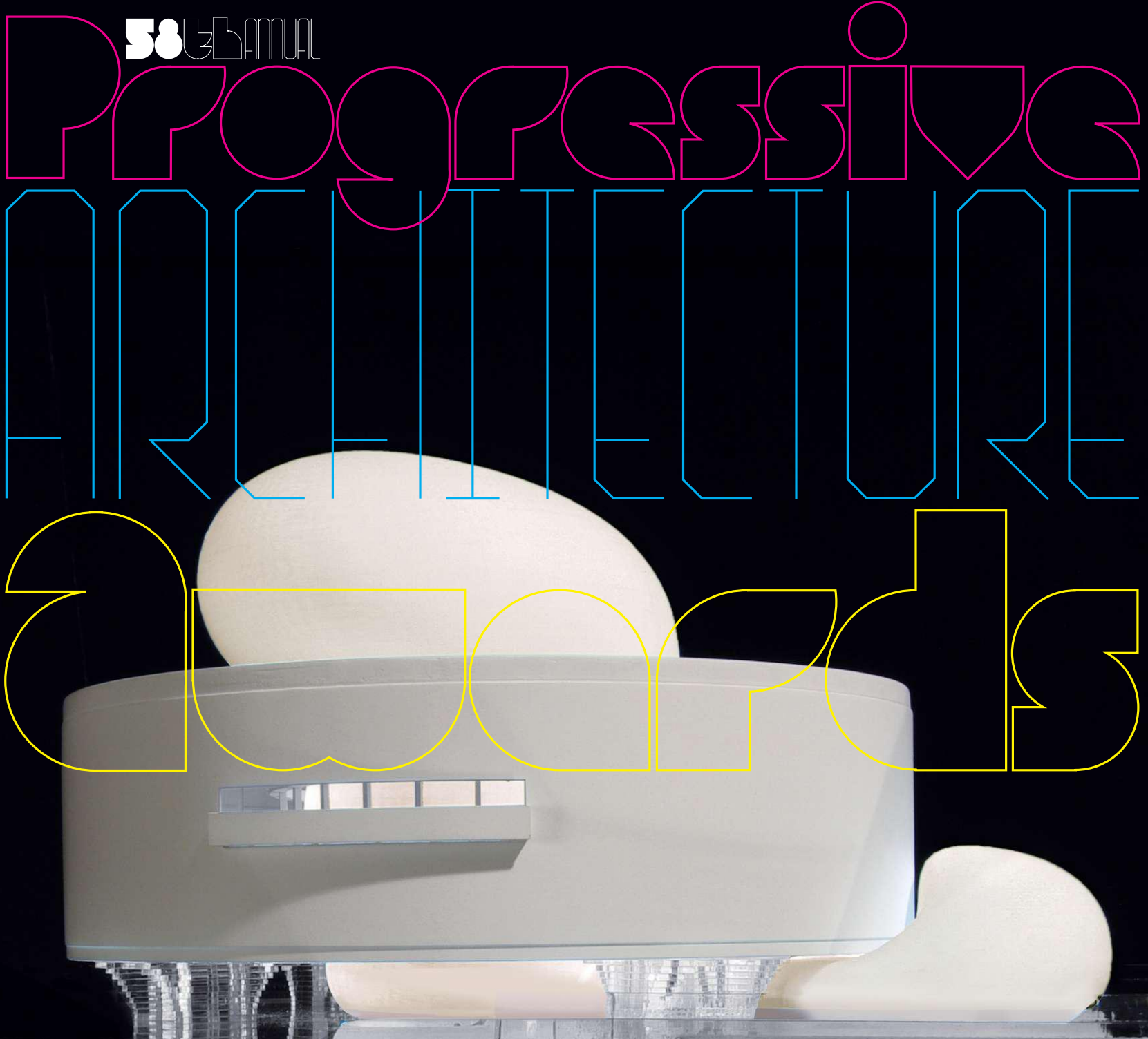


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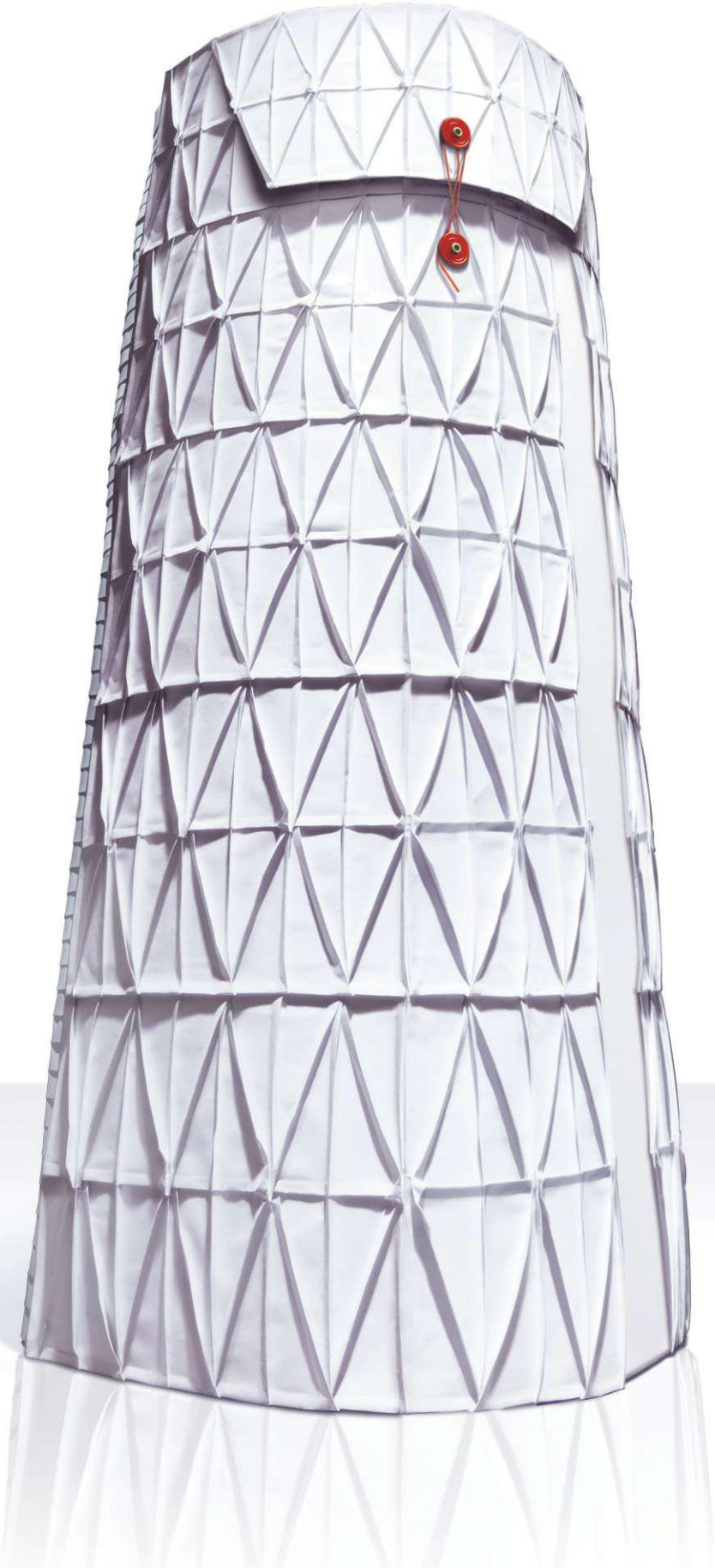


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AWARDS

Diller Scofidio + Renfro

Hirshhorn Museum and Sculpture Garden Seasonal Expansion, Washington, D.C.

Julie Snow Architects

U.S. Land Port of Entry, Van Buren, Maine

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Taichung InfoBox, Taichung, Taiwan

Field Architecture

Karoo Wilderness Center, Karoo, South Africa

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Blaine Brownell's Mind & Matter blog looks at products and materials in development and on the market.

Aaron Betsky's Beyond Buildings blog comments on the impact that design has on our society and culture.

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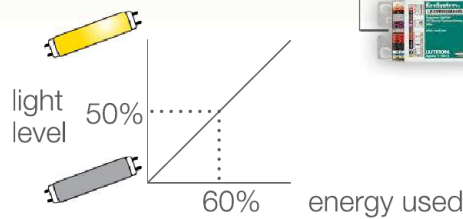
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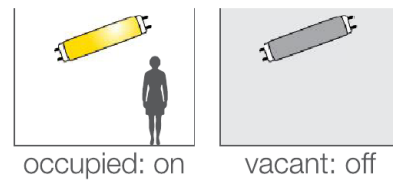
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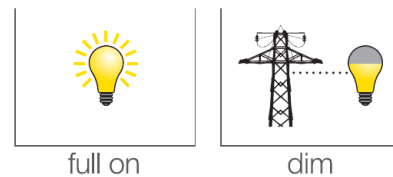


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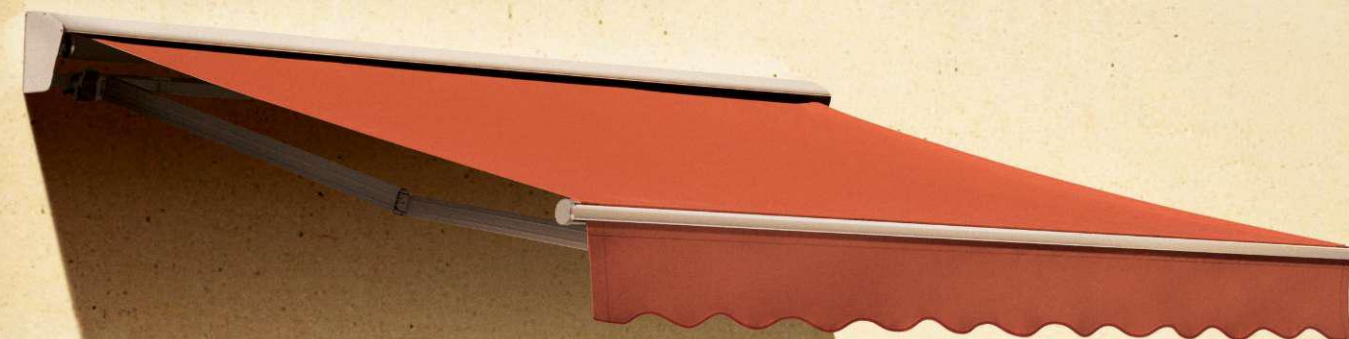
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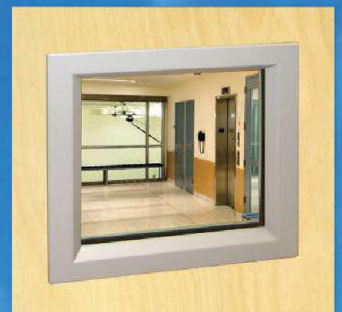
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Weapon of Choice

"The 58th Annual Progressive Architecture Awards" • page 88

Weapon of Choice is a five-year-old art and design initiative operated by co-founders Tom Brown and Todd Albertson. The designers work together even though they have their own design studios on opposite coasts (Brown, who has redesigned *Ski* and *Institutional Investor* magazines, in Port Moody, British Columbia, Canada; Albertson, the current art director for *AARP The Magazine*, in Washington, D.C.).

At their own studios, each designer had found himself more and more exploring custom letter shapes to achieve a desired visual effect. Finding that preexisting fonts had shortcomings and were never an exact fit for many projects, the two established Weapon of Choice with the goal of creating typefaces and type treatments. Now, with nearly a dozen fonts and a growing client list, Weapon of Choice is preparing to set up an online retail site in the coming year, to be found at its existing website, weaponofchoice.ca.

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WHAT IS MORE?

STOP! BEFORE YOU GO any further, please turn to page 86 and read Aaron Betsky's *Beyond Buildings* column, "Heart vs. Head." In it, he addresses the age-old question, "Is architecture art or science?"—and he comes down pretty squarely in favor of art. Betsky's position is understandable, especially given that he directs a major art museum. I happen to disagree—respectfully, of course—so I got Betsky's blessing to offer a counterpoint.

In brief, I see architecture as both an art and a science, which is all well and good. The sticking point is that I think the profession would be wise to avoid coming across as too artsy, especially right now.

Take Frank Gehry and Zaha Hadid as two obvious examples of architects working in an artistic vein; Gehry famously approaches his buildings as sculpture, while Hadid paints as a way of exploring spatial concepts. Both use sophisticated design and construction technologies to realize unprecedented architectural forms. Their reliance on technology doesn't make them scientists any more than it reduces their credibility as artists. On the contrary, in the hands of a Gehry or a Hadid, technology is largely a means to an end.

The tremendous popular acclaim that these and other big-name architects received in the 1990s and early 2000s was somewhat of a blessing for the entire profession. When the economy was at full throttle, architecture became an essential accessory to success. Hiring an architect was the equivalent of buying a designer handbag (gotta have one), albeit at a far, far greater physical and financial scale.

For every *Sex and the City* devotee willing to spend \$1,900 on a Fendi baguette, it seemed there was a hedge-fund manager eager to fork over \$5 million for a Richard Meier condo or a group of philanthropists happy to underwrite a \$125 million theater by Jean Nouvel. The banker probably made it through the crash in one piece, thanks to that \$700 billion government bailout. But cultural institutions across the country are scrambling to pay the bills on expansion projects that seemed like terrific ideas until the Great Recession hit.

Good design felt like a fair entitlement when times were good; in bad times, it can come across as a frivolous expense. Of course, design should be considered a basic human right, not a luxury good. Alas, perception is reality, and right now the perception among many otherwise-sensible people is that design went out the window with subprime mortgages.

Increasingly, architects tell me, clients want assurances that their architectural investment is sound. I imagine it would be super-tempting to turn up one's nose in response. After all, architects are trained experts, artists even; their word should be gold. But instead of taking umbrage, why not take the opportunity to convert those doubting Thomases into true believers?

Design awards and magazine profiles won't necessarily impress a hard-core businessperson. Data's more like it. Measurable, scientifically gathered data—the kind of evidence-based design strategies that many healthcare practices have adopted—should satisfy even the stingiest of bean counters.

Betsky concedes that there's fair reason for architects to offer data to their clients, at least under certain circumstances: "Where it seems to contribute or validate common-sense observations, such as that natural daylight or certain colors make people in hospitals feel better, it certainly has value." And he's right to doubt the benefits of data gathering when clients use it only to justify value engineering.

Ultimately, Betsky believes that all the scientific proof in the world can't trump the inherent value of beauty, the ineffable, unquantifiable "more," as he puts it, that distinguishes architecture from mere building. "Some things just can't be proved or measured," Betsky explains, "though we know they are important." That's where our opinions really start to differ. Belief in God requires a leap of faith. Appreciation of architecture can, and should, be taught.

Believing in yourself as an artist isn't enough—and expecting people to somehow inherently appreciate the "more" that you're offering them is patently unrealistic. Even the Parthenon, that *ne plus ultra* of ancient architecture, might look like a pile of dirty white rocks to someone who knows nothing about the history of Periclean Athens, the conventions of Doric temple design, the geometry of the golden section, or the optical effects of entasis.

Architects study and train for years in order to do what they do. They work to become experts. They earn those licenses. That doesn't release them from the obligation to justify their recommendations—be they technical or creative. Most people expect an explanation from their auto mechanic before he replaces the transmission, and most people would pause and ask their doctor a few questions before agreeing to a liver transplant. Same goes for architects and their buildings.

As a child, I was an architectural history buff, but Edwin Lutyens was my outer limit. It took five years of architecture school for me to fully embrace modernist architecture. Even so, I didn't really warm to that paragon, Ludwig Mies van der Rohe, until I took a job at the Chicago Architecture Foundation, moved into one of Mies' Lake Shore Drive buildings, and witnessed every day for four years the evidence of his brilliant riffs on Karl Friedrich Schinkel and the classicist tradition. Now I think Mies was a genius. All it took was evidence.

Michael Morgan



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LETTERS

JANUARY 2011 issue

Terrific, well done and thank you to you and the staff. I thoroughly enjoined “our/my” new publication. I am 68, registered 1974, practicing half time, and feel included (again). While not all the offerings were for me, I truly enjoyed the rest. I look forward to the forthcoming editions. *David R. Gibb, AIA, Omaha, Neb.*

I just finished reading the first issue of your tenure as the AIA magazine of record. It's a great issue, and much better than what *Arch Record* had been dishing up. Nice work! *Paul Preissner, AIA, Chicago*

Congrats on the first AIA issue. It looks serious and substantial. *Stan Allen, AIA; dean of the Princeton University School of Architecture, Princeton, N.J.*

Congratulations on ARCHITECT becoming the official magazine of AIA. Received the first issue and it read great. *Mark J. Wendel, AIA, Buffalo, N.Y.*

While I commend the mission, the graphics are so ugly and loud that it is difficult to appreciate the content. I hope that future issues will calm down and consider that

a magazine is to be read, not heard. *John M. McGinty, FAIA; past president, AIA, 1976–77, Houston*

Good job on the content, good articles. I was shocked though at the advertisements; it is really burying the substance. Is it possible to consolidate at the beginning or end? It makes the magazine really hard to navigate and (sorry) cheapens it. *Alejandro Borrero, AIA*

A DIFFICULT CHARACTER, January 2011

Whether introvert or extrovert, 51 percent of all architects are NTJ's compared to less than 4 percent of the general population. That's a huge difference which makes several of the author's points even stronger. *Peter Beck, Dallas*

In the January 2011 issue, a caption in the article “Green Industrial” misstated the owner of the ReCAP storage facility in Plainsboro, N.J. It is owned and operated by Columbia University, the New York Public Library, and Princeton University. Also, the Local Market article on Albany, N.Y., should have clarified that there have been several restoration projects at the State Capitol since the late 1970s, but “phase four” is the final round in a series of projects begun in 2000; it will conclude in 2014, and at a project cost of \$48.7 million. The Great Western Staircase that was shown was not part of phase four. Finally, Simpson Gumphertz & Heger is the lead firm for all four phases; Mesick Cohen Wilson Baker Architects provided interior architectural work for phase four of the project.

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NEWSWIRE

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THE JOURNAL TIMES

Edgar Tafel's Racine legacy

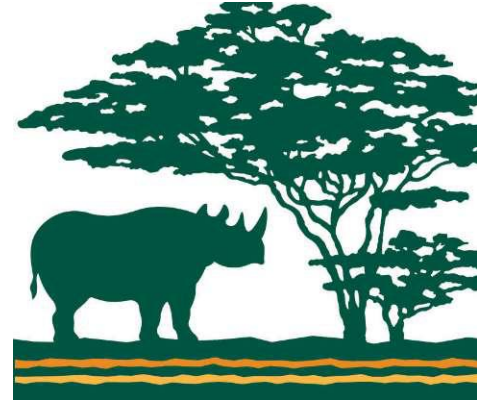
Frank Lloyd Wright apprentice Edgar Tafel (shown standing to Wright's left, above), who died on Jan. 17, left a mark in Racine, Wis.—a house commissioned while Tafel was at Taliesin.



THE NEW YORK TIMES

The garage suitable for more than cars

Herzog & de Meuron's new parking garage in Miami is being used for a lot more than parking: People are "clamoring to use it for wine tastings, dinner parties and even yoga classes."



CINCINNATI ENQUIRER

Zoo parking lot going solar

An \$11 million installation of 6,400 solar panels is under way at the Cincinnati Zoo & Botanical Garden, which says that it will be the largest "publicly accessible, urban solar array" in the U.S.

AIA Announces 2011

BOSTON'S JOHN HANCOCK TOWER PICKED

DECEMBER 2010
ARCHITECTURE
BILLINGS INDEX

↑ 54.2

- ↑ 52.7 commercial
- ↑ 50.6 institutional
- ↑ 47.8 mixed practice
- ↑ 60.1 multifamily residential

SOURCE: AIA



THE AIA HAS NAMED the winners of the 2011 Institute Honor Awards for architecture, interior architecture, and urban and regional design. The Twenty-Five Year Award, given to a work of enduring excellence, goes to the John Hancock Tower in Boston, designed by Henry Cobb, FAIA, of I.M. Pei & Partners (now Pei Cobb Freed & Partners). The awards will be presented at the annual AIA convention, taking place in New Orleans this May. **PETER JAMES**

2011 ARCHITECTURE AWARDS

The Honor Award for Architecture jury, chaired by David Miller, FAIA, of Seattle's Miller Hull Partnership, selected 10 projects. The diverse roster of winners is dominated by public and campus buildings, including four museums.

- AT&T Performing Arts Center Dee and Charles Wyly Theatre, REX | OMA
- The Barnard College Diana Center, Weiss/Manfredi Architecture/Landscape/Urbanism
- Ford Assembly Building, Marcy Wong Donn Logan Architects



UNBEIGE

NFL loses to architectural degree

Stanford University quarterback Andrew Luck, a Heisman Trophy finalist, made an unorthodox audible: He'll finish his architecture degree this year instead of opting for the NFL draft.



SAN FRANCISCO CHRONICLE

Golden Gate Park landmark consideration

San Francisco's Historic Preservation Commission is weighing whether to make Golden Gate Park's 1,017 acres a historic district. The vote may come within a few months.



SOLAR NOVUS TODAY

Solar Decathlon seeking new site

The Department of Energy said that the 2011 Solar Decathlon will not be held on the National Mall—part of a larger effort by the National Park Service to protect, improve, and restore the Mall.

Institute Honor Awards

FOR TWENTY-FIVE YEAR AWARD.

- Horizontal Skyscraper Vanke Center, Steven Holl Architects
- New Acropolis Museum, Bernard Tschumi Architects
- North Carolina Museum of Art, Thomas Phifer and Partners
- One Jackson Square, Kohn Pedersen Fox Associates
- San Francisco Museum of Modern Art Rooftop Garden, Jensen Architects/Jensen & Macy Architects
- U.S. Land Port of Entry, Julie Snow Architects
- University of Michigan Museum of Art, Allied Works Architecture

2011 INTERIOR ARCHITECTURE AWARDS

The Interior Architecture award recipients include several adaptive reuse and historic preservation projects. The jury, led by John Ronan, AIA, commended the winners for innovative fabrication and material use.

- The Academy of Music, KlingStubbins
- Alchemist, Rene Gonzalez Architect
- Armstrong Oil and Gas, Lake | Flato Architects
- Conga Room, Belzberg Architects
- FIDM San Diego Campus, Clive Wilkinson Architects
- John E. Jaqua Center for Student Athletes, ZGF Architects
- Moving Picture Company, Patrick Tighe Architecture
- The Power House (Restoration/Renovation), Cannon Design

- Registrar Recorder County Clerk Elections Operations Center, Lehrer Architects
- Vancouver Convention Centre West, LMN Architects
- Washington Square Park Dental, Montalba Architects

2011 REGIONAL AND URBAN DESIGN AWARDS

The Regional and Urban Design Honor Award winners include plans and guidelines at a variety of scales. The jury, chaired by Daniel Williams, FAIA, recognized projects that build community and mitigate environmental impact.

- Beijing CBD East Expansion, Skidmore, Owings & Merrill
- Chicago Central Area DeCarbonization Plan, Adrian Smith + Gordon Gill Architecture
- Community | City: Between Building and Landscape, Affordable Sustainable Infill for Smoketown, Kentucky, Marilyns R. Nepomechie Architect and Marta Canavés Interior Design
- Gowanus Canal Sponge Park, Dlandstudio
- Low Impact Development: A Design Manual for Urban Areas, University of Arkansas Community Design Center
- Townscaping an Automobile-Oriented Fabric: Farmington, Arkansas, University of Arkansas Community Design Center

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GETTY IMAGES; GETTY IMAGES,
GORCHEV & GORCHEV

Hillier Employees Sue RMJM Over Merger Bonus

A GROUP OF EMPLOYEES originally with the U.S. architecture firm Hillier Architecture, which merged with Edinburgh, Scotland-based RMJM in 2007, is suing the parent company to reclaim \$664,000 of a promised \$1.5 million cash bonus that the group says RMJM has failed to pay. The lawsuit, filed in the Superior Court of New Jersey, alleges that RMJM reneged on the payout stipulated in the \$24 million merger while at the same time "siphoning off corporate funds" of up to \$8 million, stripping the U.S. firm's assets, and closing its Philadelphia office.

The plaintiffs, including a number of former principals—most of whom have left the firm—are not seeking financial compensation beyond the \$644,000. "The agreement was that if they stayed around they would get a retention bonus, and they did stay around, but they only got half their money," says J. Robert Hillier, FAIA, founding principal of Hillier Architecture, who has left the merged firm and runs his own eponymous practice in Princeton, N.J., but is named as plaintiff in the

suit because he remains the shareholder representative.

RMJM spokesman Alex Barr told ARCHITECT in an e-mail that the final \$644,000 payment would be made "in the near future" and that the matter would be resolved "to everyone's satisfaction." Barr refuted charges of asset-stripping detailed in the lawsuit, describing the allegations as "outrageous and completely and utterly untrue." In fact, Barr added, the direct opposite has been the case, "as millions of dollars have been injected into the U.S. business since the beginning of the recession."

The 2007 merger created a global company of nearly 1,200 staff in seven countries, but by 2010, RMJM Hillier's Philadelphia office had been shuttered, and, according to the lawsuit, the Scottish firm also wants to cease "most or all" operations in Princeton. Last year, several top RMJM executives departed amid reports of staff disaffection and financial troubles. Barr has been quoted as saying that the firm had a strong 2010, with billings more than doubling over 2009, to \$148 million. ERNEST BECK

93,000

NUMBER OF U.S. CONSTRUCTION JOBS LOST IN 2010

SOURCE: ASSOCIATED GENERAL CONTRACTORS OF AMERICA

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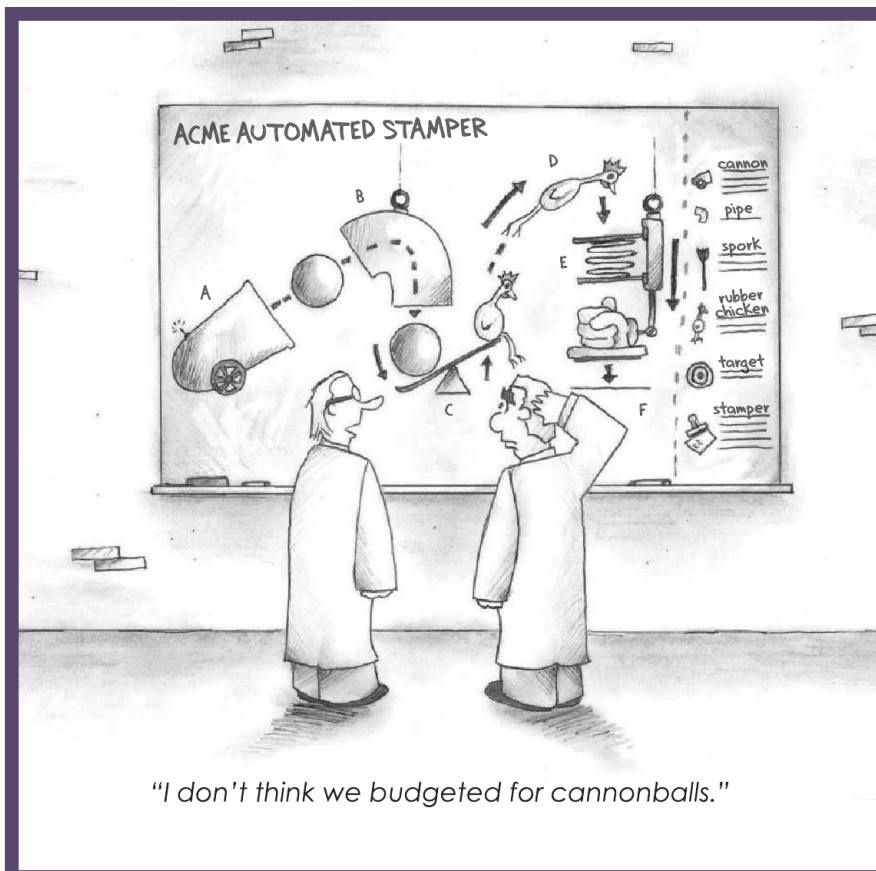
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“THEY [THE CHINESE] DON’T ESTABLISH A CONSTRUCTION BUDGET IN THE SAME WAY WE DO. I DON’T THINK WE’VE EVER HAD A PROJECT SLOWED DOWN OR HELD UP OVER THE BUDGET.”

—CHICAGO ARCHITECT JAMES GOETTSCH, FAIA, IN A JAN. 15 *NEW YORK TIMES* ARTICLE ON HOW CHINA’S CONSTRUCTION BOOM IS BENEFITING SMALLER U.S. PRACTICES, NOT JUST THE BLUE-CHIP GIANTS.



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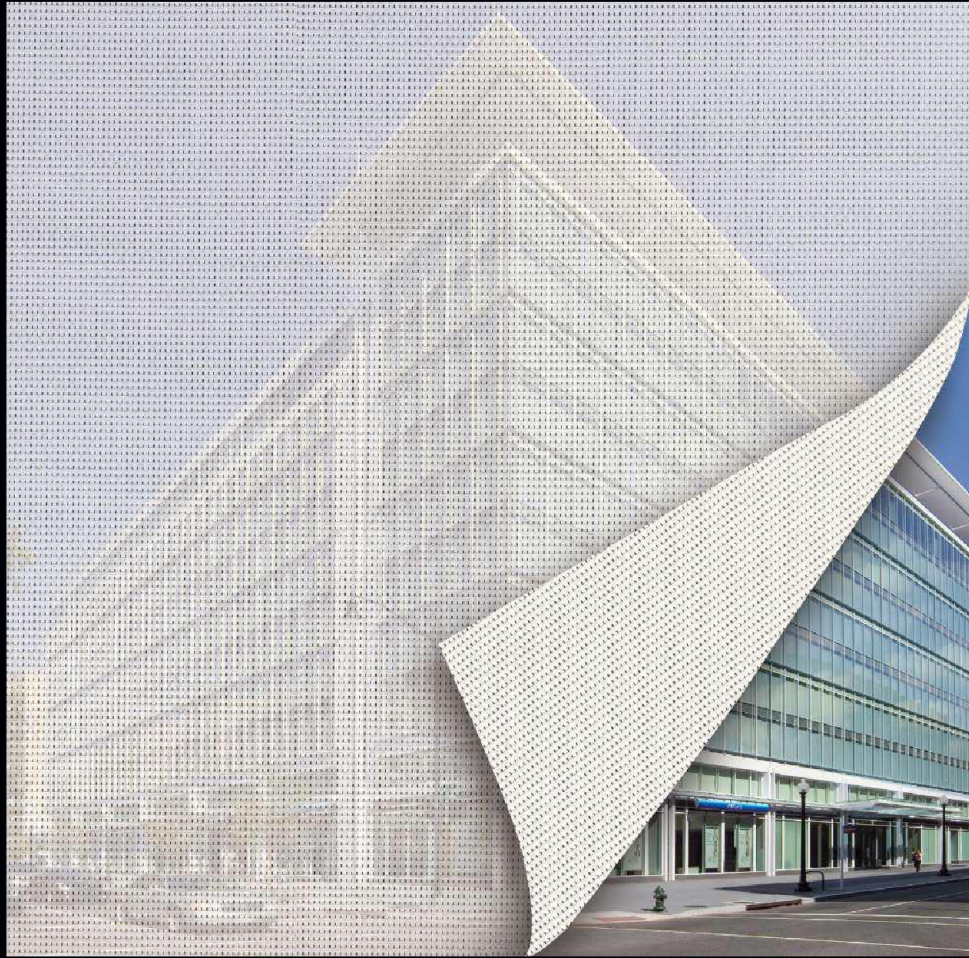
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PHOTO: LINCOLN BARBOUR

AIA VOICES

TIM DUROCHE ON THE VALUE OF ARCHITECTURE CENTERS

AIA Components across the country are engaging their communities through Centers for Architecture. Tim DuRoche—writer, musician, nonprofit leader—talks about his experience at the Portland Center for Architecture.

I'm the director of programs for the World Affairs Council of Oregon. I'm also a writer and a cultural advocate. Because I work in the nonprofit sector, I'm focused on the intersection between culture and education, and am very interested in the public realm and how we cultivate and nurture our civic ecology. "Rethinking the practices of urbanism is involved in creating a place in which people can talk to each other," Richard Sennett once noted. If we forget how to talk, it's difficult for us to embody the public realm.

I'm also a jazz musician, and I think these seemingly disparate arenas have a lot to do with each other. Jazz is a highly democratic art form, deeply concerned with participation and community, where risk and collaboration and individual voice are highly valued.

My experience at the Center for Architecture is multitiered. I performed with a trio there for the opening of last year's Portland Architecture + Design Festival. I went to a panel discussion there as part of TBA [Time-Based Art Festival]. I've gone to AIA Committee on the Environment presentations and First Thursday art openings. I remember an Oregon Humanities talk with Jim Leach, chairman of

the National Endowment for the Humanities, and Alison Carey, of the Oregon Shakespeare Festival. It was a really wonderful use of the space because it was more of a community event. They were talking about "public-ness" and the role of the humanities in a democracy. It was a fantastic way to address some of the broader values the AIA hopes to embody.

What is so exceptional about the Center for Architecture is that it is on the street level and open to the public. It's a more democratic bridge for people to understand the work of the AIA. That it's the oldest building in the Pearl District—and was renovated as a LEED Platinum project—says something. I think its scale is wonderful. It's not overly "architecture." It's a humble space. It represents the human scale that Portland traffics in so well.

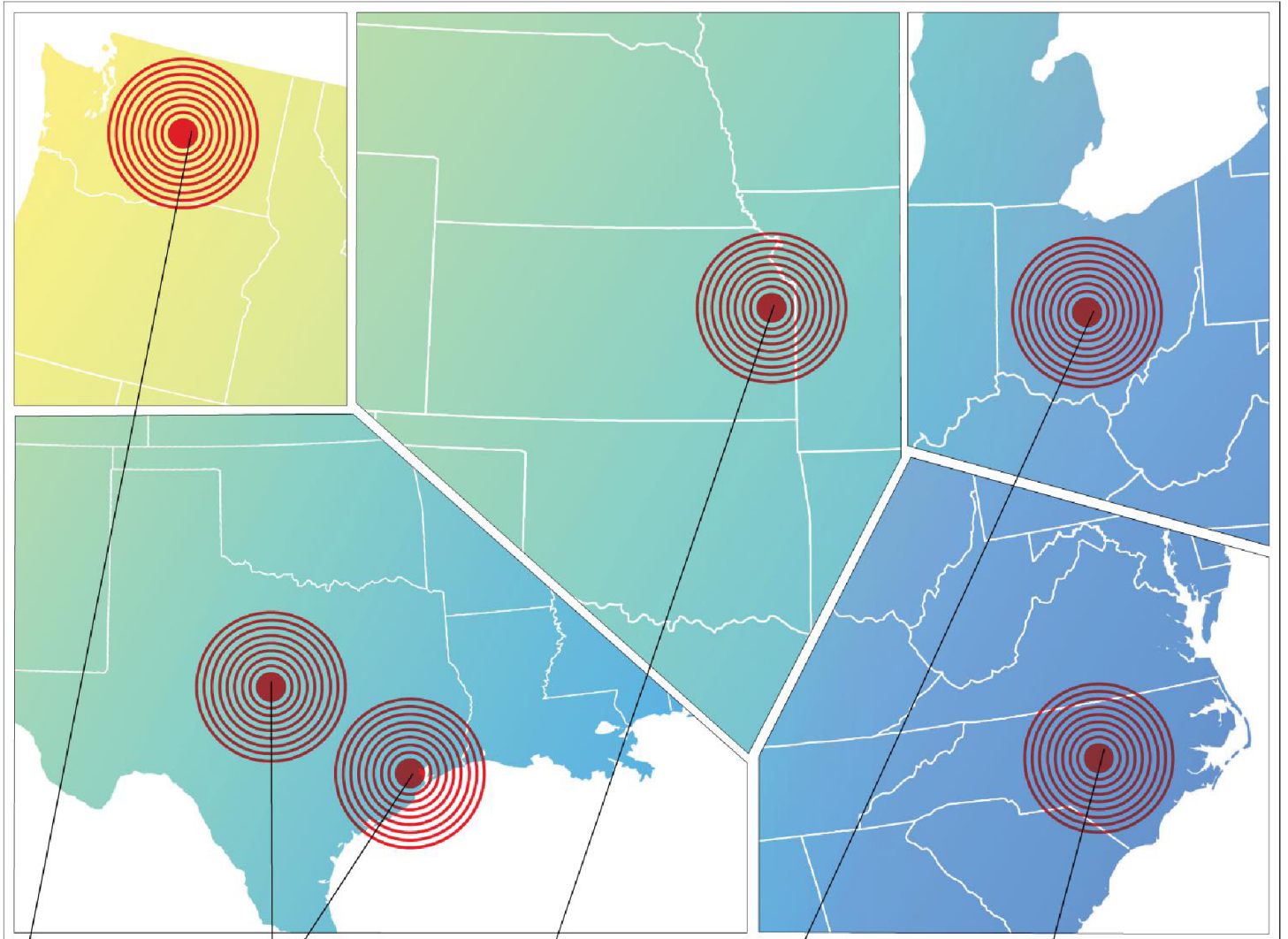
By holding regular programs—everything from meetings about potential urban design projects to artist-driven conversations about place, and films about design—the center has amplified the awareness of how/where design intersects with our lives. When communities have an engaged citizenry that understands the benefits of good design and its importance to the public interest—and sees a stake in its process and outcome—we all win. *As told to Brian Libby.* **AIA**

➔ To see more Voices, visit architectmagazine.com/AIA.



AIA NOW

ACROSS THE INSTITUTE



SEATTLE

Integrated Design

On Feb. 25, the Seattle Component of the AIA hosts The 2030 Challenge: Setting + Achieving Energy Goals with Integrated Design. This session kicks off the Component's AIA+2030 Professional Series, 10 courses meant to help architects create buildings that meet the 2030 energy-efficiency goals.

➔ Learn more at www.aia-seattle.org/aiaplus2030.

AUSTIN, TEXAS

There's an App for That

Missed last season's AIA Austin Homes Tour? Go to iTunes and download the free "AIAHT" app, which includes photos, map locations, and phone numbers that give access to cell phone audio tours.

HOUSTON

Mark Your Calendar

Gulf Coast Green, a major symposium and expo on green building organized by the AIA Houston Committee on the Environment, is set to take place on May 25.

➔ Learn more at www.gulfcoastgreen.org.

KANSAS CITY, MO.

Kansas City Here I Come

AIA Kansas City is a key sponsor of a 12-part television series, *Imagine KC*. The year-long series, developed by PBS affiliate KCPT and the Mid-America Regional Council, documents sustainable design projects and challenges residents to think of new ways to help their area become more vibrant, connected, and green.

➔ Visit www.kcpt.org/imaginekc

OHIO

Building Better Communities

Four community-minded emerging professionals have been named Enterprise Rose Architectural Fellows for the Class 2010–2013, among them Wayne Mortensen, Assoc. AIA, Central States Regional associate director on the AIA National Associates Committee. "What some might view as an extended service opportunity, I hope to make my life's work," he says.

➔ Read more at www.rosefellowship.org.

NORTH CAROLINA

New Home for AIA North Carolina

In December 2010, the North Carolina Component of the AIA broke ground for an ambitious four-story, 12,000-square-foot headquarters designed by Raleigh-based Frank Harmon, FAIA. The highly anticipated \$5 million building is located in the center of downtown Raleigh, and its modern design promises to bring a new vibrancy to the city.

➔ Learn more at www.aianc.org.



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The new B109™ – 2010 agreement is tailored for multi-family or mixed-use residential projects with terms and conditions for architectural services specific to these types of projects.

The new guide, B509™ – 2010, can be used as a reference to help modify B109 for use on condominium projects, making note of the unique risks and responsibilities involved.

B212™ – 2010 is a new document for architects to use in conjunction with an Owner/Architect agreement to define scope of regional or urban planning. It seeks to standardize the range of services provided for these projects, public or private, to make it easier for architects to prepare proposals and easier for owners to compare and evaluate them.

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**National Association of Home Builders, 2010.*

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“IN MY 36 YEARS OF LIFE, I’VE NEVER SEEN PROPERTY VALUES go down,” says Arjun Mande, AIA, a third-generation architect and native of India who still works in his homeland.

The last time architects heard this type of optimism, the speculative real estate bubble that exploded in deserts from the Middle East to Phoenix was still expanding. But for architects looking to grow their practice beyond the deflated American building sector, there is good reason to look to India. Its growing economic power is based on the strength of the Indian consumer, not speculative real estate. The nation of 1.2 billion is at a unique crossroads, where development needs match the spending power to achieve them. In the next 20 years, a quarter billion more people will live in Indian cities, requiring an additional 7.5 to 9.7 billion square feet of commercial and residential spaces—the equivalent of building a new Chicago every year. During the same time, the Indian middle class will more than quadruple.

What’s more, they’re short about half a million architects, according to India’s Council of Architecture.

“We think that in the next generation the entire infrastructure of the country is going to be rebuilt for about a fifth of the world population,” says Mark Erdly, AIA, of Cannon Design. His firm’s 300,000-square-foot, \$42 million Tata Medical Center Cancer Hospital in Kolkata is currently under construction.

Erdly recently moved to India to head Cannon Design’s operations there, but for architects looking to enter the market, having an office isn’t a strict requirement. It can take six months to a year to properly incorporate a new foreign business in India. However, establishing a project office with a native firm or a field liaison office can significantly reduce that time.

Only 1 percent of AIA member-owned firms worked in Southeast Asia (including India) from 2006 to 2009, according to the AIA’s latest firm survey. Most of the American firms working in India are medium to large in size, including many global design giants with deep international portfolios. But clients aren’t looking for size. They’re interested in design brand. Top-tier clients, such as Reliance and Tata, have developed a competitive taste for American talent. According to Mande, who lives in Boston and works for Goody Clancy, these clients pay a premium for American firms—to the consternation of some Indian architects who are bemoaning this outsourcing to non-native firms.

“Many Indian firms are seeing that aligning themselves with American architects greatly increases their chance to compete for the best opportunities,” says Todd DeGarmo, FAIA, LEED AP, whose firm, Studios Architecture, is establishing an office in India. An American firm with a client and a project will find native firms eager to partner up. Local architects can help Americans navigate India’s complex bureaucracy and shepherd projects through challenging construction phases.

Beyond design credibility, Indian clients are looking to American architects to learn the process for executing world-class contemporary buildings. India’s slow-moving bureaucracy can hold

“In the next generation the entire infrastructure of the country is going to be rebuilt.”

projects back, but once the green light flashes, Indian clients expect architects to move fast. The huge potential for development has also led DeGarmo to warn that, in India, “There are a lot of fly-by-night characters. If you get a call from somebody, take the time to check it out.”

India is experiencing a broad need for all building types, but corporate campuses, education, housing, infrastructure, and master-planning efforts are the most active development sectors. Geographically, building activity is equally dispersed. There’s no reason to restrict a firm’s business development to one region.

Firms looking to make connections in India can reach out to the AIA International Committee for additional insights. Firms that have already landed a project there can use the AIA’s family of International Contract Documents. In either case, establishing a practice in India or any new market is a long-term process. Erdly says that it can take two years to build up, a prospect made less intimidating by India’s long-term growth.

In a country with double-digit economic expansion, India is bound to pull architects into its borders from every corner of the globe. “This is big,” says Mande. “I don’t think people have even scratched the surface.” **AIA**

Written by Zach Mortice.



Civics Lessons

When a tornado devastated the seamier side of Nashville, AIA helped the town redefine its future.

CHERYL WEBER

ON APRIL 16, 1998, A TORNADO TOUCHED DOWN IN NASHVILLE, Tenn. It tore through downtown before hopping across the Cumberland River to East Nashville, toppling some 20,000 trees citywide and damaging hundreds of homes and businesses. East Nashville, a patchwork of quirky neighborhoods and about 25,000 people, took the brunt.

There is no evidence of that devastation today. Instead, new growth knits together this eclectic string of communities. There are historic mansions, humble bungalows, hip restaurants, and a smorgasbord of small businesses. Musicians rub shoulders with physicians, and trendy boutiques share streets with not-so-mainstream bars. There are attractive housing options for people with low and average incomes. It wasn't always that way.

For years, East Nashville was considered a rough part of town, cut off from the urban core by the river and an interstate highway. It had its charms, though, including a traditional urban fabric and a nice mix in household income, race, demographics, and architecture. By the early 1990s, the influx of artists and musicians priced out by real estate across the river had begun breathing new life into the area's ramshackle shotgun houses and abandoned lots. But crime and slumlords persisted.

Natural disasters sometimes clear a path for progress, and then-mayor Philip Bredesen posed a challenge to the tornado recovery board: What if they looked beyond the blue tarps and splintered trees and made East Nashville even better than it was? Not just rebuild, but reinvigorate?

In 1998, the city partnered with the AIA to do a four-day charrette with a Regional/Urban Design Assistance Team (R/UDAT). Since 1967, R/UDATs have led interventions in more than 140 communities, matching interdisciplinary professionals from around



the country with local experts to strategize around a common vision. On the last day, the team presents a published action plan in a public meeting. The program is part of the AIA Center for Communities by Design, which won the 2010 Organization of the Year Award from the International Association for Public Participation.

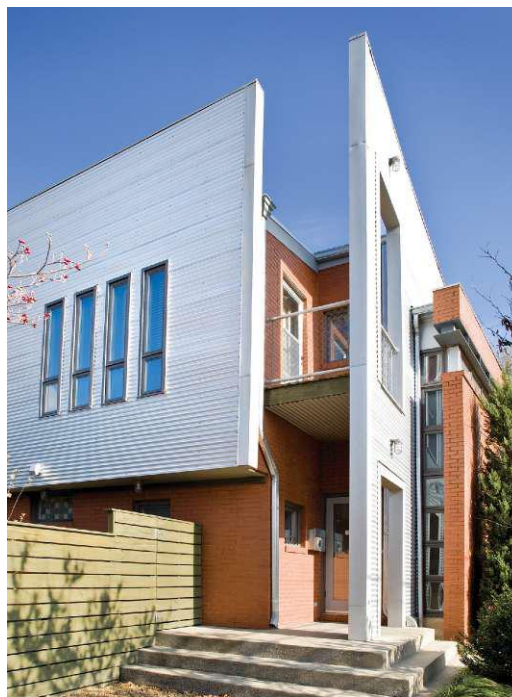
"The organizers looked at other options to see who could help, and the big reason they chose the R/UDAT was its emphasis on community participation," says Hunter Gee, AIA, principal of Smith Gee Studio, Nashville. He chaired the local steering committee, organized by Carol Pedigo, Hon. AIA, executive director of AIA Middle Tennessee, who also sat on the tornado recovery board. At the time, Gee says, "I was just a young pup that agreed to take on this challenge."

Plans moved swiftly. By September 1998, R/UDAT chair William A. Gilchrist, FAIA, then director of planning, engineering, and permits for Birmingham, Ala., began accompanying host committee members on visits with folks from every sector: bankers, developers, arts organizations, churches, business councils, government officials, social service providers, public housing authorities, and neighborhood associations. The goal was to pave the way for the charrette by inviting people across constituencies to share their ideas.

"Bill came to town and helped us understand the importance of reaching every category of community stakeholder," Gee says. Over the next 10 months, Gilchrist told stories of other R/UDATs, not only to present case histories of the program's effectiveness in rebuilding communities, but also to stress the importance of citizen participation as the first step towards the area's recovery. These accounts were well received and helped garner the necessary \$50,000 support for the R/UDAT. (The experts who come to town aren't paid, but there are costs for lodging, transportation, and setting up a design studio.)



Left: A bustling café in the vibrant East Nashville community. Below: Nashville townhouse.



PHOTOS: HENRY AMBROSE

On Saturday morning of the four-day workshop that following July, the R/UDAT team convened a forum in a public housing building. “Where we held that meeting was critical,” Gilchrist says. “We wanted to make a clear statement about being inclusive. We couldn’t have the public housing sector left floating like raisins in pudding.”

Roughly 400 people poured in, and 100 or so took the mike to make passionate pleas for improving their community. “The common thread was how important the diversity is in East Nashville. They said, ‘We don’t want to completely gentrify the community,’” Gee recalls.

The final charrette presentation drew almost 1,000 people, including private developers from the wealthier side of the river. Several themes emerged: East Nashville had no cohesive identity.

R/UDAT “locked in a passion for the difference we can make, not just as designers, but perhaps more important, as leaders.”

Areas with many single-family homes were steadily improving, while others contained clusters of substandard Section 8 housing. The residential areas were underserved by retail and commercial facilities. And Main Street’s auto-oriented zoning had produced an eyesore.

“It’s important that the team not only have good ideas, but good practical ideas,” says R/UDAT member Alan Mallach, senior fellow at the Center for Community Progress, Washington, D.C. “And when people are primed to engage, it makes a huge difference.”

Since the R/UDAT, East Nashville has employed new zoning and design guidelines while federal and local funding have spurred

major investments. At 5th and Main streets, a striking mixed-use condominium building acts as a gateway into East Nashville from downtown. Many other medium-density redevelopment projects—infill and recycled commercial space—are tucked into the residential neighborhoods. One example is Martin Corner, near Five Points. This area, once known for prostitution and drug deals, is now a healthy pocket of contemporary town homes, a modest mixed-use condo building, and a rehabbed corner with a Vietnamese restaurant and retail.

The R/UDAT empowered the whole community to identify a common direction and form the partnerships—and pools of capital—to make it a reality. “The most significant outcome was the private investment that came after the R/UDAT,” Gee says. “Investors and developers realized East Nashville’s significant potential.”

Another important outcome was the formation of Rediscover East!, a council representing all the neighborhood associations. Its urban design committee is charged with upholding design guidelines and pairing needy residents with volunteers and funding to improve their homes. “Even if people don’t necessarily refer to the R/UDAT plan anymore, it’s the subtext, the floor on which we stand,” says Christine Kreyling, an architecture and urban planning critic who is a resident.

The R/UDAT also was a stepping-off point for a young architect’s career. Gee chaired Rediscover East! for several terms, and two years ago was appointed to Nashville’s planning commission. A year ago, he launched his own firm.

“I don’t think I’d be in the same place now if it weren’t for R/UDAT,” he says. “It’s not just visibility I gained, but it locked in a passion for the difference we can make, not just as designers, but perhaps more important, as leaders.” **AIA**

AIA PERSPECTIVE

THE FUTURE FOR ARCHITECTS



PHOTO: WILLIAM STEWART



ACCORDING TO A RECENT NATIONAL COUNCIL OF ARCHITECTURAL Registration Boards survey, 105,312 is the number of licensed architects working in the United States—or at least should be working. More on that in a moment. A larger figure is this country's current resident population, about 311 million. By the time you read the final sentence of this piece—even if you skim—the number of Americans will have increased by a thousand or so.

Do the math: It comes out to about .0003 architects for every American. That's not even counting clients in the expanding markets of China, India, and the Middle East. If you believe the major issues of the 21st century—health, security, transportation, productivity, sustainability—are design matters (and I do), then the law of supply and demand would suggest firms of every size are being swamped by work. This should be a golden age for America's architects.

Yet many architects struggle just to stay afloat. So much for the so-called laws of economics. As bad as this economy is for us who are licensed, we should be worrying about the next generation of professionals: the bright young men and women just out of school and the students entering college who are looking at their options for fulfilling and rewarding careers. They are the future of our profession; they're the ones tackling design matters like health, aging, and how our nation uses energy.

Our first and highest priority has to be getting architects back to work. The second and third priorities are the same. To get us to that better place, two broad strategies suggest themselves. The first is to increase an appreciation and understanding of the value of our profession's core competency—design. The members and staff of AIA components in every part of the country are creatively leveraging their tight resources to get the story of our profession to the public, most conspicuously with exhibitions, architects in the schools, awards programs, and public service.

As we move through this year and beyond, AIA members will discover how the partnership with Hanley Wood advances this strategy, guided now by the Institute's new executive vice president, Robert Ivy, FAIA. In this position, he will strengthen the voice and influence of the AIA on those issues shaping the profession. A second strategy is to work aggressively and creatively at every level of government to get this economy moving again.

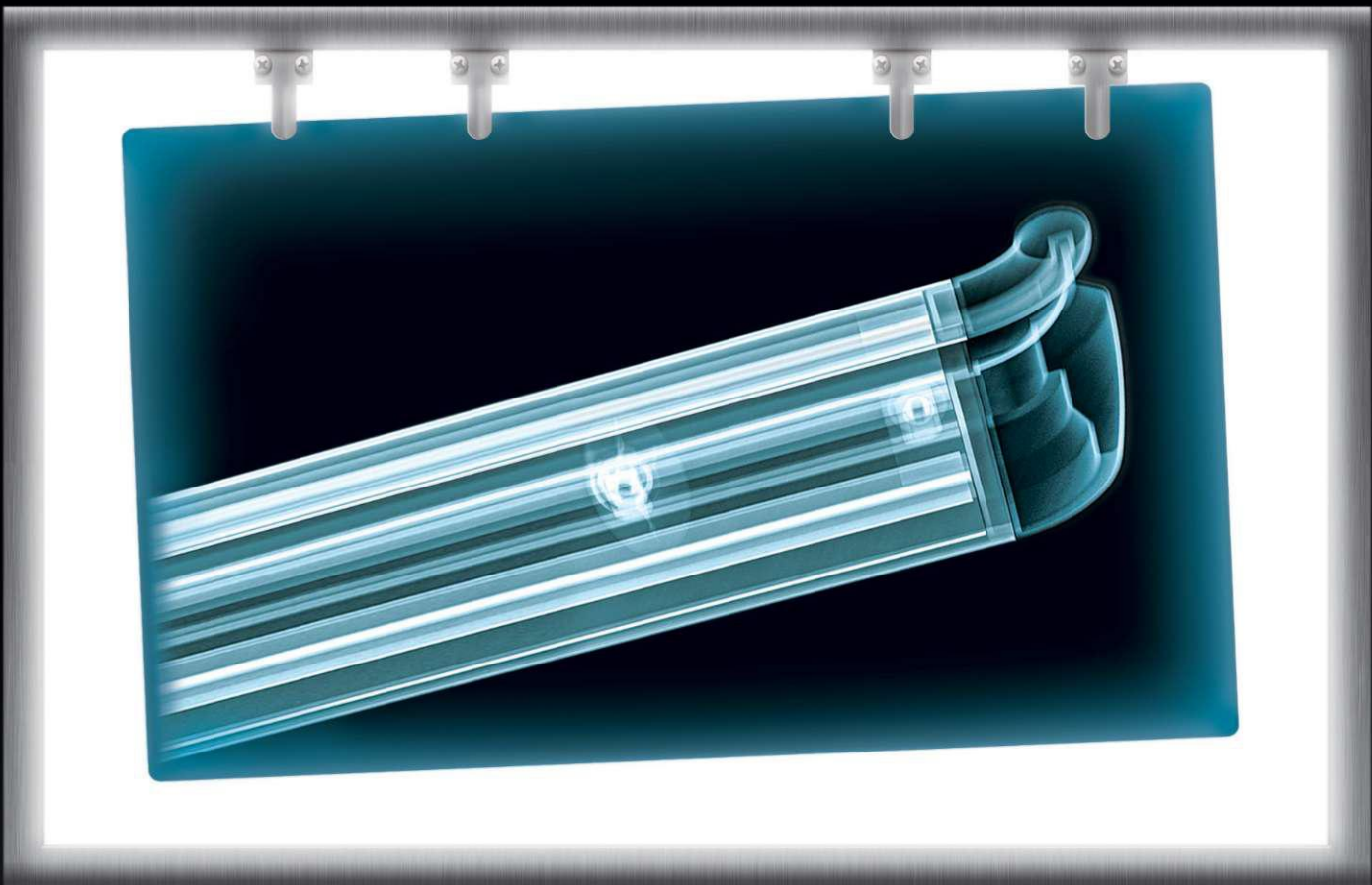
Have the results of the recent election forced the AIA to scrap its legislative agenda? Not at all. Because restoring small business as the engine of our nation's economy, returning economic vitality to our communities, and improving America's energy independence is a program for getting this country back to work, it easily negotiates both sides of the legislative aisle.

Often the person we're talking to is on the same side of what might seem to be a deep ideological divide. Take sustainability. I had a client who did not believe in climate change—no way, case closed. That would seem to be a non-starter for any hope of designing a green building. Yet by reframing the issue as a matter of controlling the cost of energy, that client was immediately on board.

This is just one skirmish of the larger campaign to shape a better world for our children. The reality is that we will not in our lifetime—certainly not in mine—have the number of licensed architects commensurate with the needs of a growing population. However, by advocating legislation that has as its goal the rebuilding of this nation's economy and, by elevating the public's understanding that design matters, that it reflects our values and shapes the very fabric of our lives, we can improve the odds. Much is at stake. Not just the future health of our profession, but the future of our communities. **AIA**

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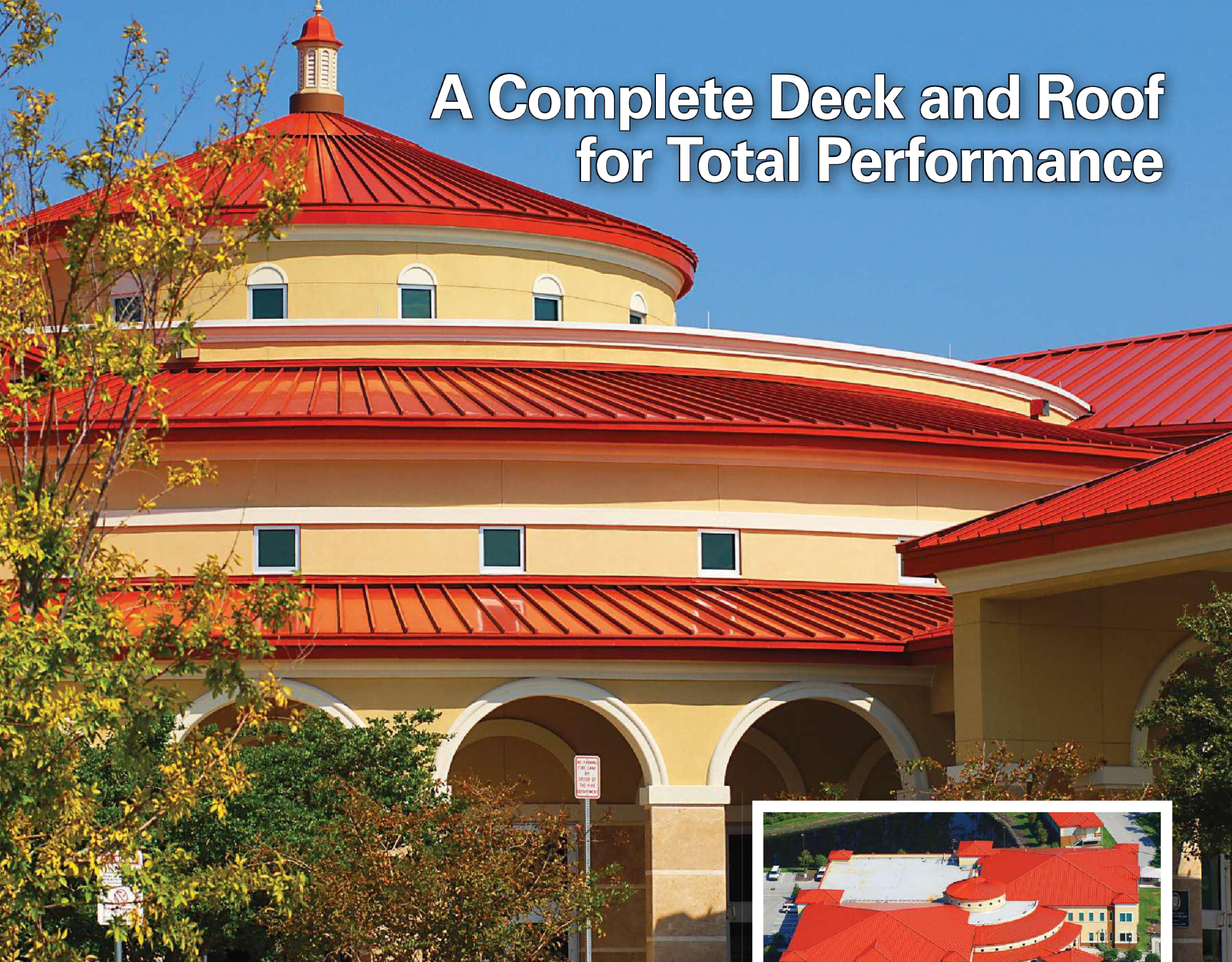


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BUSINESS



INTERVIEW BY ERNEST BECK
PHOTO BY JONATHAN CHAPMAN

A sour economy may mean “dwindling opportunities” for new construction, **Griff Davenport**, one of DLR Group’s managing principals, says, but some sectors are consistently ripe for capital-improvement work, including healthcare, higher education, and hospitality.

→ **BEST PRACTICES**

Reuse, Repurpose, Revitalize

SINCE THE MID-1960s, capital-improvement projects have been a core business for the national design firm DLR Group. With over 500 staff members in 21 cities in the U.S. and in Shanghai, DLR has become a leading criminal justice design firm in the world—designing courthouses and detention centers—and it also has a strong track record in hospitality, education, and collegiate sports facilities, according to Griff Davenport, AIA, a managing principal at the firm. Now helming DLR’s nationwide firm management from its Minneapolis office, Davenport ensures that the firm has a steady flow of capital-improvement assignments by helping to secure funding and pursuing energy-efficient design. ARCHITECT spoke with him about how DLR wins, manages, and designs these kinds of projects.

Sell your expertise.

DLR’s expertise is based on the sheer volume of its work and the breadth of its experience, Davenport says. “That’s what owners want and hire when they’re looking for project architects for capital-improvement projects.” Consider education: DLR “has done so many schools, of different scale and type and location, we can market that diverse experience.” And that spills over to other sectors as well. “We bring it all to the table,” Davenport says.

Adaptive reuse is the new normal.

Don’t even think about freestanding projects. In today’s market, “there are dwindling opportunities for new



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business

DON'T WAIT AROUND FOR AN RFP, DAVENPORT SAYS. SEEK OUT PARTNERS IN ORDER TO PURSUE PROJECTS.



construction," Davenport acknowledges. Now it's all about renovating and adaptive reuse of existing building stock. "This will be monumental," Davenport says, predicting that up to 95 percent of construction dollars in the future will be in this sector.

Target clients who want to upgrade facilities.

These clients want to change how they use their buildings. Courts need increased security, for example, and detention centers are adding medical units for an aging prison population. Also, "schools are rethinking how kids learn and teachers teach," Davenport adds, as well as modernizing for new technologies.

Check out hotels, too.

Improvement and renovation is a big part of the hospitality sector because owners need to continually reinvent their properties. In this frugal economy, "renovation is the majority of work" in this sector, Davenport says.

And stay in school.

Especially promising are places of higher education, which have been hit by sinking endowments and state funding cutbacks, and thus frequently can't build new. "These institutions need to be more competitive to attract students, so they want better facilities," Davenport points out. Adaptive-reuse clients in this sector tend to be repeat customers: DLR regularly gets jobs to improve educational facilities that the firm originally designed years, or even decades, ago, Davenport notes.

Follow the money ...

"Work with owners to help secure financing," Davenport suggests. This means locating tax rebates and chasing government subsidies for energy efficiency. Advise clients on how to push through bond issues, get a referendum passed, or build community consensus—public-relations work, yes, but owners are looking for such help. "We're doing more of this than ever before," Davenport says.

... but be cautious about stimulus money.

Much of the stimulus money released by the 2009 American Recovery and Reinvestment Act has already been assigned, but there are still some projects and some funds available. Because there's no compensation unless your firm is selected for the job, however, be very careful about how many stimulus-based projects you pursue, as they can be costly in upfront staff time and resources. "Evaluate them on a case-by-case basis," Davenport advises.

Establish your green street cred.

LEED and sustainable design continue to gain momentum, especially with capital-improvement projects for higher education and U.S. General Services Administration-funded facilities. Make sure that you have staff trained in the language of sustainable design and comfortable working with eco-design options, Davenport says, adding, "Without a doubt, the need for this skill set is changing who we are and whom we hire."

Find partners and pitch together.

Don't sit around and wait for RFPs—be proactive. For large projects, it's best to find other architects and contractors in order to pursue projects as a team, Davenport says. The advantage? A hybrid set of professionals is more attractive on big projects—and even on smaller ones.

Spread the word.

"We show owners how to do more with less and how to operate their facilities more efficiently," Davenport says, noting that you can talk clients out of what they think they want. "We say to them, look at the infrastructure you have and what you can do with it before going with more costly new construction," he explains. As a result, retrofitting and energy-efficient design are a big part of DLR's current client services. □



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→ **TPOLOGY**

Market-Rate Multifamily

TEXT BY JENNIFER CATERINO

Cyan/PDX • Portland, Ore. • *THA Architecture and GBD Architects*

This 16-story building in downtown Portland is certified LEED Gold. It appeals to Generation Y renters by compensating for small units (many are less than 550 square feet) with attractive communal areas such as a “living room” and a park for residents.



JEREMY BITTERMANN

IT WASN'T ALL THAT LONG ago that developers were scrambling to convert apartments to condominiums and architects were vying for the chance to design luxury residential projects. Today, after the bust and as the nation inches toward economic recovery, the development focus is on market-rate apartments, while financing for condominiums remains largely elusive.

The nation's apartment vacancy rate dropped to an average of 7.7 percent in the third quarter of 2010, according to the Commercial Real Estate/Multifamily Finance Quarterly Data Book issued by the Mortgage Bankers Association (MBA). The rate had dipped as low as 5.7 percent in late 2006 before gradually increasing

to a 30-year high of 8.4 percent in fourth-quarter 2009. The MBA also reported that the economy grew at a seasonally adjusted annual rate of 2.5 percent in the third quarter, marking the fifth straight quarter of positive growth.

Manny Gonzalez, AIA, a principal of KTG Group based in the firm's Santa Monica, Calif., office, thinks that market fundamentals combined with the nation's demographics have the potential to trigger more multifamily development. “All it takes is for the job market to come back, and it could create a frenzy in the [apartment] market in two to three years,” Gonzalez says.





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RENTER NATION

Expected to lead the apartment market's recovery are the so-called Echo Boomers. Also dubbed the Millennials and Generation Y, this group is estimated to total from 60 to 77 million Americans. Whether it's because they are disillusioned by the housing crisis, lack job security, can't qualify for a mortgage, or prefer the mobility, this group is being hailed as the next renter nation.

"Historically, 64 to 65 percent of people owned homes," says Jack Hannum, vice president in Transwestern's Phoenix Investment Services Group and a specialist in large multifamily properties. "In 2004, that number increased to 69 percent; now, it's trending back to a 65 percent net rate. That represents a significant number of people shifting back to the rental pool."

According to Michael D. Binette, AIA, vice president and principal in charge of construction for the Architectural Team in Chelsea, Mass., there has been a psychological change in the mindset toward rental apartments. "It's becoming a lifestyle choice rather than a stepping stone," he says.

While some of these people are becoming renters out of necessity, Hannum says that the flexibility that comes with a lease appeals to many Echo Boomers. He sees the next wave of multifamily projects, coming on line in roughly two years, as poised to capture the would-be renters who doubled up with a roommate or moved home with their parents when the economy grew shaky. "There is not the same fear in the markets as two years

ago. We consider these temporary living situations that will only happen as long as they have to," he says.

SMALL PLACE, BIG LIFESTYLE

In Boston, the Architectural Team is reconfiguring a project it first began in 2001. The Kensington was set to go forward as a 30-story residential tower in 2005, but the ensuing economic turmoil put that project on hold, along with many others across the country.

Now its developer, the Kensington Investment Co., is tracking for a July 2013 opening, says Mark J. Rosenshein, a senior project manager with the Architectural Team. Once a mix of luxury condos and market-rate rentals with an affordable component, the project is now strictly market-rate rental units.

But the building's composition isn't the only thing that has changed. Using the same building area, the new configuration will yield 383 units—76 more than in the original scheme. Rosenshein says that shrinking the units (what were once one-bedroom condos averaging 1,000 square feet are now 800-square-foot rentals, for example) allowed for the unit increase.

"Generation Y doesn't care if the unit is smaller," says Alan P. Mark, president of San Francisco-based Mark Company, which specializes in project turnarounds. "They consider the home to be the bedroom, the living room, and the surrounding amenities."

"We are designing a lot smaller," says KTG principal Rohit Anand, AIA, who is based in the firm's Tysons



Corner, Va., office. What might have been a 950-square-foot apartment a couple of years ago now measures 800 square feet. Though units are getting smaller, the size of amenity areas that house club rooms, fitness centers, pools, and the like is consistent with older product, Anand says; these areas can extend as much as 5,000 square feet in a 200-unit building.

What has changed is how an amenity package is programmed. Today's projects emphasize open, connected spaces, and many of the newer amenities are on par with what has traditionally been included in hospitality projects, Anand says.

Deven Morganstern, a marketing agent for Cyan/PDX in downtown Portland, Ore., attributes that project's success in part to the communal "living room" areas and adjacent resident-only park. As of early January, the 352-unit apartment building boasted a 90 percent occupancy rate. Designed by a joint venture of THA Architecture and GDB Architects, the 16-story project is largely composed of compact studio, one-bedroom, and two-bedroom apartments, many under 550 square feet.

FROM GRANITE TO GREEN

While granite countertops, flat-screen televisions, and stainless steel appliances will make their way into many market-rate residential projects, Gonzalez says that the level of finishes will vary from developer to developer. "It's more important to be urban and cool than high-end and grand," he says. "For example, instead of a sliding



shower door, you can do a rounded bar with a curtain and create a W Hotel kind of feel."

Sustainability looks to be the wild card when it comes to the Echo Boomers' apartment wish list. "This generation is more focused on the impact of its carbon footprint," Binette says. "They won't pay more for it, but if they have the choice of two buildings with the same rent, they'll pick the more sustainable one."

Anand and Gonzalez agree that Echo Boomers are hesitant to pay substantial rent increases for a green apartment, but sustainability efforts have garnered different levels of success in different markets.

In Phoenix, for example, where spaces for social interaction are a key tenant amenity, Hannum doesn't currently see a building's carbon footprint playing a primary role in attracting tenants. But Morganstern says sustainability has been a draw for the LEED Gold-certified Cyan/PDX. Even with rents that exceed downtown Portland's average, he reports that 65 to 75 percent of residents are renewing leases compared with the industry average of 35 percent. In addition to a green roof and various energy-saving measures, the building offers residents access to bikes and is sited near transit.

HOUSING SHORTAGES

The dearth of new multifamily construction is expected to result in diminished stock and possibly a housing

The Bond • KTG Group • Oakland, Calif.

This 105-unit midrise project (middle) is part of the new development currently transforming Oakland's Jack London Square area. Designed to be "loft-style," the one- and two-bedroom units (left) offer 9-foot-7-inch ceilings, large operable windows, and contemporary finishes. The Bond has a 4,000-square-foot private dog park and electric vehicle charging stations.

1020 Pine St. • Kennerly Architecture & Planning • San Francisco

This eight-unit project (right) in Nob Hill seeks to bring ample natural light into one- and two-bedroom condos ranging from 660 to 955 square feet.



LEFT TO RIGHT: LUCIDPIC PHOTOGRAPHY (2);
TIM GRIFFITH

MEMBERS OF GENERATION Y WON'T PAY MORE TO LIVE IN A GREEN BUILDING, "BUT IF THEY HAVE THE CHOICE OF TWO BUILDINGS WITH THE SAME RENT, THEY'LL PICK THE MORE SUSTAINABLE ONE." —MICHAEL D. BINETTE, THE ARCHITECTURAL TEAM

→ shortage if demand outpaces supply. The National Association of Home Builders (NAHB) estimates that about 300,000 multifamily units need to be added each year to meet ongoing demand. "We retire 100,000 apartment units annually" to obsolescence or condo conversion, Gonzalez says.

Nationally, the MBA reports that multifamily permits in structures with five units or more fell to 94,000 in November on a seasonally adjusted rate, the lowest level in the past 12 months. In the same period, the number of multifamily starts dropped to 72,000, and completions fell to 73,000. Compare that to 2007, when the multifamily sector recorded 359,000 permits, 277,000 starts, and 253,000 completions.

Alan Mark predicts that San Francisco's condo inventory will dwindle to fewer than 500 new units by early 2012, based on the current development pipeline. "There were 165 units permitted during Q3, none of which we believe to be market-rate condos," he says. In Phoenix, Hannum echoes Mark's concerns. "Apartment

developers in Phoenix want to get going, but they are still struggling" to get financing, he says. Hannum expects Phoenix will experience a housing shortage in 2013 or 2014 as population and employment grow.

For 2011, the NAHB forecasts 133,000 multifamily construction starts. At the same time, Jones Lang LaSalle's 2011 Multifamily Investment Survey indicates rising investor interest in the product type. Compared with 90 percent a year earlier, 93 percent of respondents predict that their investment allocation into multifamily product will increase in 2011. The Southwest and Northwest are the two regions that stand out for potential investment, according to the survey.

For now, condo developments are far and few between, as lenders have remained reluctant to finance projects. But don't count out another condo-conversion craze in a couple of years, Anand says, before evoking a familiar industry idiom: "We're in a 10-year business, but we have a five-year memory." □



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TEXT BY KRISTON CAPPS
ILLUSTRATION BY MCKIBILLO



IN THE FACE OF A RECESSION, many companies don't think to renovate their offices. The prospect may seem impossibly far off as financial pressures mount, but in fact, lean times may pose a real opportunity for a firm to reimagine its office space. The Center for Workplace Innovation (CWI), a business consultancy, pushes clients to look holistically and strategically at the entire working environment, to envision a space that performs better—and allows the people within it to do so, even if square footage is not gained (or is lost) in the process.

The principals at CWI, a wholly owned subsidiary of New York-based architecture and interiors firm Mancini Duffy, have discovered that bringing clients up to speed on best practices in terms of both the type and use of available workspace is often enough to improve efficiency while reducing costs. Workspace

itself is increasingly costly to maintain even while its use diminishes: In comparing use at a number of legal, financial, and commercial companies, CWI discovered that most office space is unoccupied 40 to 70 percent of the time. Consolidation, then, can be as much about revising longstanding assumptions about space as it is about physically eliminating square footage.

"No one is going to build the same space they built 15 years ago when they signed their last lease," says Alan Dandron, a principal with Mancini Duffy. "Any decision about real estate is a big decision, so you want to make sure that space is really going to perform for your organization. The key is to design a space that works for them as well at the end of that lease as it

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does now," Dandron says.

CWI was founded when Mancini Duffy acquired the Washington, D.C.-based Liminality in 1999; that company had a workplace-strategy division that Mancini Duffy maintained and bolstered. It is a small operation with five strategic planners, though CWI will pull on other Mancini Duffy design staff cross-trained in CWI's techniques and methodologies. The group's clients range from UBS and ANZ in the financial realm to legal firms such as Fitzpatrick, Cella, Harper & Scinto.

When working with commercial, financial, and legal clients alike, sensitivity is a priority for CWI. This effort begins with tools that are more commonsensical than analytical: town halls and coffee hours to help clients adjust to the ostensible loss of personal space. CWI designers will host mock-up tours of new model workspaces—for staff, not just executives—as they design them in an effort to familiarize workers and get feedback. But CWI's strength lies in its analytical approach, which includes tracking trends for workspace use longitudinally by a variety of industries.

In a December 2010 study, using computer-aided facilities management (CAFM) analysis to generate commercial interior benchmarks for six companies at 10 locations, CWI discovered that the ratio of dedicated workspace to total space (whether that's open or closed space) has remained consistent over the last decade. Yet

the use of workspace has changed significantly. New technologies and patterns governing the way people work have opened a gap between the space needed for amenities and needed for work—a gap that widens as a project grows in scope. CWI's CAFM projections show that, on average, as the total square footage for a project grows from 300,000 to 500,000 square feet, the space required for work increases accordingly, from about 150,000 to 250,000 square feet. But the space required for amenities grows only slightly, remaining under 50,000 square feet, on average.

And over time, the workspace itself has come to be used differently—less for individual tasks and more for teamwork. "It's a new model that's come out of the financial world," Dandron says. "You'll see it become applied more broadly across other sectors. It's a model that requires support space, much more collaborative space, and a little less individual space."

Needs vary by industry, however. CWI found that among its clients, commercial organizations devoted the most spaces to workstations (as opposed to offices). About 55 percent of commercial interior workspace is devoted to workstations. In the financial services industry, the balance is 45 percent workstation and 55 percent office (with the exception of trading floors). The disparity is greatest in the legal field, where nearly 70 percent of the workspace used by firms in New York



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and the Northeast is occupied by offices.

CWI's work with AOL reflects the trend toward more collaborative space. In 2009, for phase II of that client's consolidation and relocation from Dulles, Va., to New York, Mancini Duffy designed a collaboration-oriented sixth floor with one central pantry that also served as a town hall space. The design emphasized collaboration, including more space for team projects, in part to reflect the needs of the sales group housed on that floor.

Another CWI client, KPMG, has worked with Mancini Duffy for more than 40 years. CWI's work with the client began in 2001, when KPMG asked Mancini Duffy to help its real estate group reduce its internal construction costs. Dandron says that CWI came to the conclusion that, beyond cost considerations, KPMG's model did not serve it well.

"The model they had been using more or less forever was principals and managers in private offices, and staff either in segregated clusters of workstations or in staff rooms," says Lee Trimble, AIA, a principal who manages Mancini Duffy's relationship with KPMG. "That was fine ... when more of the staff was located in the workplace. But the model was changing to a more collaborative form of work."

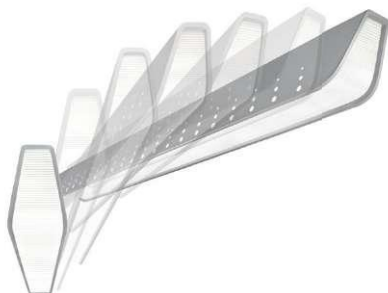
For KPMG's headquarters in New York, CWI recommended creating an entire conference center and a supplementary training center. The design

necessitated focus rooms on each floor for breakaway work. CWI also found that the older model, defined by dedicated office spaces for managers, served to separate managers from staff.

In order to gauge the success of their recommendations for KPMG, CWI has conducted both post-occupancy and utilization surveys. Priyanka Agrawala, a strategic planner for CWI, says that the timing of the post-occupancy survey is crucial. "The first items on everybody's list in the two-month survey are privacy and noise issues. In a six-month survey, that's no longer at the top of the list," says Agrawala. "People have adjusted their behavior, and that becomes a non-issue."

Beyond simply recognizing the changes that technology has mandated in the workplace over the last two decades, CWI's recommendations for embracing new uses of space begin with relating to the individual employee: The work to guide KPMG employees through a process of change began two years before the designs were in fact implemented.

"With KPMG, one of the things we did was to ... get people involved in a discussion of how they work, what tools they needed to work, and to get them to think of their office as a tool that supported work rather than a tool that signals status in the company," Dandron says. "People knew what was coming, and it [the process] got them to buy into it." □



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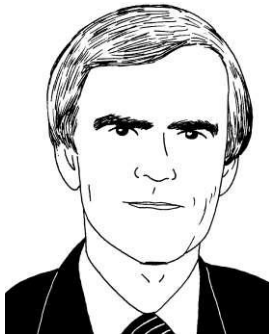
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→ POLICY

Ones to Watch

AT THE 2011 GRASSROOTS LEADERSHIP AND LEGISLATIVE CONFERENCE THIS MONTH, THE AIA RALLIED ARCHITECTS AND DESIGNERS AROUND ITS LOBBYING PRIORITIES: UNFREEZING CREDIT, EASING PAPERWORK BURDENS, ENCOURAGING RETROFITS, AND REFORMING TRANSPORTATION POLICY. HERE ARE SIX LEGISLATORS WHO ARE LIKELY TO SHAPE THE AGENDA—FOR BETTER OR FOR WORSE.

TEXT BY KRISTON CAPPS
ILLUSTRATIONS BY PETER ARKLE



BINGAMAN

The Senate Energy and Natural Resources Committee passed the American Clean Energy Leadership Act (ACELA), a bill sponsored by committee chair Sen. Jeff Bingaman (D-N.M.) that would have doubled U.S. investments in energy innovation and technology. Though in many respects similar to the American Clean Energy and Security Act (both failed to pass the Senate into law), the bill marked another example of Sen. Bingaman's commitment to sustainability—a stance that benefits innovative designers. Further, Sen. Bingaman's work as chairman for the Subcommittee on Energy, Natural Resources, & Infrastructure and his advocacy for making permanent tax incentives for clean-energy building means that he will inevitably play a role in shaping any upcoming debate over energy and sustainability.



SNOWE

The U.S. Green Building Council named the Expanding Building Efficiency Incentives Act of 2009 as one of the top 10 pending bills in 2010. That bill, cosponsored by Sen. Olympia Snowe (R-Maine) would have increased and extended tax credits for new energy-efficient homes and increased the tax deduction for energy-efficient commercial construction. Sen. Snowe and Sen. Bingaman were the Senate's fiercest supporters for performance-based tax credits that would promote jobs alongside energy efficiency. Their Advanced Energy Tax Incentives Act of 2010, which introduced credits for home retrofitters and manufacturers of new technologies for carbon capture and energy storage, was stripped by the Senate from the comprehensive 2010 tax package signed by President Barack Obama in December.



JOHANNS

Sen. Mike Johanns (R-Neb.) and Sen. Max Baucus (D-Mont.) disagree over the details, but both congressmen supported legislation to repeal a provision in the healthcare reform law that requires a 1099 filing form for every business transaction of \$600 or more. Both senators argue that this paperwork is a burden on small businesses, and small architecture firms—which are the great majority of all architecture firms—would agree. However, Sen. Johanns' legislation would at the same time cut \$11 billion in wellness and prevention programs, a spending offset his opponents describe as a backdoor effort to gut healthcare reform. Sen. Baucus' bill would simply eliminate the paperwork requirement, freeing up resources for small businesses without changing aspects of the healthcare reform.

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BLUMENAUER

Perhaps no city in the U.S. is more visibly associated with new transit development as Portland, Ore. That's largely the work of Rep. Earl Blumenauer (D-Ore.), who has served as a tireless advocate for Rebuilding and Renewing America, a campaign to invest in energy and high-speed transit across the U.S. For example, he has pushed successfully for federal support for Oregon Iron Works, which builds streetcars for the Portland Streetcar transit system, whose architects and planners then advise other transit projects. At the start of the 112th Congress, Rep. Blumenauer criticized a point-of-order rules change by the Republican House majority that would expose dedicated Highway Trust Fund funds to cuts in the name of deficit reduction.



GARRETT

Rep. Scott Garrett (R-N.J.) did his utmost to garner support for covered bonds, which are mortgage-backed debt securities popular in Europe that lack a statutory structure in the U.S. His first stab at a bill that would establish a legal framework for covered bonds drew bipartisan support but failed to find footing in the financial reform legislation passed last June. Lacking the must-pass urgency of financial regulation—and drawing the opposition of then-Sen. Chris Dodd (D-Conn.) after the Federal Deposit Insurance Corp. and the U.S. Treasury Department raised red flags over how a new class of secured assets would affect federal reserves—a standalone covered-bonds bill supported by Rep. Garrett died in committee. While new sources of capital are vital for architecture and development, there are growing concerns that the European Central Bank's enthusiasm for covered bonds may be distorting their reliability in the debt securities market.



PERLMUTTER

The co-author of the Buildings for the 21st Century Act, Ed Perlmutter (D-Colo.) is a natural ally on the Hill for architects and designers. That bill, which died in committee during the 110th Congress, would have increased and extended the tax deduction for energy-efficient commercial building costs. During that same congress, he was asked to chair the Energy Efficiency Task Force in the Financial Services Committee. And his office in Colorado was the first congressional office to reside in a LEED-certified building. But it is Rep. Perlmutter's continuing work for small businesses as a member of the Financial Services Committee, including his support for 2010's Capital Access for Main Street Act, that would most benefit the small firms that make up the majority of the field. □

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**Expansion Index Value,
Sioux Falls metro area**

The Expansion Index from Reed Construction Data is a 12-to-18-month look ahead at the construction marketplace. A value of 1.0 or higher signifies growth.

→ LOCAL MARKET

Sioux Falls, S.D.

TEXT BY MARGOT CARMICHAEL LESTER
AND CLAIRE PARKER

MARKET STRENGTHS

- Cultural amenities, public parks
- Low unemployment
- Diverse economy

MARKET CONCERNS

- Aging infrastructure and buildings
- Managing sprawl
- Maintaining “inner ring” of historic neighborhoods

POPULATION & JOB GROWTH

Current population: 235,300 in the metro area, with 2,000–3,000 more moving in each year. December 2010 unemployment: 4.9%. The city was ranked No. 11 on *Parenting's* 2010 list of best family cities, and No. 77 on *Money's* 2010 list of best small cities.

“This is a fabulous place to raise a family,” asserts Dan Hindbjorgen, vice president of the Sioux Falls Development Foundation. “When we recruit businesses or when local businesses recruit new people, they love it.”

RESIDENTIAL MARKET

The median home sale price was \$147,500 for the third quarter of 2010.

“We do have extra supply of residential properties for sale and extra commercial space that is available,” says Sean Ervin, AIA, a principal in TSP’s Sioux Falls office. “This availability has led to fewer construction starts, which does impact everyone.”

COMMERCIAL REAL ESTATE MARKET

Total office market: 12.6 million s.f., of which 14.84% was vacant in mid-2010, with an average asking rate of \$10.95/s.f. Commercial building permits increased 10% in 2010.

“Many projects are awaiting funding, while others are moving forward in order to take advantage of the lower construction prices,” notes Mark Aspaas, AIA, vice president of local firm Architecture Incorporated. “Public work seems to be moving

forward more rapidly than private work—again, the result of financing.” Locals are considering several major projects, including an events center, a branch library, and an amateur sports venue. Adds Hindbjorgen: “It’s unfortunate when government is spending all the money, but they are investing.”

FORECAST

“The economic slowdown started later, was shallower, and may finish sooner than in most of the rest of the country,” says Jeff Hazard, CEO of local firm Koch Hazard Architects. “This year will likely see a gain in building permits over 2010, with more substantial improvement coming in 2012. Over the next five to 10 years, Sioux Falls will see ... a growing higher education presence, including the development of the new Department of Architecture at South Dakota State University, continued healthcare system expansion, and continued downtown development.”

**CNA Surety Office Building**

ARCHITECT: Perspective Inc., Sioux Falls.

COMPLETION: 2012.

BRIEF: \$25 million, 224,400-g.s.f. office project replaces a former lumberyard on the Big Sioux River and will serve as the eastern gateway to downtown; seeking LEED Silver.

**Sammons Financial Group Building**

ARCHITECT: Koch Hazard Architects.

COMPLETION: 2009.

BRIEF: \$17.6 million, 120,000-s.f. office building incorporates geothermal energy and an open structural grid to maximize flexibility; winner, AIA South Dakota 2010 Merit Award.

**Our Savior's Lutheran Church**

ARCHITECT: Koch Hazard Architects, Sioux Falls.

COMPLETION: 2010.

BRIEF: \$9.9 million, 70,000-s.f. expansion doubles size, adds new entry and 850-seat “Celebrate Center,” a gymnasium, and more; winner, AIA South Dakota 2010 Merit Award.

**South Dakota Public Universities and Research Center**

ARCHITECT: TSP, Sioux Falls.

COMPLETION: 2009.

BRIEF: 263-acre campus' 10-year build-out plan starts with this 60,000-s.f. educational building and the 21,000-s.f. Graduate Education and Applied Research Center; winner, AIA South Dakota 2009 Honor Award.

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EDITED BY LAURIE GRANT
PHOTOS BY MIKE MORGAN

Duo-Gard Industries has introduced a new line of **decorative panels**. Available in translucent or opaque finishes, the panels are acrylic or polycarbonate and have standard designs and custom options. The 100% recyclable panels come in 4'-by-8' or 4'-by-10' sizes. Optional backlighting and illumination options include static and color-changing LEDs. • duo-gard.com • Circle 100



Ecophon Master Solo S suspended ceiling panels from **CertainTeed** feature 75% recycled content, Class A sound absorption, and painted edges. Manufactured out of high-density fiberglass, the surface offers 85% light reflectivity and 99% light diffusion. The panels are hung by wires fastened to suspension wire anchors. Sizes include 48" square and 48" by 96". • certainteeted.com/ceilings • Circle 101

Pixels from **USG Corp.** turns artwork, photographs, or logos into perforated-metal ceiling or wall panels. Panel sizes range from 2' by 2' to 2' by 6', and larger images can be spanned across several panels. When used with USG's Acoustibond backer, the system provides up to a .70 noise-reduction coefficient. • usg.com • Circle 102

The **Elixir** wallpaper collection from **Graham & Brown** incorporates hand-drawn and geometric patterns in metallic, gloss, and matte finishes. Rolls are 20.5" wide and 32.8' long. The wallpaper line also complements the company's new paint collection, **Colours That Made Britain Great**, inspired by British icons and popular culture. Thirty matte finish colors are available. The water-based paint is low in VOCs and dries within two hours. • grahambrown.com • Circle 103

Armstrong has added nine new patterns to its existing **MetalWorks Mesh** line of lay-in ceiling tiles. The new patterns, like the rest of the line, can be used in border, cloud, or full-ceiling applications, and are available in seven standard and three premium colors. The tiles measure 2' square and can be installed on a standard $1\frac{5}{16}$ " suspension system. • armstrong.com • Circle 104

Vivix exterior architectural panels by **Formica** are rigid homogenous flat panels designed for vertical application with a rainscreen-attachment system. Panels are available in wood grains, solid colors, and six additional pattern options, and in $\frac{5}{16}$ ", $\frac{3}{8}$ ", and $\frac{1}{2}$ " thicknesses. Vivix contains 3% pre-consumer recycled wood-fiber content. Sheet sizes include 48" by 96" and 60" by 120" or 144". • formica.com • Circle 105

Fireclay Tile has released **Claymonde**, a new ceramic wall-tile collection. The large-format tiles are only $\frac{1}{4}$ " thick and come in two standard sizes, $5\frac{3}{4}$ " by $35\frac{1}{4}$ " and $11\frac{11}{16}$ " by $35\frac{1}{4}$ ". Fourteen standard glaze colors are available; glazes are lead-free and any glaze overspray is collected and recycled. Custom sizes up to 3' by 6', and custom colors can be specified. • fireclaytile.com • Circle 106

Duo-Gard Industries decorative panels (preceding page)

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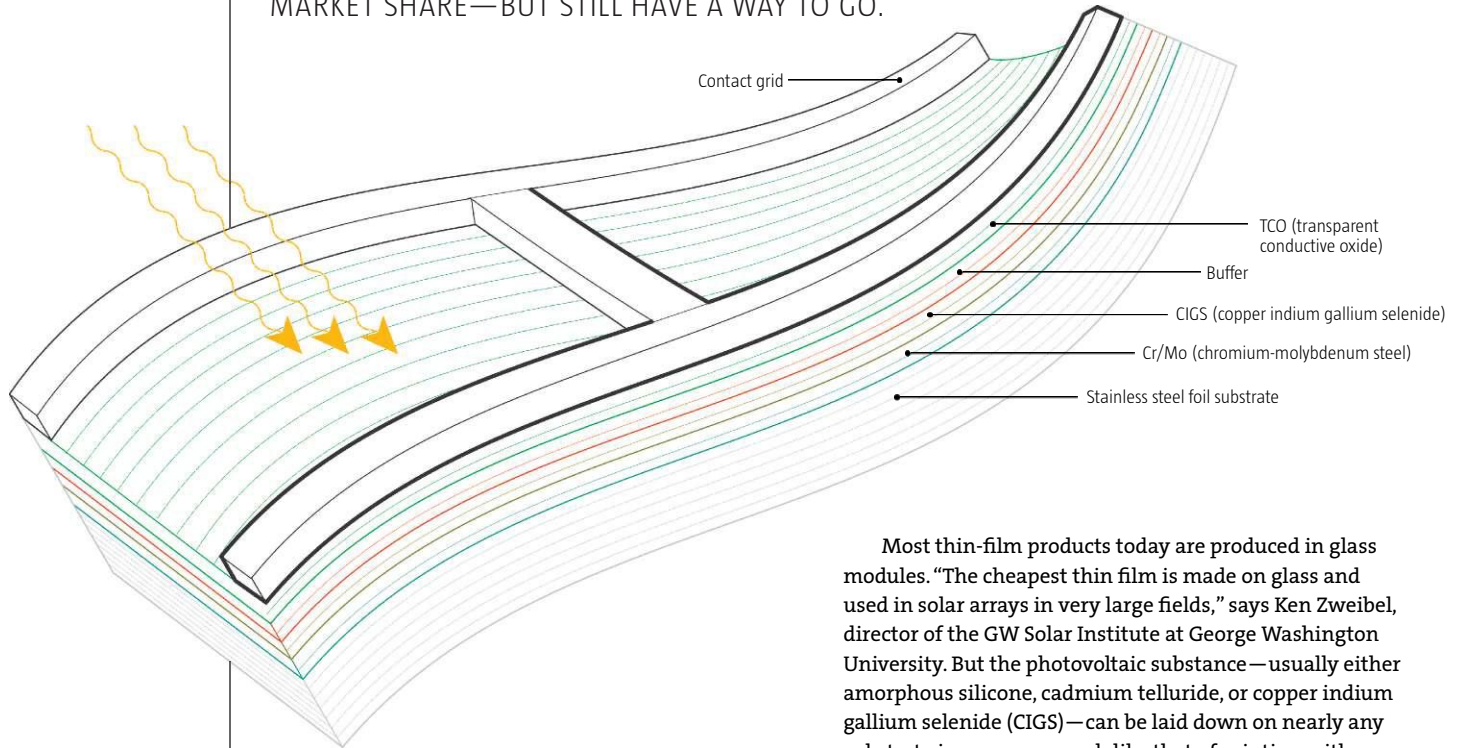
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→ SOLAR

Thin Is (Almost) In

CHEAPER AND MORE EFFICIENT THAN EVER, THIN-FILM SOLAR CELLS ARE GAINING MARKET SHARE—BUT STILL HAVE A WAY TO GO.



TEXT BY AARON SEWARD
ILLUSTRATION BY JAMESON SIMPSON

This illustration shows a Global Solar Energy CIGS (copper indium gallium selenide) cell on a stainless steel foil substrate. Molybdenum is deposited as the back contact of the cell; transparent conductive oxide (TCO) is the top contact. A collection grid on top provides a low-resistance path for the electric current.

THIN-FILM SOLAR TECHNOLOGY has come a long way from the little strips that have powered calculators for decades. In recent years, an increasing number of manufacturers have begun to produce thin-film products for use on buildings as a viable competitor to more traditional mono- and polycrystalline silicon wafer photovoltaic (PV) arrays. This growing market share has been fueled by increases in thin film's efficiency and decreases in its cost, but also by specific niches that traditional PV cannot fill, as well as the technology's greater adaptability to architectural design.

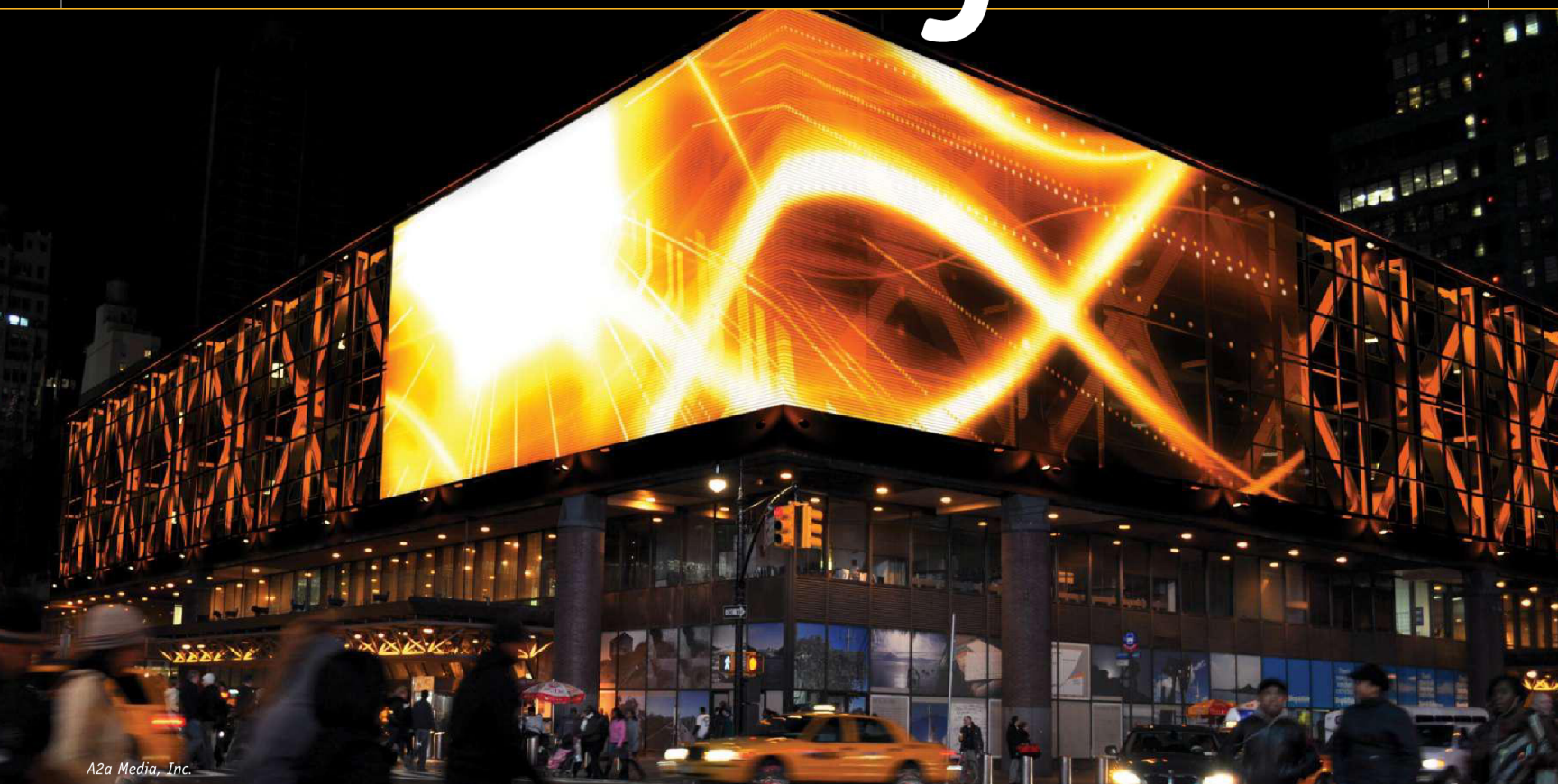
Thin film has a lot to recommend it to the built environment. For one, it is much more durable than silicon wafers, which break easily. This makes silicon wafers unsuitable for regions such as Florida and the Gulf Coast, where hurricanes frequently put all building materials through the most severe of stresses. Even in the most clement environments, silicon wafers must be encased in glass-and-steel panels for their protection, adding weight to the modules and requiring elaborate armatures for their support. These arrays transmit wind and gravity loads to their host buildings and also create roof penetrations, which open avenues for leaks.

Most thin-film products today are produced in glass modules. "The cheapest thin film is made on glass and used in solar arrays in very large fields," says Ken Zweibel, director of the GW Solar Institute at George Washington University. But the photovoltaic substance—usually either amorphous silicon, cadmium telluride, or copper indium gallium selenide (CIGS)—can be laid down on nearly any substrate in a process much like that of printing with ink. Several companies, such as Uni-Solar, Global Solar Energy, and Advanced Green Technologies (AGT), are producing flexible, stick-down solar strips by laying the PV substance down on stainless steel foil. "We are launching a 6-meter-long flexible module," says Jean-Noel Poirie, the vice president of marketing at Global Solar. "It is meant to go on roofs that have weight limitations, where you can't put heavy glass and steel arrays."

"I went and toured a large installation of AGT's stick-down PV strips out at the Nike corporate campus," says Craig Briscoe, an associate at Portland, Ore., architecture firm Zimmer Gunsul Frasca (ZGF) Architects. "There were a lot of great things about it. We were walking around on the solar array. It's very tough, not fragile like crystalline panels. It adds no extra weight from a structural perspective. And it has a really simple application—you just roll it out and plug it in." First Solar's FS Series 3 module, which is glass-enclosed, is 6.8 mm thick; Uni-Solar's PowerBond laminate is 4 mm thick.

Another significant feature of thin-film technology that separates it from silicon wafer is that it functions under ambient daylight conditions and doesn't require direct sun exposure. Crystalline PV cells work by taking direct UV rays and multiplying them inside the crystallized silicon. Thin film generates electricity by

refresh.



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—SEAN QUINN, HOK

2,108

Total U.S. solar electric capacity in 2009, in megawatts; in 2000, total capacity was 494MW

SOURCE: SOLAR ENERGY INDUSTRIES ASSOCIATION



absorbing solar heat and radiation. This means that thin film will function independent of orientation and under cloudy conditions. It also opens up greater flexibility for the integration of the technology into architecture. Thin film can be produced in a variety of colors, including blue, red, brown, green, and yellow (though the lighter colors sacrifice efficiency), and can be integrated with relative ease into glass curtainwalls, and not just as spandrel units. Processes of laser etching mean that even vision panels can be outfitted with thin-film PV in much in the same way that ceramic fritting is currently used.

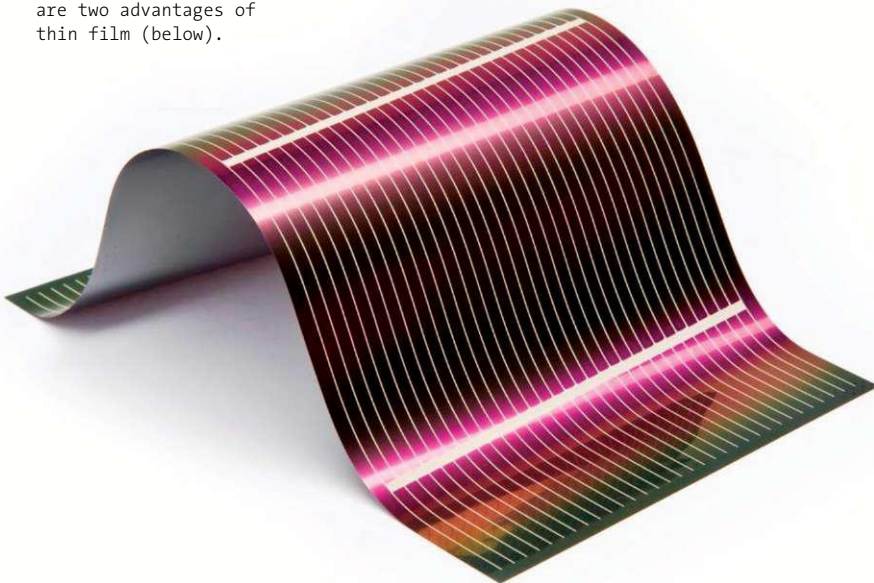
In terms of the price of purchase, crystalline solar modules and thin film are now approximately on par, costing between \$1 and \$3 per watt of energy that the modules will produce. This is a huge improvement for thin film, which just five years ago cost in the \$4 to \$7 per watt range. However, there is another important calculation to consider—watts per square foot. Currently, you get fewer watts per square foot

with some thin film than you do with crystalline, a major factor given that the roof of any building has a limited amount of real estate to house a solar array. But compared with crystalline wafers, thin film is cheaper to produce. It uses a fraction of the material and requires less energy in the manufacturing process: crystalline wafers must be heated to extreme temperatures, whereas thin-film processes demand much less heat.

In addition to dropping its price, thin film must close the watt-per-square-foot gap, which will require a leap in the technology’s efficiency. ZGF, for example, has considered using thin film for a few projects, but in each case the firm chose traditional crystalline panels for their greater efficiency. “Typically, more traditional mono- and polycrystalline panels convert 16 to 20 percent of the sun’s energy into electricity,” explains Sean Quinn, AIA, a sustainable design specialist at HOK who formerly worked for the U.S. Department of Energy. “In thin film right now, we’re looking at 6 to 10 percent conversion. They’re going to have to push the efficiency up to 15 to 20 percent in next five years. Once they do that, we’re looking at a much more commercially viable technology.” Zweibel is bullish about the future of films using CIGS, a relatively new technology. These films are relatively hard to make but most efficient, Zweibel says.

Thin film may make most sense in dense urban environments and on mid- and high-rise buildings, where shading and the relatively meager amount of roof space to building square footage makes rooftop PV arrays of negligible value. For example, HOK is currently designing a 60-story office tower in Abu Dhabi, United Arab Emirates, that will include thin-film solar panels integrated into the full elevation of the façade. “As we move forward and try to meet 2030 goals and the GSA’s net-zero requirement, thin film is going to get us closer,” says Anica Landreneau, AIA, the sustainable design practice leader at HOK. “In order to meet those goals you have to generate power on site, which is so hard to do in an urban environment. Anything that can help us is great.” □

Lightness and flexibility are two advantages of thin film (below).





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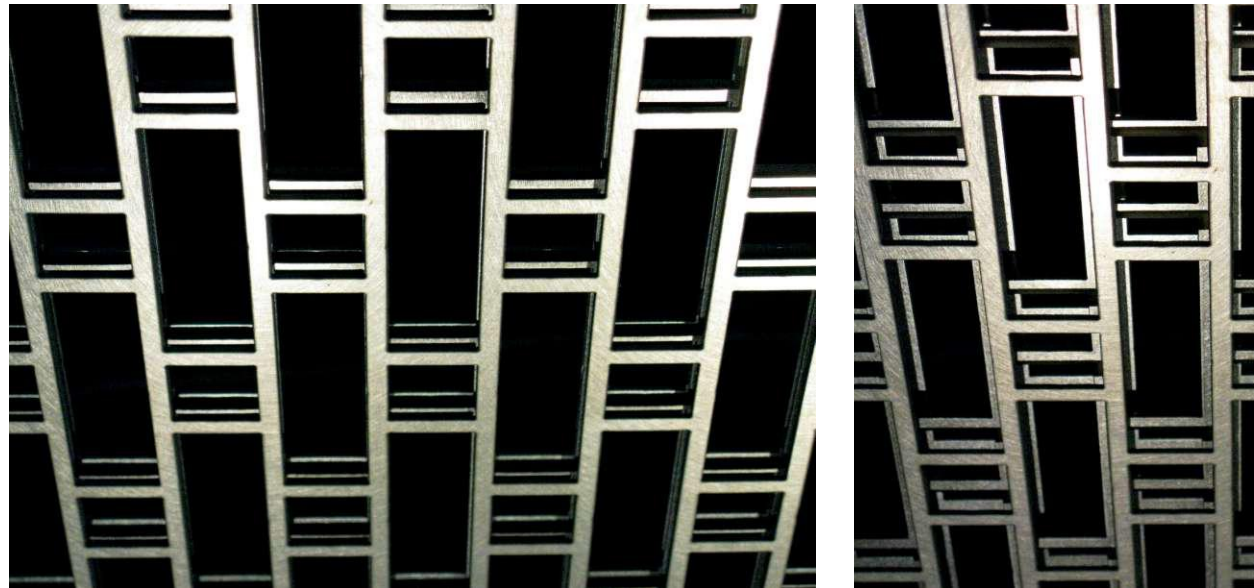
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Learning Objectives

1. Describe how a new custom shading technology has contributed toward LEED Gold certification at the Simons Center for Geometry and Physics.
2. Explain how the kinetic shading system's performance and movement were tested by the designer.
3. Describe how the kinetic shading system compared to a fixed shading system in terms of natural light reduction.
4. Describe how test models of the kinetic shading system compared to fixed shading systems in terms of building energy consumption.



THE ADAPTIVE BUILDING INITIATIVE AND ZAHNER TEAM UP TO DEVELOP A KINETIC SHADING SYSTEM WHOSE AESTHETICS ARE ECLIPSED ONLY BY ITS POTENTIAL TO HELP SAVE ENERGY.

TEXT BY MIMI ZEIGER

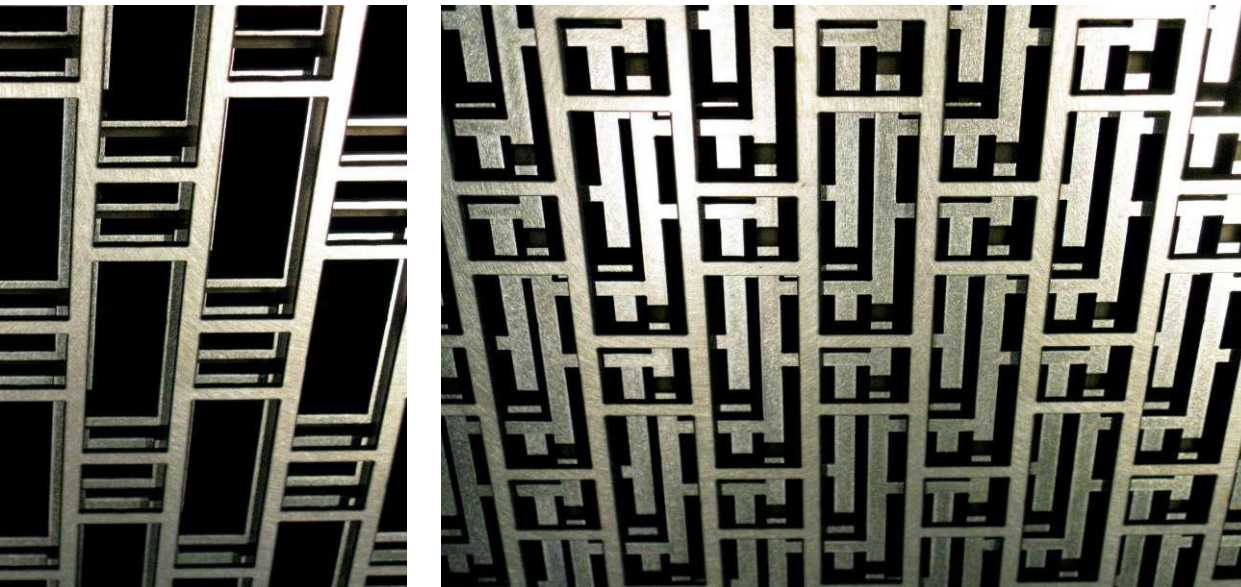
ON A WINTER MORNING threatening snow, Matthew Davis stands in the atrium of the nearly complete Simons Center for Geometry and Physics on the Stony Brook University campus. The 39,000-square-foot research center on New York's Long Island, designed by Perkins Eastman, is on track to achieve LEED Gold certification. Built as a showcase for not just sustainable practices but, more conceptually, for the celebration of mathematics and physical science, it's the perfect spot to see examples of a newly developed kinetic shading system. The system was developed by the Adaptive Building Initiative (ABI)—a joint venture of Hoberman Associates, a multidisciplinary design practice, and engineering consultancy Buro Happold—in partnership with metals fabricator A. Zahner Co.

Davis, Hoberman's vice president of engineering, stares intently at the four panels installed just inside the Simons Center's glazed façade. Muted sun shines through a latticework that recalls ornament from almost every culture and era: interlocking Arabic motifs, Arts and Crafts textiles, and Op Art illusions. Simple

geometries make up the diffusing mesh; for the Stony Brook installation, ABI designed four different panels. Each one offers rows and columns of a single geometric shape: hexagons, circles, squares, or triangles, both small and large. (Other shapes, such as the rectangles shown above, are also possible.) But what starts out as straightforward quickly turns complex.

Each panel is made up of thin layers of perforated stainless steel; these are supported by a steel frame and encased in glass. The front and back layers of steel are fixed, and a linear actuator motor at the panel's base powers a small piston that drives the "tumblers" that mechanically move the independent internal layers. As the tumblers rotate, the pattern varies. Thus each panel can display a multitude of kaleidoscopic patterns. According to Davis, each tumbler has a central axle that structurally ties the unit together from front to back and that also functions as a common pivot point, helping define the path of movement for the different layers. (The profile of each tumbler is designed to blend in with the retracted, simplest pattern of the unit.) Each petal

rk Shade



of the flower-shaped tumbler connects to an individual layer by means of a pin-and-bearing connection, so the pattern changes as the pin moves.

Because the pattern's opacity continually evolves and works to block daylight and heat gain at a variety of levels, the system is suitable as part of an environmental-control system. According to ABI, its opacity can range from 10 percent to 85 percent.

At roughly 52 inches wide and 11 feet tall each, the panels fill four bays of the façade, reaching from the floor (where they sit on a stainless steel riser) to the first structural member, where they bolt into the beam. By the time the Simons Center opens, four more, slightly shorter panels will span from the beam to the ceiling, for a total of about 380 square feet of shading. As Davis puts the system panels through their paces via a laptop computer, he programs them to run at a speed several times faster than a typical building installation, looking for glitches, catches, or bending as the layers shift and combine. When tied into a building-management system (BMS), the shading system's motor will run slowly; its speed can be set to track the sun or respond to environmental factors such as energy use, solar gain, and daylight levels. Patterns can take from several minutes to several hours to switch position. If the panels are used sculpturally, however, the motors can cycle through the various geometries in under a minute.

The Stony Brook installation is a kind of demonstration of sorts for the Hoberman team. It's a

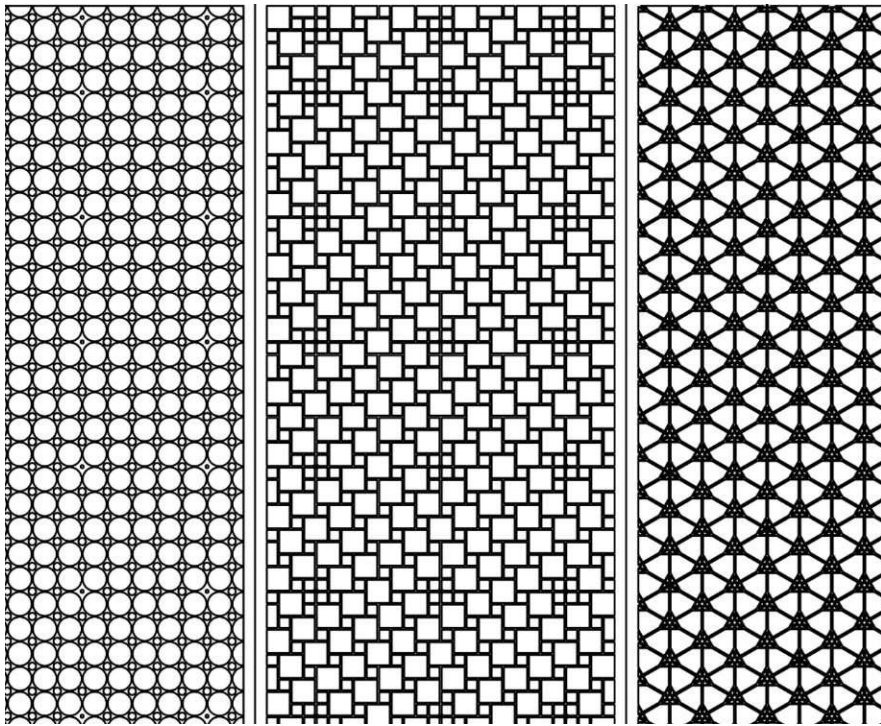
chance to test and fine-tune the ABI kinetic shading system, but it's also a way to galvanize the company's entry into the architectural market. Chuck Hoberman, founder and president of Hoberman Associates, is best known as an inventor and artist. His kinetic artworks are internationally shown, but his team also collaborates with marquee architecture firms such as Foster + Partners, Kohn Pedersen Fox Associates, and Shop Architects. The system, a self-contained, framed screen, isn't an off-the-shelf component with a single-use profile. It's designed to be totally customizable. Architects interested in it would collaborate with the team on the design, the manufacturing, and the installation. ABI touts the system as both decorative and performative, suitable for façade installations, glazing systems, and room partitions.

Like the obvious precedent, Jean Nouvel's 1987 Arab World Institute, in Paris, the panels mechanically shift to open and close. But unlike Nouvel's motor-controlled brise soleil, which relied on photosensitive controls to mediate the apertures, these dynamic panels can be directly integrated with a BMS to track changing light and weather conditions for energy savings. Because the panels are custom designed for each project, different panel configurations and patterns lend themselves to applications for controlling airflow, solar gain, and privacy. While shading is critical in almost any building

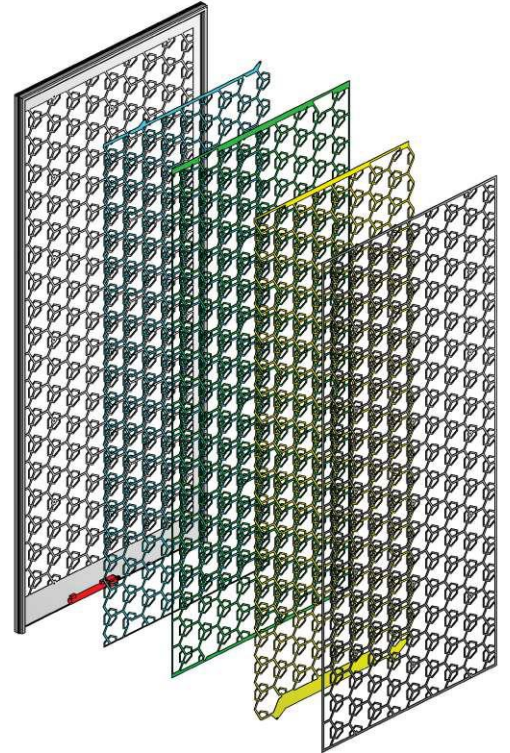
As designed by the Adaptive Building Initiative, in collaboration with metals fabricator Zahner, the steel layers within the kinetic shading system's panels can be rotated to assume patterns of varying visual complexity and opacity (above, left to right). Depending on the pattern cut into the metal sheets and the number of layers used, each panel can provide opacity ranging from 10 percent to 85 percent.



Panel Patterns



Exploded Axonometric



→ looking to reach LEED certification or meet ASHRAE Standard 90.1 requirements, conventional shading systems based on blinds or louvers offer limited creative solutions. By contrast, this system's patterns can be designed as a collaboration between the architect and ABI. Architects "are looking for something that is not just about the performance aspects, but they want something that gives them flexibility and allows them to put their own stamp on the shading," notes Craig Holland, director of operations at Hoberman.

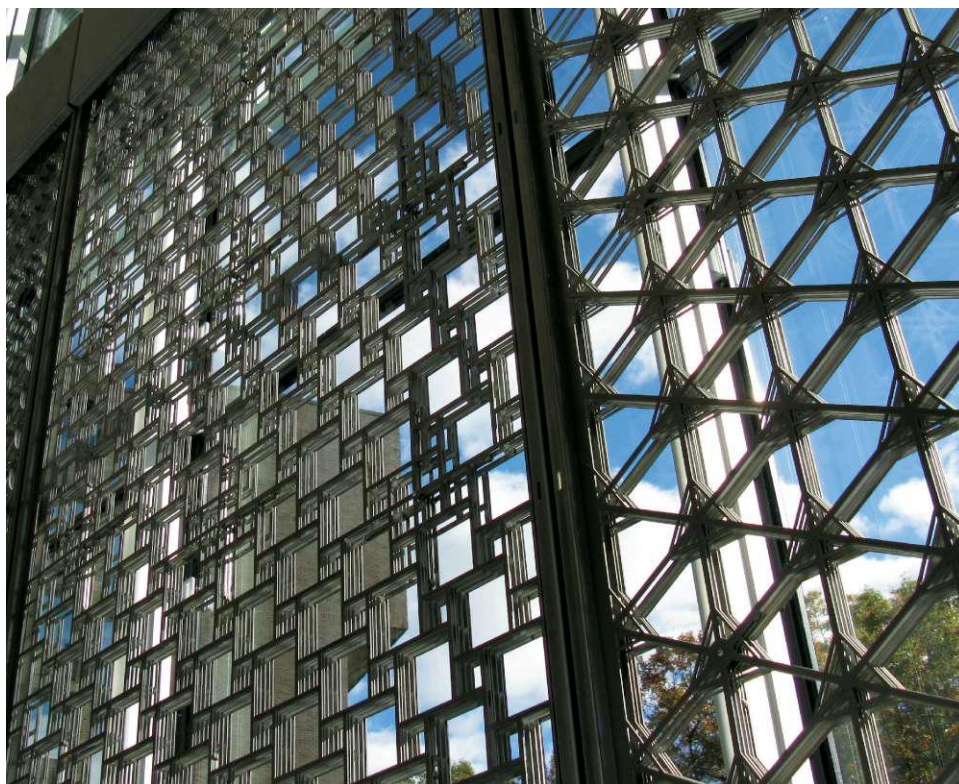
By teaming with Kansas City, Mo.-based Zahner, ABI steps immediately into an arena where top designers can apply their imaginations to the system, pushing it to its conceptual limits. The manufacturer routinely works with some of the best-known international firms to create signature skins and wall surfaces. The dynamic shades are fabricated as thin-profile framed panels—at Stony Brook, they're 4 inches deep—that can stand on their own or, in larger applications, be paired with a curtainwall assembly. At Stony Brook, ABI used five layers of metal that are a combined $1\frac{1}{8}$ inches in thickness. Adding and subtracting layers changes the range of pattern configurations as well as potential screen density. (Although current iterations of the system's panels are not yet fully functioning exterior façade systems, the ABI team hopes to develop weathertight prototypes in the future.)

According to Zahner's president and CEO, Bill Zahner, Hon. AIA, the system is straightforward and poses few technical or operational obstacles. "It is amazing how simple and easy they [the panels] are to fabricate," he explains. Hoberman's two decades' worth of experience engineering moving parts is security against the units breaking down. If on the odd chance they do pose a

mechanical problem, each panel has an individual access panel to reach the motor and driver—nonproprietary parts that can be easily replaced. Additionally, the glass panels can be easily removed to fix or swap out malfunctioning pieces, which makes the system's maintenance no more complicated than more-standard shading.

For Zahner, material choices pose the biggest challenges because they directly affect cost. Making the layers thin and lightweight keeps material expenses down. The Stony Brook installation uses 14-gauge steel for the outer, static layers and 16-gauge steel for the inner, moving layers. (Gauge thickness is determined on a case-by-case basis, Holland says, and is dependent on unit size, perforation pattern, number of moving layers, and other factors.) A water jet cut the pattern, giving a less precise edge than a laser but leaving a more textured surface to reflect the light better. (A laser-cut edge is often mirrored, while a water-jet-cut surface is more pearly and thus less prone to creating glare spots.) Because each installation would be a collaboration between the commissioning architecture firm, ABI, and Zahner, not an off-the-shelf specification, it's tricky to estimate costs. "Presently, I would put it in the \$150-per-square-foot range, which is on the pricey side," Zahner admits. "But it is very difficult to compare to something else, because there is nothing like it. If we are able to incorporate it into a façade or HVAC system, the additional cost of putting in a decorative screen is balanced by its energy-savings performance."

Matthew Herman, head of Buro Happold's Chicago office and an ABI board member, led the system's performance testing. His goal was to determine the energy benefit and to compare the impact of an adaptive surface to a standard fixed-shading system. Using



southeast-facing windows on the 16th floor of a New York City building as the test location, team members created two identical test rooms and placed a mock-up panel (featuring a square design) in the window of one; the window of the other room remained uncovered. No lights or equipment in either room were turned on, and the HVAC system was shut off as well. On two different days—one sunny, one cloudy—daylight readings were taken for 13 configurations of the screen's layers at 11 a.m. Measurements were made 3 feet off the floor (an approximate desk-level height) at zero feet from the panel, 3 feet from the panel, and 6 feet from the panel (just past the midpoint of the 10-foot-deep room). Each pattern configuration represented a different level of opacity, from 15 percent to 85 percent, and the base acceptable light level was 30 to 50 foot-candles, considered optimal for office task lighting.

For example: A 15 percent opaque configuration reading showed 42 percent daylight reduction at zero feet, 58 percent reduction at 3 feet, and 85 percent at 6 feet, for an average daylight reduction of 62 percent. Foot-candle readings for the same configuration were 136.7, 100, and 34.8, respectively, compared with 236, 160, and 65 for the room with no shading. At 40 percent opacity, 93.9, 78, and 27.1 foot-candles translated to 60 percent, 67 percent, and 89 percent daylight reduction, for an overall average of 72 percent. (The diffuse nature of a cloudy day, Herman says, did not ultimately make for much of a comparison, as light levels in the room suggested that the system would be left opened as widely as possible.)

Temperature data were taken at 10-minute intervals throughout the test day (July 21), with the mock-up panel set at 40 percent opacity; these data points then

served as the baseline for a dynamic thermal model, which measures energy reduction. As opposed to taking continual readings from a mock-up, a thermal model can simulate a full year in the life of a typical office building and apply to multiple geographic locations. Herman used the energy-modeling software IES Virtual Environment 6.1, which is compatible with a wide range of CAD programs, for the digital model. The adaptive-system model was set to minimize energy consumption and allowed more solar heat gain, measured in British thermal units, in the winter and blocked out eastern and afternoon sunlight in the summer.

Running the model through an 8,760-hour year, Herman tested the product's range, comparing the system's adaptive shading at each of the 13 fixed configurations over the course of a year against fixed shading—defined as external horizontal louvers with a 2:1 glass-to-projection ration—as well as no shading, the lowest condition allowed by ASHRAE 90.1 and represented by a glass coating with a solar-heat-gain coefficient of 0.39. All three models were identical: 10-story buildings with a window-to-wall ration of 60 percent; weather data came from John F. Kennedy International Airport (Typical Meteorological Year 3 data format).

The results were surprising. According to Herman, typical fixed-shading and high-performance façades reduce building energy consumption by 3 percent. The ABI's kinetic system showed a 3 percent to 5 percent reduction at any one moment, but when it was added up over the course of a year for the New York City climate test building, the model produced a 6 percent energy

The steel sheets used in the kinetic shading system can have different geometric patterns cut into them (opposite, at left), allowing for different aesthetics and system performance. In the installation at Stony Brook, the system's panels use five layers of sheets (opposite, at right); the interior three sheets shift positions, while the exterior sheets remain fixed.

Because the system's panels are not yet weathertight, those installed at Stony Brook were placed behind the Simon Center's glass curtainwall (above left). By selectively blocking light instead of diffusing it altogether as a shade would, the system's panels create visual interest in a building's interior (above right).





reduction. Herman attributes the higher percentage to the mechanism's ability to quickly adapt for better environmental performance. The benefits were most prevalent in the spring, summer, and fall, when less solar gain reduces the cooling load. The adaptive-façade model also showed an average internal temperature drop of 1 degree Fahrenheit—which may not seem very large, but the average internal thermal comfort range of a building can vary by 10 degrees (from 68 F to 78 F, per ASHRAE Standard 55).

In an actual building, a BMS would monitor temperature, energy usage, and daylight and, based on the readings, adjust the system's panels so that they could immediately reduce solar gain or balance light levels. The kinetic shading's control system is open source and can accept inputs from just about any digital source, and each panel has its own motor and controller. Open-source software means easy compatibility with BMS software, and nonproprietary mechanical parts keep construction and repair costs down. The panels link

into a single CPU that can run off of a standard PC or Mac running Linux or Windows. The BMS tells the central computer how to array the shades in a language of digital signals or voltages from meter readings. Individual panels, or several in tandem, can also be set to create a specific, localized effect, making the sum of them integral to potentially all scales of a building's performance.

Not ready to rest on the laurels of ABI's findings, Herman sees the kinetic shading system's ability to reduce the amount of energy expended on heating, cooling, and lighting as part of a full-building sustainability strategy. "For us, the starting point is solar shading, not the end. It is just one of the energy flows and mass flows through a building that impacts its carbon footprint," he notes. "We have the technology and are comfortable with making these screens move, so what else ... would benefit from a moment-by-moment dynamic adaptation? Other systems, such as water and acoustics, could be improved with changes in geometry, material, and mechanisms." □

AIA Continuing Education

QUIZ

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1. The Simons Center for Geometry and Physics on the Stony Brook University campus features:

- Four individually designed and functional stainless steel panels
- Both static and kinetic shading strategies, for about 380 square feet of shading
- Curtainwall on the south-facing façade and a custom-designed kinetic shading system

2. True or False: When controlled by a building management system, the shading system's motor will run slowly; its speed can be set to track the sun or be controlled by environmental factors such as energy use, solar gain, and daylight levels.

- 3. This system was preceded by:**
- Chuck Hoberman's kinetic artworks
 - Jean Nouvel's motor-controlled brise soleil
 - The Advanced Building Initiative's mesh shading panels

4. For this type of system, gauge system will be determined on a case-by-case basis, but in general:

- Stainless steel is more affordable than glazed curtainwall
- Making the layers thin and lightweight keeps material expenses down
- The lower the gauge of steel used, the lighter the panel

5. A _____ cut pattern provides a less precise edge, while a _____ cut edge is often mirrored and has more texture to reflect light better.

- Water jet, laser
- Diamond, laser
- Laser, water jet

6. To test the shading system's effectiveness at blocking daylight, two southeast-facing rooms were used; one window was covered by the panel, the other room without any shading device. Select the other test parameters from the following:

- Measurements were taken on one sunny and one cloudy day
- Daylight levels were measured at 11 a.m. and 4 p.m.
- Daylight measurements were taken at three heights
- Each pattern level represented a different opacity
- Fourteen configurations were tested

7. A(n) _____ can simulate a full year in the life of a typical office building and apply to multiple geographic locations

- Conceptual model
- Computer model
- Thermal model
- Energy model

8. What energy-modeling software was used in this project?

- EnergyPlus
- IES Virtual Environment 6.1
- DOE-2
- Energy-10

9. Energy models showed that a fixed shading system could reduce building energy consumption by _____ percent, and the kinetic shading system could reduce building energy consumption by _____ percent.

- 3, 3–5
- 1–3, 3–5
- 3, 6

10. True or False: When connected to a BMS that monitors temperature, energy usage, and daylight, the kinetic shading system's panels can be adjusted immediately to reduce solar gain, or balance light levels.

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The number of square feet of EcoWorx carpet backing that Shaw Contract Group has installed as of August 2010. The company claims that the production of this material—with its 40% recycled content—has saved 594,785 barrels of oil and 224.6 million pounds of carbon dioxide emissions over that of other, traditional backings.

Lamberts Art Glass from **Bendheim** is a series of unique, mouth-blown glass sheets. Multiple options are available, including solid colors and patterns that incorporate color streaks and cracked textures. Maximum glass sheet size is 24" by 36". Sheets are approximately 1/8" thick. • bendheimartglass.com • Circle 107

Inspired by mushrooms, the aptly named **Fungi Lamp**, designed by Amsterdam-based designer **Andreas Kowalewski**, is made from nylon webbing wound around a mold and bonded with glue. Rather than emitting a beam of light, the lamp source glows from behind the fabric, offering a diffuse illumination. Fungi is available in three sizes, and in white, blue, or red. • andreaskowalewski.com • Circle 110

Designed by **Archirivolto Design**, **Deluxe** from the **FDV Collection** is a light fixture made up of multiple triangular facets. Produced using ancient glass-grinding techniques, the satin-finish diffuser comes in black or white blown glass and the fixture is available as a pendant, ceiling, wall, or table lamp. Deluxe features a polished chrome structure and uses a halogen source. • leucosusa.com • Circle 108

Laser-cut cork surfaces, created by London-based designer **Yemi Awosile**, are made from the byproduct of wine cork production. Available in raw cork composite grain, glossy black, or a selection of metallic finishes, the product is suited for interior applications such as wall panels and room dividers. The surface features acoustic and thermal insulating properties naturally found in cork. • yemiawosile.co.uk • Circle 111

The **Greenscreen ColumnLight** is a luminous trellis column that uses optical-lighting-film technology to create high illumination without brightness or glare. **Insight Lighting's Euro**, an illuminated column fixture, is wrapped in a Greenscreen trellis. The system has DMX color changing options with RGBW LED platforms for applications such as landscape marketing, entertainment venues, and wayfinding. • greenscreen.com • Circle 109

The Roof That Goes Up In Smoke is an inflatable pillow—designed by Dutch spatial design studio **Overtreders W**—that serves as the roof for a temporary pavilion. Inflated by hot air from a wood stove, the roof is lit at night to provide illumination for the space beneath it. The wood stove also doubles as the centerpiece of the mobile pavilion, which can accommodate up to 40 people. • overtreders-w.nl • Circle 112



Toto USA has introduced the **Neorest II High-Efficiency Faucet**. The contoured, jointless design includes an embedded LED fixture, the color of which ranges from red when the water is at its hottest to blue when at its coolest. Water temperature is controlled by Toto's SMA Thermoplastic Mixing Valve to prevent sudden changes. The faucet can be used with the Neorest II Vessel Sink (pictured). • totousa.com • Circle 113

Kawneer's new **AA 3350 IsoPort Horizontal Sliding Window** is available in single-hung, double-hung, horizontal sliding, or fixed formats. The performance of the window is enhanced by the shape of a polyamide thermal break, which maintains continuity throughout the frame and sash. Available with 1" insulating or laminated glass, and with an anodized, painted, or dual-color finish. • kawneer.com • Circle 115



BioPCM by Phase Change Energy Solutions is insulation with pockets of phase-changing material (soy-based chemicals that change from liquid to solid and back again at different temperatures, allowing the material to absorb and release heat). Its performance is comparable to that of the thermal mass of 12"-thick concrete. The product increases the time it takes for a building to warm up or cool down. • phasechangeenergy.com • Circle 114

Shaw Contract Group's new line of modular carpet, **No Rules**, is available in three patterns: Byline, a medium-scale geometric block pattern; Linage (shown above), a medium-scale pattern with intersecting lines; and Link, a medium- to large-scale organic oval pattern. Each pattern has 12 color options. The line features EcoWorx tile backing. • shawcontractgroup.com • Circle 116



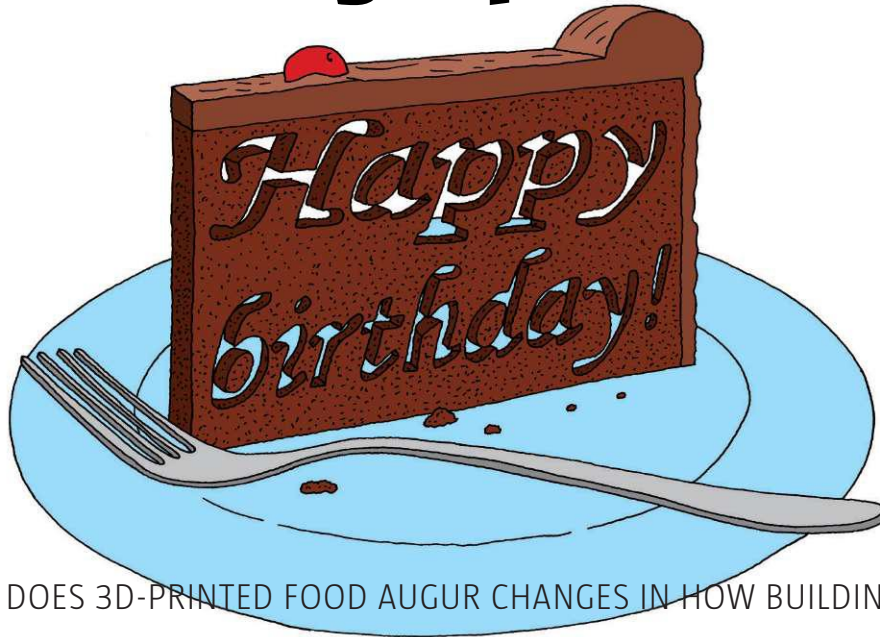
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DOES 3D-PRINTED FOOD AUGUR CHANGES IN HOW BUILDINGS GET CREATED?

COUNTRIES WITH THE MOST GOOGLE SEARCHES FOR THE TERM "3D PRINTING" IN 2010.

1. South Africa
2. New Zealand
3. Netherlands
4. Australia
5. U.K.

SOURCE: GOOGLE TRENDS

TEXT BY BLAINE BROWNELL, AIA
ILLUSTRATIONS BY PETER ARKLE



→ Read more of Blaine's reports on cutting-edge tech at ARCHITECT'S Mind & Matter blog: go.hw.net/Brownell.

LAST OCTOBER, two Portuguese universities, the Higher Institute for Education and Science and the Polytechnic Institute of Tomar, co-hosted the first International Conference in Design and Graphic Arts, which I was fortunate enough to attend. During a lecture about innovation in the printing industry, Rajendrakumar Anayath, head of the Chennai, India, branch of the Print Media Academy, highlighted general trends in emerging printing technologies. Anayath's "3-M" theory in particular, which outlined the expanded use of printing technologies in manufacturing and medicine as well as media, piqued my interest.

Based on a new project by the Cornell University Computational Synthesis Lab (CCSL), Anayath can now add another "M" to his list: meals. In a recent series of papers, Cornell researchers have been promoting the development of hydrocolloid printing, or solid freeform fabrication, as a means to create food via printing. ("Hydrocolloid" refers to substances that form a gel when combined with water.)

Printed food is not completely new: Chicago chef Homaro Cantu developed a two-dimensional edible paper for the rapid delivery of nutritional supplements—and for advertising—several years ago. However, the Cornell version is completely three-dimensional and enables the precise fabrication of complex objects made from different materials. The Fab@Home printer being developed by the CCSL reads information from an electronic blueprint similar to a CAD file and deposits food "inks" in precise layers via individual syringes. Director Hod Lipson, an associate professor in Cornell's Sibley School of Mechanical and Aerospace Engineering and a member of the Faculty of Computing and Information Science, told the BBC, "In the future, there

would probably be a kind of 'ChefCAD' that will allow people to design their own food constructions."

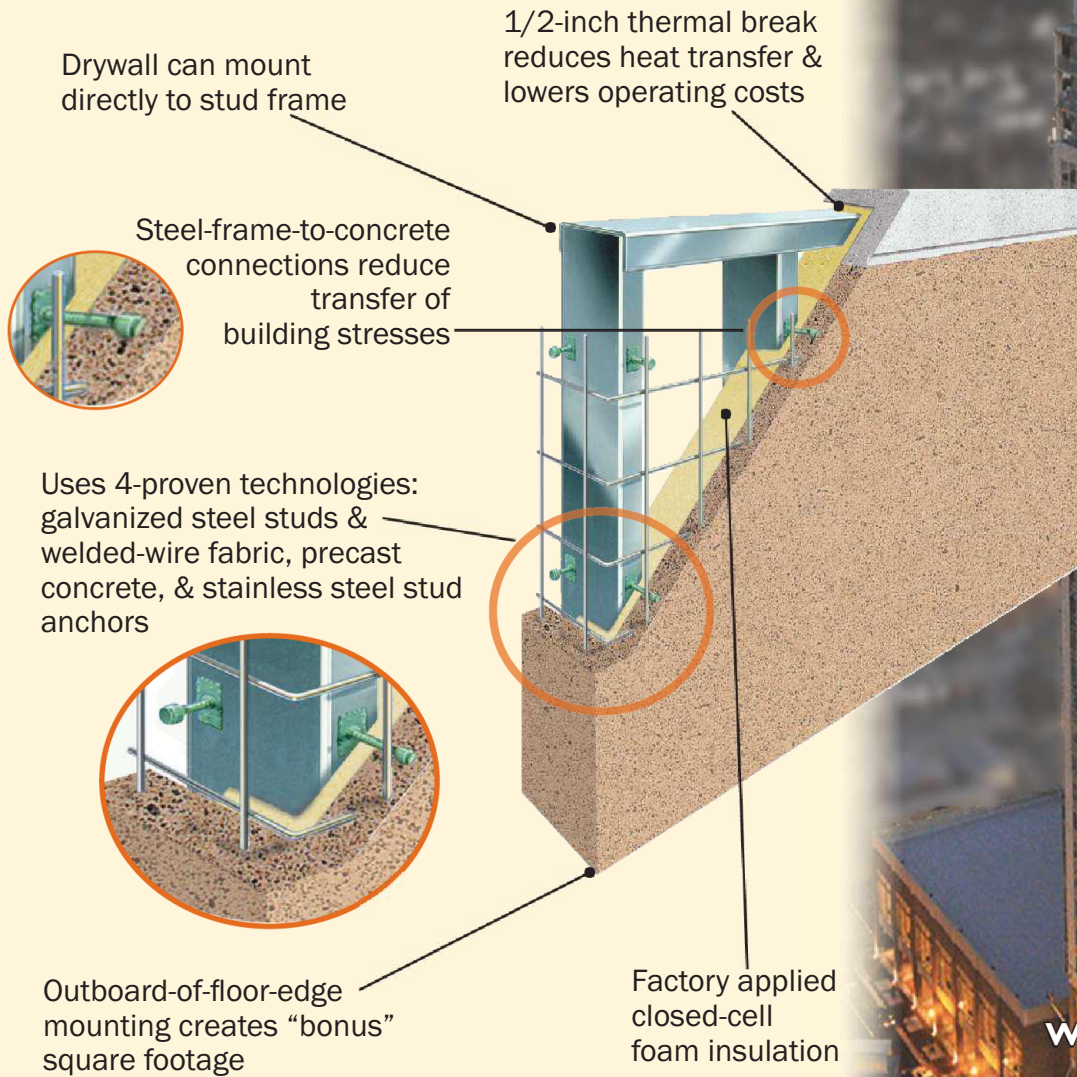
The Cornell researchers are currently at work developing a printer affordable enough to use at home, claiming that hydrocolloid printing is the path to mass customization, a goal that typical industrial molding, extrusion, and die-cutting procedures cannot achieve. They also assert that 3D-printed food will reduce the waste generated by current food-production methods, including fertilization, transportation, cooking, packaging, refrigeration, and so on. However, the new technology could create new forms of waste from the distribution of food inks, similar to the excessive packaging found in popular single-serve coffee pods.

The CCSL research is likely to get mixed responses. Many foodies will be appalled, while experimental chefs such as Cantu will embrace the new technology. Regardless, it is worth remembering the degree to which current food production is already heavily industrialized. In this sense, new explorations in food manufacturing have much in common with emerging fabrication processes for building materials. Selective laser sintering, for example, has already been adopted as a common method for fabricating prototype models out of plastic or metal and will eventually be produced in affordable desktop formats. As for buildings, the University of Southern California's Contour Crafting process, part of the school's Center for Rapid Automated Fabrication Technologies, utilizes a large gantry crane with a robotic armature to print large-scale structures out of concrete, eliminating the need for formwork. A single "flavor" for buildings, for the moment, but I have little doubt that, eventually, we will be able to print structures, or pieces of them, complex enough to rival anything by chef Cantu. □

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CULTURE



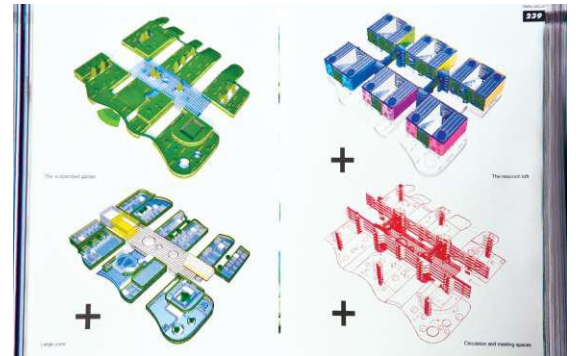
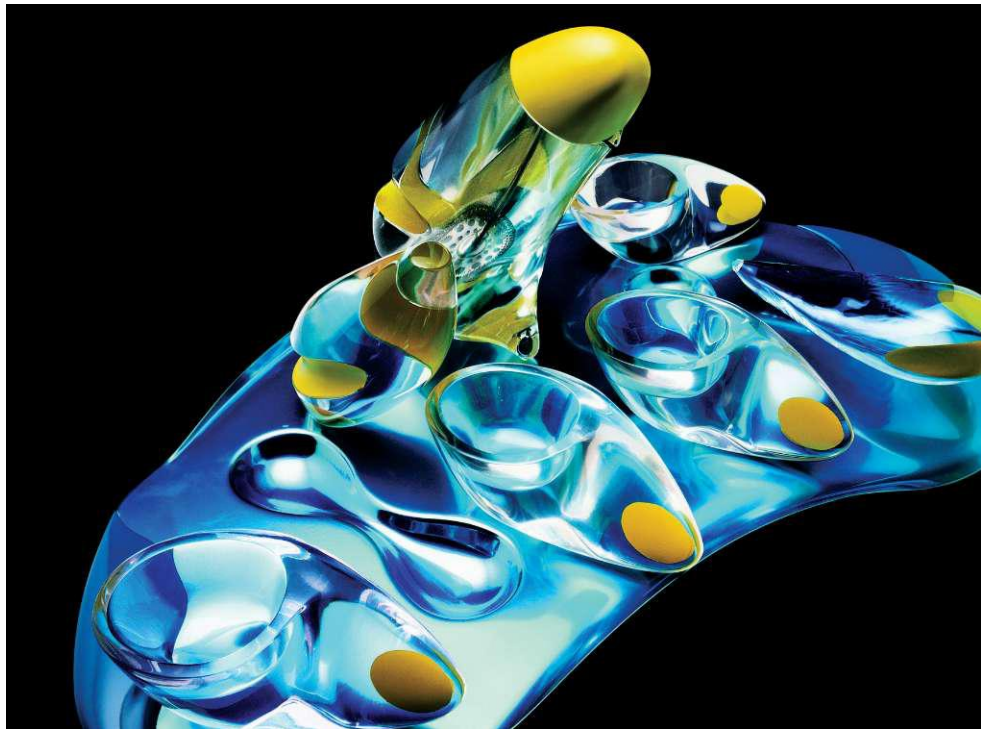
EDITED BY LINDSEY M. ROBERTS

→ EVENT

Committed altruists have a great opportunity to share the love in front of the whole world, thanks to Lauren Crahan and John Hartmann of Brooklyn, N.Y.-based design and fabrication studio Freecell. For 10 days starting on Feb. 10, groups of six volunteers, working in 15-minute shifts, will hold aloft a 10-foot diameter, metal-and-fabric heart in the middle of Times Square. Crahan and Hartmann's design, titled **Light Hearted**, is the winner of a competition organized by the nonprofit Times Square Alliance. • timessquarenyc.org/valentine

→ OBJECT

A teapot is more than a teapot when it's made by Alessi. The Italian design company began making household objects in 1921, but in the 1950s, under Carlo Alessi's leadership, it began commissioning superstar architects and designers to make domestic gadgets and tableware for us to use—but also to covet and display. Now at the Philadelphia Museum of Art in the exhibit **ALESSI: ETHICAL AND RADICAL** are 150 of those objects, including Future Systems' blobby 2003 reinterpretation of Carlo Alessi's 1945 tea-and-coffee service set (shown). Through April 10. • philamuseum.org



→ BOOK

For Bernard Tschumi, FAIA, whose career has demonstrated a long-standing rejection of the Modernist credo "form follows function," the relationship between architecture and its uses—or, in his terminology, "events"—is complex, even conflicting. But don't think that "Concept-Form," the subtitle of **Event-Cities 4**, the latest in the architect's documentation of his philosophy as reflected in theoretical and realized projects, means that Tschumi has softened his stance. A concept-form "is not hierarchical and does not reflect a rigid set of rules," he writes. "It is rather a specific moment ... when an architectural strategy becomes the generator for making buildings. The concept-form requires intent." • \$35; MIT Press

→ EXHIBIT

Before they queued up at Epcot theme park, Americans eager for a glimpse of the future thronged to world's fairs. Six were held in the U.S. during the 1930s; major corporations and the federal government (often working with leading designers) used them to unveil new technologies and ideas. **Designing Tomorrow: America's World Fairs of the 1930s**, at the National Building Museum in Washington, D.C., assembles more than 200 artifacts, from guidebooks to a giant Westinghouse robot, Elektro the Moto-Man. Through July 10. • nbm.org

New technologies are revolutionizing the process and product of architecture. To celebrate advances in building technology, ARCHITECT magazine announces the fifth annual R+D Awards. The awards honor innovative materials and systems at every scale—from HVAC and structural systems to curtainwall and ceiling-panel assemblies to discrete building materials such as wood composites and textiles.

For more information e-mail: rdawards@architectmagazine.com

THE 5TH ANNUAL R+D AWARDS

CALL FOR ENTRIES

ELIGIBILITY

The awards are equally open to architects, designers of all disciplines, engineers, manufacturers, researchers, and students.

PUBLICATION

The winning entries will appear in the August 2011 issue of ARCHITECT, both in print and online.

DEADLINE

Monday, May 2, 2011
regular submission deadline (postmark)

Friday, May 6, 2011
late submission deadline (postmark; additional fee is required)

FEES

First entry: \$175 first entry
Additional entries: \$95 each
Late entries: \$50 additional fee per entry by May 6, 2011
Application forms and submission requirements are available at rdawards.com

CATEGORIES

The awards will be judged in three categories, reflecting different stages of the research and development process:

- **Prototype**—Products, materials, and systems that are in the prototyping and testing phase
- **Production**—Products, materials, and systems that are currently available for use
- **Application**—Products, materials, and systems as used in a single architectural project or group of related architectural projects

The jury will consider new materials, products, and systems as well as unconventional uses of existing materials, products, and systems. Entries will be judged for their potential or documented innovation in fabrication, assembly, installation, and performance. All entries will be judged according to their potential to advance the aesthetic, environmental, social, and technological value of architecture.

ARCHITECT



By enclosing the Arena Stage's existing buildings—the now-renamed Fichandler Stage (above left, at left) and the Kreeger Theater (at right), both by Harry Weese—in a new structure called the Mead Center for American Theater, Bing Thom has raised the design bar in the nation's capital.

→ CRIT

Arena Stage's Second Act

BING THOM PRESERVES A PAIR OF LATE MIDCENTURY THEATERS AND UPGRADES A D.C. CULTURAL INSTITUTION TO MUST-SEE STATUS.

AMERICA'S AESTHETICALLY conservative capital occasionally receives a design jolt thanks to a unique new building. Washington, D.C.'s latest architectural shot in the arm, the Arena Stage at the Mead Center for American Theater, is a radical transformation by Bing Thom, AIA, of one of the city's most venerable cultural institutions. Filling a tight, triangular parcel overlooking southwest D.C.'s Potomac River waterfront, the Mead Center's dramatic sculptural qualities are rational and purposeful, not arbitrary or whimsical. Its provocative, idiosyncratic form, housing an equally idiosyncratic program, works well in functional, aesthetic, and urbanistic terms.

Some question the Mead Center's fit within southwest D.C.'s urban context, since the new structure doesn't emulate surrounding buildings. It doesn't because it shouldn't. Most nearby buildings are stylistically eclectic, diverse in scale and function, and architecturally unremarkable. The neighborhood is in flux and will look very different in another decade. On the adjacent waterfront, obsolete 1960s-vintage, low-rise commercial buildings and parking lots soon will be replaced by multistory, mixed-use development. Other redevelopment

projects in the area are under way or planned. Indeed, the Mead Center is spurring local revitalization. Equally important, it is both a civic edifice for the city and a cultural resource for the nation. Standing boldly apart as charismatic architecture is altogether fitting.

Appreciating this innovative makeover requires knowing a bit of Arena's history. Sitting at the intersection of Maine Avenue and 6th Street SW, Arena Stage was originally a freestanding, 800-seat, in-the-round theater designed in the late 1950s by Harry Weese. Square in plan with chamfered corners, the theater became a well-known example of midcentury modern D.C. architecture: exposed concrete structure, brick cladding, hipped metal roof. Rising in 1971 was a sister theater, the Weese-designed, 514-seat Kreeger, which is fan-shaped, with a proscenium stage. For decades loyal patrons filled the theaters, despite painfully small lobbies, outmoded technical systems, and woefully inadequate back-of-house facilities. Something needed to happen.

According to Arena's artistic director, Molly Smith, what happened was a "thrilling adventure" that entailed reconceiving Arena's mission, coping with challenging

TEXT BY ROGER K. LEWIS, FAIA



Roger K. Lewis, FAIA, is a professor emeritus at the University of Maryland School of Architecture, Planning & Preservation, and a columnist for *The Washington Post*.



site and design issues, and raising \$135 million. Moving beyond its role as a regional theater, Arena Stage was to become a “national center” for American theater, says Smith. In addition to showcasing local and traveling works, it would foster the development of new productions and serve as a facility for the study of American theater history. But expanding aspirations required programmatic and spatial expansion. Because of the small, oddly shaped site, Arena considered other locations. But recognizing that its property was in a changing neighborhood close to a Metro station, and that the site constituted part of Arena’s historic image and identity, the board decided to stay put. It also decided to save and modernize the existing theaters.

For Bing Thom Architects (BTA) in Vancouver, British Columbia, Canada, fulfilling the center’s mission architecturally required accommodating the entire 200,000-square-foot program on the site. Everything existing was to be demolished except for the Arena Stage building—renamed the Fichandler Stage, to honor its founder—and the Kreeger Theater. A new 200-seat experimental theater, the Arlene and Robert Kogod Cradle, was to be added. Totally new back-of-house facilities and commodious public spaces were needed. Although the 1,397 seats in today’s three theaters roughly match the number in the two original theaters (200 Arena box seats were eliminated), supporting three performance venues instead of two necessitated augmented, state-of-the-art production and operational capabilities.

Two design options were possible: Create a village of densely aggregated, disparate new and existing structures interconnected by public and back-of-house circulation networks, or envelop new and existing structures within a unifying form. BTA chose the latter,



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→ using a singular heroic gesture: a curving, 475-foot-long cantilevered roof sweeping horizontally across the site. The sinuous roof's acutely angled, dramatically projecting tip at the site's west end points toward the Washington Monument. Lacking preconceived stylistic intentions, the gesture is at once symbolic and practical, born of site and program conditions, the kind of big aesthetic move that Eero Saarinen might have made.

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The roof gesture is amplified by the undulating, floor-to-ceiling glass curtainwall, tilted slightly outward, wrapping around the street façades and beautifully revealing the center's design. Braced by Parallam, engineered-wood muntins, and struts, the curtainwall's 370 glass panels hang from the roof yet make the roof, framed with deep steel trusses, seem to float. The steel roof structure rests on 18 elliptical Parallam columns, to which curtainwall struts attach. According to Thom, this glass-wood-steel construction assembly is unprecedented in the U.S. The glazing exposes the center's interior architecture and movement of people and sets, while those inside enjoy panoramic views of the city, the river, and sunsets illuminating the western sky. At night, the building is at its artful best, radiantly aglow with light.

Abstract concrete forms emerge and project outward at the site's western vertex and eastern edge. Near the main entry on 6th Street, for instance, an oval concrete cylinder rises from sidewalk level to above roof height and contains the Kogod Cradle and the spiraling ramps that lead around and into the theater. The cylinder and the other masses succeed as aesthetic anchors and visual counterpoints to the building's dominant roof and glass curtainwall expression. The center's expressive character is enhanced by consistent details and materials carried from exterior to interior, where one sees concrete floors with a terrazzolike finish in public spaces, and concrete, glass, wood, and metal on wall surfaces and guardrails.

The center's fluid public realm is a dynamic place to see and to be seen. All of the free-plan space around and between the theaters, including the elevated café terrace atop the Kreeger, is sheltered below the sweeping span of the new roof. Viewed from the café terrace, however, the space between the Fichandler roof and the new roof above feels overly compressed. Thom acknowledges that, budget permitting, he would have preferred a higher roof to give Weese's building a bit more breathing room. Nevertheless, the spatially and volumetrically layered interior, coupled with views outside, provides rich visual complexity yet does not impede orientation or navigation.

Rehearsal spaces, classrooms, administrative offices, prop storage, and other staff spaces, including a publicly visible lounge, occupy the site's northern edge, with parking below. BTA's deployment of these critical facilities enables efficient movement and interaction of staff, actors, and materials. Acoustic design, likewise a critical priority, ensures that no noise or vibrations enter the theaters. The Kogod's floor sits on isolation mounts, and mechanical equipment is located in a soundproofed basement.

The center and its designers earn points for reusing an urban property that is well served by city infrastructure and transit, and for keeping all of the center's functions concentrated on the site. They also saved the two theater buildings that embody energy and resources previously invested, harvested and poured daylight deep into the building, and engineered efficient HVAC and chemical-free water-treatment systems.

The Arena Stage at the Mead Center for American Theater is an iconic, purposeful building. Bing Thom has substantially raised the bar for architectural design quality in the nation's capital. □



2010 Residential Winner
Classic Comforts, Electronics Design Group



2010 Restaurant/Casino Winner
Parx Casino, Production Technology
Consultants Group



2010 Corporate Winner
Bank of America, CMS Audiovisual Consultants

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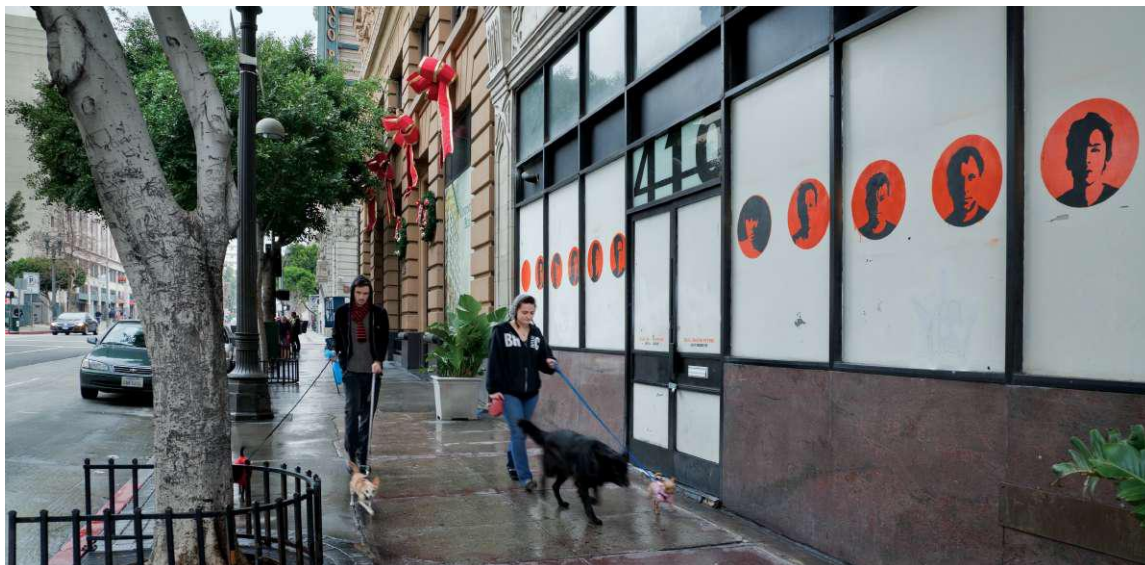
→STUDIO VISIT

Ball-Nogues Studio

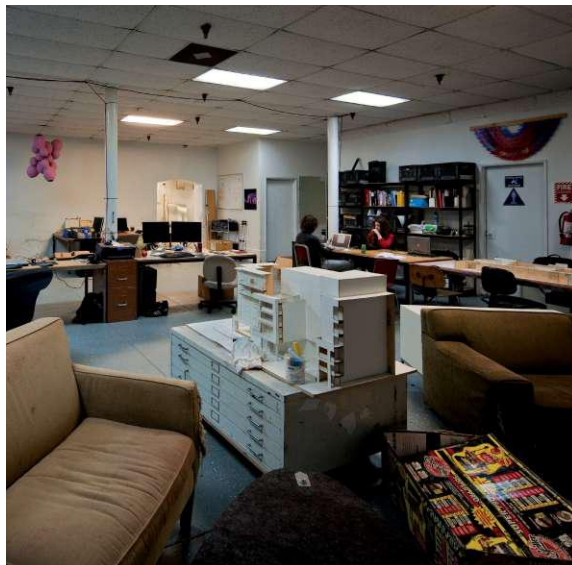
THE DESIGN AND FABRICATION STUDIO, WHICH FUSES ART, ARCHITECTURE, AND INDUSTRIAL DESIGN, SHOWS US ITS NEW HOME.

TEXT BY AMANDA KOLSON HURLEY
PHOTOS BY TIMOTHY HURSLEY





Ball-Nogues Studio was founded in 2004 by Benjamin Ball, Assoc. AIA, and Gaston Nogues, both graduates of the Southern California Institute of Architecture. Known for creating installations for the likes of MoMA PS1 and the Venice Biennale, the practice used to work out of a 2,500-square-foot space (left) in Los Angeles' Old Bank District. In December, it moved to nearby Boyle Heights, and a much larger space—about 12,000 square feet.



Along with the loading dock and roll-up doors, one thing that appealed to Ball and Nogues about the new location was having separate spaces for the studio (above left) and for production (left). Nine people currently work at the firm, but the staff size fluctuates: People tend to be hired on a project-by-project basis. "The organizational model is more akin to film production than traditional architecture offices," Ball says. A local nonprofit, Self Help Graphics & Art, plans to move in eventually and share the space with Ball-Nogues.

Cradle (above right) was installed last July on the side of a Frank Gehry–designed parking structure in Santa Monica. Ball and Nogues hoped that the aggregation of mirrored stainless steel spheres would stimulate "creative associations with other things in that particular [Santa Monica] environment," Ball says. "On the one hand, it's glitzy and shiny, to comment on the culture of Santa Monica, and it's shaped like a men's Speedo swimsuit. It kind of looks like sea foam. ... It's got all these oceanic and beach references."

The production space (left, with Nogues at left and Ball at right) was empty when photographer Timothy Hursley visited, but it won't be for long. Ball and Nogues will soon begin work on a major new project called *Talus Dome*, commissioned by the city of Edmonton in Alberta, Canada. "It's an earthwork made out of non-earthwork materials," Ball says. The piece—about the size of a single-family house—will be fabricated here in sections, then transported to Edmonton and assembled on-site. "It's going to be interesting," Ball laughs.



→ Q&A

The Communicator

AS ROBERT IVY, FAIA, PREPARES FOR HIS NEW ROLE AS CEO OF THE AMERICAN INSTITUTE OF ARCHITECTS, HE SHARES HIS AMBITIONS FOR THE ORGANIZATION.

INTERVIEW BY NED CRAMER
PHOTO BY NOAH KALINA

You've had a lifelong relationship with the institute.

I grew up with it. When I was a young architect in Mississippi, the AIA served as the vehicle for architectural culture. I practiced in a small town and would drive 250 miles to my AIA meeting. This was my opportunity to interact with other architects and find out the latest ideas.

If you were a recent graduate of Tulane today, practicing in your home state, do you think the AIA would play the same role?

There are probably more opportunities for young architects today to learn about architectural culture—there are more schools of architecture, there are websites. You can be in Mississippi and know what's going on with architects in Russia. So maybe that aspect of the AIA is less important. On the other hand, there is still something vital about my ability

to sit down with another architect, in an environment that is nonthreatening and noncompetitive, and share ideas. That's outside of the culture, that has to do with our work, and that happens with the AIA. People meet and interact with people they ultimately learn from—or collaborate with. In that sense, someone graduating from Tulane has every reason to join.

Do you have concerns with trajectories that the institute has taken in the past?

The way I see the institute, it's not a club. There have been times that people have looked on it as a place where architects are welcome, and no one else can come in the door. A vision I have for the AIA is as a place where architecture is accessible and easily understood, a network of people who share common interests and have common skills, with potential for sharing this wonderful discipline with others.

How do you balance the dictates and necessities of leadership with the multiplicity of strong, smart voices on the AIA board?

There is a new strategic plan. It is not written by the CEO; it is written by the executive committee and the board. That group is tasked with determining the strategic direction for the entire institute. The CEO's role is to undergird that, to share this information, to see that it works throughout the body of the organization, and that it is effectively implemented—but it isn't to make the policy.

Can the AIA take a leadership role in the construction industry and drive its agenda aggressively on Capitol Hill and in state legislatures?

The potential is there, because the need is great, and the role of architects is central to the construction process. Having said that, the number of registered architects in the United States is very small relative to the entire construction industry. To be a dedicated lobbying organization you have to have the resources, the entertaining budgets—all those things that lobbyists require. That is a question of priorities and how money will be spent.

Communications can result in the same things if legislators understand from their constituencies that better schools make better students, or that effective planning makes more vibrant communities and economic development. There needs to be a balance, given a finite pool of resources.

And the communications tools would be things such as advertising?

Major national advertising campaigns obviously cost a great deal. There are other, more cost-effective ways to gather national and international attention, including having communication vehicles that share this story well, having other people write about what we do. There is a greater interest, as we all know, in design and in architecture particularly, than there has been in decades.

So that opportunity is real, and could be capitalized on. But it requires an external communication plan. The institute is reorganizing itself to do that even as we speak. By the time I arrive at the job there will be new personnel in place who will be working on those very things.

The profession is beset by an unprecedented level of unemployment. I would imagine it's easy in that scenario to look for a villain and say, "The AIA isn't doing enough for me."

Well, in associations everybody asks, "What have you done for me lately?" And that warrants a response. Dues are not cheap, and members need to know what they're getting for their money. Traditionally they get certain benefits. They get access to contract documents; they get a communications vehicle, ARCHITECT magazine, and it's going to be more directly related to the institute and what it's doing. So there'll be greater understanding, one hopes, by the average member about what's going on.

Many chapters have forums to help people find opportunities for employment and alternative ways to make it through this difficult time. And many chapters now serve as advocates for architecture—the numerous storefronts that invite the public in and display what architecture can do. They're making friends for architecture, and that's something you can't assign a dollar value to.

Do you have thoughts about how to reinforce the sometimes challenging relationships between AIA national and the other components?

Components are the core of the institute. They are what make us who we are. It was a component member who picked me as a board member. It was a component member who chose Sam Mockbee to be a gold medalist. This is where these things originate. One of the first things I hope to do is get out in the field and listen to people and hear what their thoughts and concerns are at the local and regional level—not just in the boardroom in Washington. I'll let members tell me what needs to happen.

How will your work as an editor inform your new role as CEO?

I see communications as central to the role—not make the story or share the story, but help set up the process. Communications is something I've spent my lifetime doing. That's only one aspect of the job, but it's critical.

Another is participating in the change in the nature of the institute. My own view of where the value for the member resides is in each other. There are few of us, and we need each other. I feel sorry for the architect who feels that he doesn't need to join his peers or her peers.

Ultimately, the AIA is not Harvard; it's not going to be the source of the information. But what it can be is a wonderful network of people who are intimately connected and transparently allied. We can make it easy for an architect to find the information that he needs, in the head of another architect. □



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When a building's design is better than most, we grasp it intuitively. But can science tell us why we find beauty in, for instance, the library that Louis Kahn designed for Phillips Exeter Academy (above right)?

TEXT BY AARON BETSKY
ILLUSTRATION BY PETER ARKLE



→ Read more of Aaron's design observations at ARCHITECT's Beyond Buildings blog: go.hw.net/Betsky.



→ BEYOND BUILDINGS

Heart vs. Head

IN ARCHITECTURE WE TRUST, ALL OTHERS BRING DATA.

IS ARCHITECTURE ART OR SCIENCE? I have long held that it is the art of “building.” Standard definitions have it both ways when they talk of the “art and science of building” (as Merriam-Webster puts it). It’s been a long-running debate, and I’m glad to learn this discipline isn’t the only one engaged in such a discussion. In November, the American Anthropological Association dropped the word “science” from the language of its long-range plan, substituting instead the phrase “the public understanding of humankind.”

I don’t know any anthropologists, so I can’t verify that the ensuing uproar the media reported on was real, but there was plenty of press on the matter. The issue appears to have some parallels with architecture. The question is whether anthropology is an evidence-based endeavor or one that examines and interprets cultures. I always assumed the latter, thinking that fieldwork and data gathering were part of a larger activity that helps us understand society in all its complexity.

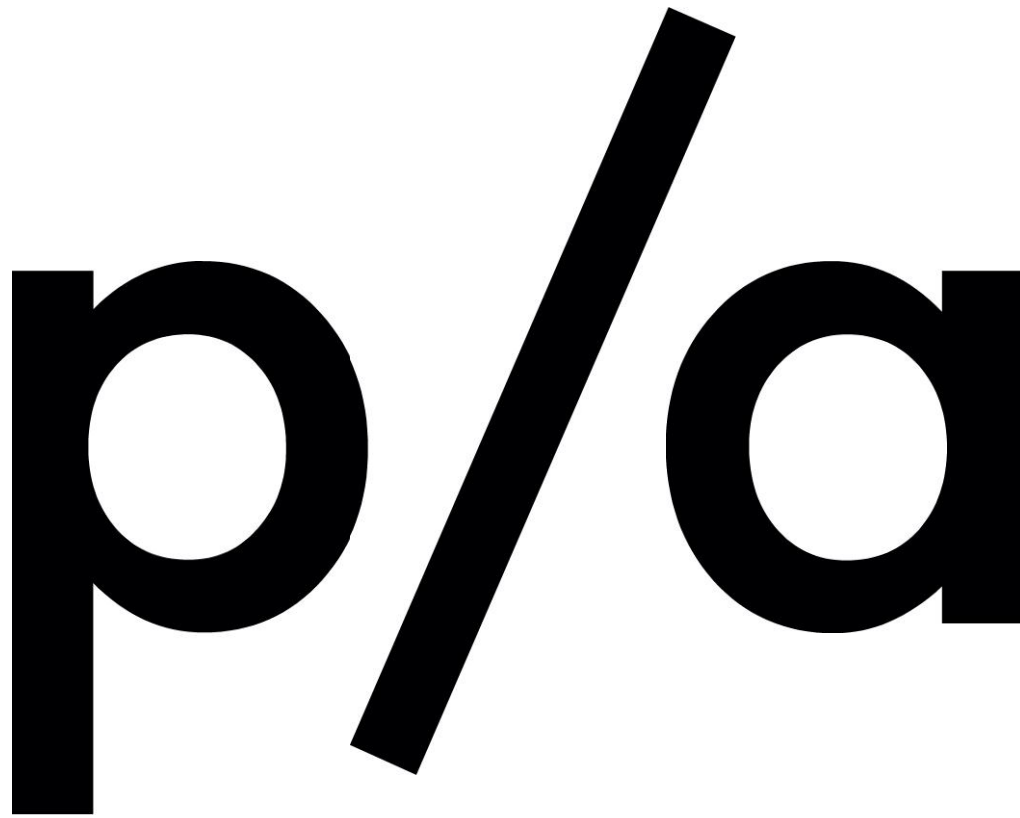
The problem seems to be that we as a society—not to mention our institutions and funding agencies—do not really trust such interpretation. Apparently, anthropologists have to answer to some of the same pressures we all do, providing metrics at every stage of their research and interpretation. I have run into the same issue at the Cincinnati Art Museum, which I direct: Funders want us to prove what impact the encounters with art we facilitate might have. I don’t know how many times I have heard this mantra: “In God we trust, all others bring data.” Certainly, a

dependence on the sense that art (or architecture) is beautiful and makes you feel good is not enough. However, some things just can’t be proved or measured, though we know they are important.

In architecture, the movement for “evidence-based design” is still somewhat marginal. Where it seems to contribute or validate common-sense observations, such as that natural daylight or certain colors make people in hospitals feel better, it certainly has value. Where it intersects with value engineering and other cost-benefit analyses to leech out any surprise or surfeit space from buildings, I would question its efficacy.

It seems evident to me that architecture, like anthropology, must use whatever tools it can to create those frameworks that establish a good and beautiful (or critical, or whatever term you choose) relationship between ourselves, our fellow humans, and the world around us. The fact—yes, I would say fact—that the University of Virginia, the Laurentian Library, or most buildings by Louis Kahn do that better than most should cause us to ask why and how they do it, but I doubt we can obtain an answer through measurement.

Ultimately, what makes us human is something more than the sum of our body parts or the structure of our brains. What makes a building into architecture is also something more. That “more” is essential—and impossible to measure. We welcome anthropology to that nebulous territory where funding is more difficult to find, explanations are more tortured, and knowledge is much deeper than statistical data. □



CELEBRATING THE WINNERS OF THE
58TH ANNUAL PROGRESSIVE ARCHITECTURE AWARDS

AWARDS

UNITED STATES LAND PORT OF ENTRY
VAN BUREN, MAINE
Julie Snow Architects

HIRSHHORN MUSEUM AND SCULPTURE
GARDEN SEASONAL EXPANSION
Diller Scofidio + Renfro

CITATIONS

KAROO WILDERNESS CENTER
Field Architecture

TAICHUNG INFOBOX
Stan Allen Architect

HINMAN RESEARCH BUILDING
REHABILITATION & ADAPTIVE USE
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58th ANNUAL

PROGRES

PROGRESS

2024

TEXT BY KATIE GERFEN
TYPE DESIGN BY WEAPON OF CHOICE

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TIPS
DES

p/a

SOMETIMES AN AWARDS jury develops an overriding thesis and uses it to analyze the projects before it. In recent years, the Progressive Architecture Awards have taken on issues such as public housing, community planning, and disaster relief. When this year's jury—Lisa Iwamoto, Steve Dumez, FAIA, William Rawn, FAIA, Dan Rockhill, and Zoë Ryan (learn more about them on page 114)—convened, they decided to return to the program's original purpose: identifying projects that push the envelope of progressive design, regardless of the building type.

That doesn't mean that the jurors didn't bring their own causes to the table. Iwamoto was interested in "systems—some within the buildings, some material." Rockhill and Ryan looked for sustainability, but not just in any old way: "Sustainability should just be a part of the project," Ryan explained. "It shouldn't be an add-on." And Rawn went on the hunt for "big ideas, a driving force, an intellectual construct."

In the following pages, you will see which projects made the cut. Given a pool of nearly 300 entries, the jury selected only two awards and four citations.

The winners may be few in number, but they are diverse in program, location, and design, ranging from an inflatable temporary museum addition in Washington, D.C., to a terraced office complex in China; a rigorously modern border station in Maine to a contextual wilderness center in Africa; a bamboo-clad information center in Taiwan to a structurally daring architecture school renovation in Atlanta. The early P/A Awards jurors—Eero Saarinen and Victor Gruen among them—would agree: Regardless of one's interest in systems, sustainability, or big ideas, all of the winning designs are progressive in their own ways.

project name

FIRST FLOOR

MUSEUM + SCULPTURE

GARDEN SEASONAL EXPANSION

firm name

DILLER SCOFIDIO + PARTNERS

award



TEXT BY VERNON MAYS

SITE The paved exterior space of the Hirshhorn Museum and Sculpture Garden in Washington, D.C., designed by Gordon Bunshaft of Skidmore, Owings & Merrill and completed in 1974.

PROGRAM A temporary event space for public education programs, served by a 2,000-square-foot lounge.

SOLUTION Bunshaft's brooding concrete-and-granite donut at the Hirshhorn Museum is a perfect foil for an inflatable structure whose playful form will take over the museum's central courtyard and surrounding plaza in warm weather. The proposal by New York's Diller Scofidio + Renfro for a seasonal expansion will create a vibrant public space to house art and education events. The inflatable membrane—which squeezes into

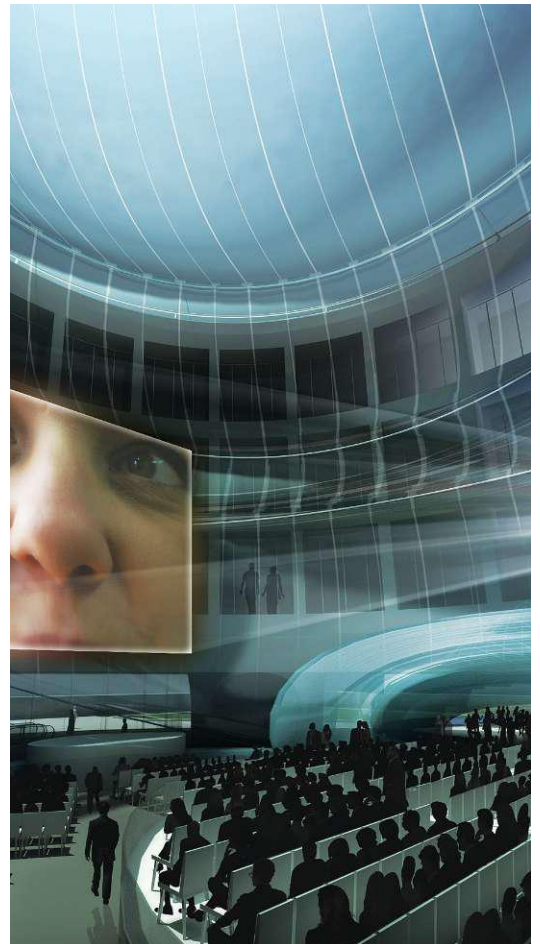
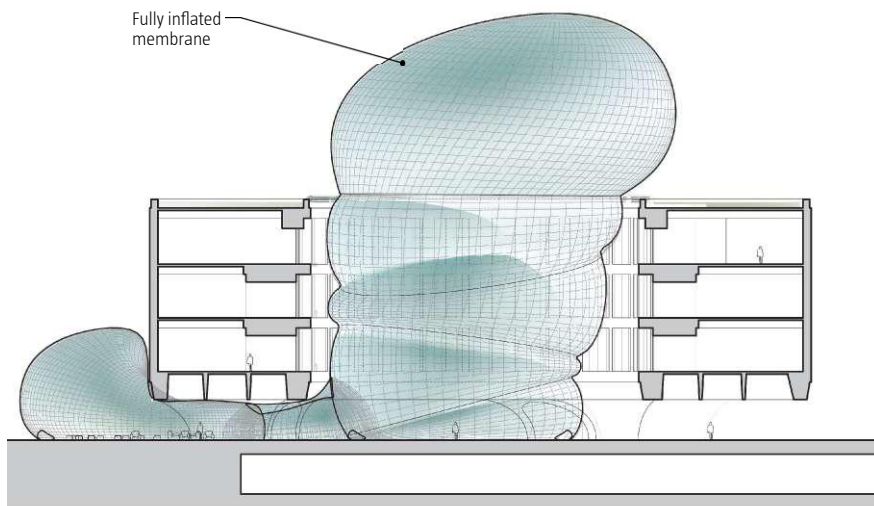
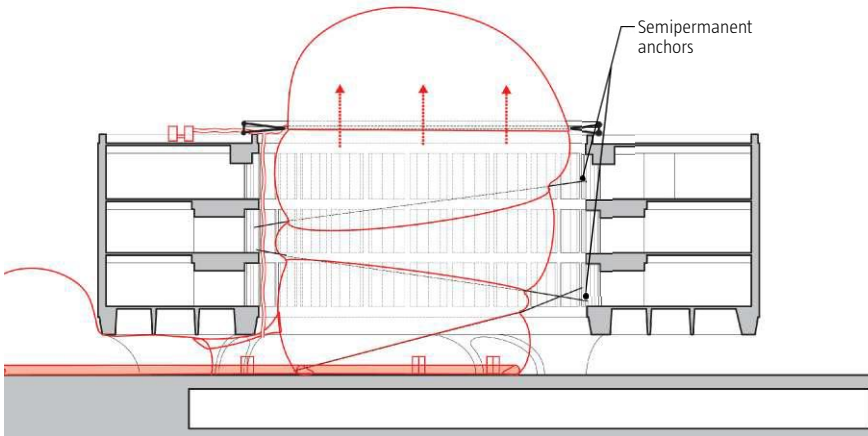
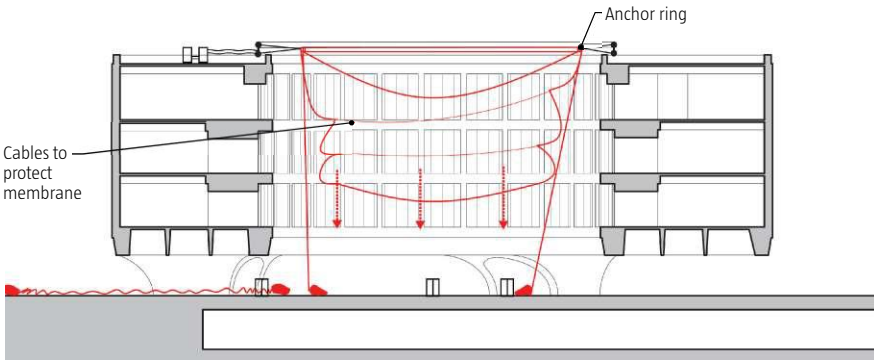
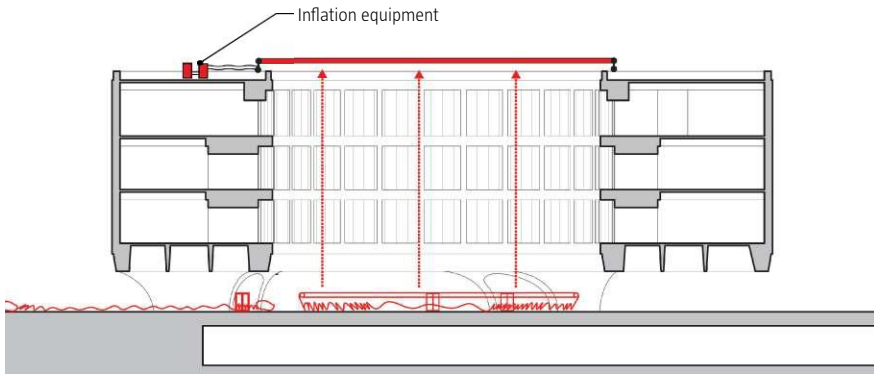
the void of the museum courtyard, oozing out the top and beneath its mass—covers the museum's courtyard and transforms the central space into an auditorium, café, and meeting place. The pavilion will be erected for one month each spring and fall. Both installation and building, the air-filled structure challenges long-standing perceptions of what a museum means as a public space, how it encourages pluralistic audiences, and what it is able to exhibit. Its presence underscores a paradigm shift at the Hirshhorn: The museum is growing in importance as a place for dialogue and education extending beyond the traditional art world.

"In terms of the innovation, the freshness of the idea, the sustainable aspects, and the presentation, it's just delicious," juror Dan Rockhill enthused. Juror Steve Dumez noted, "It uses resources. But it reuses them, over

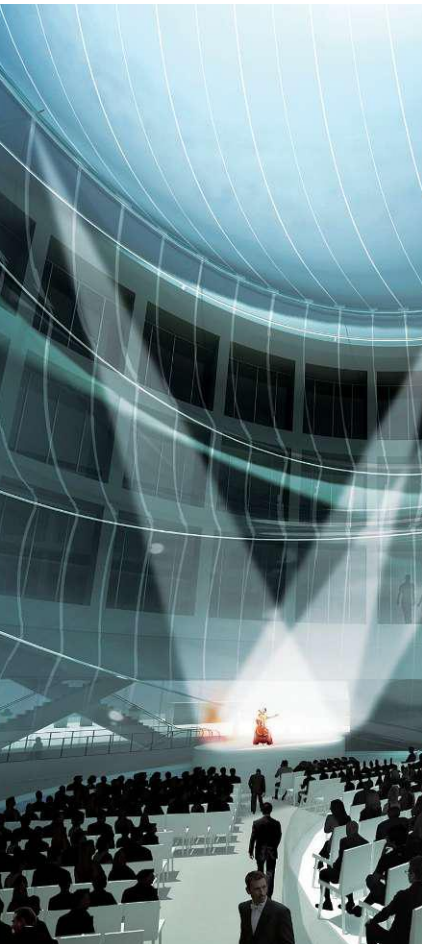
Inflated by rooftop pumps and with pressure maintained by an air lock, the Hirshhorn Museum's seasonal expansion is an inflatable form that fills (and extends above and off to the side of) the building's central courtyard.



Inflation Sequence



The inflatable membrane structure will protrude out from the central atrium, under the building itself, and into the western courtyard, encompassing a 2,000-square-foot lounge. In the main space, seating can be set up to accommodate films (below left), performance (below middle), or exhibitions (below right).



and over and over again.”

The translucent pavilion will immerse visitors in a sheltered, 14,000-square-foot space shaped by a series of cable rings that constrict the membrane, pulling it away from the walls of the building’s central courtyard. Other cables will tether it into place at each floor. The resulting contours produce changing shafts and pockets of outdoor space that visitors will experience from the ground and the galleries. Semipermanent anchors are designed to be removed when not in use, and the membrane can be recycled when it reaches the end of its life.

Within the bubble, the courtyard will accommodate 500 to 800 seats for an array of public events including live performances, films, lectures, and debates. A café and lounge will extend from the central event space into the adjacent sculpture plaza. After it has been inflated by semipermanent inflation equipment stored on the roof of the building, the seemingly weightless pavilion will provoke a dialogue with the solid, permanent form of the museum. And so that it doesn’t deflate, pressure is maintained by an air lock in the entry vestibule.

“The Hirshhorn is a wonderful building, but this will completely transform the way you experience it,” Dumez observed. “On the exterior, you’ll see this odd protuberance sticking out of the bottom and the top. But just imagine what the inside galleries will be like, where currently you look across this empty space. Because of the transparency, this form is going to interact with the entire building.”

project name

U.S. LAMP POST
COMMUNITY LAMPURER,
RENTY, Maine

firm name

JULIE S. DOW
RENTY, MAINE

award

TEXT BY MARK LAMSTER

SITE A 21-acre former rail yard along the St. John River in Van Buren, Maine.

PROGRAM A 41,000-square-foot border-control station comprising three structures, with inspection checkpoints, a warehouse, office space, and support facilities.

SOLUTION A border-control station isn't typically a place that anyone is happy to encounter, but the jury responded with uniform approval to this austere checkpoint on a remote site in northeastern Maine—along the Canadian frontier—designed by Julie Snow Architects. "It's very close to what a typical federal building might look like—a not very good one from the '60s—and yet it's very good, through very subtle moves,"

juror Lisa Iwamoto said. That sentiment was shared by juror William Rawn. "It doesn't feel nefarious. It actually feels welcoming," he said.

Large glass planes and rough steel walls balance the project's opposed programmatic requirements of surveillance and concealment. Several jurors commented on the "porosity" of the design, both in terms of its materials and its efficient planning. "Driving up to the building, it's very legible," said juror Zoë Ryan. Agents can monitor the checkpoints from various locations throughout the site, allowing for reduced staffing.

Outdoor checkpoint zones are covered by a large canopy, necessary given the extreme weather conditions in northern Maine, and protected by an anodized aluminum rainscreen. These spaces—with warm light



Clear sight lines from officer workspaces inside the port building to the vehicle processing areas under the canopies outside allow security needs to be met with few border-control officers. Openings in the roof canopy admit daylight to the space underneath; after sunset, artificial lighting is projected through the perforated aluminum ceiling panels.

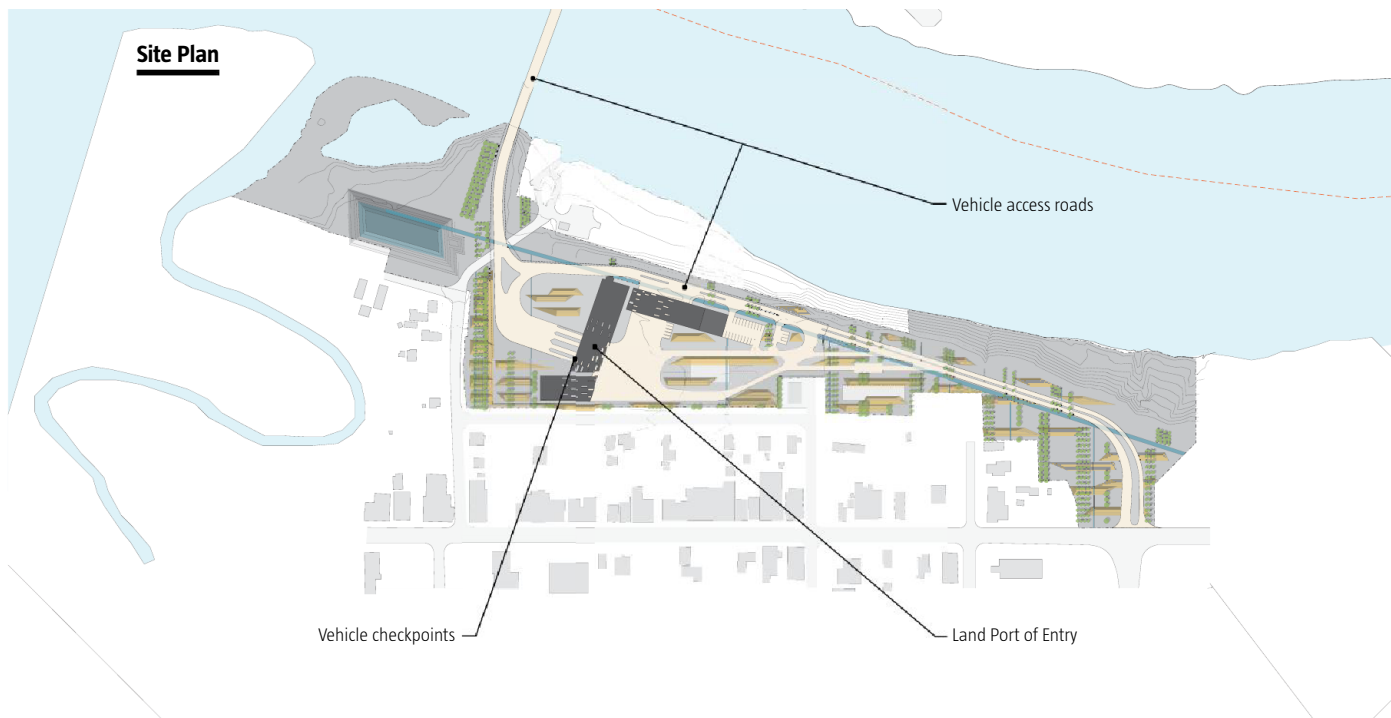




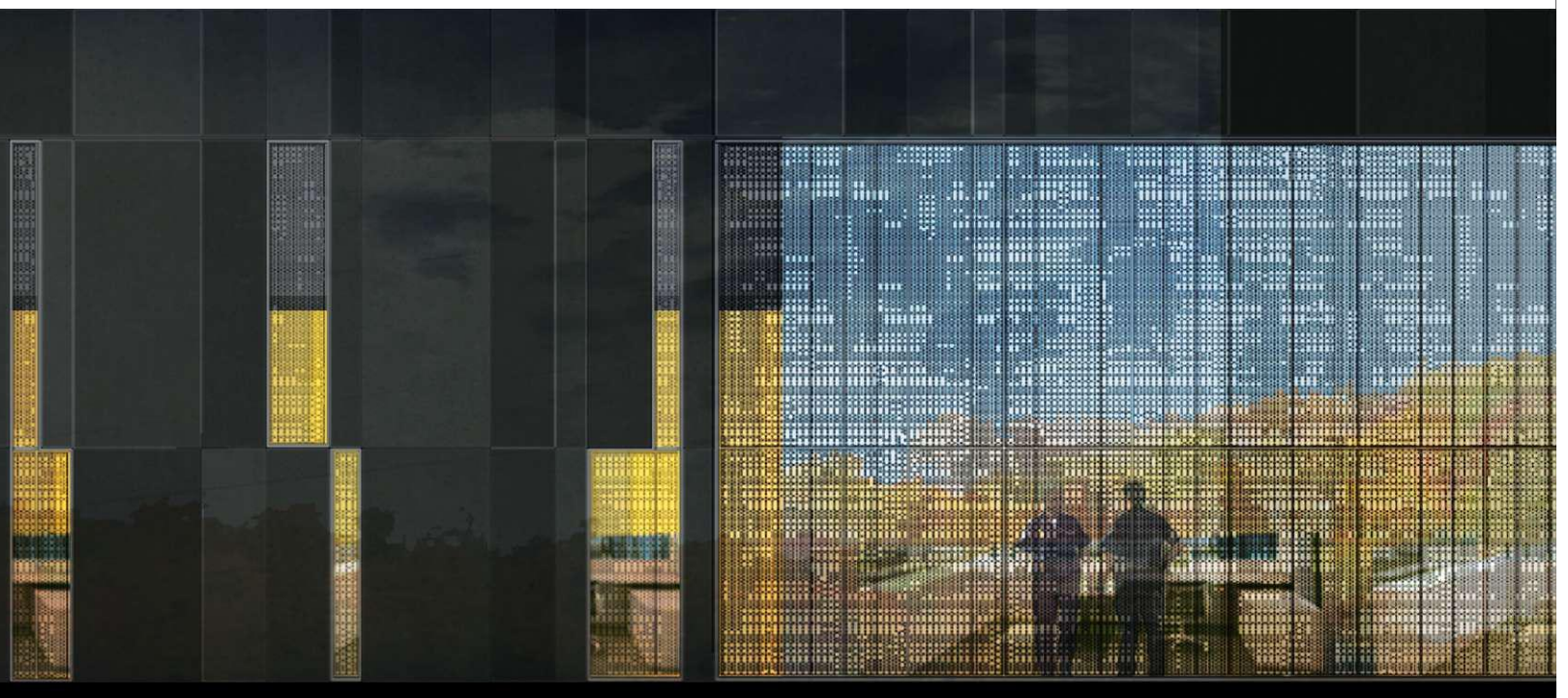
radiating from behind perforated aluminum panels at night, and during the day, natural light reflecting through skylights lined with bright-dipped aluminum—create liminal effects for those making the passage from one nation to another. Inside the pavilions, the warm tones are carried over to foster a congenial workspace for officers on duty in a harsh climate.

For all its opacity, the jurors were impressed with the station's aesthetic of restraint and its intentionally camouflaged placement in the landscape. The three barlike pavilions are clad in vertical panels of glass and steel that form a simple repetitive pattern. All surfaces are flush, to add a sense of unity to the façades. In plan, the structures are pragmatically disposed in the shape of a "z." "It has a really abstract quality," Iwamoto said.

The facility, budgeted by the U.S. General Services Administration at \$30 million and designed to LEED Gold standards, has its own water-filtration system and generates its own heat from a ground-coupled pump. The pavilions are set with great sensitivity between stands of birch, marsh grasses, and a stone-lined swale. "I think the landscape treatments are used to great effect," juror Steve Dumez said. "What they've been able to do is introduce landscape and topography that really breaks up the scale and modulates it so that it's very clear about where you go. It's really good."



The Van Buren Land Port of Entry is located on a narrow, 21-acre site that used to serve as a rail yard. The surrounding forested areas inspired the patterning on the silk-screened glazing, which sits flush with metal panels to form a taut skin around the building forms (below). The Z-shaped layout of the pavilions serves not only to create windbreaks that shield border-control agents from harsh weather, but also to increase visibility of the vehicle checkpoints (this image).



project name

binman RESEARCH
BUILDING
REHABILITATION & ADAPTIVE USE

firm name

MAKER
STREET
OFFICE

in collaboration with

CITATION



TEXT BY JOHN MORRIS DIXON, FAIA

SITE Existing building with a 50-foot-high central volume on the Georgia Institute of Technology campus in Atlanta, joined to other existing buildings to the north and south.

PROGRAM Architecture school expansion totaling 31,698 square feet to keep pace with increasing enrollment in graduate studies. Included are studio space, galleries, offices, classrooms, and research labs. The high-bay space offers opportunity for increased large-scale material research and experimentation. The project was nearing its January completion when the jury met.

SOLUTION The original Hinman Research Building, which opened in 1939, was the first of several structures designed for Georgia Tech by Paul M. Heffernan, director of the architecture school from 1956 to 1976, who played a key role in introducing Bauhaus-influenced functionalism to the curriculum and to the campus. With its high central bay, illuminated by clerestory windows, the building had long served the schools of engineering

and earth sciences as a center for full-scale research and prototyping.

The renovation had to maintain the ideals of Heffernan's building as a pedagogical example, yet accommodate additional programmed space and meet current building standards. Besides the high-bay volume, the space to be occupied by the school includes flanking bands of more conventional two-story spaces.

Lord, Aeck & Sargent and Office dA's essential approach was to preserve the integrity of the high bay by literally hanging their interventions within it. The massive gantry crane that previously carried materials and assemblages through the space was reused to support a suspended "crib" that can serve studio or student-lounge functions and is linked by a bridge to adjacent second-floor studios.

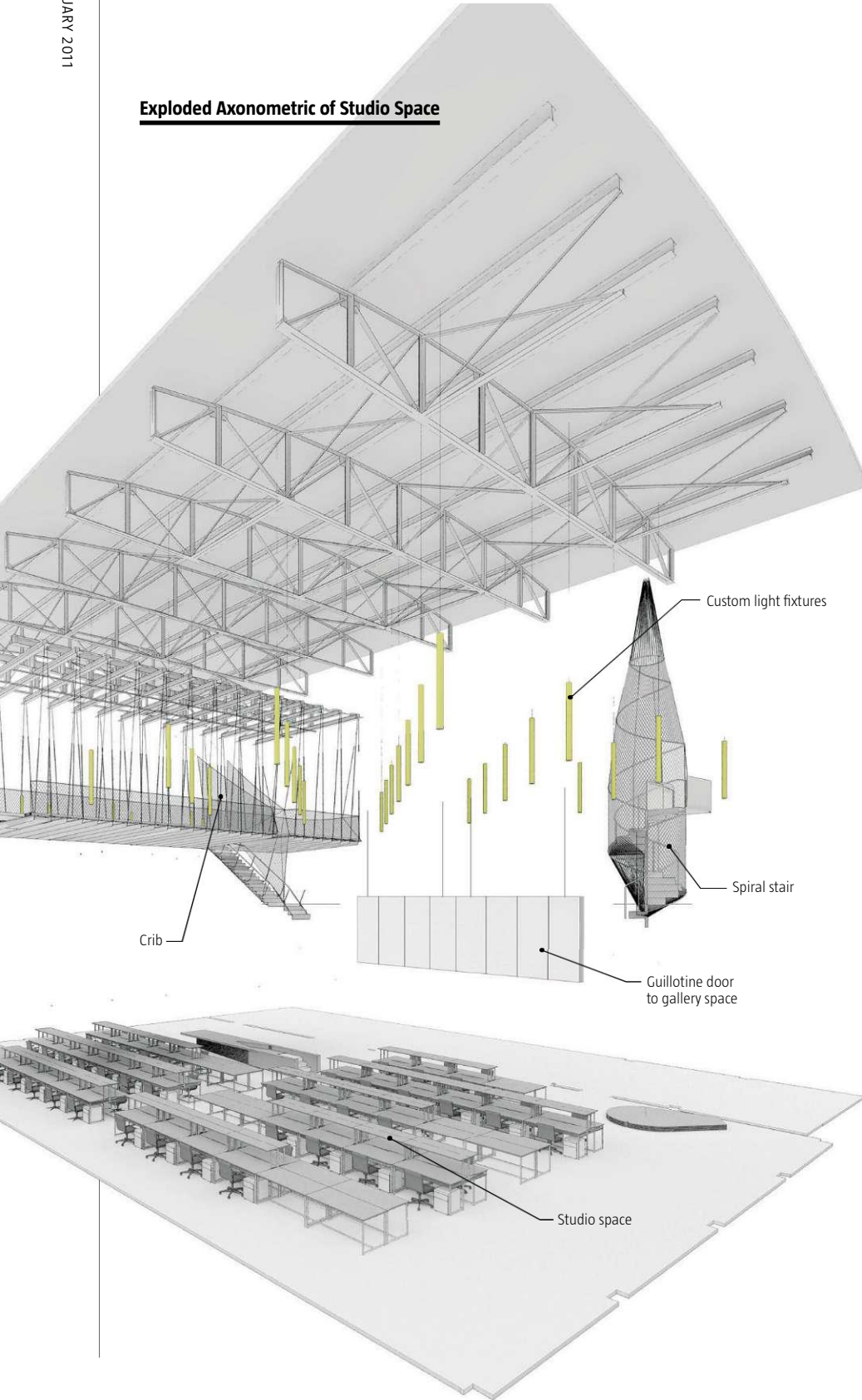
The crib floor is constructed of profiled T-beams suspended on 5/8-inch-diameter steel rods. The crib's structural efficiency, the architects say, "serves as a pedagogical example of innovation during a time ... [of] shrinking budgets and increasing demands for

The architects' charge in the restoration and adaptive reuse of the Hinman Research Building was two-fold: Preserve the pedagogical ideals of the original 1930s building (and its architect Paul M. Heffernan), and transform the building into a flexible and functional home for the College of Architecture.



To preserve the flexibility of the high-bay studio space, the architects suspended most of the new elements from the ceiling, including custom light fixtures, a mezzanine bridge called the crib, and a steel-cable tensile-mesh guardrail that envelops a spiral stair allowing access to an adjacent second-floor gallery (right). An enclosed hallway at one end of the high-bay connects flanking bands of two-story spaces, which are now used as classrooms, offices, and galleries (bottom right).

Exploded Axonometric of Studio Space





environmental responsibility.” Juror Lisa Iwamoto observed, “I love that everything is hanging. I think that it was a really smart decision.”

A stair linking the crib to the floor below is supported on a single beam that appears to peel off from its floor system. A steel-cable mesh provides safety enclosure with ample transparency. Elsewhere in the high-bay space, a spiral stair to second-floor galleries and studios consists of a single steel plate wrapped around a column; although only its mesh enclosure is supported from above, the stairway sustains the theme of suspension.

With its entire floor area left open, the high bay is adaptable as a setting for design studios, lectures, movie screenings, parties, graduations, and large-scale prototypes and installations. A 60-foot stretch of guillotine door can be opened to an adjacent gallery for exhibitions or project reviews. Suspended tubular lights offer ambient studio lighting, with winch controls to adjust them for other events.

In order to allow repurposing of spaces, the team developed a system of movable tables and drawer units for the students. Simple construction of these components uses sustainably harvested birch plywood, which also appears on applied surfaces and in stairwell safety barriers throughout the project. Each student also has a fixed locker in which to store belongings. Juror Dan Rockhill praised the whole project as “very minimal, economical, intelligent.”

project name

ORFORD
1
+
S OFFICE COMPLEX

firm name

WILKINSON
SCOTT
COBEN

CITATION



TEXT BY SARA HART

SITE Hillside in Dongsheng District, Ordos, China.

PROGRAM Master plan, landscaping, and design for multitenant commercial office space.

SOLUTION Regularity and repetition are the hallmarks of speculative office buildings. Historically, tenants prefer innocuous spaces, which they build out to suit their needs. Cambridge, Mass.-based architect Preston Scott Cohen's office complex in Ordos, China, a city of 1.5 million in Inner Mongolia, manages to be both original and uncomplicated. The architect's scheme divides the 232,000-square-foot program into four freestanding buildings, which descend down the side of a hill. Each building is wrapped in a neutral glass-and-aluminum envelope with vertical fenestration.

Cohen interrupts this uniformity with a single horizontal datum, seemingly suspended in air, which penetrates each building at a different elevation relative

to where it sits on the slope. Programmatically, the view line forms a ramped corridor, which splits the main core of each tower diagonally as it rises to match the topography. Juror Dan Rockhill was impressed with the overall continuity, which is both visual (sight lines) and spatial (internal ramps). "It's quite inventive, just in the minimal quality of it. It's quite striking," he said.

At the termination points of the ramps, voids are created around the core of each building, and these voids—which soften the monumentality of the complex as a whole—continue into the office floors above and below. Juror Zoë Ryan acknowledged that "The buildings have a lightness about them, even though they're large structures in the landscape. They do have a transparent nature, so they're not blocking views entirely."

The fire stairs, while providing code-compliant egress, act as a strong vertical counterbalance to the horizontal ramp datum that splits the cores of all four buildings diagonally. One stair is enclosed in a typical

Located in Inner Mongolia, China, the Ordos 20+10 Office Complex takes advantage of the natural setting with a series of ramps that connect the buildings, terminating in viewing platforms cut out of the mass of each tower.





Second-Lower-Level Plan



rectangular stairwell. The other forms a triangle in a twisting vertical shaft, open to a central void. The result is staggered floor heights on either side of the core. Space can be leased as half-floors or as full floor plates connected by ramps.

The formality and directionality of the ramps, which lead from the landscape into exterior voids carved in the buildings, create covered spaces for the public, as well as employees, to commune. Rockhill summarized the overall effect: "Here, the architecture is, in some way, a manifestation of the plan and the way a human would interact with that cut and that horizon line. It's a very strong comment and a very strong urban design."

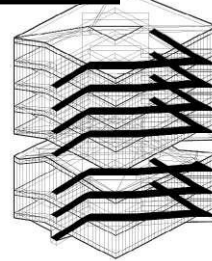


To break up the monumentality of four glass-encased commercial towers in this rugged landscape, the architects create a horizontal view line that echoes the incline of the hill and cuts through all four towers. Ramps connect some of the buildings and continue inside, creating a torqued circulation sequence and staggered floor plates.

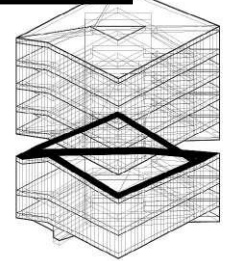
Ground-Level Plan



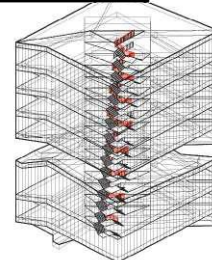
Interior Ramps



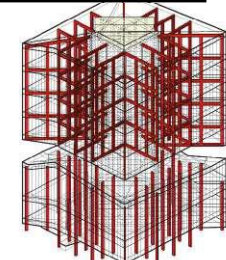
Exterior Ramps



Stair Axonometric



Structural Axonometric



project name

INTERNATIONAL
INFORMATION

firm name

STAN ALLEN
ARCHITECT

CITATION

The Taichung InfoBox is an information center for the larger Taichung Gateway planned development. The steel-frame, bamboo-clad box sits within a hangar on a former airport site and turns the construction of an urban-scale project into a form of public entertainment.



TEXT BY JOSEPH GIOVANNINI

SITE Taichung, Taiwan's decommissioned Municipal Airport, which is slated to become the 600-acre Taichung Gateway, a mixed-use development of civic structures, residential neighborhoods, and infrastructure, built around a large urban park.

PROGRAM The conversion of an unused hangar into a temporary information center. The design includes a two-story freestanding pavilion inserted into the hangar space with performance and exhibition venues for displaying the plans to transform the old airport. An elevated terrace will overlook the larger project's construction.

SOLUTION With a project of a scale like Stan Allen Architect's Taichung Gateway (the conversion of a former airport into a park and mixed-use cultural district, which won a P/A Award in 2008), it is important to engage area residents during the long construction process. To

that end, the Brooklyn, N.Y.-based firm designed the Taichung InfoBox, an observation pavilion within an existing hangar on the site, where plans and models of the project under construction will be exhibited. To offer a taste of events that will eventually be staged in public venues, a second-floor stage serves as a performance space. A deck on the second floor of the pavilion, at the front of the hangar, creates a visitors platform for gazing at the site; the design turns the grounds into a sustained construction event.

Other competition entries proposed a box-within-a-box, but Allen's take on the concept intrigued the jurors because its doughnut-shaped perimeter—including part of its open roof—is structured in bamboo. Besides forming a spatially filigreed wall, the armature carries rich cultural associations connoting vernacular construction in Asia, where skeletal bamboo frames scaffold even high-rise construction. Beyond offering visual pleasures, the bamboo is a rapidly renewable resource, which intrigued the jury members, who





placed a premium on sustainability. Doing due diligence in their materials research, the architects provided calculations for loading bamboo scaffolding and, in so doing, demonstrated that the material can be a viable structural system for an entire building. In other words, they were not proposing the use of bamboo out of cultural sentimentality: The material is as practical and inexpensive as it is poetic and appropriate.

The jurors immediately fixated on the bamboo, and were disappointed to realize that the material did not make up the entirety of the structural system. Instead, the 12,500-square-foot building is a hybrid; the bamboo scaffold wraps a steel frame. The composite system is necessary, however, for code reasons: Public occupancy in Taiwan requires a steel structure. "I expected the entire structure to be bamboo," juror Steve Dumez said. "But they can't for code reasons. I thought it was wonderful initially as a concept."

Putting aside the structural issues, juror Dan Rockhill

pointed out bamboo's spatial and architectural qualities in this "elegant insertion into an old carcass of a hangar. It's beautifully executed" and "used in a really creative way," he said.

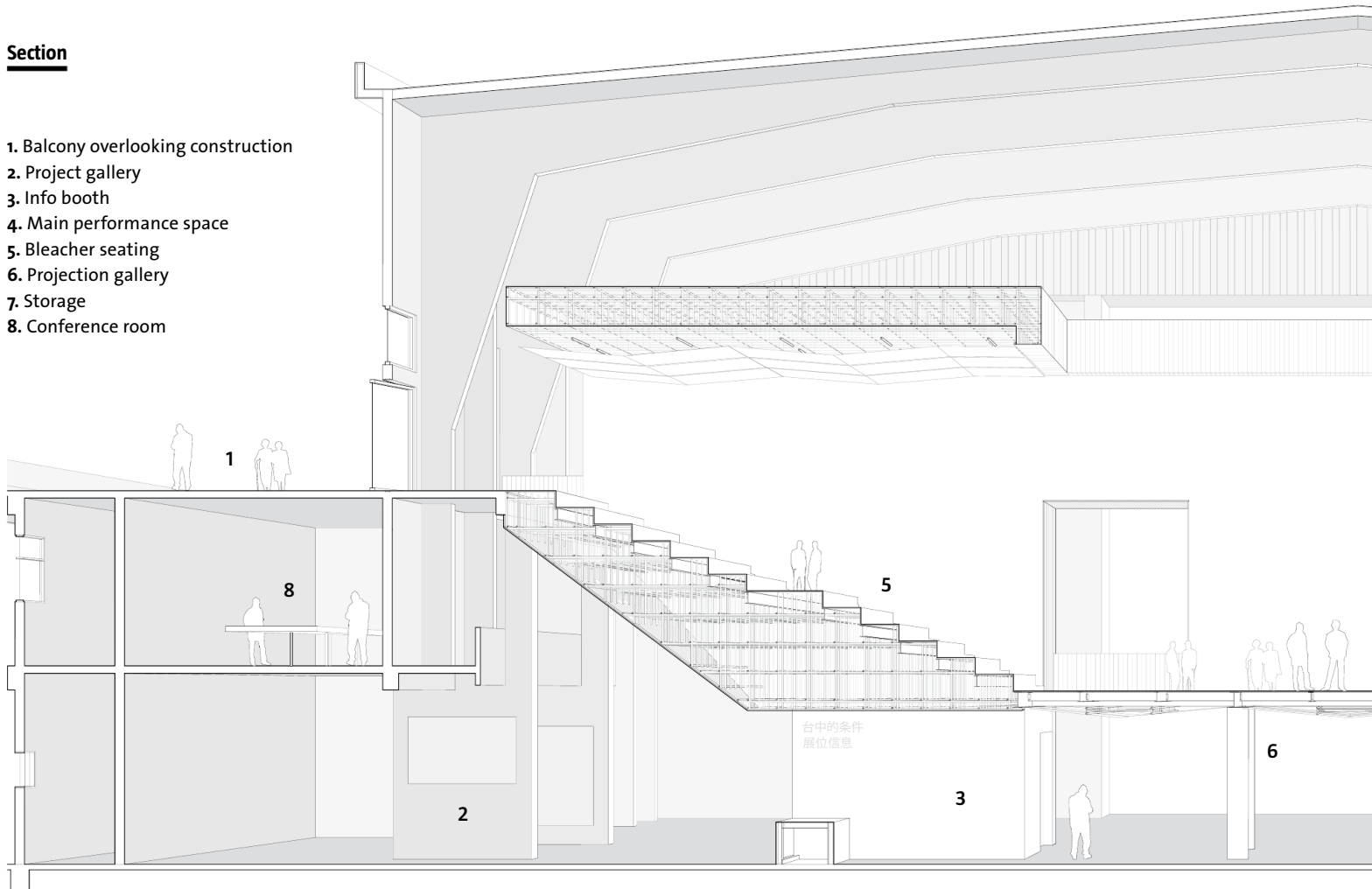
"As an envelope, you can imagine the qualities of light and view and porosity that that kind of structure would have," Dumez agreed. "Using it as scaffolding and using it as something that you move through to get into another space is very powerful."

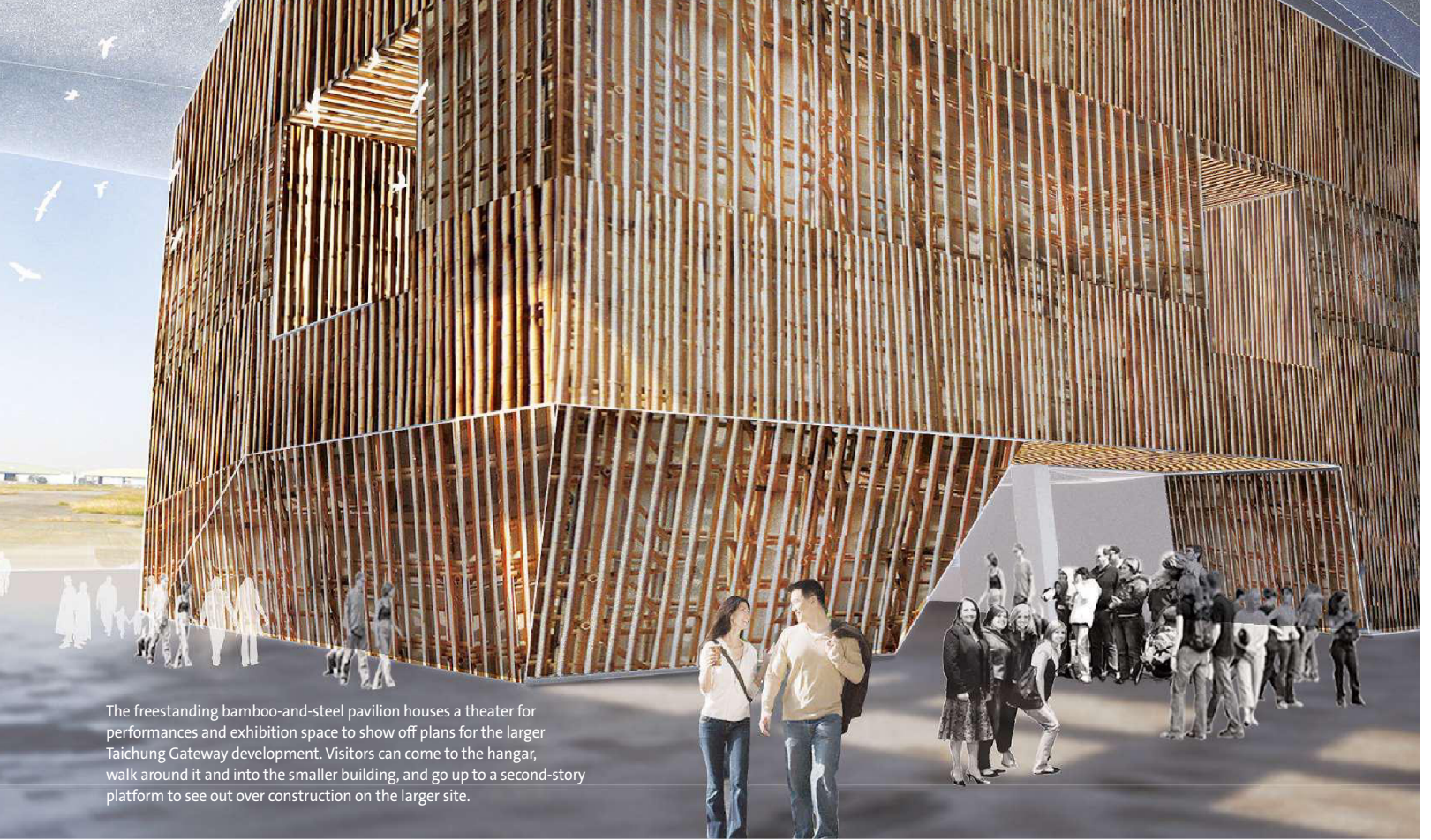
Still coming to grips with the role of bamboo in a composite structural system, juror Lisa Iwamoto realized that the whole roof and any wall above the floor plate level, for the most part, relies on the bamboo scaffolding. "So it's a self-supporting system," she said. "To me, it's completely acceptable that they weren't able to fulfill that structural model 100 percent of the way. But I think the way they are using it as the self-supporting skin and pieces of the roof is really nice. I love the interesting overlaps."



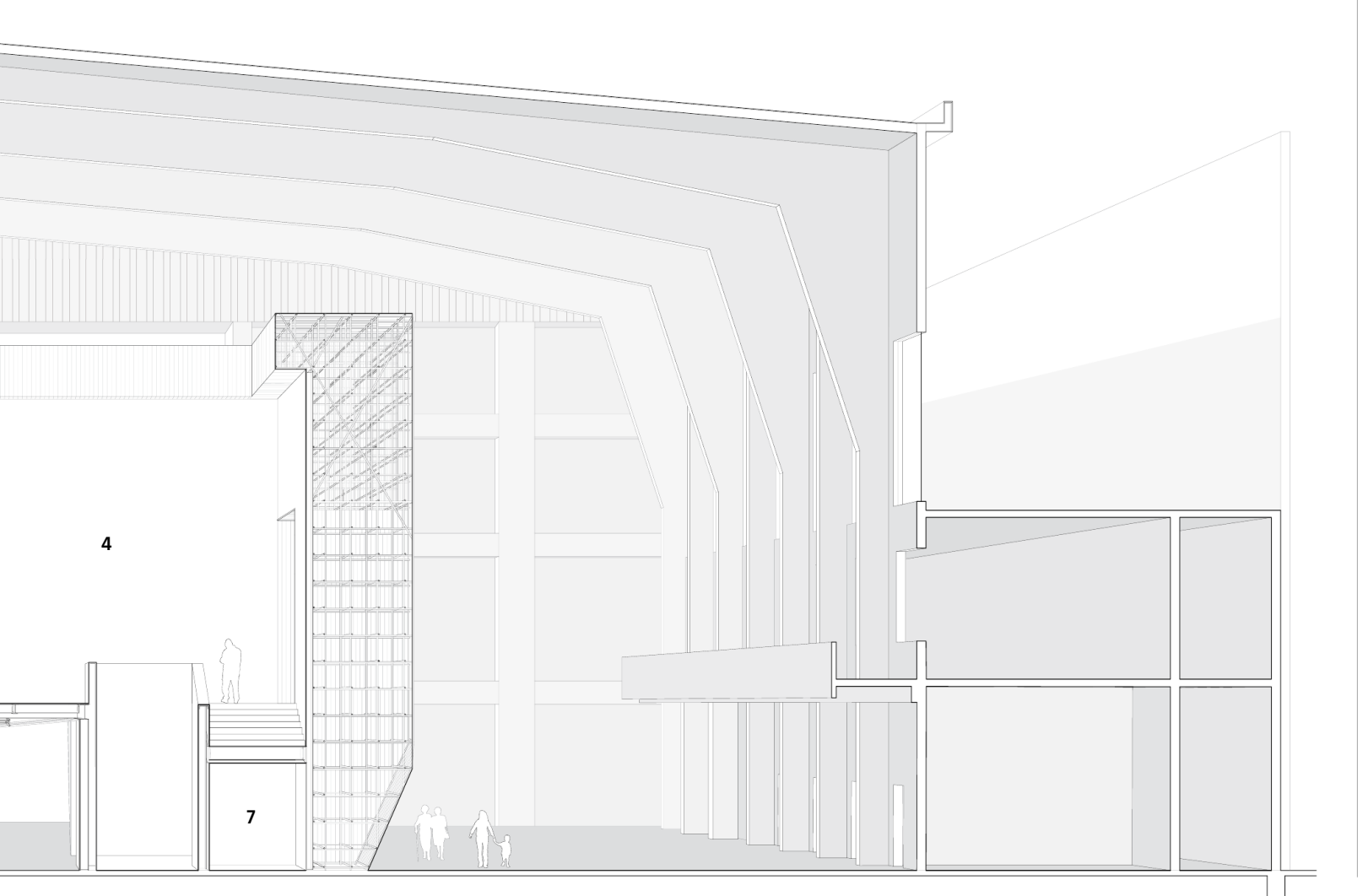
Section

1. Balcony overlooking construction
2. Project gallery
3. Info booth
4. Main performance space
5. Bleacher seating
6. Projection gallery
7. Storage
8. Conference room





The freestanding bamboo-and-steel pavilion houses a theater for performances and exhibition space to show off plans for the larger Taichung Gateway development. Visitors can come to the hangar, walk around it and into the smaller building, and go up to a second-story platform to see out over construction on the larger site.



project name

RAMBOO

WINDMILLS

CENTER

firm name

ILLIAD architecture

CITATION

The planned Karoo Wilderness Center is a natural resource conservation-and-management center in the Karoo region of South Africa. Concrete walls and gum-pole-clad cupped roofs shelter conference areas, residences, lounges, and a theater, among other spaces.



TEXT BY THOMAS FISHER, ASSOC. AIA

SITE An arid, sloping site in a wilderness area in southern South Africa.

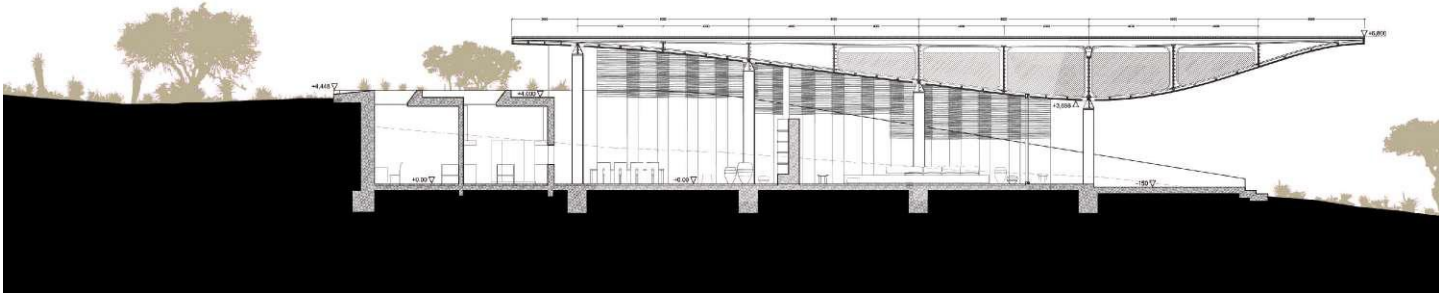
PROGRAM A natural resource conservation-and-management leadership center containing a dining facility, a library and conference center, and residences for visiting conservationists.

SOLUTION The architects conducted an in-depth analysis of the geography, hydrology, and botany of this arid site and designed a facility that “generates its own energy,

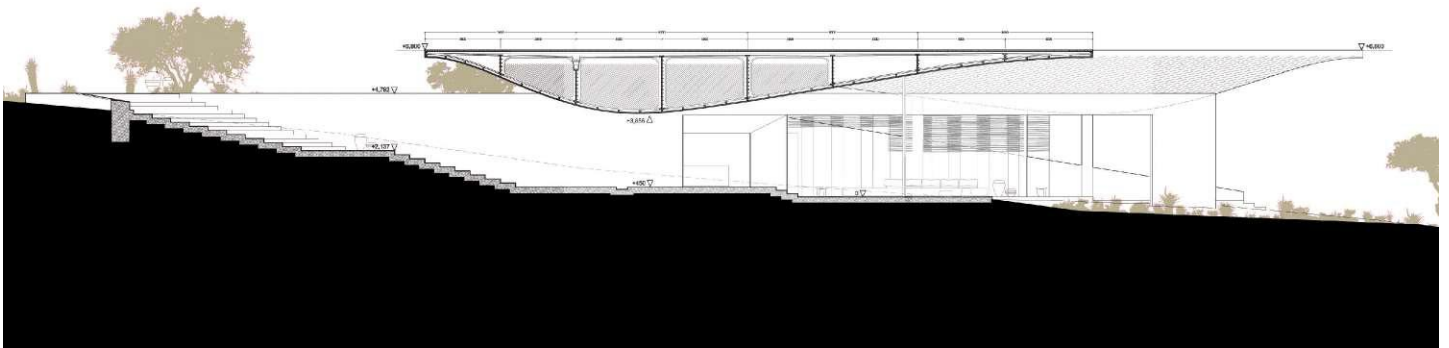
harvests its own water, processes its own waste, and provides thermal comfort using no municipal water or power.” Taking their cue from the cupped, self-shading leaves of the indigenous *Aloe ferox* plant, the architects envisioned a series of saucer-shaped roofs that serve to shade the inhabited spaces below, to gather and store rainwater in covered tanks, and to produce power with photovoltaic arrays along their upper surfaces. These roofs also funnel air currents through the facility, provide evaporative cooling in summer, and serve as part of a radiant hydronic heating system in winter. At the same



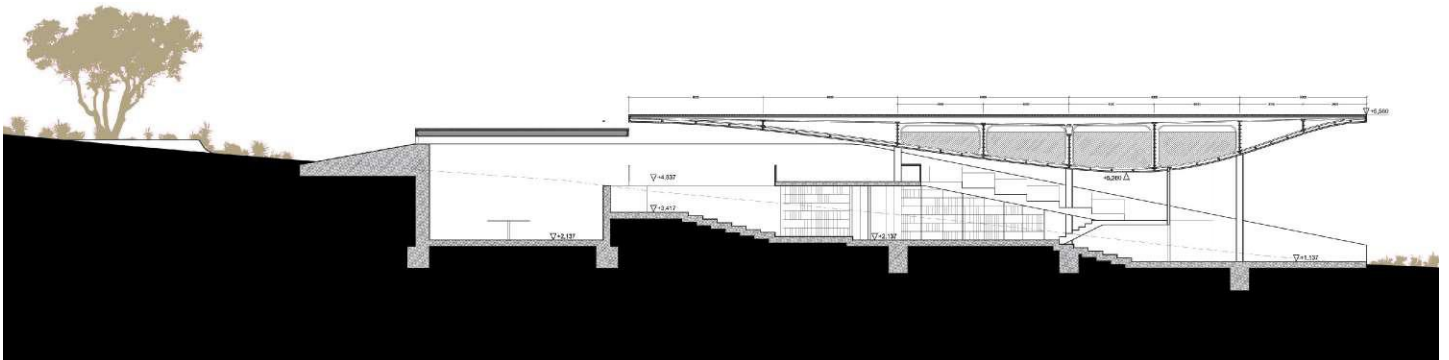
South–North Section Through Lounge



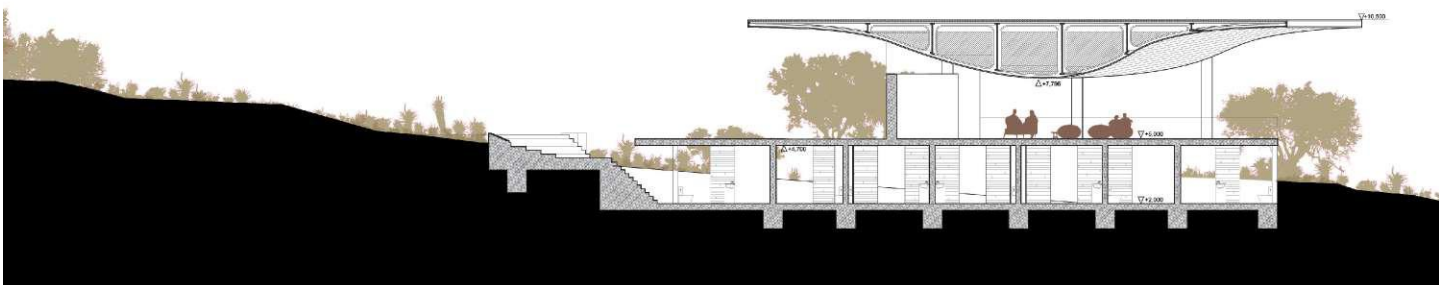
South–North Section Through Lobby

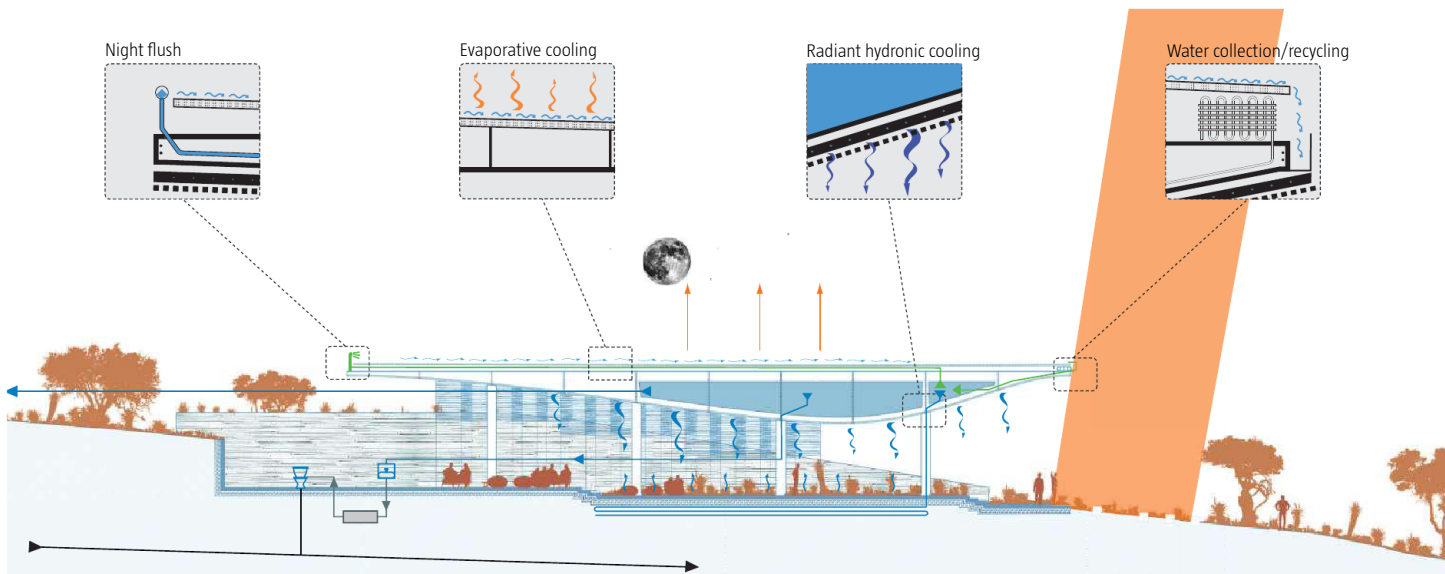


South–North Section Through Conference Room and Library



West–East Section Through Residences





time, the undulating wood-slat undersides of the roofs echo the traditional gum-pole ceilings of the vernacular houses in the region, while reflecting the undulations in the surrounding landscape and directing views of the wilderness area from the interior. The concrete walls use local aggregate, tying their color to that of the land, and are constructed as a series of shallow pours that echo the strata of the area's geology.

The facility comprises three clusters of spaces. An access road brings visitors to an arrival lobby, with a reception office and lounge, and an adjacent dining room and kitchen. A library, conference room, theater, and outdoor classroom make up a second cluster of spaces, with a row of seven residential rooms forming a third cluster. Covered outdoor terraces, stairs, classrooms, and pedestrian paths connect the enclosed spaces and maximize the experience of the arid landscape.

While all of the jury liked the project, Iwamoto found aspects of it "excessive." Much of the jury's discussion

revolved around the roofs and the expense of storing rainwater in the air in a steel structure. "I don't think it's an economical project in terms of the tremendous structure for the roof," said juror Lisa Iwamoto. "There are better ways of getting water." At the same time, juror Steve Dumez found "the site plan particularly engaging, almost like a rivulet." And Dan Rockhill said, "It's nice to see a project that is not intimidated by the sustainability question, but that engages it to make something very beautiful," a sentiment with which the other jurors strongly concurred.

The beauty of the project lies not only in its simple forms and powerful evocation of the landscape, but also in the idea of the center itself. As the architects wrote in their submission, the center enables "representatives of the academic and business world [to] directly engage in the resources they depend upon and promote ... Conservation and use are demonstrated as equivalent functions ... through which less is lost and more is gained."

The cupped roofs, clad in insulating gum-poles on the underside, define interior spaces such as the lodge (top). Potable water is stored in covered tanks in the roof depressions; and the thermal mass helps with radiant hydronic and evaporative cooling in the summer (above). A heat exchanger conditions water for radiant heating in the winter.

iirp



Steve Dumez, FAIA, is design director at New Orleans-based Eskew+Dumez+Ripple, the architecture and planning studio he cofounded with R. Allen Eskew, FAIA, and Mark Ripple, AIA. Dumez is also a past president of AIA New Orleans and AIA Louisiana.



Lisa Iwamoto is a founder of IwamotoScott Architecture in San Francisco. She has a B.S. in structural engineering from the University of Colorado, an M.Arch from Harvard University, and is currently an assistant professor at the University of California at Berkeley.

credits

Hirshhorn Museum and Sculpture Garden Seasonal Expansion, Washington, D.C.

Client Hirshhorn Museum, Smithsonian Institution
Lead Designer Diller Scofidio + Renfro, New York—Elizabeth Diller (principal-in-charge); Charles Renfro, AIA, Ricardo Scofidio, AIA (principals); David Allin (project leader); William Arbizu, James Brucz, Michael Etzel, Felipe Ferrer, Matthew Ostrow, Haruka Saito (project team)
Associate Architect KlingStubbins, Washington, D.C.—Pascal Pittman, AIA (principal); Diane Evans, AIA (project manager)
Tensile Structure Engineer Form TL—Gerd Schmid (principal)
Theater Design Fisher Dachs Associates—Joshua Dachs (principal)
Acoustician JaffeHolden—Mark Holden (principal)
Lighting Consultants Tillotson Design Associates—Suzan Tillotson (president)
Wind Engineering Consultants Wacker Ingenieure—Jürgen Wacker
Climatic Analysis and Engineering DyAnaKG—Andreas Buchner
Rigging Consultant Inauen-Schätti—Bruno Inauen
Size 14,000 square feet

United States Land Port of Entry, Van Buren, Maine

Client U.S. General Services Administration
Architecture/Team Lead Julie Snow Architects, Minneapolis—Julie Snow, FAIA (principal); Tyson McElvain, AIA (project manager); Matt Kreilich, AIA (senior project designer); Mary Springer, AIA (senior project architect); Pauv Thouk, Assoc. AIA, Ryan O'Malley, Assoc. AIA, Dan Winden, Assoc. AIA, Tamara Wibowo (designers); Kai Haller (technical consultant, BIM); Robert Feyereisen (model maker); David Huang (architectural renderer)
Civil Engineering/Traffic Jacobs Engineering Group—Rod Emery (principal, civil); Phil Boness (civil project manager); Thomas Morin (civil engineer)
M/E/P Sebesta Blomberg—Bob Resselman (principal, mechanical/electrical); Bob Kilgore (project manager, mechanical/electrical); Jeff Olson, Todd Lagus (mechanical engineers); Ryan Lindal (electrical engineer)
Structural Engineer Meyer Borgman Johnson—Dan Murphy (principal, structural); Mike Retterath (structural engineer)
Landscape Architects Coen + Partners—Stephanie Grotta

(principal); Travis Van Liere (project manager); Zachary Bloch (landscape designer)

Cost Estimating Faithful+Gould—John Pidgeon (senior cost estimator); Chad Chapman (cost estimator)

Security Global Defense Solutions—Michael Goldsmith (principal); Dave Danitz (project manager)

Historian Deborah Thompson

Archaeologist Northeast Archaeology Research Center—Ellen R. Cowie

Size 41,000 square feet (including covered canopies)

Hinman Research Building Rehabilitation & Adaptive Use, Atlanta

Client The Georgia Institute of Technology College of Architecture
Architect Lord, Aeck & Sargent (Atlanta) in collaboration with Office dA (Boston)—Jack Pyburn, FAIA (principal, Lord, Aeck & Sargent); Nader Tehrani (principal, Office dA); John Kisner, AIA (project manager, Lord, Aeck & Sargent); Daniel Gallagher (project manager, Office dA); Karen Gravel, AIA (project architect, Lord, Aeck & Sargent); Tom Beresford (project coordinator, Office dA); Tom Butler,



William Rawn, FAIA, is the founding principal of Boston-based William Rawn Associates Architects. Rawn is a graduate of Yale College, Harvard University Law School, and the MIT School of Architecture. He has been a GSA peer since 1998.



Dan Rockhill is a founder of Lecompton, Kan.-based Rockhill and Associates, as well as a professor of architecture at the University of Kansas (KU) and founder of Studio 804, the KU design/build program that has resulted in such projects as the Prescott Passive House.



Zoë Ryan is the Neville Bryan Curator of Design and Acting John H. Bryan Curatorial Chair of Architecture and Design at the Art Institute of Chicago and is responsible for exhibits such as "Hyperlinks: Architecture and Design." Ryan was also the senior curator at the Van Alen Institute.

Seth Hammonds, Jim Nicolow, AIA, Claire Oviatt, Cobb Quarles, Ben Ridderbos, Benjamin Scott, Jihan Stanford (design team, Lord, Aeck & Sargent); Remon Alberts, Marzouq A. Al-Mutairi, Yousif J. Alsaleem, Arthur Chang, Brandon Clifford, Jeff Dee, Sarah Dunbar, John Houser, Pepe Giner Ivars, Samuel Ray Jacobson, Harry Lowd, Jonathan Palazzolo (design team, Office dA)
Structural Engineer Uzun & Case Engineers—James Case, John Hutton
M/E/P/FP Engineer Eaton's EMC Engineers—Douglas Gray, Chip Tabor
Cable Mesh Systems Officium Design Engineering—David Bradley, AIA
Concrete Repair and Rehabilitation Wiss, Janney, Elstner Associates—Paul Gaudette
Civil Engineer Haines, Gipson & Associates—Robert McCann
Acoustics The Sextant Group—Brian Patrick
Size 31,698 square feet
Construction Cost \$8.4 million

Ordos 20+10 Office Complex, Ordos, China

Client Ordos Dongsheng District Urban Planning Bureau
Architect Preston Scott Cohen, Cambridge, Mass.—Scott Cohen, Collin Gardner, Matthew Allen (architectural design); Amit Nemlich (project architect); Michelle Chang, Lee Huang (project assistants)
Size 215,300 square feet
Project Cost 100 Million Chinese RMB (\$15.14 million)

Taichung InfoBox, Taichung, Taiwan

Client City of Taichung
Architect Stan Allen Architect, Brooklyn, N.Y.—Stan Allen, FAIA, Marc McQuade, Chris Oliver, Rosalyn Shieh, Dahlia Roberts (project team)
Associate Architect W.B. Huang Architects & Planners
Project Coordinator Feng Chia University Design Center
Size 12,500 square feet

Karoo Wilderness Center, Karoo, South Africa

Client Withheld
Architect Field Architecture, Palo Alto, Calif.—Stan Field, Int'l Assoc. AIA, Jess Field, Assoc. AIA (design principals); Andy Lin, Erik Bloom, Chris Graesser (project team)
Sustainability Engineers Timmons Design Engineers
Structural Engineers Arup
Conservation Management Wilderness Foundation South Africa
Environmental Impact Analysis Integrated Environmental Management
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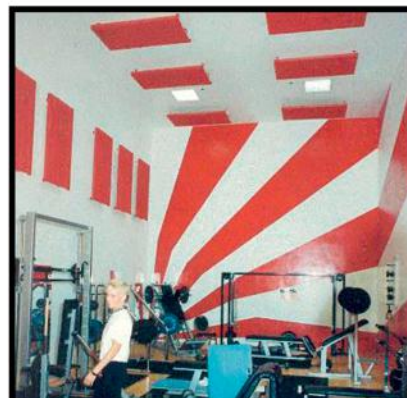
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TEXT BY THOMAS FISHER, ASSOC. AIA

→1969 AND 1975 P/A AWARDS

BELOW-GROUND BOOKS

TWO UNDERGROUND COLLEGE BOOKSTORES, ONE AT CORNELL AND THE OTHER AT MINNESOTA, WON AWARDS SIX YEARS APART. THEY BOTH POINT TO THE PROMISE AND THE PROBLEMS THAT CAN ARISE FROM BUILDING BELOW GRADE.

1969 P/A Awards Jury

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Lewis Davis
Richard M. Gensert
Roger Montgomery
Cesar Pelli, FAIA

1975 P/A Awards Jury

Michael Brill
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Lee Copeland, FAIA
Peter Eisenman, FAIA
Clare Cooper Marcus
Paul Rudolph
Joyce Whitley
Eberhard Zeidler,
Hon. FAIA

CORNELL UNIVERSITY and the University of Minnesota, both major land-grant research institutions, faced the same dilemma some 40 years ago of how to fit their bookstores into the hearts of their already crowded campuses without disrupting the surrounding historic buildings. And both arrived at the same solution: Put the structures below ground.

The Cornell Store, designed by Earl R. Flansburgh & Associates and cited in the 1969 awards program, burrows into a hill across from the student union, with concrete retaining walls funneling people to the entrance or up steps and over the grass-covered roof. An open courtyard brings light to the center of the store and marks the place where stairs lead up to a mezzanine and a back entrance.

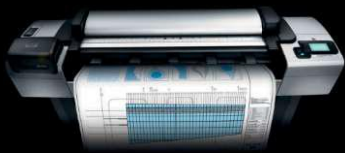
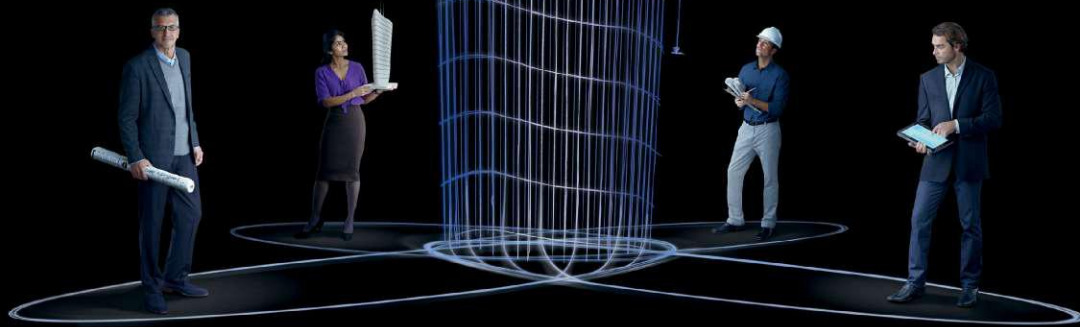
Minnesota's East Bank Bookstore and Admissions

and Records offices, awarded in 1975 and designed by Myers and Bennett Architects/BRW, occupies a flat urban site, which forced more of the building—clerestories and the loading dock—above grade, with a triangular stepped-down courtyard bringing daylight to the two below-ground levels.

While both buildings got built and served their stated purposes well, they also revealed the limits of subterranean structures. They proved difficult to expand, with Cornell's store feeling cramped and overcrowded as a result. And they met unexpected subsurface problems, such as an aquifer at Minnesota that led to a lot of water infiltration. Add to that changes in how students buy books and purchase supplies, and these two below-ground buildings now seem as outdated as they once were innovative. □

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