

Local Architect Blue lango (design phase); Chabanne et Partenaires (execution phase) Structural Engineer Ove Arup & Partners

General Contractor Vinci Construction (Nanterre) Acoustics Rouch Acoustique and Nicolas Albaric Cost Consultant Gec LR—Ivica Knezovic Size 35,000 square meters (376,737 square feet) Cost Withheld

#### **Materials and Sources**

Adhesives, Sealants, and Coatings Dow Corning Corp. dowcorning.com; Hilti Corp. hilti.com Curtainwall Reynaers Aluminum reynaers.com Exterior Wall Systems Prefabricated concrete panels; aluminum-finned brise soleil over glazing Insulation Isover, a St. Gobain Co. isover.com Roofing Carlisle SynTec (Classic EPDM) carlislesyntec.com Structure Steel-reinforced concrete structure

#### Youth Center of Qingpu

Project Youth Center of Qingpu, Shanghai Client/Owner Shanghai Dianshanhu Newtown Development Co. Architect Atelier Deshaus, Shanghai—Liu Yichun, Chen

Yifeng (co-founders and principals); Gao Lin, Liu Qian, Wang Longhai (design team)

Interior Designer Atelier Deshaus & Vermilion Zhou Mechanical, Electrical, Structural, and Civil Engineer Architectural Design & Research Institute of Tongji

University Group Geotechnical Engineer Shanghai Civil Defense Survey

and Design Institute
Construction Manager Ma Juyun

**General Contractor** Shanghai Huaxin Construction (Group) Co.

Landscape Architect Atelier Deshaus Lighting Designer Zhu Tongyun Size 154,570 square feet Cost ¥52 million (CNY) (\$8.3 million)

#### **Materials and Sources**

Ceilings Armstrong armstrong.com Exterior Wall Systems Reinforced concrete frame structure Flooring Boyn (self-leveling cement) www.boyn.com.cn; Armstrong (linseed oil floor) armstrong.com Glass Zhuogao Glass (insulating low-E glass) HVAC VRV system Lighting Philips (fluorescent lamp) philips.com Wallcoverings Dulux (water-based paints) dulux.com Walls Aerated concrete Windows, Curtainwalls, and Doors Kesheng Curtainwalls Co. (aluminum alloy corrugated perforated plate curtainwall)

#### Reva & David Logan Center for the Arts

Project Reva & David Logan Center for the Arts, Chicago Client/Owner University of Chicago

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Architect Tod Williams Billie Tsien Architects, New	Exterior Cladding Earthworks (dolomitic limestone)
York—Tod Williams, FAIA, Billie Tsien, AIA (partners-	ewgroupinc.com
in-charge); Philip Ryan, Felix Ade, Johnny Cho, Azadeh	Exterior Glass Transparent and mirror-coated glass
Rashidi, Brian Abell, Aaron Fox, Evan Ripley, Archana	panels arranged in various locations
Kushe, Forrest Frazier, Annika Bowker, Aaron Korntreger,	Exterior Pavers Pietra Luna
Aurelie Paradiso (design team)	Floors Natural cork (music practice rooms); Indonesian
Associate Architect Holabird & Root	Merbau reclaimed wood (performance hall stage &
M/E/P Engineer Ambrosino, DePinto & Schmieder	performance penthouse)
Structural Engineer Severud Associates	Guardrails, Corner Guards, and Wall Panels Stainless
Civil Engineer David Mason Associates	steel with a hand-applied nondirectional finish;
Landscape Architect Hargreaves Associates	sandblasted glass panels with low iron content
Lighting Design Renfro Design Group	(guardrails on ground level)
Acoustics & Audiovisual Consultant Kirkegaard	Interior Felt Walls Tod Williams Billie Tsien Architects
Associates	(design); Liora Manné (custom production)
Theater Design Schuler Shook	lioramanne.com
Construction Manager Turner Construction	Interior Tiles Heath Ceramics heathceramics.com
LEED Consultant Steven Winter Associates	Lighting Studio 1thousand (fluorescent lamp)
Façade Consultant Axis Group	studio1thousand.com
Elevator Consultant Van Deusen & Associates	Mirrored Glass Panels Acid-edged and mirror-coated
Size 184,000 square feet	(back side) glass panels
Cost \$114 million	Roofing Rheinzink (standing seam roofing)
	rheinzink.com
Materials and Sources	Wall Cladding Cherry veneer (performance hall);
Acoustical Absorption Panels Fabric-wrapped panels in	walnut veneer panels with custom-designed acoustical
various colors	perforation pattern (performance penthouse)
Exposed Concrete Sandblasted concrete (tower stair	Welcome Desks and Box Office Acrylic solid surface
walls); terrazzo-style ground concrete (tower stair	cladding
floors)	Wood Benches Solid cherry

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# PAST PROGRESSIVES



JURY

**1999 P/A Awards Jury** Thomas Fisher, Assoc. AIA Eva Jiricna, Hon. FAIA Rodolfo Machado, Intl. Assoc. AIA Billie Tsien, AIA Mehrdad Yazdani, Assoc. AIA

#### 1999 P/A AWARD CITATION Pavilion on a Pedestal WITH A HUDSON VALLEY RETREAT, THOMAS PHIFER AND PARTNERS UPDATED THE EARLY MODERN IDEAL OF A PURE VOLUME IN AN ARCADIAN LANDSCAPE.

Text by John Morris Dixon, FAIA

**"THIS YEAR, ON THE BRINK** of a new millennium, the P/A Awards offer proof that Modernism has weathered a generation of growing pains, and is all the stronger for it." So began the introduction to the 1999 awards issue. Among that year's varied award winners, none expressed the founding principles of Modernism more eloquently than did New York–based Thomas Phifer and Partners' Taghkanic House, a rural retreat on a hilltop in the Hudson Valley.

The most visible part of the house is a pavilion fashioned with extraordinary discipline and delicacy—a framework of whitepainted steel, infilled with glass and fitted with manually operable aluminum-mesh panels for sun control. Approaching the house, all one sees is this 30-by-60-foot pavilion, which contains only the living and dining areas. At closer range, one can see the glazed walls of the far larger spaces — four times as much floor area — that infiltrate the house's landscaped plinth. Bedrooms at this level look west, toward the mountains across the river, while the kitchen, family dining room, and indoor pool face east toward a sheltered terrace. Skylights, set flush with the grass, illuminate some underplinth spaces, and unexcavated areas allow for trees to flourish.

The design was worked out in collaboration with landscape architect Dan Kiley, the reigning expert at extending Modernist geometries into their settings. The outcome is not only minimal apparent disruption of the land, but minimal expenditure of energy for such an ample residential program. Completed faithfully to the jury-honored design, the house stands as an elegant millennial interpretation of Miesian ideals.

SCOTT FRANCI

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Project Name - Randall Children's Hospital - Portland, OR Architect - Zimmer Gunsul Frasca - Portland, OR Installer - Benson Global - Portland, OR

"We developed a computer simulation sketch of the building that included a time lapse film of the site. The simulation changed as the light changed. It was living, bright and optimistic. We went to Telling to begin collaboration on the panels. Telling provided us access to the experts who make the glazes and panels. They made sample after sample for us. Ultimately, together, we created a panel that was manufactured efficiently and met all of our expectations for the project."

Kip Storey, Principal, ZGF

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### 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
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"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

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

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.

#### Visit us at Greenbuild, Booth 2101S





