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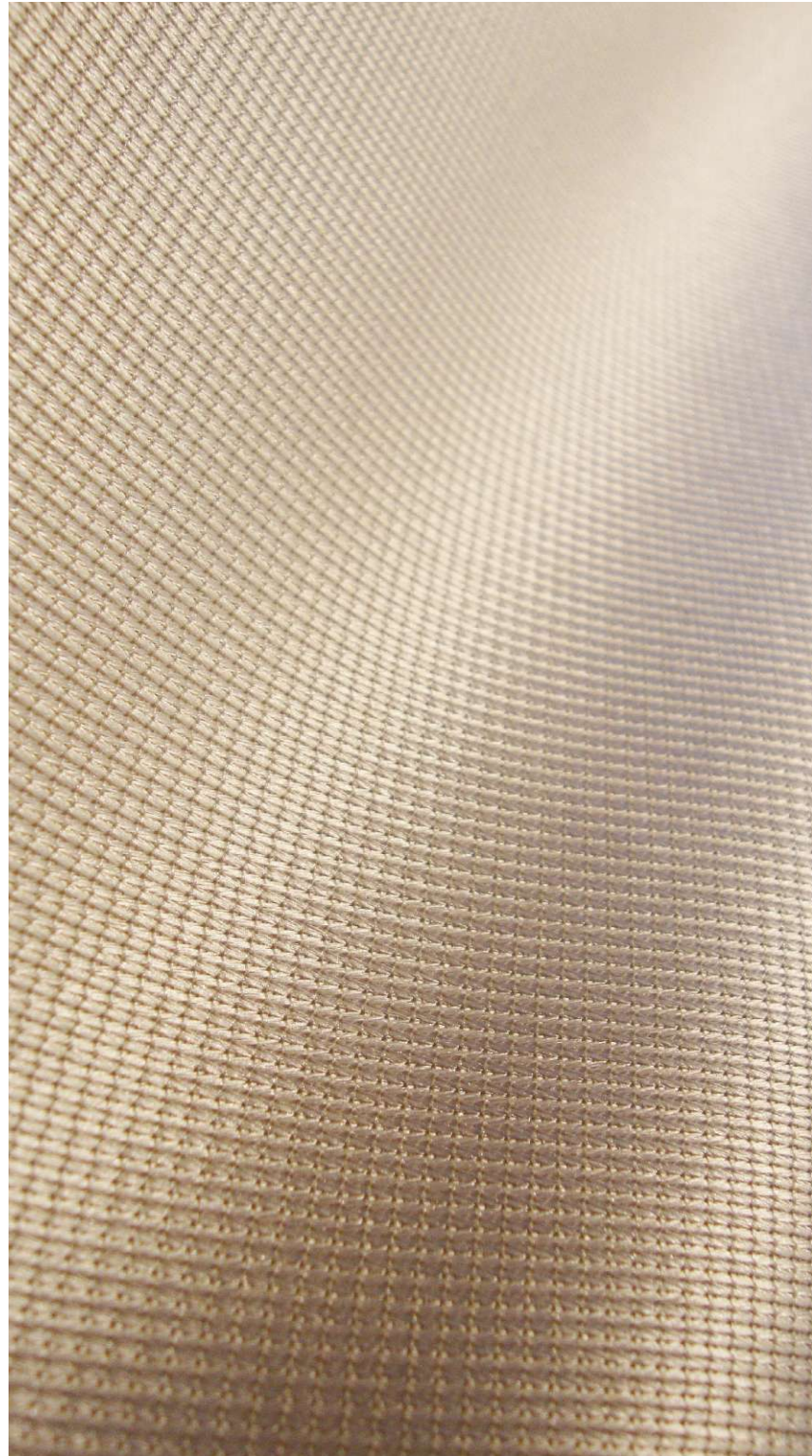


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FEATURE

We're Number One!

When it comes to weight, America is top of the charts. It's no surprise: We eat the wrong food (and too much of it); we move too little. Could better design—of food networks, communities, our daily lives—be the answer to obesity?

EDITED BY KRISTON CAPPS, NED CRAMER, AND AMANDA KOLSON HURLEY

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

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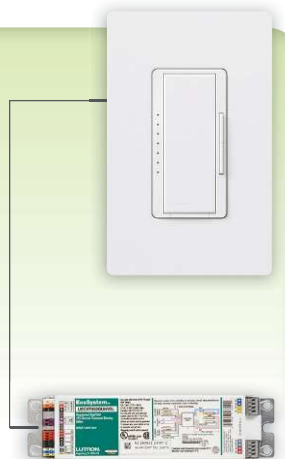
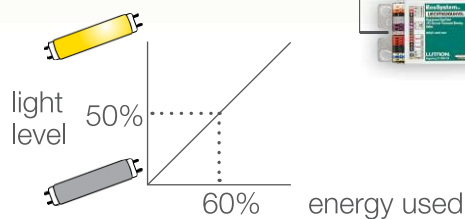
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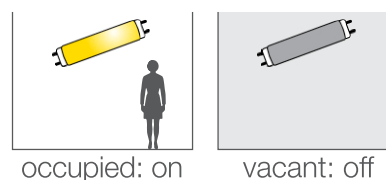
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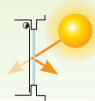
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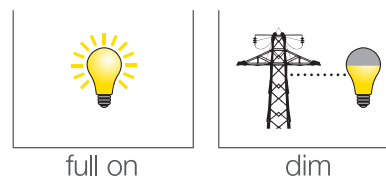


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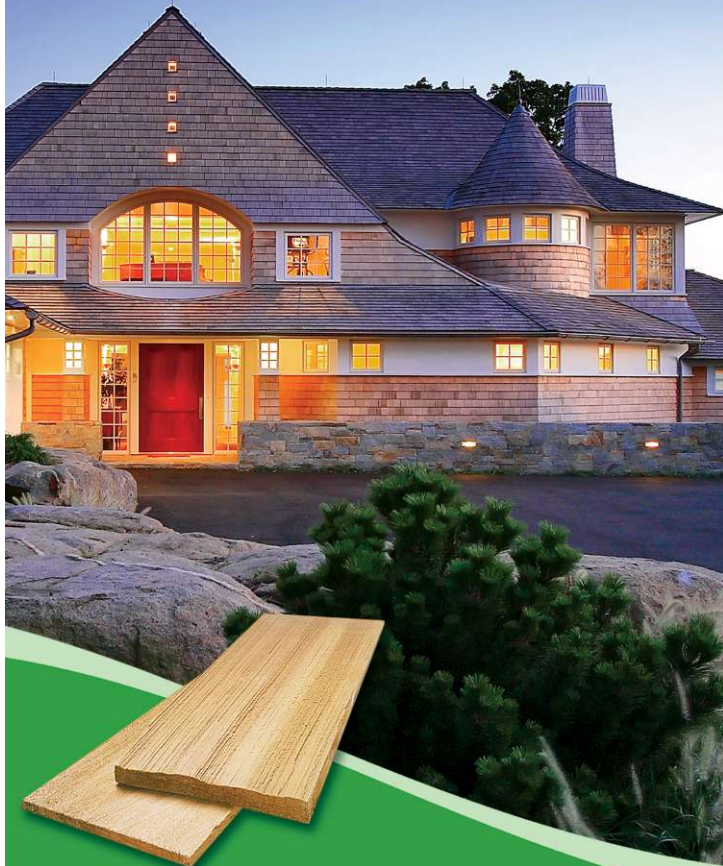


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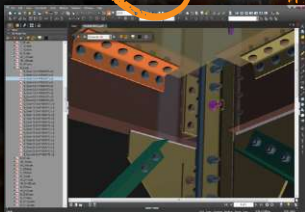
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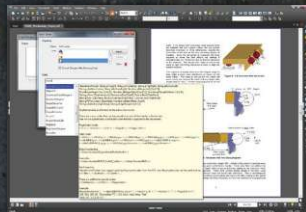


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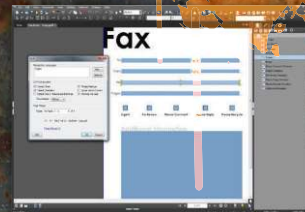
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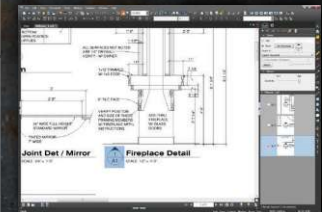
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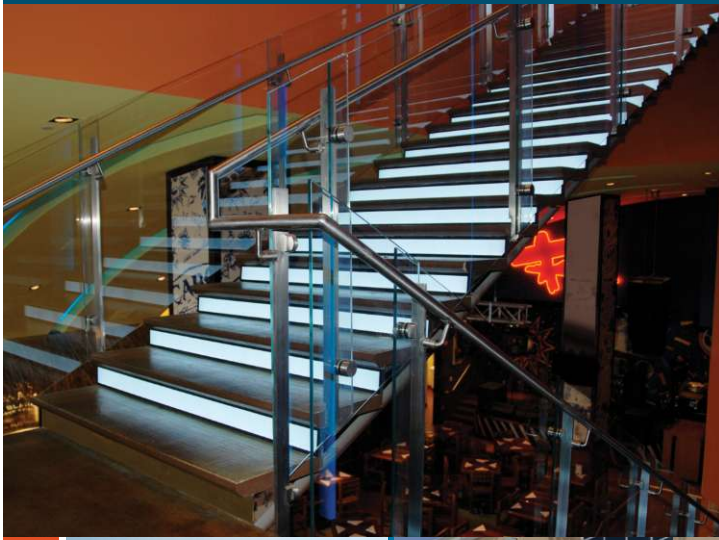


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IS THE WORLD'S
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GREENWASHING?

BIG-BOX PARADOX

THE RICHEST PERSON I've met is Alice Walton, the daughter of late Walmart founder Sam Walton. It was 2004. I was curator of the Chicago Architecture Foundation at the time, and courting potential donors was part of the job. The heiress wanted a tour of our latest exhibition, about sustainable design. She was planning a green art museum in her hometown of Bentonville, Ark., and hunting for an architect.

Walton probably didn't enjoy the tour. I rushed her from display to display, consumed by righteous indignation: Could this woman possibly be thinking that her pet project would make up for Walmart's unconscionable business model?

Like a drug dealer, Walmart traps its customers in a vicious cycle of dependency: People understandably love its famous "Every Day Low Prices." But those low prices force other retailers out of business and force U.S. suppliers to rely on cheap overseas manufacturing. So more Americans join the growing ranks of the unemployed, and then they spend even more of their shrinking income at Walmart, because it's the only place where they can afford to shop.

In 2007, at the beginning of the Great Recession, chief financial officer Tom Schoewe admitted, "Tough times are actually a good time for Wal-Mart."

Walmart likes to boast that its new stores create jobs, but its average full-time hourly wage falls below the federal poverty level for a family of four. In 2010, the company's healthcare plan failed to cover nearly 700,000 out of a workforce of 1.4 million. And then there's Walmart's treatment of its women employees, 1.5 million of whom are trying to bring a class-action suit against the company. Alice Walton isn't among them—her net worth exceeds \$20 billion.

On the tour, I wanted to say to Walton, "Skip the museum, and build a better Walmart." I'm a real chicken, so I resorted to passive aggression instead. The show didn't include any big-box stores, but I spent lots of time on projects such as Ford's River Rouge plant in Detroit, with its enormous green roof. If Walton saw a connection between the Ford factory and Walmart's box-in-a-parking-lot building formula, she certainly didn't let on. She certainly didn't send me a thank-you note, either.

In the years since that brief encounter, Walmart has hired California-based architecture firm LPA to design green supercenters in Aurora, Colo., and McKinney, Texas. It has also established social and environmental standards for the companies in its vast supply chain, and lent its support to Michelle Obama's anti-obesity campaign.

Is the world's largest corporation going green, or is it just greenwashing? Only time will tell if Walmart's heart is truly in the right place. Consumers certainly can't tell. In a 2009 poll conducted by marketing agency

BBMG, Walmart ranked as both the most *and* the least socially and environmentally responsible company that respondents could think of.

I suspect there's an ulterior motive for their new green agenda. The boys from Bentonville have maxed out their rural and suburban base—90 percent of Americans live within 15 miles of a Walmart—so they've set their sights on the one remaining growth opportunity in the U.S.: cities, where fewer consumers buy Walmart's faux-folksy brand image. Almost every article written about Walmart and the first lady's anti-obesity campaign mentions the company's promise (threat?) to open more stores in urban "food deserts," where the poor have limited access to healthy food (see "We're Number One!," page 74). Walmart, the Robin Hood of the ghetto.

The company is so keen on urban expansion, in fact, that it's even willing to forgo its horrific box-in-a-parking-lot building formula to appease the NIMBY crowd. "It would shrink its stores to as small as 8,000 square feet, about 4 percent of the size of an average supercenter," *The New York Times* reported last summer. But until Walmart starts paying its employees a living wage and weans Americans off artificially cheap goods, better store designs are just window dressing.

Meanwhile, construction is under way in Bentonville on the Crystal Bridges Museum of American Art. Moshe Safdie, FAIA, got the job, and his design looks quite good. Walton has been buying major artworks to hang on the walls, including Norman Rockwell's *Rosie the Riveter*, John Singer Sargent's *Robert Louis Stevenson and His Wife*, and Asher Brown Durand's *Kindred Spirits*.

According to a 2006 article in *The Nation* with the fantastic title "Alice Walton's Fig Leaf," in buying the Durand, "she got the state of Arkansas to pass legislation specifically to save her taxes—in this case, about \$3 million on a purchase price of \$35 million." Nice, really nice, and not at all surprising: It's the Walmart way.

"Art patronage has always been a kind of money-laundering, a pretty public face for fortunes made in uglier ways," *The Nation* article says. "[T]he Crystal Bridges Museum seems like a false front for Wal-Mart, a made-in-America handcrafted artifact of idealism for a corporation that is none of the above."

Bill Gates has devoted 48 percent of his fortune to philanthropic causes, and Warren Buffet 78 percent. And the Waltons? About 2 percent. That's the Walmart way. Here's my way: I don't shop at Walmart.

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LETTERS

ARCHITECT

As an Intl. Assoc. AIA, I have the privilege of receiving the AIA magazine. Now, with ARCHITECT, I am glad to notice the approach and the extensive range of subjects that the magazine covers, realizing that the problems and challenges to the profession in these times of recession are the same everywhere. *Nuno Varela, Intl. Assoc. AIA, Porto, Portugal*

THE FUTURE BELONGS TO WOODBURY, March 2011

You don't know how happy everyone at Woodbury is with your feature on the School of Architecture. It really captures who we are and what we are doing. The photographs are beautiful. Thanks so much. *Norman Millar, AIA, dean, Woodbury University School of Architecture, Burbank, Calif.*

Often, the online comments section becomes the launching point for a conversation. Below are comments from the story about Woodbury:

March 10, 2011—12:05 p.m.

Hear, hear. Congrats to Woodbury for defining its identity and moving forward aggressively in honor of its diverse and extremely talented student body. As a recent grad, Woodbury has prepared me well. I've never been turned down from an interview. The work Woodbury helped me produce is more than adequate. In only three years out, I've been able to support my family of five, including my wife who doesn't need to work, and to purchase a new home in sunny SoCal.

March 20, 2011—9:07 p.m.

This poor minority kid mentioned that he's graduating with \$120,000 in debt in this terrible economy for architects. As a recent white male graduate with a few family connections in the industry and fortunate to have found a job, that would be too much for even me to bear. This is an article about disadvantaged minorities, is it not? Or about advantaged private institutions?

TRULY SURREAL, March 2011

Below is an online comment from a story about HOK's Salvador Dali Museum in Florida:

I was delighted to see national exposure for the Dali Museum, the greater Tampa Bay area, and Yann Weymouth, AIA, of HOK. My excitement waned once I got to the end of your critique, and saw you just couldn't resist inaccurately slamming the area with the following quote: "Tampa/St. Petersburg, known both as the Strip-Club Capital of America and as God's Waiting Room." That may have been true many years ago, but St.Petersburg/Tampa is having a resurgence in the arts. Within the past few years we have experienced an expansion at the Museum of Fine Arts by Weymouth, as well as a new permanent exhibition by internationally renowned glass artist Dale Chihuly. I am extremely proud of my adoptive city. *Harmon H. Haley Jr., AIA*

→ Want to be part of the conversation? Go to architectmagazine.com. You can comment anonymously or make yourself known to the rest of our community. All letters and online comments may be edited for length, content, grammar, and style.

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Contributors



Aaron Seward

"Going Underground" • page 50

Born and raised in Houston, Aaron Seward is a freelance writer who specializes in architecture, design, and technology. He studied literature, creative writing, and history at the New School university in New York City and graduated with a Bachelor of Arts degree in 2000. He honed his architectural knowledge as an editor of monographs at Edizioni Press, and later as an associate editor at *The Architect's Newspaper*, where he created the bimonthly column "In Detail," which he continues to author.

Seward has become a regular writer of continuing-education articles for ARCHITECT. "They're just long enough for there to be room to really sink into the subject matter, and they've helped me to continue my own education on systems for architecture," he explains.

Seward now contributes regularly to a number of industry publications, including ARCHITECT's sister magazines ARCHITECTURAL LIGHTING and ECO-STRUCTURE. He lives in Brooklyn, N.Y., and is currently at work on his first novel.



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[LEFT TO RIGHT] ZA – KOENJI LIGHTING DESIGN: Hiroyasu Shoji, IALD; Yumiko Tanaka, Associate IALD; LightDesign Inc | ARCHITECTS: Toyo Ito & Associates PHOTOGRAPHY: © Toshio Kaneko STEPHEN M. ROSS SCHOOL OF BUSINESS AT THE UNIVERSITY OF MICHIGAN LIGHTING DESIGN: Keith J. Yancey, IALD, AIA, LC, P.E.; Carlene M. Geraci; Nathanael C. Doak; Jennifer Pieszak, IALD; Lam Partners Inc | ARCHITECTS: Kohn Pederson Fox Associates PC PHOTOGRAPHY: © Barbara Karant / Karant+Associates, Inc; © JJR LLC / Ken Cobb; © Lam Partners Inc; © Michael Moran

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NEWSWIRE

EDITED BY BRAULIO AGNESE



AIA.ORG

Disaster in Japan

AIA.org posts the latest architecture news in the aftermath of Japan's devastating March 11 earthquake and tsunami. You can also learn how to contribute to relief efforts.



THE TIMES-PICAYUNE (LA)

Managing New Orleans' water

Greater New Orleans selected Waggonner & Ball Architects to create a water-management plan for the city. The firm's approach was described in our January 2011 issue ("Don't Fight Nature").



MILWAUKEE JOURNAL-SENTINEL

Taliesin photos going back to Wisconsin

The Wisconsin Historical Society has acquired more than two dozen photographic proofs of Frank Lloyd Wright's Taliesin that were taken between 1912 and 1914.

Old Struggle, New Chapter

IN TEXAS, A FIGHT BETWEEN ARCHITECTS AND ENGINEERS GOES TO THE CAPITOL

A DECADES-LONG BATTLE in Texas over whether engineers can provide architectural services has moved from the courts to the state Legislature. Under Texas law, engineers can perform design work on projects that fall below certain thresholds: 20,000 square feet for commercial structures, \$100,000 for new public buildings. But that isn't enough for the engineers, who have persuaded allies in the Legislature to propose laws that would allow engineers to engage in what they call "comprehensive building design."

The fight has been brewing ever since the Texas Legislature passed a "practice act," restricting architecture work to architects, in 1990. But some engineers continued doing architecture, and in 2005 and 2006 the Texas Board of Architectural Examiners began enforcement actions. In 2008, the board issued cease-and-desist orders to three engineers it found to be practicing architecture.

The engineers retaliated: The Texas Society of Professional Engineers sued the Texas Board of Architectural Examiners, in part over the board's jurisdiction. In 2009, a district court found that the board

had erred in creating a brochure that said that "engineers may not engage in the same activities as architects" because it did not take the exemptions into account.

But on the larger issue, the court handed the architectural board a victory, finding that the state's practice act was valid and that engineers "are not categorically exempt" from its requirements. The case is on appeal, but meanwhile, says Yvonne Castillo, general counsel for the state AIA chapter, the Texas Society of Architects (TSA), "It's not looking good for the engineers in the court, so they've shifted their focus to the Legislature."

Several bills have been introduced in the current legislative session. HB 2284, the most "blatant," as Castillo puts it, would amend the definition of engineering to include building design. Another proposal, HB 2522, would allow the Texas Board of Professional Engineers to decide what design services engineers can perform.

Castillo says it's too soon to know what chances the bills have of passing—but, just in case, the TSA has asked its members to call and write their legislators. In the meantime, says Paul Mendelsohn, vice president for government and community relations for the AIA, the institute's position is clear: "Any structure that's for human habitation or use should be designed by an architect as opposed to an engineer."

Mendelsohn says that, in most states, good communication between architecture and engineering boards "has led to an understanding on the proper roles of each profession." But given how heated the issue has become in Texas, he adds, "It's always something we are concerned about." FRED A. BERNSTEIN

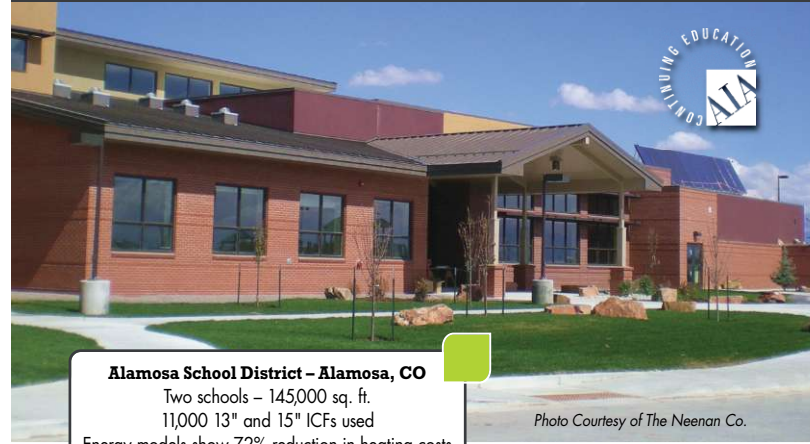
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- ↑ 51.3 mixed practice
- ↓ 49.7 multifamily residential

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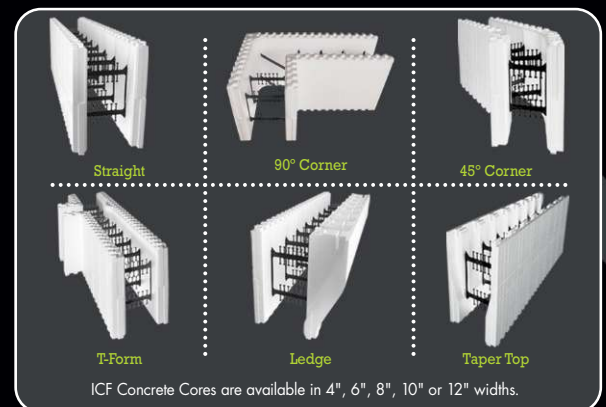
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THE NEW YORK TIMES

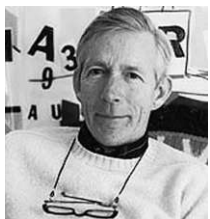
New York City's youngest landmark

Built in 1971, the Junzo Yoshimura and George G. Shimamoto–designed Japan Society building was designated a landmark, along with three other, much older, structures.

Weld Coxe Dies at 81

WELD COXE, HON. AIA, founder of Seattle-based Coxe Group, died on March 15 at the age of 81. Coxe essentially invented the role of management consultant to architectural firms.

He attended Harvard College but was asked to leave after two years because he neglected his studies to write for Harvard's newspaper, *The Crimson*. Coxe's first jobs were as a reporter for *The Berkshire Eagle*, *The Arizona Republic*, and *The Providence Journal*.



Weld Coxe

When professional ethics rules were changed by the AIA in the early 1960s to allow marketing, Coxe saw an opportunity to meld his journalistic skills with his interest in design. He wrote the first draft of his book *Marketing Architectural and Engineering Services* in 1967 and began consulting for firms as he solicited comments while polishing the text. The book was published in 1971.

Pritzker Prize winner Robert Venturi, FAIA, has warm memories of Coxe. "He was a wonderful man and one of our clients when we were young," Venturi says. Venturi's firm designed a pair of cottages on Block Island, R.I., for Coxe and his wife in 1981. The Coxe Group also consulted for the Philadelphia-based Venturi, Rauch and Scott Brown (now Venturi, Scott Brown and Associates). "He advised us very effectively," Venturi notes—as evidenced by the fact that the practice won the AIA Firm Award in 1985.

Coxe retired from active duties at the Coxe Group in 1994 and battled with Parkinson's disease in his later years. His legacy can be found in his company's five offices and in the architecture firms that he served: More than half of the AIA Firm Award winners have been clients of the Coxe Group. EDWARD KEEGAN, AIA

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PHOTO: COREY ROURKE

AIA VOICES

TAMMY EAGLE BULL, AIA, NCARB, DRAWS TOGETHER COMMUNITY AND TRADITION TO DEFINE AN ARCHITECTURAL PRACTICE

Tammy Eagle Bull is president of the Native American, woman-owned firm Encompass Architects, in Lincoln, Neb. This year she also became president of AIA Nebraska. With her husband, Todd Hesson, AIA, as partner, 80 percent of the firm's work is for tribal nations; the remainder includes commissions for public schools in South Dakota and Nebraska, including the University of Nebraska-Lincoln. But for Eagle Bull, the work for the tribes is especially satisfying.

We work mostly in South Dakota, where I'm from, and in the Southwest and Nebraska. Since the federal stimulus funds for schools and infrastructure dried up, we're focusing a lot on—sad to say—the growing need for detention facilities, especially youth detention and rehabilitation centers. The tribes had been sending people off the reservation for these services, but now they want to keep their people nearby as they help them deal with issues. A lot of people don't know the basic needs and some of the deplorable conditions that exist on reservations.

To design for tribal nations, we work very closely with the communities. We did a K-8 school on the Pine Ridge Indian Reservation in Porcupine, S.D., funded through the Bureau of Indian Affairs. We asked the kids what they wanted. The overwhelming

response was a safe place where they could get away from issues at home. We designed the school as an “ideal home,” with spaces like a living room, a family room, and areas they can identify with and feel safe in. It's the first LEED Silver-rated school in South Dakota. Yes, the tribes want sustainable architecture—they were green before green was green.

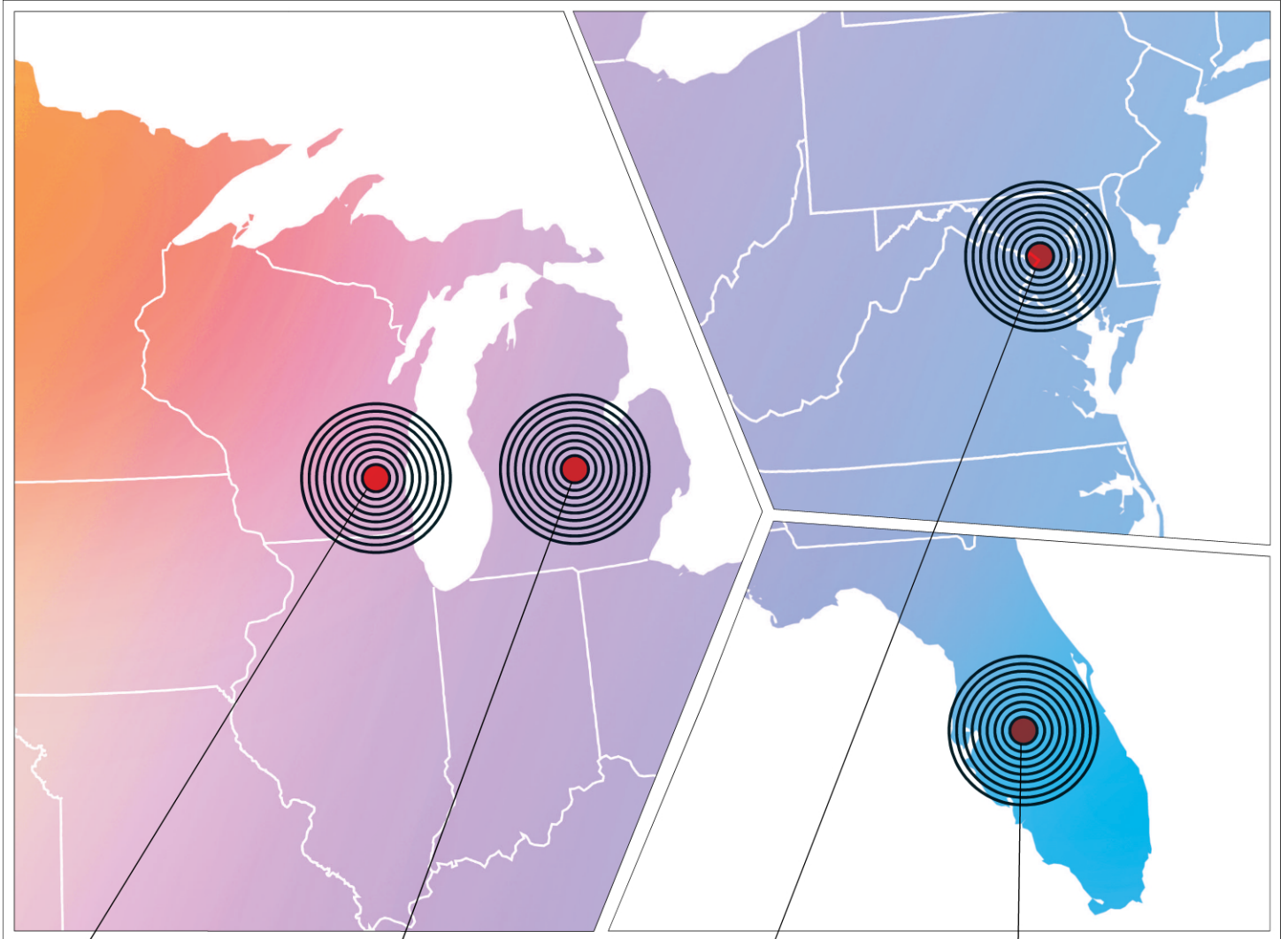
My dad grew up on a reservation and wanted to be an architect, but his 1950s high school counselor talked him out of that. My dad helped me realize that if I could improve the built environment of Indian people, I could help improve their lives. We need to look ahead. When money comes to the tribes, they think, “What can we build?” Our focus for the next few years is to offer infrastructure, project and master planning, so when funding returns they're ready.

My practice is not glamorous and you don't win awards, but it's very satisfying. When we work with tribes, I stay visible. I hear, “You're a girl and you're an architect?” I say that it's about courage, and being an architect can be a way to give back. They're interested. And unlike in my dad's day, not only the boys but also the girls know it's possible. *As told to Edward Lifson. AIA*

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

AIANOW

ACROSS THE INSTITUTE



WISCONSIN

Great Architects and Architecture in Milwaukee

It has been 10 years since Santiago Calatrava designed a spectacular addition to the Milwaukee Art Museum, created by Eero Saarinen. To celebrate, the museum has compiled a series of architecture shows for 2011, including 33 drawings by Frank Lloyd Wright that have never before been exhibited publicly. Both "Frank Lloyd Wright: Organic Architecture for the 21st Century" (through May 15) and "Building a Masterpiece: Santiago Calatrava and the Milwaukee Art Museum" (Sept. 8–Jan. 1, 2012) will help make Milwaukee "an important destination for architecture in 2011," says Daniel T. Keegan, the museum's director.

➔ Learn more at mam.org.

MICHIGAN

Michigan Architects Need CE Credits

Starting Nov. 1, all architects registered in Michigan must meet the same continuing education requirements as those set by 42 other states. For the year ending October 2012, Michigan architects must take 12 credits of Health, Safety and Welfare courses. Then starting Nov. 1, 2012, the requirements will be 24 HSW credits for the regular two-year licensing renewal period. AIA Michigan plans to help out its members by offering low-cost programs and distance learning, and making available CE courses from outside the state.

WASHINGTON, D.C.

Building, Block by Block

Fifteen structures from around the world recreated in Lego blocks are on display at the National Building Museum in Washington, D.C., through Sept. 5. Some of the most recognized structures have been rendered in tiny Lego blocks by Chicago-area architect Adam Reed Tucker, one of only a handful of Lego-certified professionals in the world. Each sculpture in "Lego Architecture: Towering Ambition" is a study in detail. In recognizing that the blocks are toys for the imagination, the museum has set aside a play area for children of all ages to create their own Lego structures.

➔ Learn more at nbm.org.

FLORIDA

Sunshine Architecture

Read about the fascinating history of Florida architecture, from its Colonial past to the New Deal, in a book created by Vivian Young for the Florida Foundation for Architecture. *Florida Treasures: Celebrating Florida's Historic Architecture* (1996) touches on buildings ranging from the simplistic vernacular to the fantastical landmarks recognized around the world, all shaped in response to the local climate.

➔ Download the book for free at aiafla.org.

Compiled by Elena Marcheso-Moreno



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NOTICE



THE AMERICAN INSTITUTE
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OF AIA CANDIDATES AND CONVENTION BUSINESS ITEMS

CANDIDATES FOR INSTITUTE OFFICERS

Elections for the Institute's 2012 First Vice President/2013 President-elect, two 2012-2013 Vice Presidents, and 2012-2013 Treasurer will be held at the AIA 2011 National Convention and Design Exposition, which will take place May 12-14, 2011, in New Orleans. If no candidate for First Vice President or Treasurer obtains a majority of the votes cast during the initial round of voting on May 12-13, a run-off election will take place on May 14, 2011. The following members have declared themselves candidates for national office.

2012 First Vice President/2013 President-elect



Mickey Jacob, FAIA
(AIA Tampa Bay)



Stephen K. Loos, FAIA
(AIA Colorado North)



Donald C. Brown, FAIA
(AIA Montgomery)



Russell Davidson, AIA
(AIA Westchester
Hudson Valley)



David Del Vecchio, AIA
(AIA New Jersey)



Debra S. Kunce, FAIA
(AIA Indianapolis)



Gabriel Durand-Hollis,
FAIA (AIA San Antonio)

2012-2013 Vice Presidents (two will be elected)

2012-2013 Treasurer

THE INSTITUTE'S ANNUAL BUSINESS MEETING WILL BEGIN PROMPTLY ON SATURDAY, MAY 14, AT 8:15 A.M. DELEGATES WHO FAIL TO CLAIM THEIR VOTING KEYPADS AND TO USE THEM TO REGISTER THEIR PRESENCE AT THE START OF THE MEETING WILL NOT BE ABLE TO VOTE AT THE MEETING.

PROPOSED BYLAWS AMENDMENTS

The AIA Board of Directors is sponsoring amendments to the Institute's Bylaws, and they will be considered at the annual business meeting.

Bylaws Amendment 11-A – Vote Required to Adopt Bylaws Amendments at Convention
This amendment would use a threshold to determine voting requirements. That threshold would be reached whenever delegates holding at least three-fourths of the votes accredited to be cast at the meeting are present. If that threshold were met, then the amended Bylaws provision would require an affirmative vote of at least two-thirds of all votes actually cast on the proposed amendment at the meeting. If the threshold were not met, then the amendment would require an affirmative vote of at least two-thirds of all votes accredited to be cast at the meeting.

Bylaws Amendment 11-B – Proxy Voting at Meetings of the Institute

This amendment would permit a state delegate or a delegate designated by the state component president to represent more than one chapter within that state by proxy.

Bylaws Amendment 11-C – Term of Public Directors

This amendment would increase the term of the Public Directors on the Institute's Board of Directors from two years to three years.

RESOLUTIONS

The delegates at the AIA 2011 National Convention and Design Exposition will also be asked to consider resolutions, which require approval by a majority vote of the delegates present and voting. To view the candidate speeches, visit <http://video.aia.org/Candidates2012/index.html>. For candidates' statements, and the full text of the proposed Bylaws amendments and resolutions, visit the AIA Convention Web site, www.aia.org/convention.



ILLUSTRATION: HARRY CAMPBELL

SINCE CONGRESS PASSED THE BROOKS ACT IN 1972, ALL FEDERALLY funded architecture projects have been governed by the qualifications-based selection (QBS) process. QBS requires that public clients select architects based solely on their qualifications and technical ability—not on proposal costs—and prohibits clients from discussing bid prices at all until the most qualified firm has been selected. If the client and most qualified designer can't come to an agreement on price, clients begin negotiations with the next-most qualified firm.

In the years since the federal mandate, most states have adopted "mini-Brooks" laws that require the same selection criteria for state-funded projects, as have some local municipalities. The result? A patchwork of laws that lose uniformity the further they get from federal laws, but are all meant to safeguard the quality of work architects do for public clients.

But today, QBS is under threat from state legislators and institutional procurement officers who don't understand the process, or question it, creating a need to reeducate clients and civic leaders about QBS's value—all this coming at a time when many states and municipalities are looking to cut costs and see QBS as an added expense.

In Florida, state legislators Mike Bennett and Fred Costello introduced bills that would roll back QBS for all state entities. In West Virginia, State House Delegate John Doyle and others introduced a bill that would repeal QBS requirements for state institutions of higher education. Exempted from its state's QBS law, the University of New Mexico began asking architects for price estimates a year ago. And in Wisconsin, state legislator Rich Zipperer sponsored a bill allowing counties to continue using cost for a quarter of all evaluations, but it died in Assembly committee.

Some municipal leaders object to QBS regardless of the current economic climate. Some architects report that civic leaders in charge of procurement aren't aware of the value or purpose of QBS and will ignore it—even if it's the law. "They don't understand that professional design services are not like bidding pencils," says Sue Bertram of QBSColorado, a multidisciplinary industry advocacy and watchdog group that works with industry partners such as AIA Colorado.

Other architects report that their clients object to QBS because of its cost. Richard Logan, AIA, of MPA Architects in West Palm Beach, Fla., says that by jettisoning QBS, clients are looking to leverage the

depressed design and construction economy to drive prices down. "They think that there's very little work out there, and a lot of qualified firms that will take the work no matter what the price," he says.

Similarly, University of New Mexico chief procurement officer Bruce Cherrin says that he asks each architecture firm up front for pricing and level of effort. Even though this information is a small percentage of each firm's proposal, "It gives us better understanding and potential leverage," Cherrin says.

Norman Cummings, one of the Waukesha County officials who supported the bill that would have allowed Wisconsin counties to continue using QBS for only 75 percent of the evaluation for local projects, says that using a pure QBS process would cost his county an additional \$250,000 per year. "If that's what it cost, we'd be doing less projects," he says. "The 25 percent cost quotes, which are not known by evaluators until the 75 percent technical scoring is completed, allow us to know what the market is for the services we seek. Under pure QBS, we would have to negotiate blindly."

Can municipalities afford to ignore QBS? A 2009 study by researchers from the University of Colorado and Georgia Tech found that projects using QBS averaged a 3 percent increase in construction cost growth, while non-QBS projects saw a 10 percent increase. The study also found that construction-schedule growth with QBS averaged 8.7 percent, but without it schedules grew by 10 percent.

Architects say that instead of trying to come up with a minimum-cost proposal based on just a few paragraphs in an RFP, QBS allows them to learn from clients exactly what a project needs. Without QBS, clients are cut out of the design process, and architects are pressured to make the cheapest possible bid with incomplete project information.

According to Joe Brawley, AIA, of Brawley and Company in Albuquerque, N.M., this is a recipe for change-orders (by contractors) and additional service requests (by the design team) and complications. He's seen QBS from both sides, having directed capital projects for universities in the past. "The owner is hiring the architect not to solve the problem, though that's part of it, but to first help define the problem," Brawley says. "When you're bidding a project, you have to assume the project is already defined, and there lies the rub: It isn't defined." **AIA**

Written by Zach Mortice.



Lightness of Being

Local needs bolster a national trend to redefine healthcare's physical footprint.

BILL MILLARD

A HEALTHCARE INSTITUTION CAN BE A TROUBLESOME NEIGHBOR: utilitarian in design, voracious in resource use, and insular toward its surroundings. Historically, notes Jean Mah, FAIA, LEED AP BD+C, a principal at Perkins+Will in Los Angeles, hospitals were isolated because infectious diseases and marginalized populations were their chief concerns. "Hospitals were places that the poor went," she notes. This quarantine model hasn't kept pace with contemporary epidemiology, demographics, or market forces driving facilities to exurban sites. Today's hospital is more of a critical node than an isolated citadel. "Healthcare's not about sickness," Mah says, "so much as about healthy people and communities."

Ron Smith, AIA, LEED AP, vice president for healthcare at HOK in Houston and president of the AIA's Academy of Architecture for

Health, interprets hospitals' regenerative opportunities broadly: "If you take the definition of regenerative medicine as regenerating damaged tissues and organs in the body by stimulating previously irreparable organs to heal themselves," he says, a hospital can "stimulate a part of the community that is not working or is underperforming." By shaping facilities to contribute to the communities they serve, architects become partners with healthcare providers in regenerative design.

LIGHTER FOOTPRINTS AND WALKABLE SITES

Several related schools of thought—environmental medicine, evidence-based design, and active design—share a general premise: that patients' well-being responds not only to one-on-one interventions but to the quality of environments. Robin Guenther, FAIA, LEED AP, sustainable healthcare design leader at Perkins+Will, puts it succinctly: "You're not going to have healthy people on a sick planet."

Guenther, co-author (with Gail Vittori) of *Sustainable Healthcare Architecture* (Wiley, 2007) and a member of the LEED for Healthcare Committee (LEED-HC), sees a philosophical shift. A few years ago, "green hospital" was almost a contradiction in terms; hospitals' mission to provide high-quality care overrode concerns about resource conservation. Now, she says, "healthcare understands that



Karlsberger Architects built its Dell Children's Medical Center of Central Texas in Austin, on a brownfield site rather than breaking ground in suburbia.



PHOTOS: © JOHN DURANT PHOTOGRAPHY

delivering high-quality patient care isn't a passport to waste and excessive energy use. It's not a get-out-of-jail-free card. The industry is recognizing that sustainable design is not about deprivation; it's about doing more with less and fundamentally connects to healthcare's core mission to 'do no harm.'"

Health promotion, she believes, also includes accountability for carbon footprints, graywater management, purchasing patterns, and combating sprawl. (Epidemiologists correlate sedentary behavior with obesity, diabetes, and cardiovascular disorders—identified in the



Dell Children's Medical Center occupies 500,000 square feet and 32 acres, and is the first LEED Platinum hospital in the world.

Active Design Guidelines, published in 2010 by four New York City agencies and the AIA New York Chapter, as "diseases of design.") "Do hospitals contribute to the sprawl when they leave their downtown sites and build their expansive new campuses at the intersection of two arterial interstates?" Guenther asks. "Or are they just following the populations they serve?"

Situating buildings among footpaths, gardens, and transit enriches a neighborhood more than surrounding it with parking. The world's first LEED Platinum hospital, Dell Children's Medical Center of Central Texas, set a strong precedent by choosing a brownfield site at central Austin's abandoned airport over a suburban location. Kaiser Permanente is supporting local food procurement in Oakland and South Central Los Angeles. Spaulding Rehabilitation Hospital is moving from central Boston to the former Charlestown Navy Yard, anchoring waterfront redevelopment and opening amenities to the public; it is also designed for the higher water levels anticipated by 2050.

Even in the Motor City, reports Uma Ramanathan, AIA, a principal at Boston's Shepley Bulfinch, design is addressing sprawl's bodily consequences. Her firm's Specialty Center for Children's Hospital of Michigan will incorporate a running track and clustered conference rooms that convert to exercise and outreach spaces, a boon to a region with widespread obesity and diabetes and a large uninsured population.

RETOOLING FOR RECOVERY

In Newark, N.J., revitalization combines community synergies with institutional triage. "The State of New Jersey asked Catholic Health East (CHE) to buy Cathedral Health System, a three-hospital system," says James Crispino, AIA, president of Francis Cauffman's New York office. "We helped reposition the hospital when CHE needed to close two [in order] to make one healthy hospital for the city of Newark, which the state and city agreed to support." The plan's initial phase gives Saint Michael's Medical Center a new four-story tower, expanding clinical spaces and offices amid Newark's wider project to upgrade transit, build 3,000 housing units, demolish Baxter Terrace ("the most dangerous project in the city," Crispino says, "very much in Pruitt-Igoe mode"), and add commercial development.

Newark's recovery from its 1967 riots remains an uphill struggle, a far cry from creative-class success stories such as university-medical complexes in Pittsburgh and Cleveland. Still, the city has Rutgers, the New Jersey Institute of Technology, and Seton Hall for intellectual capital. "They're focused on retention," Crispino says. "If the workforce isn't there, maybe you can train them and keep them" with accessible and affordable medical education. "At the end of the day, it's as much about the quality of your life in the city of Newark as the redevelopment of a medical center."

Perkins+Will's Mah cites a hospital in Rio Negro, Colombia, that incorporates a cathedral, thereby becoming the spiritual town center. Healing any community, suggests Frances Halsband, FAIA, of the New York firm Kliment Halsband Architects, requires deep, nuanced local assessment. How deep, only a proverb can say: "To make an apple pie from scratch, plant an apple tree." But the necessary assets may already exist. "Start with what's there. Find out if there's already an apple tree growing on that site," she says. **AIA**

➔ Find out about two regenerative design projects in Providence, R.I., by Kliment Halsband and Imelk at www.aia.org.



AIAPERPECTIVE

A PRESCRIPTION FOR A HEALTHIER NATION

PHOTO: WILLIAM STEWART



THE RECENT DEATH OF JACK LALANNE, THE HIGH PRIEST OF crunches and treadmills, has inspired a cottage industry of stories on the state of America's physical health. Most of these stories—no, why hedge? all of them—make depressing reading. As a nation, we're literally and figuratively in bad shape.

A January feature article in *The New York Times* graphically and textually documented the battle of the bulge. From the Kennedy administration's revamped President's Council on Physical Fitness, in 1961, to Michelle Obama's Let's Move campaign against childhood obesity, the number of Americans between the ages of 20 to 74 classified as obese rose almost threefold, from 13.3 percent to 35.2 percent. Expand the pie chart to include the merely overweight and the figure jumps to a staggering 67.3 percent—or nearly seven out of every 10 Americans.

A recent study of hospitals in Camden, N.J., one of the poorest cities in the nation, revealed that 90 percent of the cost of medical care was generated by only 20 percent of the patients. In a Jan. 24, 2010, *New Yorker* piece, just 1 percent of Camden's patients accounted for a third of the city's medical costs. Healthcare delivery systems nationwide are at risk of being overwhelmed. In the meantime, health insurance premiums for individuals and businesses continue to rise, even for those who are healthy.

Leaving aside the impact of soaring health costs on small business, America's health crisis—and "crisis" is not an overstatement—raises the question of the role, if any, design has as an Rx for the nation's health. Answering that question requires bridging a deep and wide perceptual gulf.

Mention "health" and "design" in the same breath and most people immediately picture hospitals and clinics. Yet architects have a much larger role to play. We should be trying to keep people out of hospitals. A trip to the emergency room should largely be the consequence of accidents, not the outcome of a poor lifestyle.

At present, this nation's healthcare system is really not about health; it's about medical care. Members of the AIA's Academy of

Architecture for Health Knowledge Community advocate a different perspective: We need to shift our focus away from a preoccupation with medical care to a more balanced view of the world. They're right.

Gaining a more balanced, integrated view of how we interact with the environment and one another is the role of design. Moving toward such a balance goes far beyond diet and exercise. It means giving people choices in how they negotiate their environment. It means restoring whole neighborhoods to health.

In suburban America, as well as within many cities, it's almost impossible to buy a stamp, shop at a grocery store, or drop your kids at a basketball game without driving halfway to hell and back. This is a direct result of poor design. Whether it's neglected open spaces, out-of-the-way stairs, limited access to recreation and cultural facilities, lack of generous sidewalks or retail density, or the absence of bike paths—the list goes on—every piece of the larger puzzle affects our health.

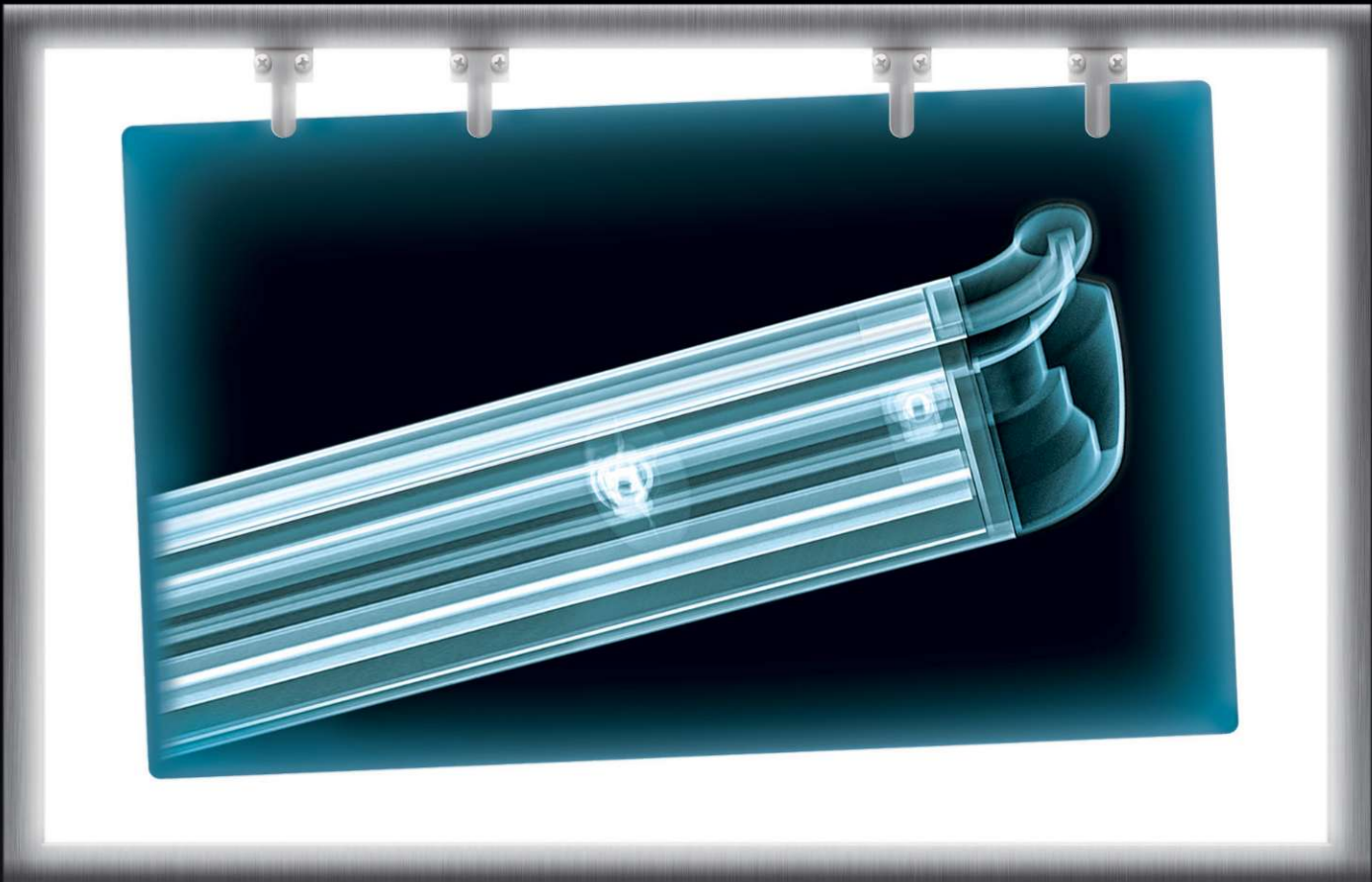
Conceived by the AIA and co-chaired by three national leaders from education and practice, America's Design and Health Initiative (ADHI) aims to articulate specific recommendations for public policy, research priorities, and design guidelines. Since December 2010, ADHI has been building frameworks for lasting collaboration with leaders from a broad range of public and private organizations concerned with America's health crisis.

But the real challenge is gaining public appreciation of the connection between health and design. Here, too, the AIA is actively engaged. A PBS series titled *Designing Healthy Communities*, hosted by former AIA Public Director Richard Jackson, will air later this year. Underwritten in part by the AIA, this series will explore the relationship between design and health.

When the day comes that an architect is invited to address the American Medical Association, we'll know we've been heard. When we wake up to a healthier nation, we'll know we've been understood. **AIA**

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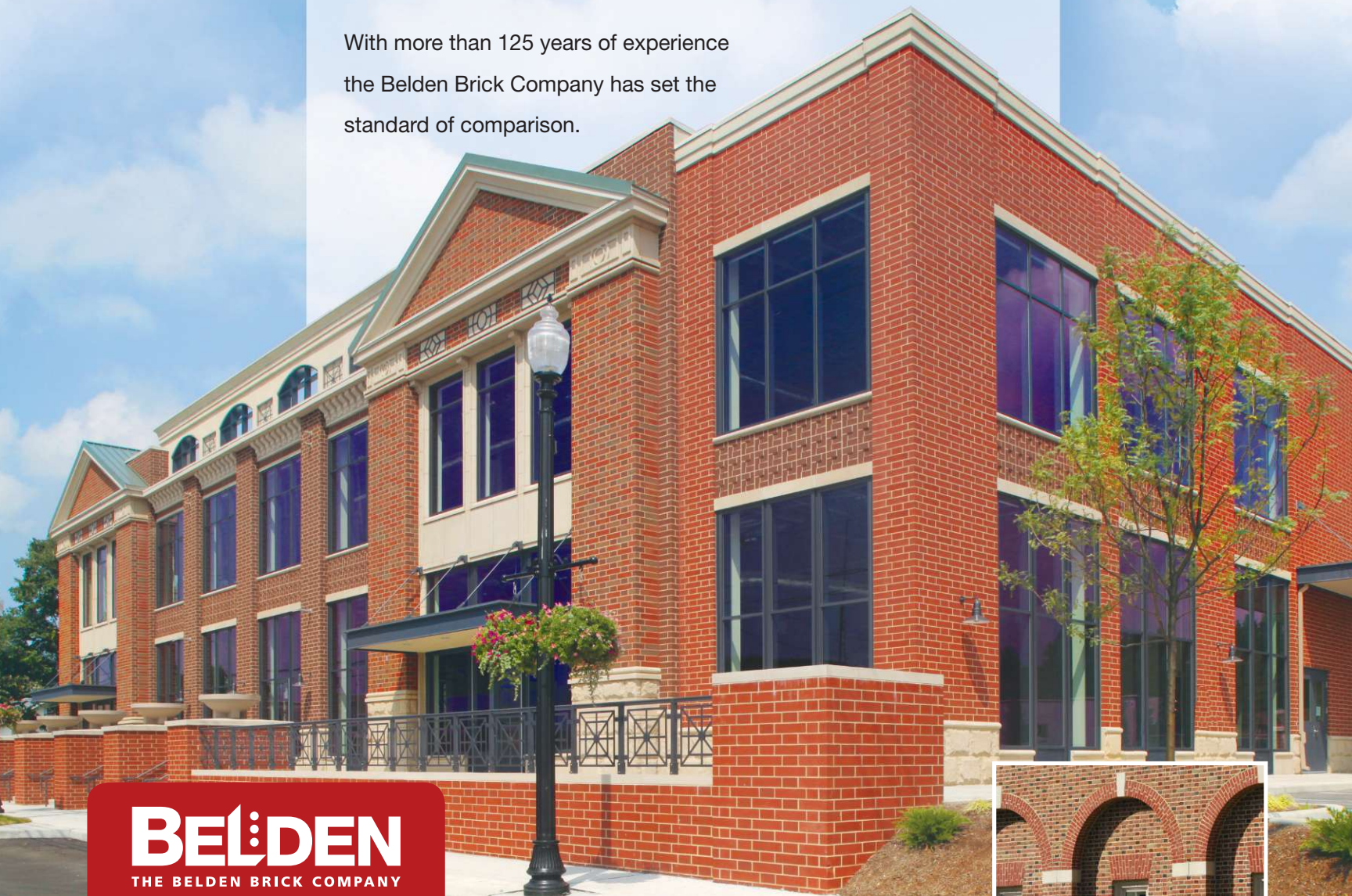
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BUSINESS



INTERVIEW BY ERNEST BECK
PHOTO BY SIOUX NESI

Commissioning building photography is not a point-and-click decision. **Elizabeth Kubany**, a publicist for architects and designers, offers advice on how best to select and work with an architectural photographer.

→ BEST PRACTICES

Straight Shooters

AS THE FORMER PUBLIC RELATIONS director at both Skidmore, Owings & Merrill and Hardy Holzman Pfeiffer Associates (now three separate firms), Elizabeth Kubany has deep expertise in commissioning photographs of buildings and getting them in front of the public. Over the years, she has honed a keen eye for spotting talented photographers and the ability to foster a dialogue between photographers and architects. That relationship is a balancing act, she believes, between understanding the architect's intentions and the photographer's technical and artistic skills. In the first of two columns focusing on architectural photography, Kubany, who

now runs her own public relations agency for architects and designers, talks to *ARCHITECT* about how to make sure that your building looks great in pictures.

Know your photographer.

It's critical to find a photographer who gets you and how you want your building represented, Kubany says. After all, the photographer's job is to create an image that captures and explains a three-dimensional building in a two-dimensional format for someone



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business

IDEALIZED PICTURES OF EMPTY BUILDINGS ARE LOSING THEIR VOGUE, WHILE SHOTS WITH A POINT OF VIEW ARE IN.



who will probably never see it in reality. That's why the photographer must understand the building and what the architect is trying to say. "It's all very personal," she says.

Keep an open mind.

Many firms have their favorite photographers, the ones with whom they feel most comfortable. It's a seductive idea to stay with a trusted photographer. But "try to stay open to new names," Kubany says. New talent does not necessarily mean inexperienced photography. A generalist photographer with an eye for architecture might make for a great discovery—like Alfred Stieglitz, who took the iconic 1903 photograph of the Flatiron Building. Always check an architectural photographer's portfolio for shots of a variety of building types that show something special. "You don't want a sense of sameness," she says.

Watch the bottom line.

Look for newcomers who are willing to spend a day on their own expense to shoot pictures in order to show you what they can do and justify their costs, Kubany says. Depending on the photographer's experience, a day rate can run between \$1,500 and \$4,000—assistants, equipment, and travel expenses not included. "Architectural photography is not a small investment," she says. Good photographers bring along intangible assets. "I am interested in photographers who come to the table with media contacts and want to work with you to get the project published," she says.

Don't forget point of view ...

There has been a recent shift away from photographs with a chilly modernist perfection to a more inclusive, less tidy perspective, Kubany says. Idealized pictures of empty buildings are losing their vogue, while shots with a point of view are in. "If the purpose of architectural photography is to get a building noticed—by potential clients, by editors, by the general public—then it follows that having images with a strong point of view is a good idea."

... but make sure that the POV is in line with the architect's.

Architectural photography is not unlike portrait photography. Different photographers will shoot the same building slightly differently. "It's best to find someone who sees something you don't, but reinforces an element or theme in the building that the architect loves or finds important," Kubany says.

Prepare a pre-shoot briefing.

"The more information the architect can provide, the better," Kubany says. You don't have to be on the shoot, and in fact, that can be a hindrance. A back-and-forth is good, but given the costs involved, it's worthwhile to let the photographer know beforehand your priorities and interests. Provide a shoot list with all the elements you want the photographer to look for, she suggests.

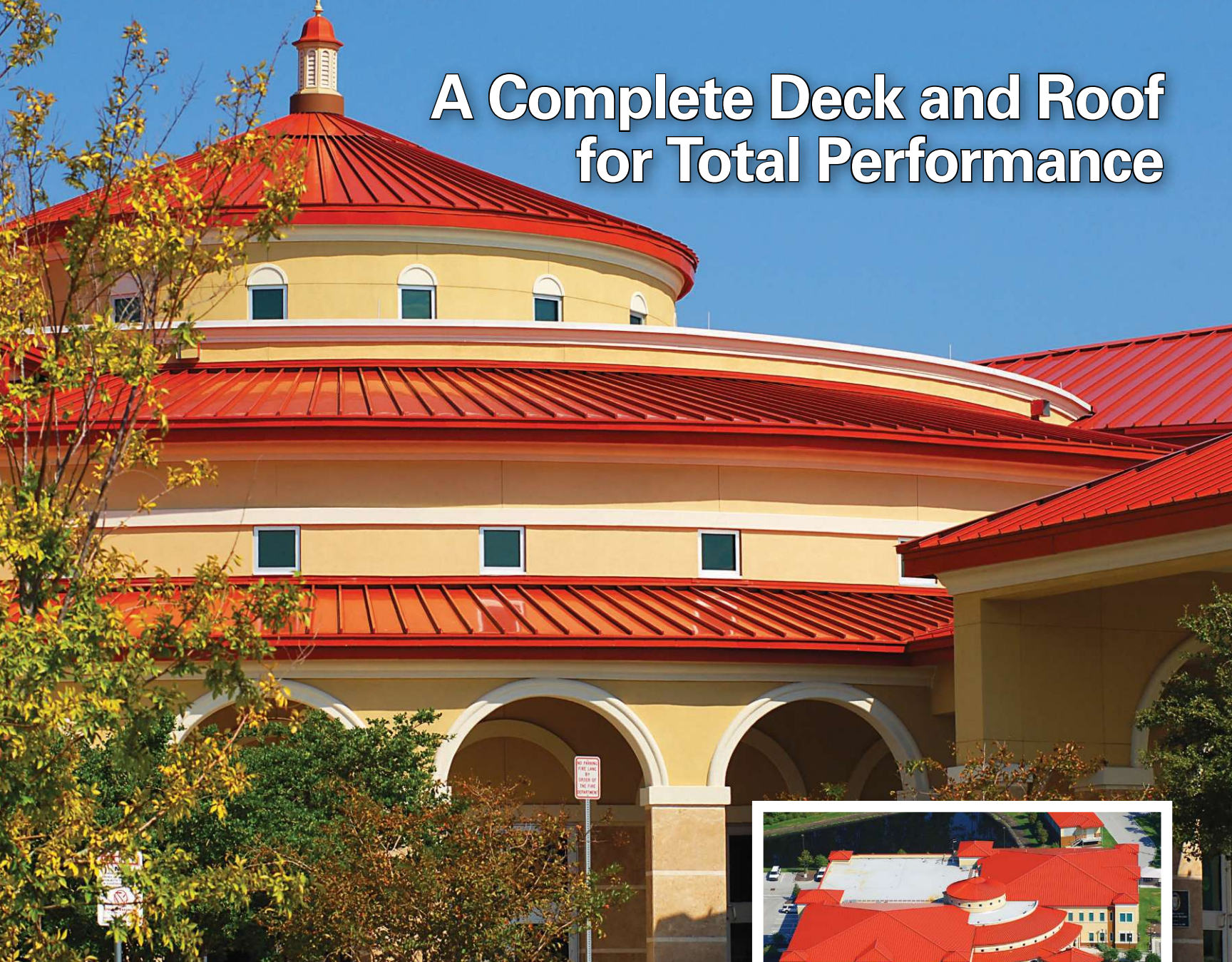
Don't forget a follow-up.

Some buildings are difficult to shoot and have to be reshot after the first round of images. Why? Maybe the photographer didn't do a good job, although that doesn't happen very often, Kubany says. Perhaps the first photographer did fine, but another photographer has a second opinion. Loyalty and variety both have their advantages. And a follow-up can happen years later, she says.

Sort out legal details from the get-go.

"There is a constant tension between the rights of the architect, who commissions and pays for the shoot, and the photographer, who retains the copyright," Kubany says. Address this issue up front, and in detail, because it can complicate marketing, public relations, and publishing down the road. "Contracts should allow widespread use of the picture by the architect," she advises. "Always with due credit to the photographer, of course." □

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→ TYPOLOGY

Synagogues

JEWISH HOUSES OF WORSHIP ARE EXPERIENCING MODEST GROWTH AS CONGREGATIONS SEEK MORE SOCIAL, ADAPTABLE SPACES.



B'nai Israel Synagogue

• Rochester, Minn. •

HGA

The 15,000-square-foot B'nai Israel Synagogue, near the Mayo Clinic, has a 150-seat sanctuary based on a broad-house plan. The program also includes classrooms, a social hall, a library, offices, and a catering kitchen.

TEXT BY ELIZABETH EVITTS DICKINSON

OF ALL RELIGIOUS STRUCTURES, synagogues are the great chameleons of architectural form. This has something to do with Jewish history. The First Temple, built by King Solomon in Jerusalem in the mid-10th century B.C., was destroyed, and so was the Second Temple that replaced it. The great diaspora that followed scattered Jews across countries in which they were frequently persecuted. When synagogues were constructed, they often needed to be contextual, to do anything but call attention to themselves. Even as the Jewish faith gained acceptance, synagogues remained very much rooted in the tastes of the congregation and the community.

“One thing about synagogue architecture is that there are not a lot of rules,” says Joan Soranno, FAIA, a vice president at the Minneapolis architecture firm HGA. Soranno and her partner, John Cook, FAIA, designed the B'nai Israel Synagogue in Rochester, Minn., which won an award in 2009 from the AIA Interfaith Forum on Religion, Art and Architecture. “Catholic churches can be very prescriptive. In Judaism, there isn’t a building typology history *per se* that you are enslaved to. Judaism very much embraces contemporary architecture.”

As Jewish congregations in America grew after World War II, they looked to the great architects of the day to create singular houses of worship: Walter Gropius, Frank

Lloyd Wright, Louis Kahn, Eric Mendelsohn, and Philip Johnson, to name a few. In the last 20 years, demand for new and renovated synagogues again has been strong, according to Samuel D. Gruber, an architectural historian and the author of *American Synagogues: A Century of Architecture and Jewish Community*. “I think we’ve been going through the biggest synagogue building boom since the 1960s,” he says. This spurt can be attributed to the baby boomers but also to a younger generation that has sought to redefine its experience of Jewish worship.

Jay Brown, AIA, vice president of Maryland-based firm Levin/Brown & Associates, which has completed more than 150 synagogue projects, says that new construction has recently been slowing, particularly in terms of smaller commissions. “Because of declining membership [in congregations] and lack of funding, there is not a lot of money for new construction,” Brown says. His firm has had several new-build projects put on hold in the last year.

But, he adds, this financial squeeze translates into a more robust demand around the nation for renovations of existing structures—including some of the now-historic buildings designed by Wright and Kahn.





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**Summit Jewish
Community Center**

• Summit, N.J. •
*Alexander Gorlin
Architects*

Alexander Gorlin recently designed an expansion for the Summit Jewish Community Center, a Conservative synagogue in New Jersey. The form of the new sanctuary (right) was derived from the Star of David. Now under construction, the project will also add three new classrooms and a common room for the nursery school.



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New Ways to Worship and Connect

All synagogue interiors share a few standard elements. There is the sanctuary—the main room for worship—where services are led from the *bimah*, a raised platform on which the Torah is read aloud. On the *bimah* is the ark, the container of the Torah scrolls, ideally placed on an east wall, facing Jerusalem. Around the *bimah* is seating for the congregation. (In Orthodox congregations, men and women are segregated.)

For many decades, Jews in America took cues from churches and created large sanctuaries with fixed seating in a theater style. The raised *bimah* was the focal point, and congregants sat facing it and the rabbi. Today, there is a desire for a more communal experience. “The service is much more interactive, so the most modern synagogues surround the clergy in a theater-in-the-round style,” Brown says.

With this shift comes a need to make the building more adaptable. Many congregations swell to more than three times their weekly service size during High Holidays. Synagogues are also places of community activity, from Hebrew school and day care to adult education and special events.

Adaptability is a key component of B’nai Israel, completed in 2009 for roughly \$200 per square foot. Located near the Mayo Clinic, the new 15,000-square-

foot building has a 150-seat sanctuary based on a broad-house parti. “The sanctuary is wider than it is deep, which influences participation, versus a church, which is long and narrow and more hierarchical,” Soranno says. Seats encircle the *bimah* and there is a partition that opens to an adjacent social hall, which expands seating to 250. A nearby kosher kitchen caters to special events. “Worship is very important, but so is coming together and eating and celebrating,” Soranno adds.

Reviving Historic Temples

The most common reasons for renovating a synagogue are to reconfigure the space so that it encourages social interaction and to add more natural light. A third reason is to update an iconic building.

In celebration of its 50th anniversary in 2009, the congregation of Frank Lloyd Wright’s striking Beth Shalom synagogue outside Philadelphia opened a new visitors’ center, designed by Venturi, Scott Brown and Associates. It’s squeezed into an existing space of about 1,400 square feet within the building, a National Historic Landmark. “The center choreographs the visit and adds a whole new layer of interpretive material,” explains project architect James Kolker, AIA.

Receiving a more extensive facelift is Temple Beth El in Chappaqua, N.Y., Louis Kahn’s only surviving

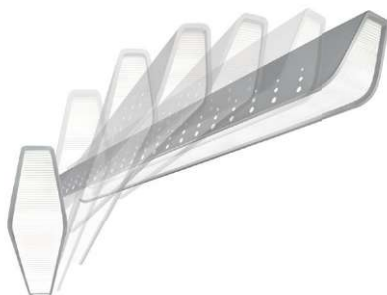
1.3%

Projected rise in spending on U.S. religious construction for 2011

3.4%

Projected rise for 2012

SOURCE: AIA CONSENSUS CONSTRUCTION FORECAST, DEC. 2010



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“THE SERVICE IS MUCH MORE INTERACTIVE, SO THE MOST MODERN SYNAGOGUES SURROUND THE CLERGY IN A THEATER-IN-THE-ROUND STYLE.”

—JAY BROWN, AIA

synagogue, completed in 1972. The building, originally designed for 450 families, is overcrowded today, with some 625. Rather than expand Kahn’s existing structure, Beth El commissioned a new building—currently under construction—to house overflow activities.

Alexander Gorlin, FAIA, of Alexander Gorlin Architects in New York, designed the project in close collaboration with members. Gorlin is an expert on Kahn, having taught his architecture at Yale University for many years. “The Kahn building never really worked properly,” Gorlin says. “Kahn normally had an ambulatory circulation around a central space. Here, you actually walk through the sanctuary to get to classrooms. In some ways, it’s a throwback to an old typology of the synagogue as a social space, but it doesn’t work today in terms of sound.”

By adding a new structure, Gorlin could take the activities that overtaxed Kahn’s original design and place them in close proximity to the sanctuary. He was inspired by the spatial relationships in the earliest temples, where the sanctuary and other social spaces were organized around a central courtyard. “The addition defers to the existing building; at the same time, it has its own presence,” Gorlin says. “By breaking down the scale of the new building and creating a courtyard, it gives the impression of a village in which the original building is the most important building of the town.”

Sustainable Synagogues

While many of today’s congregations employ progressive architecture, synagogues may be less progressive when it comes to sustainability. Both Gruber and Brown believe it’s a cost issue. “In the last four years, every congregation has been interested in the LEED movement, but few have felt they have the funds to pursue it,” Brown says.

A notable exception is the new home of the Jewish Reconstructionist Congregation (JRC) in Evanston, Ill. Completed in 2008 by Ross Barney Architects, it is the only LEED Platinum synagogue. “JRC decided that the primary driver for the building was going to be *tikkun olam*, Hebrew for ‘repairing the world,’” says Carol Ross Barney, FAIA. “It’s been a popular term in Jewish congregations, but it’s mostly been used to talk about social responsibility. JRC was being radical by talking about repairing the actual Earth.”

For just \$230 per square foot, Ross Barney and her team created a striking box-shaped building clad in 18,000 feet of reclaimed cypress (“We identified a dealer in New York who was selling used mushroom huts made from cypress,” Ross Barney says.) The highly visible structure resulted in a large number of requests for tours, so the congregation trained volunteer docents.

And public interest isn’t the only thing on the rise at JRC. “Their membership is through the roof,” Ross Barney says. “I know the building plays a part in that.” □



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Private investment spurred by the High Line, as estimated by New York City's former deputy mayor for economic development

THE NEW YORK TIMES

John H. Alschuler Jr. (pictured) is the chairman of HR&A Advisors. "I'm not going to say there's not tension, but I find the tension a very creative one," he says of working with architects and landscape architects.

→SPECIALIST

The Integrators

NAVIGATING THE COMPLEXITIES OF A BIG URBAN PROJECT? NEW YORK'S HR&A CAN HELP.



TEXT BY AMANDA KOLSON HURLEY
PHOTO BY NOAH KALINA

IN THE 1990s, Cincinnati was vexed by a common urban problem: what to do about its downtown core. Fountain Square, the symbolic heart of the city since the 1870s, had lost its luster as a civic space. It was unwelcoming, with a confusing plan and visual barriers that deterred potential visitors. It was underprogrammed. The fountain itself was cast in shadow half the year.

City leaders knew that Cincinnati deserved better, and that, as the headquarters of several Fortune 500 companies, the community possessed the resources for its own improvement. But how to harness disparate private funds for a common civic goal was not clear. So the city turned to HR&A Advisors, a New York-based real estate and economic-development consulting firm.

HR&A, working with architects and planners Cooper, Robertson & Partners, drew up a strategic investment plan and helped establish the Cincinnati Center City

Development Corp., or 3CDC, a private, nonprofit development group devoted to the revitalization of downtown. Today, after a \$48.9 million renovation by Cooper, Robertson and the landscape architects Olin, Fountain Square is a lively plaza with parklike plantings, a giant LED board, and a full calendar of events. (The fountain also now sits in a sunnier location, thanks to Olin's landscape design.) 3CDC estimates that the renovation, completed in 2008, has generated \$125 million in further investment around the square.

For 31-person HR&A, this kind of urban turnaround is all in a day's work. Consider a few of the major redevelopment projects the firm has worked on in recent years: New York's Brooklyn Bridge Park and South Street Seaport; the Toronto waterfront; Washington, D.C.'s Anacostia waterfront. The cherry on top is the High Line, Manhattan's disused elevated railway-turned-critically

feted park, designed by James Corner Field Operations with Diller Scofidio + Renfro.

Requiring rigorous financial analysis, world-class design, and sophistication in public policy to succeed, the High Line was a classic HR&A project. Any number of consulting firms—RCLCO or Jones Lang LaSalle, for example—could have drawn up a pro forma. But those firms wouldn't have the same history of working with world-class designers. They wouldn't all relish complicated projects with multiple stakeholders. And they probably wouldn't value, to the same extent, the intangibles that make a city great.

"We measure our success by our ability to contribute to the character and quality of urban life," explains John H. Alschuler Jr., the chairman of HR&A. Although the firm's special skill is integrating finance with design and public approval, its ethos is what sets it apart from the number-crunchers. "It's not a financing strategy of *anything*," Alschuler clarifies. "It's a financing strategy that creates a distinctive place."

HR&A was founded in 1984, when Alschuler joined a business that had been set up by Edward Hamilton and Francine Rabinovitz eight years earlier (the other founding partners focus on executive search and tort liability, and operate out of Carmel, Calif.). Alschuler's father, John H. Alschuler Sr., was a prominent architect in Chicago, as was his grandfather, Alfred Alschuler. Despite this lineage, he "can't draw a straight line"—yet he still wanted, as early as his teenage years, to contribute to American cities. After getting a doctorate in education, Alschuler found a chance, becoming the assistant to the superintendent of schools in Hartford, Conn. He progressed to the job of assistant city manager. In 1981, he was appointed city manager of Santa Monica, Calif., where he oversaw the redevelopment of the Third Street Promenade. Today, in addition to helming HR&A, Alschuler is a director of SL Green Realty Corp. and chairs the board of directors of Friends of the High Line.

In HR&A's New York and Los Angeles offices, there are MBAs, economists, lawyers, and finance and public policy experts. Being able to draw on this range of specialist knowledge is a plus for the firm's clients—and for its collaborators. "As a company, they have a really unique skill set," says Corie Sharples, AIA, a principal of SHoP Architects and SHoP Construction. On a past SHoP project, she remembers, "I was interested in historic façade credits, and I was able to go to HR&A—they have a historic preservation tax-credit person."

Alexander Cooper, FAIA, a founding partner of Cooper, Robertson, has worked with Alschuler on at least a dozen projects.

He says that Alschuler's grasp of details is complemented by "an ability to see the whole picture," thanks to his experience in government, and a strong visual sense—unusual for one in his line of work. "He's extraordinarily visual. ... He has a really good eye. He becomes a collaborator with the architect." That skill set is in high demand: Cooper once went to an interview for a job and discovered that "John was on all four teams being interviewed."

In his most productive relationships with designers, Alschuler says, "they can often help us around issues of finance, and how to make a project work" financially—for example, designing a high-quality amenity that would increase rents or sales in nearby buildings. Alschuler believes that his and his colleagues' deep respect for good design is critical to their own effectiveness. The same level of respect should be manifested by the designer toward the user of public space, he notes. "The American citizen is a very sophisticated consumer of space. People very quickly understand the respect that's been accorded to them by the designer. And people respond."

Maybe the most important of HR&A's strengths, Alschuler argues, is in framing clients' problems and goals. Often, this is quite different from fulfilling the project brief. Consulting work that isn't useful is work in which "the economic consultant did what they were asked to do, but what they were asked to do wasn't the right thing. It was the wrong assignment."

This observation is echoed by Candace Damon, the firm's vice chairman and a former real estate lawyer. "What clients are rarely good at is framing their problem. They know they have one. Figuring out the problem is what's hard, and I think we're good at it." In Charlotte, N.C., for example, Damon helped convince officials that developing a park near downtown to draw young residents wasn't the right idea, because by and large, young employees of the big companies downtown already lived there. She redirected their focus to a small parcel of land which could be developed as a corporate attraction instead.

Today, HR&A is busy with more of the complicated projects it favors, such as legacy planning for the nearly 250 acres of parkland being developed for the 2012 Olympics in London. This work has the potential to help regenerate a swath of East London over the coming decades. It means a lot of trans-Atlantic flights for the partners, and not just during the project.

"I always go back and visit," Alschuler says. "I like to go back three years later, five, 10 years later. I go back to Santa Monica and see the promenade." □



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18

Predicted percentage population growth for the Cedar Rapids Metropolitan Statistical Area by 2020

SOURCE: CEDAR RAPIDS AREA CHAMBER OF COMMERCE

→ LOCAL MARKET

Cedar Rapids, Iowa

TEXT BY MARGOT CARMICHAEL LESTER AND CLAIRE PARKER

MARKET STRENGTHS

- Stable and diverse economy
- Proximity to Des Moines and Iowa City
- Opportunity to practice smart growth

MARKET CONCERNS

- Recovery from the 2008 floods
- Largely vacant downtown
- Slow residential recovery

“Cedar Rapids is still rebuilding from the 2008 floods, which damaged 10 square miles of our city—displacing thousands of residents, destroying more than 4,000 homes,” notes Kari Stillman, vice president of marketing and communications for the Cedar Rapids Area Chamber of Commerce. Cedar Rapids is the seat of Linn County, which, flood notwithstanding, produced 24.9 million bushels of corn in 2010.

POPULATION & JOB GROWTH

Current population: 126,326. Total employment: 6.2%. Jobs have grown

steadily since 2006, an average of 2% growth each year.

“Cedar Rapids’ economy is expected to grow by 30% over the next three years,” Stillman says. The metro area is expected to see employment expand 14.2% over the same period according to research firm Moody’s Analytics at economy.com. The impact of corn and ethanol production on the region’s growth can’t be overstated. “We’re the largest processor of corn in the world,” says Dee Baird, president of development for the Cedar Rapids Area Chamber of Commerce.

RESIDENTIAL MARKET

“The residential market is slowly recovering, but the sale of large single-family homes is soft,” says James Novak, AIA, principal and architect for local firm Novak Design Group. “We currently have an interesting affordable housing project under construction ... adjacent to the New Bohemia arts district.”

COMMERCIAL REAL ESTATE MARKET

Office space goes for under \$6 (Class C) to over \$14/s.f. in the central business district, with overall vacancy around 12% downtown. Industrial space moves at an average of \$3.50/s.f., with an approximately 10% vacancy rate.

“We still have flood-damaged buildings that aren’t occupied,” says Scott E. Olson, AIA, a registered architect and commercial real estate broker for Skogman Commercial Real Estate at the Penthouse. “Rockwell Collins will occupy 82,000 s.f. when they relocate downtown this spring. That will bring the vacancy rate down by 2%.”

FORECAST

“It will be some of the most incredible years in our city’s history,” declares Daniel Thies, AIA, president of local firm OPN Architects. “With the reinvention of our city there is time for the economy to perhaps get righted in many ways.”



Convention Complex
ARCHITECT: Tvsdesign, Atlanta, and OPN Architects, Cedar Rapids, architects of record; AECOM, Kansas City, Mo., arena-renovation designers
COMPLETION: 2013.
BRIEF: \$70 million, 125,000-s.f. renovation of existing arena, expansion of flood-ravaged convention center.



Oak Hill Jackson Brickstones
ARCHITECT: Novak Design Group, Cedar Rapids.
COMPLETION: 2011.
BRIEF: \$19 million affordable brickstone row housing features 97 one- and two-bedroom units. Proximal to new courthouse, hospital, library, and arts district.



National Czech & Slovak Museum & Library
ARCHITECT: Durrant Group, Dubuque, Iowa.
COMPLETION: May 2012.
BRIEF: \$25.8 million, 56,000-s.f. expansion of the relocated museum received \$10 million from Iowa’s infrastructure investment initiative plus funding from other sources. LEED Silver certification anticipated.



U.S. Courthouse
ARCHITECT: OPN Architects, Cedar Rapids, and William Rawm Associates, Boston, Mass.
COMPLETION: 2012.
BRIEF: \$142 million, 289,000-plus-s.f. federal courthouse received disaster-relief funding after the 2008 flood and was fast-tracked by the Obama administration. Seeking LEED certification.

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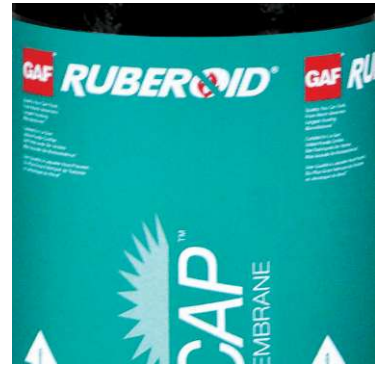
→ PRODUCTS

Editor's Choice

EDITED BY LAURIE GRANT



The **Pony Saddle** seat is the latest addition to **Humanscale's** Freedom seating line, designed by the legendary Niels Diffrient, a graduate of Cranbrook and protégé of Eero Saarinen. A more compact version of the designer's earlier Saddle seat, the Pony Saddle encourages a posture that lowers the thighs, opens the hips, and puts the spine into a healthy lordotic curve. The stool contains 59% recycled content and has modular cushions for easy replacement. Numerous textile options are available. • humanscale.com • Circle 100



\$750,000

The amount of money that Humanscale has committed to a World Wildlife Fund project in association with the Cambodian government. The money is being used to support the Phnom Prich Wildlife Sanctuary in Cambodia where patrols help protect tigers, leopards, Asian elephants, wild water buffalo, and other indigenous species.

The **Cortiça** chaise lounge by Brooklyn, N.Y.-based designer **Daniel Michalik** takes advantage of the natural flexibility of cork. The 72"-long contoured chaise allows the user to rock from side to side and front to back without tipping over. Appropriately enough, the piece is made from reclaimed waste from the wine-bottle-stopper industry. It is fire-resistant and waterproof. Better yet, being made of cork, it floats. • danielmichalik.com • Circle 101

Sun Valley Bronze's new **clean-lined plumbing collection** for sinks, showers, and bathtubs includes a wall-mount faucet (above). The fixtures are available in white bronze (shown), which contains a minimum of 95% pre-consumer recycled bronze, and in silicon bronze, which contains a minimum of 90% pre-consumer recycled bronze. Sun Valley manufactures its hardware in Bellevue, Idaho. • sunvalleybronze.com • Circle 104

Premier Copper Products' hand-hammered copper pendant lights are made from 99.7% recycled copper wire. The oil-rubbed bronze finish is burnished into the copper to prevent it from tarnishing over time. The pendants were designed for use in kitchens, bars, and other areas; are available in dome and cone shapes; and come in several different sizes, from 7" to 13" in diameter. • premiercopperproducts.com • Circle 102

Last year, two co-founders of Forms + Surfaces started their own company to research and develop a proprietary ultrahigh-performance concrete called **Taktl**. The partners have also formed two sister companies to manufacture products using Taktl. **Situ** makes landscape products and street furniture, such as benches (above). **Vectr** makes exterior and interior wall panels. Both companies offer off-the-shelf and custom solutions. • taktl-llc.com • Circle 105

Tania Johnson Design has introduced four **hand-knotted rug** designs that subtly incorporate imagery from nature: branches reflected in water, a tree viewed through a fog of rain, drops of light, and the shadow of daisies on a pebbly path. The branches rug is made from silk; the other three are a silk-and-wool blend. Standard rug sizes are 5' by 8', 6' by 9', 9' by 12', and 10' by 14'. The rugs can also be made to custom specifications. • taniajohnsondesign.com • Circle 103

GAF has added two modified bitumen membranes to its Ruberoid family of roofing products. **EnergyCap MOP FR** is a fire-retardant membrane with an elastomeric coating; a polyester mat core offers split and tear resistance. **MOP Plus Smooth** features a nonwoven polyester mat coated with SBS polymer-modified asphalt. Designed for built-up roofing membrane repairs, MOP Plus Smooth can also be used for flashing construction. • gaf.com • Circle 106

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Plugged In

FOUR DESIGNERS SHARE THEIR FAVORITE SOFTWARE UPDATES FOR 2010 AND 2011.

TEXT BY BRIAN LIBBY
ILLUSTRATIONS BY PETER ARKLE



Ryan Fetters, Gensler

All the architects interviewed here made reference to Revit, Autodesk's BIM software for Windows. According to Ryan Fetters, a designer based at Gensler's global headquarters in San Francisco, **Revit Architecture 2011 (\$5,495 program; \$2,745**

upgrade), is an improvement over its past edition.

"I think they worked out some of the bugs from the last version," he says. "It moves smoother now." He notes the change from drop-down menus to a ribbon-style navigation layout, which frees up space for more windows of information. Because there are three different versions (Architecture, Structure, and M/E/P), Revit has become

something close to an industry standard. "If you get a structural consultant or M/E/P consultant, they're working in it now, so you really start to see how it all fits together," Fetters says. "Before, you wouldn't really, truly see it all together until construction. Now you can. You spend more time up front getting things ready to go, but it's easier on the back end because it's all theoretically kind of there."

Still, Fetters approaches Revit with caution. "It's easy to just rely on what the program's telling you to do," he says. "It's like in elementary school, when you learn long division—the really hard way, to work it out yourself on a piece of paper—and then you learn the simple way, using a calculator. If you start in Revit, no one has taught you that division before the calculator."

IN THE PAST, GUGGENHEIM NOTES, THE PROFESSION SEEMED TO APPROACH OLD-FASHIONED HAND-DRAFTING AND -DRAWING VERSUS COMPUTER-AIDED DESIGN AS AN EITHER-OR PROPOSITION. NOW, ONE MAY ENABLE THE OTHER.



Erin Sterling Lewis, In Situ Studio

For Raleigh, N.C., architect Erin Sterling Lewis, AIA, of In Situ Studio—who is a Mac user—having a more limited array of tools but more control makes **PowerCADD 9.0 (\$995 program; \$199 upgrade)** the right software choice. "PowerCADD is intuitive," she says. Yet, as with most architects today, it's just one component in an array of programming tools.

"All of our projects are very different from each other. We don't have standard details for anything," she explains. "There's often different materials, different ways the window fits in the wall. It's mostly two-dimensional. That's kind of all we need." She says that Revit, by comparison, automatically makes many of the collateral changes that one design tweak can prompt. Lewis likens PowerCADD to a stick-shift car versus a car with automatic transmission. "You really have to get your mind around how your building goes together," she says. "With PowerCADD, you're limited in what you can do. It comes from within you to discipline yourself and constantly be thinking about that third dimension."

The architect is using the most recent PowerCADD version but has been working with the software for nine years. She appreciates that it doesn't radically change. "Things get a little more sophisticated, but it's not a huge learning curve as you go from version to version. It makes me feel like I'm respected, like I'm not being fooled. Otherwise it slows down your efficiency if you have to relearn everything."



Charlie Williams, LPA

Google SketchUp Pro is a go-to tool for design technologies manager Charlie Williams of the Irvine, Calif., firm LPA. Williams says that the new version, **SketchUp Pro 8 (\$495 program; \$95 upgrade)**, features improvements in its integration with Google Maps. He says that a new layout mode makes it easier to use the application as a drafting and presentation tool because it integrates with rendering programs such as Podium.

“We can take SketchUp models and throw them into that [Podium] and get better renderings, because the look is pretty rudimentary when it comes out of the box. The challenge for us is ... we’ve made this complex, accurate SketchUp model, but then it’s hard to translate that into our energy-analysis software.”

Williams also uses a SketchUp competitor, Project Vasari. It’s part of the Autodesk Labs series, in which new software is introduced initially for free. “It doesn’t have all the nuanced geometry of SketchUp,” he says. “The benefit would be the energy-analysis component. But it also acts as a kind of a simplified version of Revit.” Even so, Williams says, “As much as Vasari wants to think they have a SketchUp killer, I don’t think they’re quite there yet.”



Jeff Guggenheim, Giulietti/Schouten Architects

Both Jeff Guggenheim, Assoc. AIA, of Giulietti/Schouten Architects and his wife, interior designer Jenny Guggenheim of Fig Studio, have become avid users of the **Sketchbook Pro (\$7.99)** iPad application from Autodesk. “We’re still looking and seeing how far the design applications can go, but I think it’s the next generation of a napkin sketch,” the Portland, Ore., architect says. “I think it’s probably one of these first pieces of software really creating that bridge between paper and paperless, that more tactile dimension to digital. Especially for the younger generation of architects out there, this is going to be the next big thing.”

In the past, Guggenheim notes, the profession seemed to approach old-fashioned hand-drafting and -drawing versus computer-aided design as an either-or proposition. Now, one may enable the other. “You can start with sketching out your designs on the computer screen, and it gets pulled right into Revit as underlays,” Guggenheim explains. “It’s one more step between bridging that gap between hand-drawn and digital. Instead of using a mouse, you’re really getting into something that feels like pen and paper, but has all the digital benefits of being able to create layers or undo things.” □

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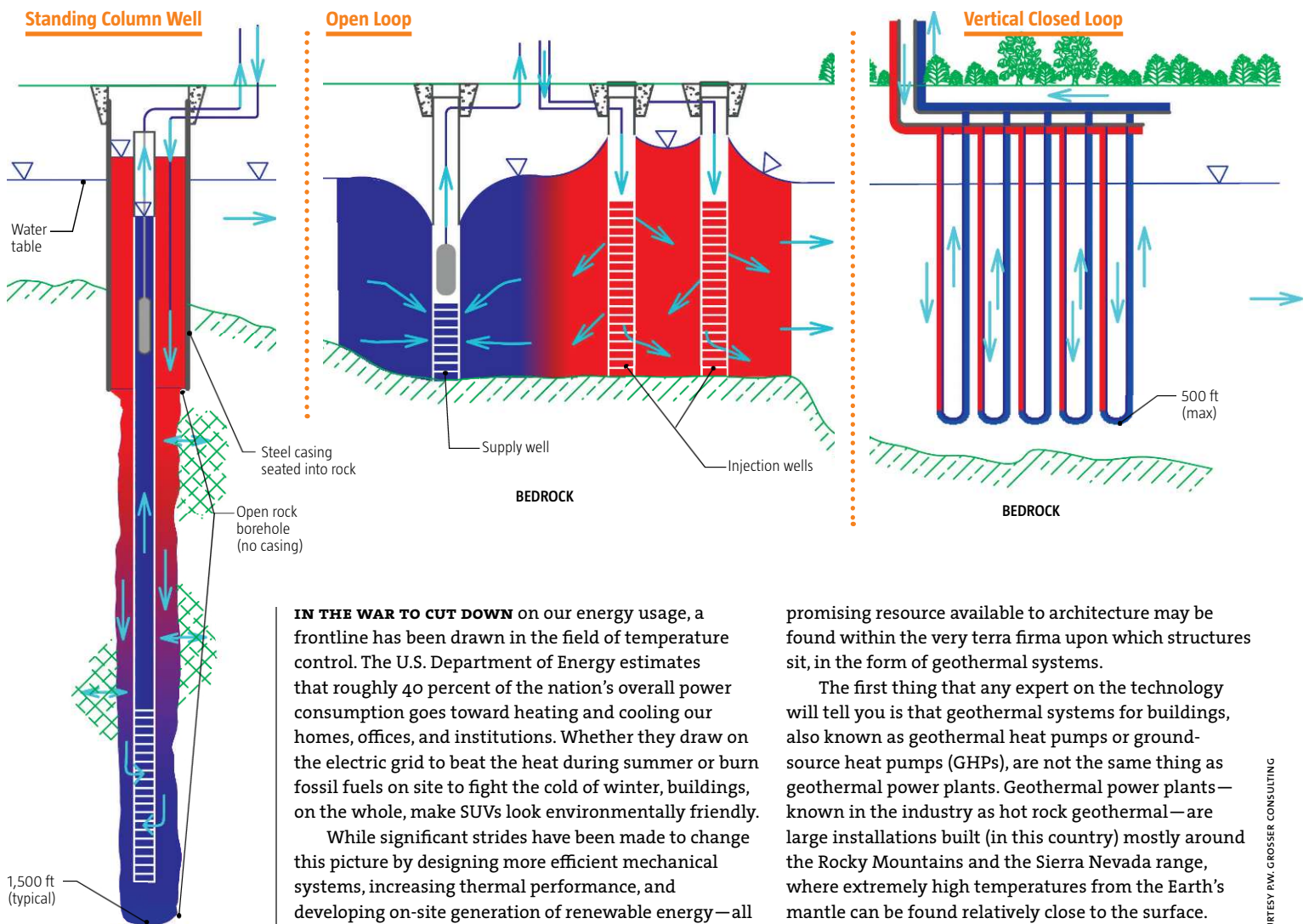
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→ CONTINUING EDUCATION

Going Underground

BELOW THE EARTH'S SURFACE, THE TEMPERATURE REMAINS CONSTANT YEAR-ROUND. GEOTHERMAL HEAT PUMPS HARNESS THAT ENERGY FOR EFFICIENT HEATING AND COOLING.

TEXT BY AARON SEWARD



IN THE WAR TO CUT DOWN on our energy usage, a frontline has been drawn in the field of temperature control. The U.S. Department of Energy estimates that roughly 40 percent of the nation's overall power consumption goes toward heating and cooling our homes, offices, and institutions. Whether they draw on the electric grid to beat the heat during summer or burn fossil fuels on site to fight the cold of winter, buildings, on the whole, make SUVs look environmentally friendly.

While significant strides have been made to change this picture by designing more efficient mechanical systems, increasing thermal performance, and developing on-site generation of renewable energy—all important and admirable advances—perhaps the most

promising resource available to architecture may be found within the very terra firma upon which structures sit, in the form of geothermal systems.

The first thing that any expert on the technology will tell you is that geothermal systems for buildings, also known as geothermal heat pumps or ground-source heat pumps (GHPs), are not the same thing as geothermal power plants. Geothermal power plants—known in the industry as hot rock geothermal—are large installations built (in this country) mostly around the Rocky Mountains and the Sierra Nevada range, where extremely high temperatures from the Earth's mantle can be found relatively close to the surface. They tap into these reserves of heat and use them

to produce steam, which then drives a turbine, thus producing electricity.

GHPs, on the other hand, use the thermal energy stored in the upper portion of the earth's crust to heat or cool a building, replacing conventional boilers and air-conditioning systems. "The temperature of the Earth down 20 or 30 feet is a relatively constant number year-round, somewhere between 50 and 60 degrees" F, says John Kelly, the COO of the Geothermal Exchange Organization, a nonprofit trade organization in Washington, D.C., that lobbies for wider adoption of the technology. "A geothermal heat pump moves heat to and from the Earth by circulating water through a well."

"For example," Kelly offers, "let's say in Kansas City, the underground temperature is 55 degrees. In summer, the air temperature is 100 degrees, and in winter it's 20, but underground it's still 55. It's not that hard to get that constant temperature out of the ground so you can heat in winter and cool in summer."

In other words, in winter, a GHP moves the thermal energy from under the earth into a building, and in summer it reverses that process, moving the heat in a building down into the earth. These systems incorporate a piping loop buried in the ground through which water is circulated, and the heat pump removes the temperature from the water and distributes it through the building, much in the same way that central air conditioning works. Alternatively, groundwater is directly circulated through a series of wells.

Either way, GHPs are significantly cheaper to operate than conventional heating and cooling systems. "The cost savings occur because the ground offers starting temperatures closer to what is desired for heating and cooling than the seasonal temperature extremes upon which many conventional air-source HVAC systems rely," says John Rhyner, a senior project manager at P.W. Grosser Consulting in Bohemia, N.Y., a civil engineering firm that specializes in geothermal and is currently authoring a book of guidelines on the technology for the New York City Department of Design and Construction. "It takes less energy to make up that smaller difference in temperature," Rhyner says.

While the theory and technology behind GHP are simple, implementing a GHP system can be a more complex matter. There are several different types of GHP systems, and choosing the best one for a specific project can require a good deal of study and tailoring. "It's not a cookie-cutter approach," Rhyner says. "Some level of up-front feasibility analysis is needed to pick the right system for a particular site. For a medium-to-large commercial system, due diligence and feasibility analysis are critical, and shouldn't bust the budget."

"The objective," Rhyner adds, "is to get everyone on the same page at the start and provide clear direction on approach. The type of system that's most suited varies geographically, all depending on the geologic conditions, how the building gets coupled to the ground, and what drilling method is appropriate."

The three most common types of GHP systems are closed-loop, open-loop, and standing column well.

Closed-loop systems circulate water through a sealed network of pipes buried underground. The water within the pipes transfers heat from the earth to the building during the winter, and vice versa during the summer, by way of a heat exchanger. Since the water flows in a closed loop, it does not exchange all of its temperature; it can get as warm as 80 to 90 degrees F in summer and as cold as 40 to 30 degrees F in winter. For this reason, the water is usually combined with a 30-percent mixture of food-grade antifreeze (for example, propylene glycol) to keep the fluid from gelling during the winter months.

Closed-loop systems can be laid out either horizontally in fields, buried just beneath the frost line, or vertically in wells, bored typically 200 to 500 feet deep. Horizontal systems are generally used for smaller or residential projects. They are cheaper to install, but are affected by outdoor air temperatures, meaning that they can become less efficient as a season progresses and as the soil takes on the characteristics of the air temperature.

Vertically drilled closed-loop systems are more efficient than horizontal systems, as more of the pipe is in contact with the stable, cool earth materials. They are most efficient if they can be drilled into groundwater rather than dry ground, since water is a good conductor of heat. Closed-loop systems typically require large amounts of land. "For a closed-loop system, it's all a function of how much pipe you can get in the ground with the open land area you have available to work with," Rhyner says. "You get a certain number of tons per linear footage [a ton of heat is 12,000 British thermal units per hour], and can get more pipe in the ground going vertically than horizontally."

Open-loop systems draw actual groundwater from a well, move it through a heat exchanger, and then return the water to separate wells, where it is allowed to percolate back to the aquifer. The supply and return wells (the latter are also known as "injection wells") must be placed far enough apart to ensure that the thermally altered water, (i.e., the water that is heated or cooled) is not sucked back into the system through the supply wells until it regains ground temperature. The number of injection wells needed depends entirely on the rate of flow generated from the supply wells.

Open-loop systems are generally more efficient than closed-loop systems because they are better coupled with ground temperatures, with no heat transfer occurring across the plastic closed-loop pipe or the grout used to seal the borehole. However, these systems do present challenges, most notably water chemistry, which can corrode heat-pump equipment or may foul the system over time, requiring extra cleaning. If groundwater contains high levels of salt, minerals, or iron, closed-loop systems are generally preferable.

Standing column wells are a specialized type of open-loop system that is well suited where bedrock is not too deep below the surface. Standing column wells are drilled to depths of 1,500 to 2,000 feet. The shallow portion of the well through the soil zone has steel casing installed, while the remaining depth is drilled



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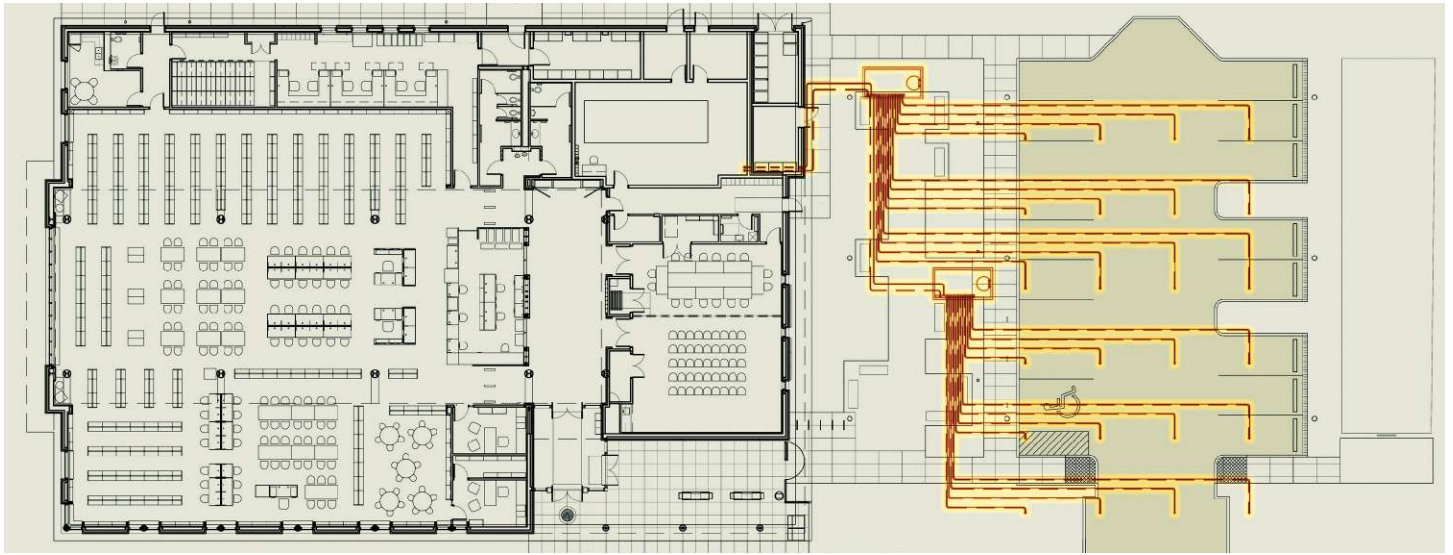
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Learning Objectives

1. Describe what a geothermal heat-pump system is.
2. Describe how geothermal heat-pump systems work.
3. Describe why geothermal heat-pump systems are so effective at heating and cooling a building.
4. Describe some challenges associated with incorporating a geothermal heat-pump system into a project.



Vertical Closed-Loop System



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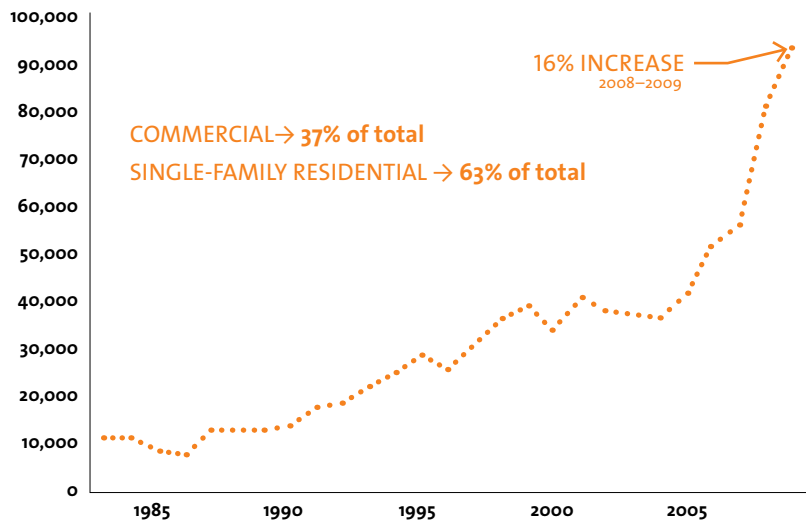
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and left as an open rock borehole. In these systems, the groundwater is pumped up from the bottom of the well, passed through a heat pump or heat exchanger, and then returned to the top of the well, where it filters slowly downward, exchanging heat with the surrounding bedrock.

According to Rhyner, “Standing column wells provide the most thermal capacity per installation, thus are popular in urban locales like New York City with limited real estate to drill.” Where bedrock is deeper than 100 to 125 feet it can get too expensive to install these wells, because of the amount of steel casing you would need to seal off the soil zone.

Choosing which of these systems is right for a specific project requires calculating a building’s heating and cooling demand and conducting a subsurface analysis to determine the thermal capacity of the site, and how many wells or how large of a loop field will be needed. If the calculations are done correctly and the system is properly designed, GHPs can handle all of a building’s heating and cooling loads, no matter what climatic conditions prevail.

“Heat pumps work anywhere in world,” Kelly says. “They certainly work well throughout North America. They are widely used in Canada, and likewise in Mexico.” When designed and installed right, GHPs drastically reduce the amount of energy needed to heat and cool a building. According to the U.S. Environmental Protection Agency, GHPs are 48 percent more efficient than the best gas furnace and 75 percent more efficient than the best oil furnace. They require 25 to 50 percent less energy than other HVAC systems and bring down operation and maintenance costs by as much as 40 percent.

The main inhibitor to the wide-scale adoption of GHPs today is the relatively high up-front cost of installation, most of which goes toward the drilling involved in constructing wells and loop fields, and the design and analysis needed to tailor a system to a building. The mechanical equipment itself—the heat pumps and heat exchangers—is no more expensive than conventional heating and cooling systems. Annual savings on energy bills, however, offset the up-front cost. Payback periods for commercial GHP systems are generally calculated in the 10-to-20-year range but often can be shorter, for example, if the system is replacing an aging, inefficient HVAC system. GHP systems can be cost-competitive against many conventional systems in new construction. As a result, GHPs have primarily been popular with municipal and institutional clients, building owners who plan to inhabit and operate their facilities over the long term, and those who are simply more interested in environmental stewardship than the bottom line.

The City of Chicago is currently in the midst of constructing five new branch libraries that incorporate a number of sustainable design features. Designed by Lohan Anderson, the libraries rely on GHP systems. Among them is the Richard M. Daley Branch Library, a 16,300-square-foot facility slated for LEED Silver

certification. The branch is served by 24 closed-loop geothermal wells drilled to 395 feet beneath the parking lot. These will provide hot or chilled water to an air-handling unit, and also to an underfloor radiant system. While the GHP system’s thermal capacity is sufficient to provide all of the library’s heating and cooling needs, the client also requested a backup boiler.

“There’s not a lot of experience on the city’s part with these systems, so they didn’t feel comfortable relying solely on geothermal,” explains Stephen Novak, a project engineer at Chicago’s Henneman Engineering, which designed the library’s GHP. “After a period of time, once there is more documentation and they see that these systems work, the boilers may be eliminated from the city’s branch library prototype.”

GHPs don’t necessarily have to be custom-designed for individual projects. Novak sees the construction of large district geothermal fields that investors could tap

PAYBACK PERIODS FOR COMMERCIAL GEOTHERMAL HEAT-PUMP (GHP) SYSTEMS ARE GENERALLY CALCULATED IN THE 10-TO-20-YEAR RANGE. THE SYSTEMS HAVE BEEN POPULAR WITH MUNICIPAL AND INSTITUTIONAL CLIENTS, BUILDING OWNERS WHO PLAN TO INHABIT AND OPERATE THEIR FACILITIES OVER THE LONG TERM, AND THOSE WHO ARE SIMPLY MORE INTERESTED IN ENVIRONMENTAL STEWARDSHIP THAN THE BOTTOM LINE.

into much like a utility as one way that the technology could become more prevalent in the future. Boise, Idaho, for example, has a district geothermal system that heats buildings in its downtown core. But the system relies on geologic hot springs, a natural resource not available to most cities.

Ball State University in Muncie, Ind., on the other hand, is currently working on a GHP system of a similar scale. When completed, it will be the largest closed-loop GHP system in the nation. The project will replace four aging coal-fired boilers with 3,600 boreholes in fields located throughout the 660-acre campus. These

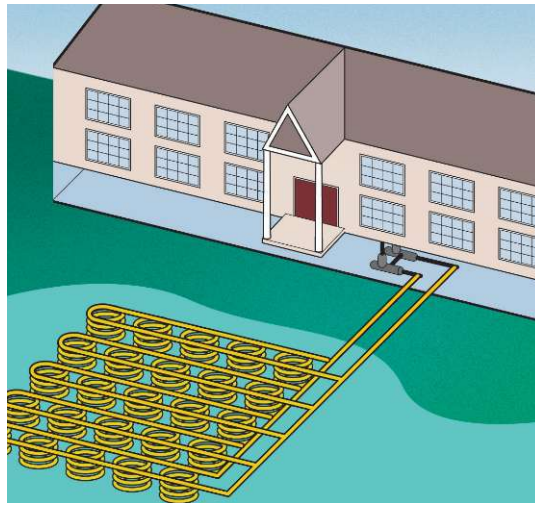
Lohan Anderson’s Richard M. Daley Branch Library (opposite, top and middle), which is currently under construction in the Humboldt Park area of Chicago, incorporates a GHP system. Twenty-four closed-loop wells were drilled to a depth of 395 feet beneath the library’s parking lot. A geothermal heat pump will contribute significantly to LEED certification; the Daley library is targeting LEED Silver.

As the chart opposite shows, geothermal is becoming more popular in North America. Industry shipments grew 16 percent from 2008 to 2009. One reason for the growth: A number of tax incentives (some listed opposite, bottom left) exist to offset the up-front costs for businesses.





One of the most economical and efficient applications of a closed-loop geothermal system is in a pond or lake (the water must be at least 6 to 8 feet deep, however, so the pipes don't freeze). The illustration at right shows a typical pond loop system, in which overlapping circles of pipe form what are known as "slinky coils." These are then sunk to the bottom of the body of water.



fields will provide heating and cooling for more than 45 buildings, cutting the university's carbon footprint roughly in half and saving it \$2 million per year in operating costs. The entire system will run through two energy stations, where heat pulled from the ground or returned to the ground will be exchanged by way of heat pumps connected to two distinct loops running through the campus. One loop will carry cold water at a constant 42 degrees; the other will carry hot water at a constant 150 degrees. These loops will run through heat exchangers in each building, where fans will deliver the desired temperature to occupants.

While GHP systems present obvious environmental incentives, they also offer architects an opportunity to free themselves from the burden of hiding unsightly mechanical equipment, since most components of the systems are underground, well out of view. This can be especially welcome when retrofitting historic structures.

One such project is Helypern Architects' design for the restoration of Knox Hall at Columbia University. Completed in 1909, Knox Hall is a 50,000-square-foot, seven-story Neo-Gothic stone building with pitched copper roofs. "It's not a landmark structure, but we were treating it as if it was because it's occupied by Columbia University at the Union Theological Seminary campus," says Margaret Castillo, AIA, a principal at Helypern. "We studied five different HVAC systems, including geothermal. In the end, while the architectural concerns were a factor—it wouldn't have been easy to put chillers on the roof—geothermal proved to be the most cost effective on an operational level."

Knox Hall relies on four standing column wells drilled to 1,800 feet deep for all of its heating and cooling needs. The system helped the project earn LEED Gold. While the up-front cost was relatively high, Columbia estimates the payback to be about six or seven years. "They are very pleased this project is reducing energy use and greenhouse gas emissions," Castillo says. □

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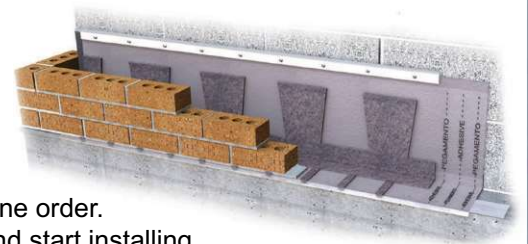
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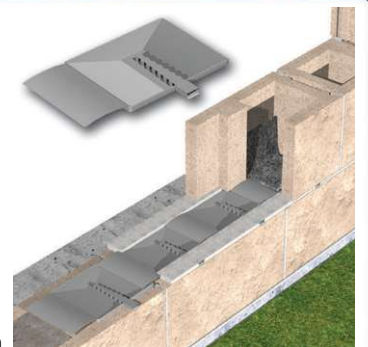


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QUIZ

1. True or False: The temperature of the earth down 20 or 30 feet is a relatively constant number year-round, somewhere between 50 and 60 degrees.

2. How do geothermal heat pumps work?

- a. By allowing heat from the Earth to rise into the floor of the building
- b. By moving heat to and from the Earth, circulating water through a well
- c. By gathering steam from below ground that is circulated in the building's infrastructure

3. True or False: Ground-source heat pumps are significantly cheaper to operate than traditional heating and cooling systems.

4. There are three common types of geothermal heat pumps. What are they? (Choose three.)

- a. Closed-loop
- b. Open-loop
- c. Ground-source
- d. Standing column well
- e. Thermal steam

5. True or False: The three main types of geothermal heat pumps can be used anywhere, on any site.

6. Open-loop systems are generally more efficient than closed-loop systems because they:

- a. Draw groundwater directly from the ground
- b. Do not require a heat exchanger
- c. Are installed horizontally, rather than vertically
- d. Do not require an antifreeze mixture.

7. Vertical systems generally provide more consistent heating and cooling because:

- a. They are larger
- b. They don't use pipes
- c. They don't require a heat exchanger
- d. They draw heat from deeper within the ground, where temperature is unaffected by seasonal weather changes

8. Standing column wells:

- a. Are closed-loop systems that are used where bedrock is particularly deep
- b. Can only be used in warm climates
- c. Are open-loop systems that are well suited where bedrock is not too deep below the surface
- d. Are most appropriate for locations where the water table is high

9. According to the U.S. Environmental Protection Agency, GHPs are 48 percent more efficient than the best gas furnace, and 75 percent more efficient than the best oil furnace. They require _____ less energy than other

HVAC systems and lower operation and maintenance costs by as much as _____.

- a. 10 to 20 percent, 40 percent
- b. 25 to 50 percent, 40 percent
- c. 30 to 40 percent, 60 percent
- d. 40 to 60 percent, 30 percent

10. What is the largest inhibitor of large-scale adoption of geothermal heat pumps?

- a. It's a new technology that is untested, with varying results
- b. Most decision-makers are not aware of the benefits of these systems
- c. Concerns related to the amount of drilling required for system installation
- d. High up-front costs



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THE RACE TO INVENT LIGHTWEIGHT BUILDING MATERIALS IS PRODUCING INCREDIBLE STUFF.

ONE OF THE MOST INTRIGUING material innovations to be introduced to buildings in the past decade is aerogel. Originally developed by chemical engineer Samuel Stephens Kistler in the early 20th century, the world's lightest-known solid material—made of about 1 percent quartz and 99 percent air—has been nicknamed “frozen smoke” due to its lightness and translucency.

Since 2003, Cabot Corp. has manufactured a pelletized version of aerogel called Nanogel, which is available as translucent insulating fill in skylights and window-wall systems based on its high insulating value and fire resistance. Aerogel is made by replacing the liquid in a gel with a gas in a process called supercritical drying. The slow extraction of liquid leaves the structure of the gel intact, resulting in a material with very little density.

The first aerogels, including the example described above, were silica-based. Scientists have also manufactured aerogels with other materials, such as chromium oxide and aluminum oxide.

A little over two decades ago, researchers began experimenting with carbon in aerogel fabrication. Recently, scientists from the NanoScience Technology Center at the University of Central Florida (UCF) made the lightest solid even lighter.

Composed of carbon nanotubes—structures so small that thousands will fit within a single human hair—the new substance is called multiwalled carbon nanotube (MWCNT) aerogel. MWCNT aerogel boasts a density of only 4 milligrams per cubic centimeter—lighter than any other aerogel made thus far. The material has a large surface area and exhibits incredible strength.

When infused with a polymer material, MWCNT aerogel becomes amazingly flexible.

Compared to silica-based aerogel, MWCNT aerogel demonstrates unusual traits. According to Lei Zhai, an associate professor in UCF's NanoScience center and in its chemistry department, the new material possesses approximately the same thermal-insulation capacity as silica aerogel, yet is also highly electrically conductive. And its large surface area enables it to store large amounts of energy.

MWCNT aerogel is incredibly sensitive to pressure changes, making it the first “smart” aerogel. This trait allows the material to behave like human skin, inspiring scientists to suggest potential applications in robotics or precision manufacturing. MWCNT aerogel can also detect physical pollutants and toxic substances.

Given its inherent insulating capacity and fire resistance, silica-based aerogel has upset the traditional expectations for windows, which provide light to occupants yet weaken the thermal and fire-protective envelope. Although MWCNT aerogel does not transmit light, it disrupts conventional thinking about other building materials and systems.

Its low thermal and high electrical conductivity suggest the possibility of integrating the functions of electrical and communications networks and building insulation in the same material, with the added advantage of energy storage. The substance's sensitivity to both pressure and toxicity allows it to detect important environmental changes, reinforcing the trend toward smart networks in buildings. □

100 nm

THICKNESS (IN NANOMETERS) OF HONEYCOMB WALLS IN MWCNT AEROGEL.

SOURCE: AMERICAN CHEMICAL SOCIETY

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.

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CULTURE



EDITED BY LINDSEY M. ROBERTS

→ EXHIBIT

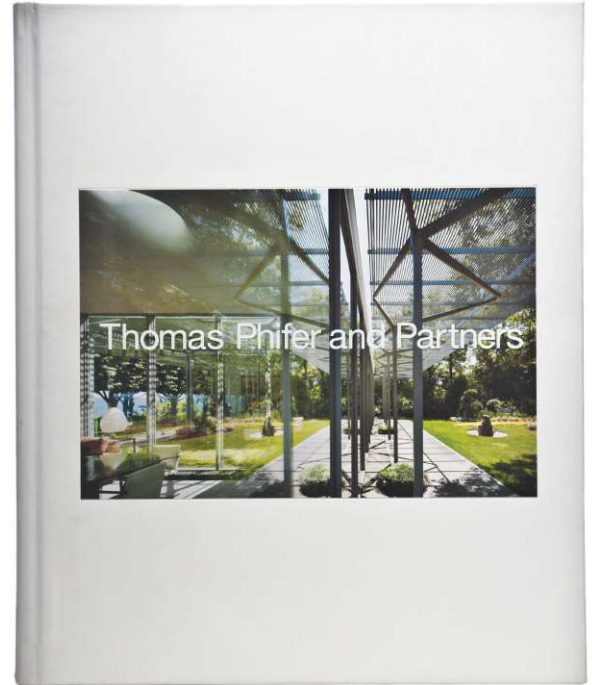
German artist Candida Höfer's *Palacio Nacional de Mafra VII* (2006), showing the trophy room of a Portuguese palace, is one of 17 large-scale interior shots on display at the Carnegie Museum of Art's Heinz Architectural Center in Pittsburgh. In **You Are Here: Architecture and Experience**, photographs by Höfer and etchings of housing towers in Romantic landscapes by French artist Cyprien Gaillard acknowledge that though we make our architecture, it also makes us. As part of this argument, a Gaillard film also reflects on the utopian aspirations of post-World War II high-rises and their dystopian realities. Through May 29. • cmoa.org

→ **OBJECT**

Jean Nouvel, Hon. AIA's *Tour Sans Fins*, a 1989 high-rise for suburban Paris, never got built. He plays with the concept of a tower without ends at a smaller scale, and horizontally, in *La Table au Km* (2011). On view at Gagosian Gallery in Paris for "Jean Nouvel: Furniture," the table is more than 20 feet long—but its span is in theory limitless, thanks to the top's extreme thickness. • gagosian.com

→ **BOOK**

Transparent, luminous, intimately tied to the landscape: these descriptions are often affixed to the work of Thomas Phifer, FAIA, and they also apply to the first monograph on the output of his New York-based firm. **Thomas Phifer and Partners** includes key residential and institutional projects such as the North Carolina Museum of Art, Salt Point House, and the Raymond and Susan Brochstein Pavilion at Rice University. Crisp, unfussy photographs show the simple materials palette to good effect, as well as Phifer's signature light scoops and oculi. • \$75; Rizzoli, 2010



PREVIOUS PAGE: COURTESY OF SONNENBERG GALLERY, NEW YORK
TOP: THIERRY DEPACNE; BOTTOM: MIKE MORGAN

ARCHITECT

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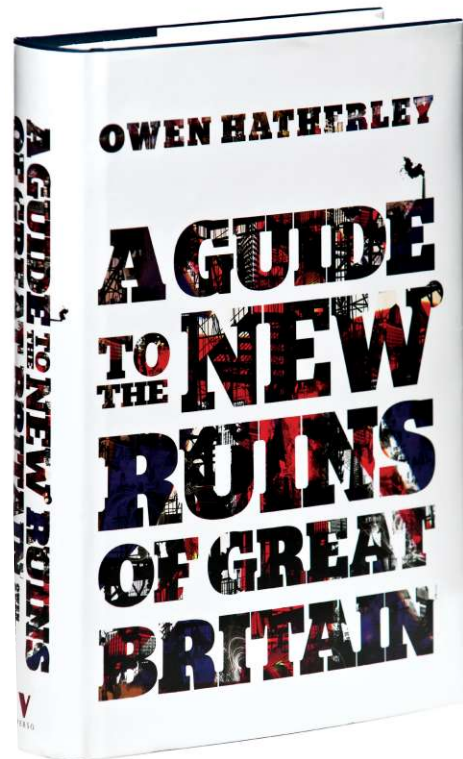
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→ CRIT

Blair's Banality

OWEN HATHERLEY'S SURVEY OF U.K. ARCHITECTURE DURING THE TONY BLAIR YEARS FINDS COMFORT IN THE MARGINS OF AN ERA MARKED BY HIGH-RISES.



TEXT BY DEYAN SUDJIC
PHOTO BY MIKE MORGAN



Deyan Sdjic is the director of the Design Museum in London. Previously, he served as the design and architecture critic for *The Observer*, as the editor of *Domus* and *Blueprint* magazines, and as dean of Kingston University's art, design, and architecture program. The author of several books on architecture and design, Sdjic published a biography of Norman Foster in 2010.

IF OWEN HATHERLEY WERE an American critic, the effort to write his latest book would have taken him to St. Louis to lament the lost remains of the Pruitt-Igoe complex felled by dynamite and Postmodernism. He would undoubtedly have traveled to Seattle to see the still-extant Minoru Yamasaki buildings there—and would no doubt have nailed Yamasaki, as he does memorably one lesser-known British architect, as “a mediocre designer at the top of his game.” He would have toured Detroit, very probably on foot, and mourned the death of a city that, as he would see it, had the guts to build John Portman’s fearless Renaissance Center.

But Hatherley is as English as drizzle, tabloid journalism, and driving on the lefthand side of the road. And so, rather than tour the foreclosed suburban victims of the credit crunch and reflect on the aesthetics of the subprime housing sprawl, it is the Tony Blair years and their architectural history that he surveys in *A Guide to the New Ruins of Great Britain* (Verso; \$29.95). He claims to identify a specifically “Blairite” approach to urbanism, architecture, and regeneration.

A Blairite building, according to Hatherley, is not so much the Richard Rogers Partnership–designed dome in which New Labour celebrated the millennium—a building since given a Las Vegas–deco makeover by its current owner, Philip Anschutz. Rather, it is privately financed public hospitals, approved by the Commission for Architecture and the Built Environment that New Labour established, which mean Blair. Or a renewed waterfront for Cardiff, the capital of Wales, that shows nothing but cowardice in the face of the howling void left by the evisceration of an industrial city. Hatherley hates them all, characterizing this Blairite category with effective venom as infantilizing, flimsy, and cosmetic.

There are places in his narrative where a little judicious editing might have helped, as he is sometimes hasty in his judgments. Was the Blair government really the most authoritarian regime in British history? I know that former President George W. Bush’s prayer mate was keen on surveillance and suspending habeas corpus, but there were no Bloody Sunday riots in Trafalgar Square during his term in office.

But despite the number of times that Blairism is cited, Hatherley’s book is less a new look at the aesthetic politics of the recent past than a rediscovery of a familiar path for English literature: a tour around the provinces in search of enlightenment. Hatherley’s version takes the form of a melancholic tour of provincial England, with excursions to Scotland and Wales. He is fascinated by the grain of provincial life and by provincial architecture. Hatherley begins in Southampton, the town where he grew up and which he depicts as a place entirely without qualities; he then takes the reader to Milton Keynes and Cambridge, where, all too typically, he is detained by nothing



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ARCHITECTS "I particularly enjoy working with architects at the beginning of a project because, well, that is when the most creative structural solutions are born. We have to really understand the architect's vision, their goals, to provide world-class structural design for our healthcare projects. For hospitals, that means understanding the relationships between the different departments, the desired design aesthetic, the project goals and challenges, and how best to deliver all of this within an established budget. It's never a cookie-cutter design! We deliver the most value to the project when we participate in the process early."

Lanny J. Flynn, P.E., S.E. Principal. Heads up Healthcare at Stantec Consulting Services Inc. Harmonizes creativity with structural engineering. Appreciates the flexibility of steel shapes to enhance the vision of today's architects and healthcare facilities.



PATIENT CARE "The primary focus of hospitals is patient care, which demands intense medical, mechanical and electrical systems with very rigid architectural requirements... efficient staff circulation and patient flow, acuity adaptable rooms, patient- and family-friendly spaces, and integration of infrastructure. There are also required levels of transparency, as well as stringent vibration criteria for sensitive equipment and procedures. The structure must support all these demands and be flexible enough to change rapidly. Steel structural systems are great for this type of design. As hospitals bring in new technologies and adjust patient care strategies, steel structures are able to easily morph to make these modifications possible."

SEISMIC "Hospitals need to function after an earthquake, so Codes impose more stringent requirements on their design. Steel is a wise choice, because it is a very ductile and predictable material. One of our recent hospital designs involved a 700,000-square-foot expansion and utilized a unique steel bracing system with a well-defined ductile steel core designed to dissipate the energy imparted by an earthquake. That system actually bettered code requirements and, because of the steel bracing system, actually reduced the structural costs of the foundation system and columns. The hospital not only saved money, but also received a better-performing building."

PERFORMANCE-BASED "Stantec Consulting has taken a leadership role in the development of performance-based seismic design for new buildings, with over 3 dozen successful projects. A performance-based approach is becoming the trend in seismic design, rather than prescriptive Code-based structural design. Performance-based design involves a very detailed analytical process that identifies anticipated demands on structural elements and sets parameters of acceptable performance for each element. Armed with that knowledge, we proportion and create the structure to support those criteria."

FAST TRACK "Hospitals are about patient care, but the financial part of the operation is equally important. If you are not successful financially, you can't deliver the best patient care. Steel pays the dividends on fast track construction, and for hospitals, fast track is always an issue. The shorter the construction, the faster they can treat patients!"

DESIGN "Twenty years ago, hospitals were more institutional. They had repetitive grids, boring public areas, and drab décor. Today's hospitals incorporate amenities you see in five-star hotels, and the framing is moving away from institutional to the longer spans of steel. In one of our recent hospital designs, a portion of the patient-care wing was cantilevered 120 feet. Steel made it possible."

BIM "Our firm has been doing this for quite some time, even though the transition to BIM (Building Information Modeling) is occurring as we speak. We actually use a BIM delivery system for all of our hospital designs, because of the benefits it provides in coordinating structure with the intense MEP systems and Architectural requirements embedded in modern healthcare design. In one hospital where we used a BIM delivery, all the structural steel framing was developed in 3D object-based design. The mechanical routing of the intense duct work and HVAC systems through the interstitial truss work was shown, and a lot of conflict checking and coordination occurred early on in the design phases avoiding downstream coordination issues. BIM is a real time saver, and steel is leading the way."

TRANSPARENCY "Today's healthcare designs call for openness and controlled transparency. Small, sleek structural members and long spans aid in supporting this concept. Steel systems are an excellent choice to create open and transparent spaces which help to improve the experience of the patient and the patient's family and friends."

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culture



that was built before 1968. Hatherley evokes the lost sense of distinctiveness that provincial cities once had. Sheffield, which he paints as a onetime socialist paradise, or Glasgow, Scotland, with its grid and the breathtaking bleakness of its high-rises, were cities that once had their own voices. He is melancholy about the lost industrial economies that once powered these cities; he is even more distraught about the lost utopias that architects of the 1960s and 1970s built to house the masses of those cities, and perhaps too quick to exculpate architects from the consequences that flowed from the badly built and hard-to-heat towers that some of them designed.

He writes exhaustively, and occasionally exhaustingly, in a manner that will be familiar to readers of Nikolaus Pevsner's famous guides, with a quality of the colorful criticism of Ian Nairn—a figure with the same influence on a certain generation of British writers that Alison and Peter Smithson have on younger architects. Unlike Pevsner, Hatherley goes for a continuous narrative in his guide in place of individual entries. He nevertheless provides a considerable amount of the kind of detail that conservationists will one day find useful. And *A Guide to the New Ruins of Great Britain* is full of wonderful aperçus. I had never put it into words myself, but Ebenezer Howard is exactly as Hatherley describes, a curiously Victorian combination of crank and pragmatist.

The ostensible intention of Hatherley's journey is to delineate the course of Blairism, yet he manages to avoid any mention of its most conspicuous manifestation: the march of high-rises across the London skyline that tracked the rise and fall of the markets with precision. The omission owes to an altogether separate purpose. Hatherley has managed to seize, with relish and some success, an opportunity that comes all too rarely for architectural critics—probably not more than once in every two generations—to overturn conventional wisdom. To tell us that something we had accustomed ourselves to seeing as irretrievably awful is in fact an unacknowledged masterpiece, and having told us, to persuade us that he is to be believed.

In the 1950s, it was the poet John Betjeman who took credit for opening British eyes to the glories of Victorian architecture. (To be sure, the architectural historian John Summerson did the spade work.) After their efforts, that which had been seen as, at best, an amusing embarrassment became priceless heritage. Now Hatherley is trying to do the same for the Brutalists. And not just any Brutalists: his particular favorites are the previously, deservedly, obscure. Like the aesthetic distance between the Art Nouveau of Bratislava, Slovakia, and of Nancy, France, Hatherley surveys a Brutalism that is a distant echo of a metropolitan original, practiced by somebody who never got closer to Paul Rudolph than seeing a picture in a magazine and studying a floor plan of the Art and Architecture Building in New Haven, Conn.

As a result, *A Guide to the New Ruins of Great Britain* reads something like Tom Stoppard's *Rosencrantz and Guildenstern Are Dead*, in which the action of Hamlet is seen through the eyes of two of Shakespeare's more minor characters. Hatherley writes an account of British architecture of the past 30 years—an account in which Norman Foster, James Frazer Stirling, Denys Lasdun, and the Smithsons are reduced to walk-on parts, with the greater part of the action reserved for such figures as Owen Luder, Rodney Gordon, and Malcolm Lister. He loves their shopping centers and car parks and trade-union offices as thoroughly as he despises Blairite bar-code façades and random fenestration patterns. And as Hatherley must surely know, in another 30 years, along will come another Hatherley—to tell us just how good all that meretricious Blairite rubbish really was. □

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→ LETTER FROM NEW ORLEANS: PART TWO OF THREE

Saints March In

WITH MEL CHIN'S "FUNDRED" DRAWINGS, CHILDREN ARE HELPING TO BATTLE LEAD SOIL CONTAMINATION.

TEXT BY KRISTON CAPPS

IN MAJOR CITIES ACROSS the United States, an ecological and health crisis has been unfolding for decades. The soil in urban environments has endured years of pollution in the form of airborne lead dust from gasoline, paint, and other industrial emissions. While the use of lead in these applications is now restricted, the damage is done. In affected cities, blood poisoning stemming from lead soil contamination poses serious complications for children, including developmental disabilities and behavioral disorders.

In New Orleans, prior to Hurricane Katrina, some 20 to 30 percent of children living in the inner city had elevated blood lead levels. Traditionally, to reduce the risk meant to remove the lead—by removing the soil. But excavating and replacing an entire city's topsoil is a prohibitively expensive procedure, especially for poor neighborhoods such as Tremé, where lead soil concentrations in some areas eclipse 1,000 milligrams per kilogram. By contrast, the U.S. Environmental Protection Agency considers 400 milligrams per kilogram to be hazardous.

An unlikely friend to inner cities has emerged with a promising alternative solution—and help from the U.S. Environmental Protection Agency: conceptual artist Mel Chin. The artist has worked for years to promote an

art project that, if realized, would undercut the threat of lead soil contamination in New Orleans. "You can't make a city lead free," Chin says. "But to make a city lead safe is the dream."

In 2006, the Texan-born artist traveled to New Orleans to find out whether he could do anything for victims of Hurricane Katrina. Lead soil contamination has posed a problem for children in New Orleans since before the hurricane, and it has always been a poorly understood issue with little visibility. Chin pledged to help.

"In every major industrialized city, architects are going back into these cities that have been disenfranchised, and they're going back into the same situation: How do you save the soil?" Chin says. "The soil's essentially still good, except for this horrible lead that's in the top two centimeters."

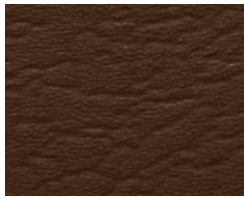
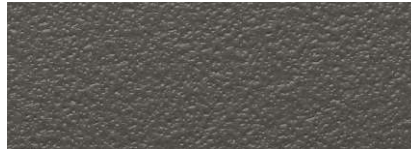
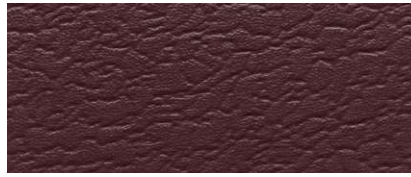
Chin worked from the start with Tulane University bioenvironmental scientist Howard Mielke on a solution. He also collaborated with Andrew Hunt, an environmental health scientist at the University of Texas at Arlington who specializes in geochemistry and inhalation toxicology, to build upon a procedure used by the military to trap lead in the soil on military bases.

60%

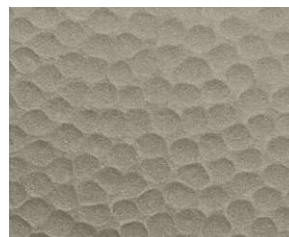
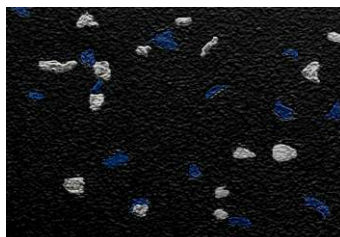
Lead capture in some Oakland, Calif., soil samples one month after phosphate treatment trials

SOURCE: U.S. ENVIRONMENTAL PROTECTION AGENCY

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culture



If “dig and dump” is the term for the pricey process of simply replacing all the contaminated soil wholesale, then the procedure favored by Chin’s team might be called “sprinkle and bind.” Chin himself calls it TLC: treat, lock, and cover.

By this method, an organic phosphate mineral called Apatite II is sprinkled over contaminated soil. The phosphate binds the lead, transforming it into a form of lead phosphorus called pyromorphite. Pyromorphite is both easily formed and highly insoluble. Ideally, residents and city workers could simply till the phosphate into the ground, rendering the lead harmless to children who might ingest it. (A generational solution, the treatment does not need to be reapplied.)

“At some point, you’ve got to go beyond measuring risk to intervention,” Hunt says. “Primary prevention is the only real way to proceed with reducing pediatric blood poisoning.”

Lead mobilization was part of Chin’s artwork back in the early 1990s. After having exhibited at the Hirshhorn Museum and Sculpture Garden in Washington, D.C., in 1990 and the Storefront for Art and Architecture in New York in 1991, the artist abandoned object-making to focus on politically and environmentally relevant conceptual works. For example, in a 1991–1993 project titled “Revival Field,” Chin planted hyperaccumulators—plants that draw heavy metals from the soil—in a landfill in St. Paul, Minn.

For “Operation Paydirt” (as he calls his New Orleans initiative), Chin coupled science and politics. In 2007, he launched the “Fundred” drive, whereby he enlisted schools and children to fill in blank drawings of hundred-dollar bills—which he will in turn deliver to Congress as a massive petition. Chin aims to ask for an exchange of \$100 per Fundred, or \$300 million for 3 million children’s signatures.

“The concept didn’t take more than 20 minutes to conceive,” Chin says. “It will be drawings of the people. It will start in New Orleans. It will start in a place that was compromised, not a museum. It would be telling people about a bad thing—it was a tremendous amount of education that was necessary—but to offer that and offer something that was a response.”

To build the hype, in 2008, Chin installed a fabricated 10-foot-diameter bank-vault door in a cutout of the façade of a residence in New Orleans’ St. Roch neighborhood. Called the Safehouse, it served as a headquarters designed to hold Fundreds and host visitors and celebrities. As the drawing campaign

commenced, a vegetable oil-powered armored truck was dispatched in 2009 to collect more than 350,000 Fundred bills at participating schools and institutions.

The effort, which stalled when funding slowed in early 2010, was enough to draw the attention of the EPA. In 2009, U.S. Rep. Barbara Lee (D-Calif.) asked the EPA to address a complaint about elevated lead levels in West Oakland, a constituency she represents. Federal on-scene coordinator Steve Calanog—the person the EPA calls in for oil spill and disaster cleanups—said a colleague working on metals mobilization tipped him off to Chin’s work.

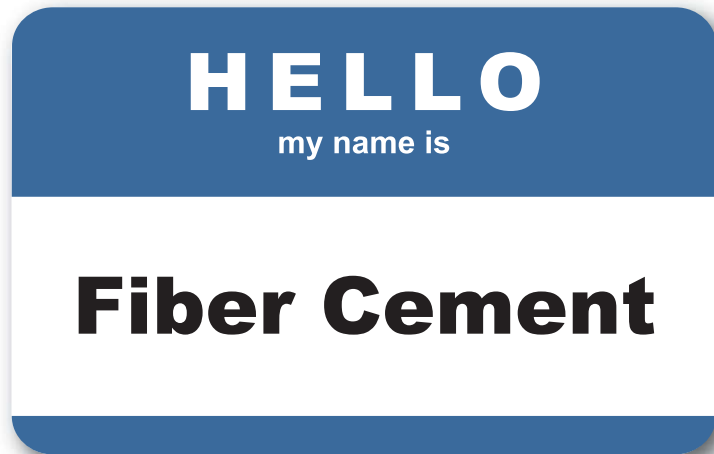
“I was taken by his messaging and the way he was framing and communicating the message to communities,” Calanog says. “He was interested in my approach and how we were going to prove and demonstrate that this was a viable option in terms of the laboratory work I was planning on doing.”

In August 2010, Calanog began work to “bench-test” Chin’s TLC process in West Oakland—the first time any entity has proposed using this approach in a residential setting. Chin and Calanog met with Rep. Lee and EPA administrator Lisa Jackson in October; of the many sites and demonstrations that Jackson and Rep. Lee saw that day, Calanog says, it was Chin’s Operation Paydirt project they described to the evening local news.

Calanog notes that with the TLC process, what’s good for soil is good for landscape architecture. “Cover,” in the scientific sense, means erecting a barrier between the toxin and humans—typically, concrete or asphalt. But for Oakland, Calanog and Chin are considering environmentally and architecturally sensitive ways of restoring the environment while building in cover. “After we treat the yards, we want to work with landscape designers to find drought-resistant, native species or raised planter beds to use instead of grass,” Calanog says.

Chin says that his team should have clear results from the EPA testing stage this spring and that the early returns are promising. A similar testing effort specific to New Orleans’ soil is also now under way, thanks to a U.S. Department of Housing and Urban Development grant. Chin says that he would like the EPA to own Operation Paydirt and the Fundred drive. As a conceptual artist, he says, he hopes to transition from the person who catalyzed the project to the figure who delivered it to the people who will perform it.

“It’s an elegant solution. You don’t need a yearly application. No incredible amount of expertise,” Chin says. “There are some safety issues with rototillers—but I think people can handle that.” □



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→ STUDIO VISIT

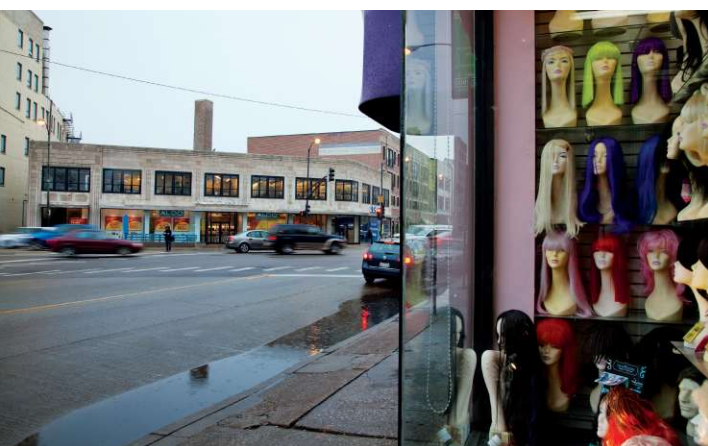
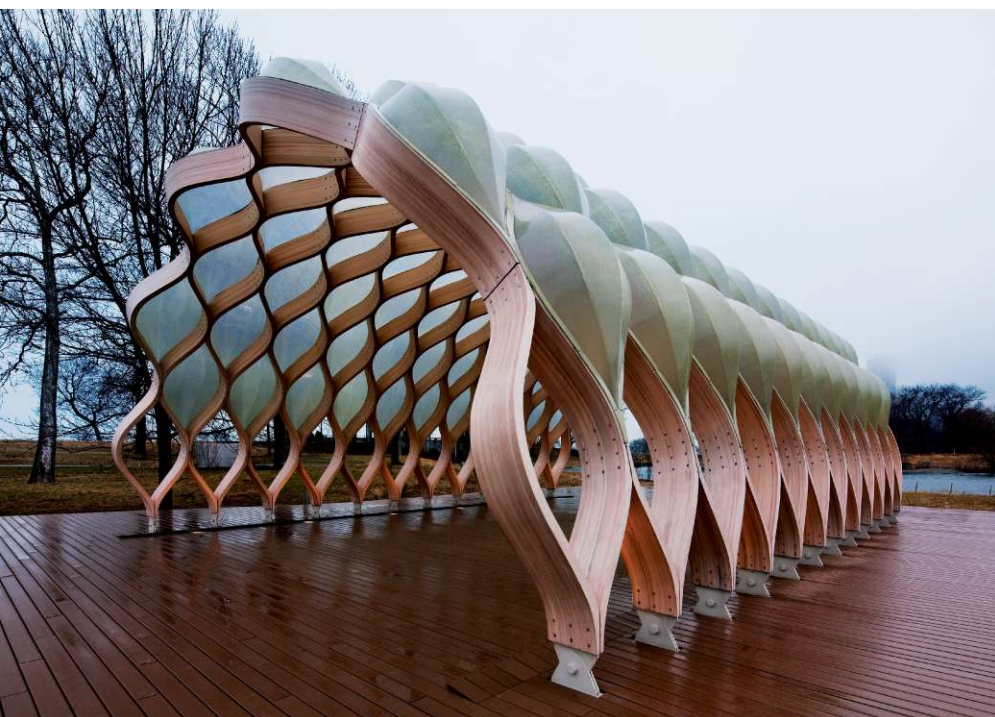
Studio Gang Architects

THE DESIGNER OF THE CELEBRATED AQUA TOWER, JEANNE GANG, GIVES A TOUR OF HER WORKSPACE IN CHICAGO'S DIVERSE WICKER PARK NEIGHBORHOOD.

TEXT BY KRISTON CAPPS
PHOTOS BY TIMOTHY HURSLEY



Above: Jeanne Gang, FAIA, (far left) leads a project meeting with (left to right) Stephen Claeys, Weston Walker, and Beth Zacherle. The group is discussing a mixed-use project for Mumbai, India, and debating, specifically, how the project's base will meet the ground. In this session, the group resolved to combine elements from two preliminary models to move forward. Even at an early design stage, Studio Gang's engagement with topography is evident. The first monograph on Studio Gang, *Reveal*, to be published this month by Princeton Architectural Press, reveals the process behind eight projects—including key hometown works such as the Aqua Tower, a residential skyscraper near the Chicago River, and the SOS Children's Villages in Chicago's reemerging South Side.



The model shop (top) at Studio Gang, which is on the second floor of an old office building in Chicago's Wicker Park neighborhood, includes a prototype for the Arcus Center for Social Justice Leadership at Kalamazoo College in Kalamazoo, Mich. "We're trying to make the inside of the building part of the landscape," Gang says.

The design for the education pavilion at Chicago's Lincoln Park Zoo (above left) emerged from the selection of wood and fiberglass to build the lattice. "We were looking for the best performance from materials," Gang says.

The white concept models for a Vancouver high-rise (above right) are the earliest studies for the project. The more colorful column is a structural study.

"I love this neighborhood," says Gang, a Chicago-area native. Studio Gang Architects started with one space in the building (left) in 2002 and quickly took over the entire floor. While Chicago winters are bleak, the firm's work is colorful—and so is the neighborhood, she says. "It's one of the most diverse neighborhoods in the city."



→ BEYOND BUILDINGS

W Marks the Spot

THE W BRAND OF HOTEL MODERNISM HAS GONE GLOBAL. WHY IT FEELS WRONG—YET SO RIGHT.

The lobby of the W South Beach in Miami Beach, Fla., (above) exemplifies Modernism at its most comforting and inoffensive.

SOON THERE WILL BE 50 W Hotels around the world. That might not seem like that much in the grand scheme of things, but if you combine that with all the copy brands, such as Hyatt's Andaz and Starwood's own Aloft and Element (it also owns the W), as well as all the independent "design hotels," it means that you will be able to stay in a modernist interior of the generic kind in almost as many places as you will be able to buy a semidecent coffee from Starbucks.

The spread of "W-ism," a peculiar combination of clean lines, plush surfaces, quirky details, low lighting, and a dizzying array of off-whites, is in many ways a triumph of Modernism. After the false start of the 1960s, when Hilton and Intercontinental Hotels brought a hard-edged version of the International Style to cities from Amsterdam to Kampala, Uganda, from Des Moines, Iowa, to Tuscaloosa, Ala., this latest wave of hotels is part of the general conquest of the globe by the idea that space conquers place, white is the new black, abstraction is good, and mass production can have a form, namely minimalism. I would contend that high-end hotels spread the aesthetic because they become both urban symbols and aspirational experiments for one-night stands, where the effective elite learns how to live. The best ones also become social centers, with W having been especially successful at turning its hotel bars and restaurants into "it" places.

The wider movement of W-ism has spread from Crate & Barrel to Banana Republic (whose designers W used for some of its early hotel interiors), and from the tonier doctors' offices to airport lounges (Delta's new Sky Clubs are wannabe W lobbies). It is pervasive and effective. For those in my generation who grew up with the remnants of the first modernist revolution,

rebelled, then reassessed, or who merely have none of the sentimental attachment to frills and neocolonial myths, the W and its cheaper cousins give comfort, if even for a night.

W Hotels are not original. Their inspiration was the hotels that Ian Schrager developed in the late 1980s and the 1990s, such as the Paramount and Royalton in New York and the Mondrian in Los Angeles. Their décor, created by a continually changing array of local talents guided by a watchful corporate control mechanism, is derivative of whatever is showing up in the lifestyle magazines.

That is not to say, however, that it is not good. Local designers can offer nice touches, such as the hammocks on the balconies at W Mexico City. David Rockwell, who did the original W in New York and is now dreaming one up in Paris, creates a modern equivalent of grand hotel theater that is superb in its effects.

What bothers me—other than the way W Hotels represent capitalism's ability to shut out all difference and poverty in luxury lagers protected by black-clad security—is exactly how comfortable I am in these kinds of spaces. I relish the fact that, if I am stuck at an airport, I can stay in an Aloft rather than a Holiday Inn. (And there are more pieces of West Elm furniture in my house than I dare to admit.)

I am bothered because W-ism is so comfortable and comforting. It proves that Modernism is the opiate of the middle class. It lets me get a fix of that utopia we were promised by Le Corbusier—once in a while. I can dream that soon all will dissolve not into white, but into off-white, not into almost nothing, but into temporary oblivion, not into pure forms in light, but into perfectly comfortable forms spread out under mood lighting. □

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.

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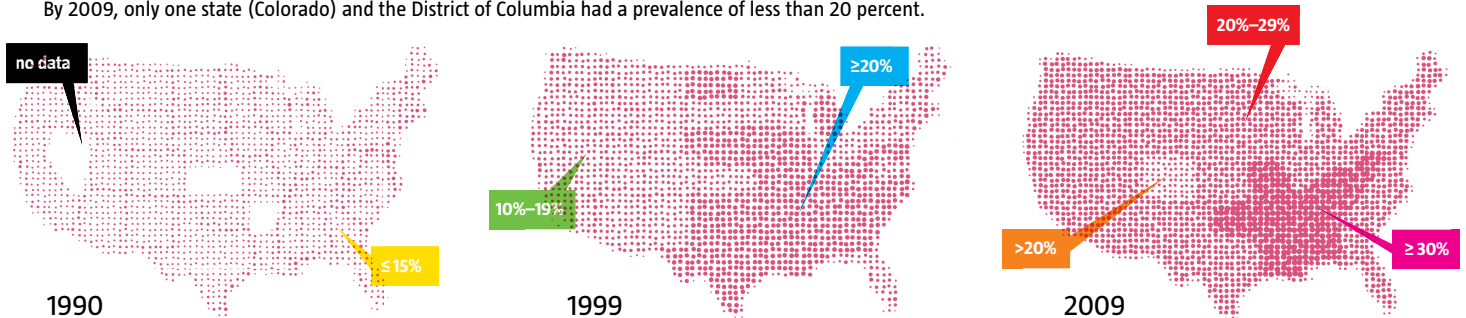
WE'RE NUMBER ONE!

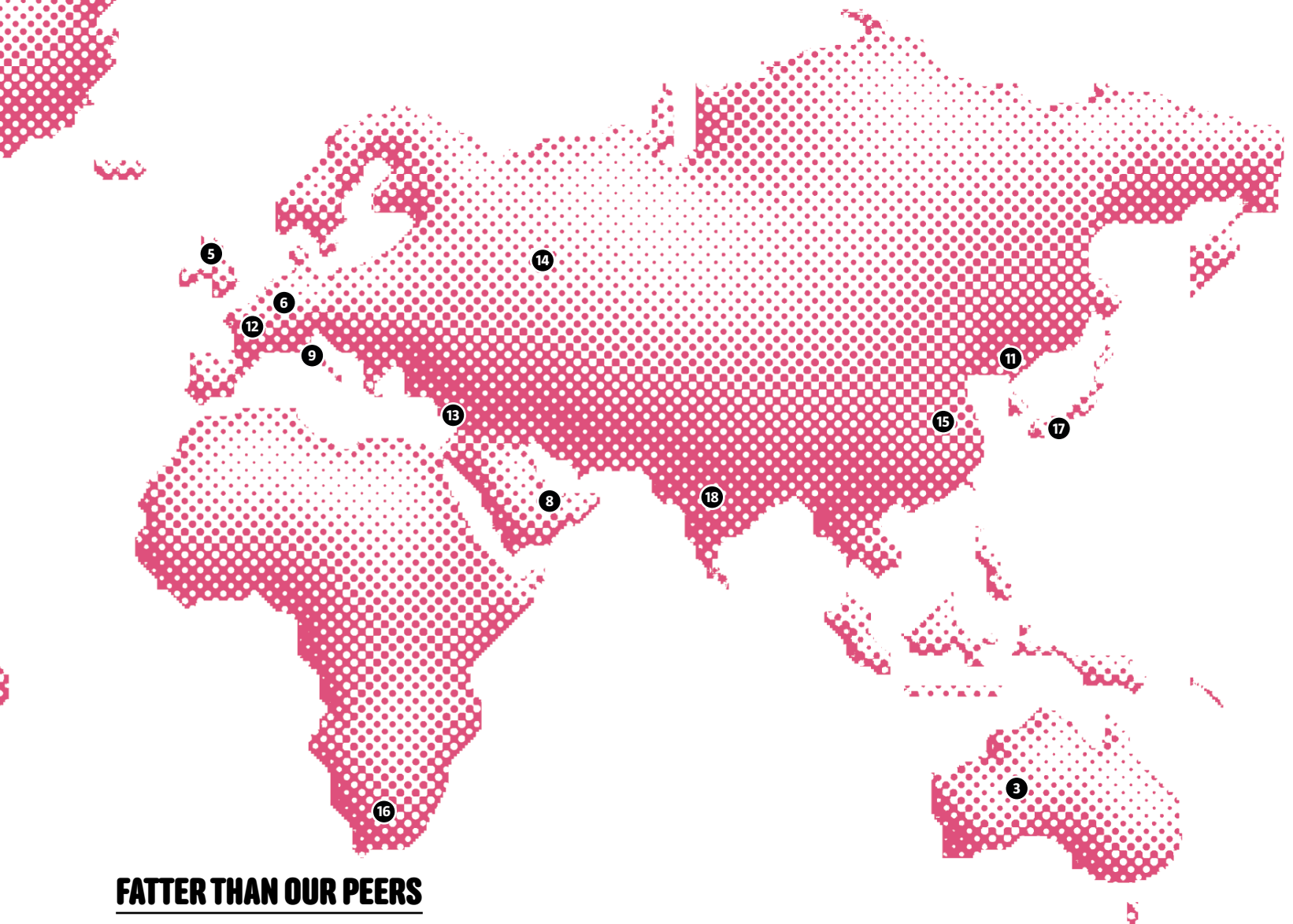


WHEN IT COMES TO WEIGHT, AMERICA IS TOP OF THE CHARTS. IT'S NO SURPRISE: WE EAT THE WRONG FOOD (AND TOO MUCH OF IT); WE MOVE TOO LITTLE. COULD BETTER DESIGN—OF FOOD NETWORKS, COMMUNITIES, OUR DAILY LIVES—BE THE ANSWER TO OBESITY?

FATTER, YEAR ON YEAR

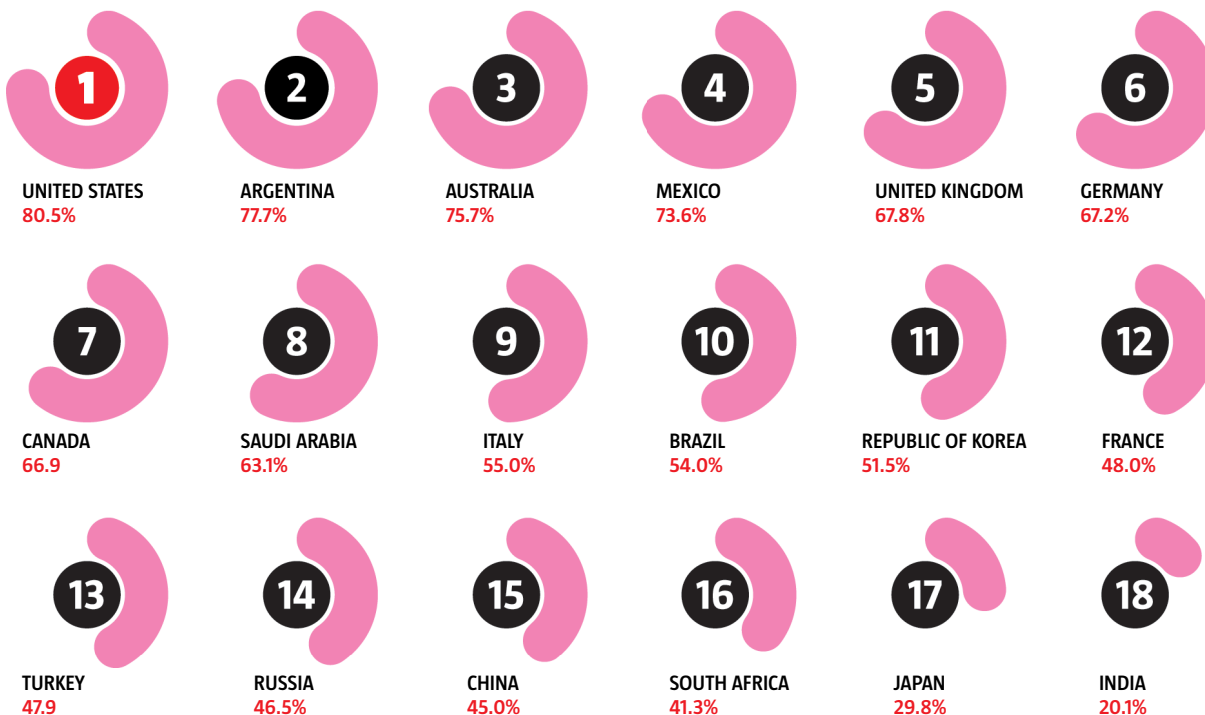
In 1990, 10 states had a prevalence of obesity (defined as a body mass index of 30 or higher) of less than 10 percent. By 2009, only one state (Colorado) and the District of Columbia had a prevalence of less than 20 percent.





FATTER THAN OUR PEERS

Of all the countries in the world, America ranks seventh in overweight and obesity for males 15 and older. But among G-20 nations, America ranks first, with 80.5 percent of males having a body mass index of 25 or higher.



EAT BETTER

FOR ALL THE RECENT interest in whole grains and the South Beach Diet, Americans certainly aren't getting any thinner. The causes of being overweight or obese go beyond fast food (although that certainly plays a role). Even in our wealthy country, access to food—especially to healthy food—can be a problem. In hundreds of rural “food desert” counties, residents must drive farther than 10 miles to reach a supermarket. Cities such as Baltimore and Albany, N.Y., offer spotty access to healthy food items, while Detroit doesn't have a major grocery chain within city limits. Meanwhile, vacant urban land that could be used for agriculture sits idle.

“FOOD DESERTS”

50%

FOOD AVAILABILITY IS CLOSELY TIED TO INCOME. THERE ARE ONLY HALF AS MANY SUPERMARKETS IN LOW-INCOME CENSUS TRACTS AS THERE ARE IN WEALTHY TRACTS.

23.5 MILLION AMERICANS, MAKING UP ROUGHLY 8% OF THE POPULATION, LACK ACCESS TO A SUPERMARKET WITHIN A MILE OF THEIR HOME.

MANY OF THESE UNDERSERVED PEOPLE LIVE IN ONE OF THE 418 RURAL “FOOD DESERT” COUNTIES (13% OF ALL COUNTIES), IN WHICH ALL RESIDENTS LIVE MORE THAN 10 MILES FROM A SUPERMARKET OR SUPERCENTER.

RACIAL DISPARITIES

FOOD AVAILABILITY HAS A RACIAL DIMENSION, AS WELL. WHEREAS 31% OF WHITES LIVE IN A CENSUS TRACT WITH A SUPERMARKET ...

... ONLY 8% OF BLACKS DO.

IF 29% (40 SQUARE MILES) OF DETROIT IS VACANT LAND, WHY ISN'T THAT BEING USED FOR FOOD PRODUCTION?

NO FOOD, NO FARMS

... ESPECIALLY SINCE THE NUMBER OF MAJOR CHAIN GROCERY STORES IN DETROIT IS ZERO.

EMPTY CALORIES

IF YOU LIVE NEAR A 7-ELEVEN BUT NOT A GROCERY STORE, LUNCH MIGHT BE A 1/4-LB. HOT DOG: 480 CALORIES.

IF YOU BUY INGREDIENTS FROM A GROCERY STORE, YOU CAN MAKE YOUR OWN LUNCH. A HOMEMADE TURKEY SANDWICH IS 185 CALORIES.

BETTER TO PUT A 65-CALORIE APPLE IN YOUR CART, AND KEEP THE DOCTOR AWAY.

ONE STUDY OF A HIGH-POVERTY NEIGHBORHOOD IN INDIANAPOLIS ESTIMATED THAT IF A NEW GROCERY STORE WERE ADDED, THE AVERAGE RESIDENT WOULD LOSE 3 LBS.

EXCESS WEIGHT

SO-SO NUTRITION

AMERICANS ARE GETTING MOST, BUT NOT ALL, RECOMMENDED SERVINGS OF THE FIVE FOOD GROUPS. CONSUMPTION OF FRUIT AND VEGETABLES IS LOWEST, AND FRESH PRODUCE IS WHAT CORNER AND CONVENIENCE STORES OFTEN DON'T STOCK.
GRAIN 84% / VEGETABLE 89% / FRUIT 59% / DAIRY 65% / MEAT 82%

SOURCES, PREVIOUS SPREAD: WORLD HEALTH ORGANIZATION. THIS SPREAD, COUNTERCLOCKWISE FROM TOP LEFT: "THE GROCERY GAP," BY POLICYLINK AND THE FOOD TRUST (5); DETROIT FREE PRESS; CNNMONEY; U.S. DEPARTMENT OF AGRICULTURE ECONOMIC RESEARCH SERVICE; "THE GROCERY GAP"; LIVESTRONG.COM (3).

IT'S ASSUMED THAT WE DRIVE BECAUSE WE PREFER TO. YET IN 2009, PUBLIC TRANSIT RIDERSHIP WAS 131% OF WHAT IT WAS IN 1995.

131%

WE LIKE PUBLIC TRANSPORTATION

IF WE LOVE DRIVING SO MUCH, WHY WOULD 3 IN 5 VOTERS SAY THEY'D RATHER IMPROVE PUBLIC TRANSIT AND MAKE IT EASIER TO WALK AND BIKE THAN BUILD AND EXPAND ROADS?

60%

73% OF VOTERS CURRENTLY FEEL THEY "HAVE NO CHOICE BUT TO DRIVE AS MUCH AS" THEY DO, SAYS A RECENT SURVEY.

73%

SAN FRANCISCO / JACKSONVILLE

MOST WALKABLE MAJOR U.S. CITY: **SAN FRANCISCO**
LEAST WALKABLE MAJOR U.S. CITY: **JACKSONVILLE, FLA.**

44%

OVERWEIGHT AND OBESITY RATE, SAN FRANCISCO

OVERWEIGHT AND OBESITY RATE, JACKSONVILLE/DUVAL COUNTY, FLA.

62%

WE CAN WALK IT OFF ...

IF THERE'S MIXED USE

12.2%

ACCORDING TO A STUDY OF THE ATLANTA REGION, THE ODDS OF OBESITY DECLINED BY 12.2% FOR EACH QUARTILE INCREASE IN MIXED USE.

THE ODDS OF OBESITY WENT DOWN BY 4.8% FOR EACH KILOMETER WALKED, ACCORDING TO THE SAME STUDY.

6%

BUT FOR EACH HOUR SPENT IN A CAR PER DAY, THE ODDS INCREASED BY 6%.

AND NOT JUST TV TO ENTERTAIN US

THE AVERAGE AMERICAN HOUSEHOLD WATCHES MORE THAN 8 HOURS OF TELEVISION PER DAY, A FULL-TIME JOB.

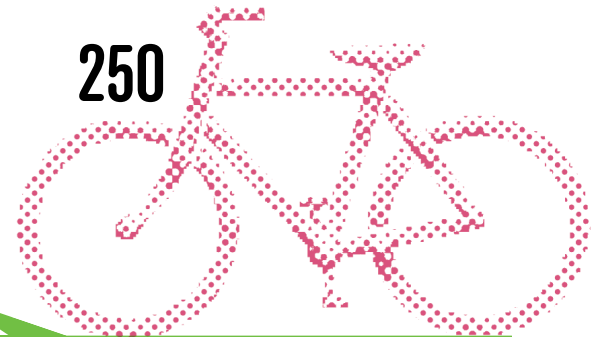
8h11min

SOURCES, COUNTERCLOCKWISE FROM TOP LEFT: FUTURE OF TRANSPORTATION NATIONAL SURVEY (2010), BY TRANSPORTATION FOR AMERICA (3); WALKSCORE, 2008 RANKINGS; STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES; DUVAL COUNTY MEDICAL SOCIETY; "OBESITY RELATIONSHIPS WITH COMMUNITY DESIGN, PHYSICAL ACTIVITY, AND TIME SPENT IN CARS" (L. FRANK, M. ANDRESEN, T. SCHMID), AMERICAN JOURNAL OF PREVENTIVE MEDICINE (3); THE ECONOMIST; AMERICAN COUNCIL ON EXERCISE (3); CALORIESPERHOUR; U.S. CENSUS BUREAU.

USE YOUR COMMUTE

25.5 min

THE AVERAGE COMMUTING TIME IN THE U.S. (EACH WAY) IS 25.5 MINUTES.



SPEND THOSE MINUTES IN A CAR, AND YOU'LL BURN A MERE 64 CALORIES. WALKING OR BIKING TO WORK WILL GET YOU FITTER, AND SLIMMER.

MOVE FASTER

EVEN IF WE'RE CAREFUL about eating healthfully, the best diet in the world can't make up for a sedentary lifestyle. And boy, are Americans sedentary. We commute—usually by car—to our jobs, which are mostly at desks. But as these graphics show, a surprising amount of activity can be slotted into the average workday. Commuting by foot or bicycle can translate into an hour of calorie-burning, mood-lifting exercise. Moving more while on the job can help, too. Not everyone can be employed as a mail carrier, but we can take a lunchtime walk, choose the stairs instead of the elevator, or stroll down the hall to find a colleague, instead of emailing.

STEPS OF OUR LIVES

5,062

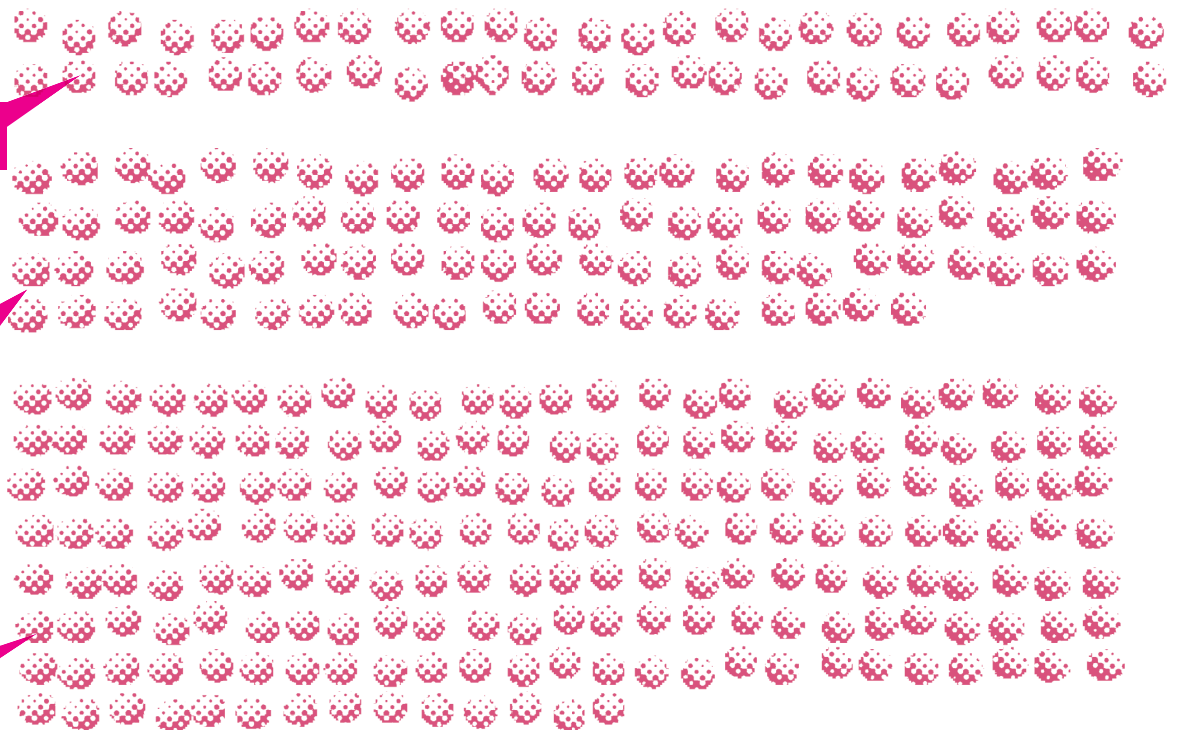
TOTAL STEPS TAKEN IN AN AVERAGE DAY BY A LAWYER

9,646

TOTAL STEPS TAKEN IN AN AVERAGE DAY BY A CONSTRUCTION WORKER

18,904

TOTAL STEPS TAKEN IN AN AVERAGE DAY BY A MAIL CARRIER





COMMUNITY GARDENS GET PEOPLE OUTSIDE AND MOVING, AND ENABLE THEM TO GROW THEIR OWN, HEALTHY FOOD. LIKewise, URBAN FARMS CAN TURN VACANT OR DISUSED PARCELS INTO ENGINES OF LOCAL FOOD PRODUCTION— INCREASING THE AVAILABILITY OF FRESH PRODUCE AND CUTTING DOWN ON THE “FOOD MILES” THAT LEAD TO CARBON EMISSIONS.



THE DISTRICT OF COLUMBIA LAUNCHED THE FIRST U.S. BIKESHARE PROGRAM IN 2008. SINCE THEN, CAPITAL BIKESHARE'S SOME 6,000 ANNUAL MEMBERS HAVE LOGGED 250,000 TRIPS. IN BARCELONA, SPAIN, A POPULAR BIKESHARE PROGRAM AVERAGES 35,000 JOURNEYS PER DAY.



BIKESHARE PROGRAMS NEED THE RIGHT INFRASTRUCTURE (SUCH AS DEDICATED PARKING AREAS) TO THRIVE. SIMILARLY, PARKS AND OTHER GREEN SPACES SHOULD BE PLANNED TO STIMULATE USER ACTIVITY. IN CHILDREN'S PLAY AREAS, NATURAL TERRAIN AND GROUND MARKINGS HAVE BEEN SHOWN TO GET KIDS UP AND RUNNING.

A STANDING DESK IS BOUND TO DRAW STARES FROM COLLEAGUES AT THE OFFICE, ALTHOUGH ONE—STILVOLL'S CRESCENDO C2, A MODULAR SIT-DOWN DESK THAT TRANSFORMS INTO A HANDSOME STAND-UP PODIUM—MAY INSPIRE AS MUCH ENVY AS WONDER.



MORPHOSIS ARCHITECTS HAS DESIGNED OPEN STAIRCASES AND SKIP-STOP ELEVATORS FOR PROJECTS INCLUDING 41 COOPER SQUARE IN NEW YORK (SHOWN). AT ITS CALTRANS DISTRICT 7 BUILDING IN LOS ANGELES, A STUDY FOUND THAT THE OPEN STAIRCASE NEXT TO A SKIP-STOP ELEVATOR IS USED 3300% MORE THAN THE ENCLOSED STAIRS NEXT TO TRADITIONAL ELEVATORS.



A "REGIONAL FOODSHED" PROPOSED BY RESEARCHERS AT COLUMBIA UNIVERSITY AND THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT) WOULD INCLUDE URBAN FOOD TERMINALS, WHERE CONSUMERS COULD BUY LOCALLY PRODUCED GROCERIES.



FOR HILLY CITIES, BICYCLING MAY REPRESENT A MORE SEVERE FORM OF EXERCISE THAN MOST COMMUTERS WILL ENTERTAIN. THAT'S WHY STUDENTS AT MIT SET ABOUT TO REINVENT THE WHEEL, DEVELOPING A KINETIC ENERGY-RECOVERY SYSTEM, USED IN FORMULA ONE RACING, FOR THE BICYCLE. THE "COPENHAGEN WHEEL" CAPTURES THE ENERGY GAINED FROM BRAKING AND STORES IT FOR LATER USE—WHEN THE RIDER IS TRAVELING UP A HILL, FOR EXAMPLE.



DESIGN FIT

EARLY LAST YEAR, New York City and AIA New York published the *Active Design Guidelines*. The guidelines suggest a clear corollation between the inclusion of specific design elements at various scales—open staircases in a building, neighborhood bikeways, a city's land-use mix and open space—and an enhanced rate of physical activity among building users and city residents. Since their debut, the guidelines have sparked interest in other cities, such as Washington, D.C., and New Orleans, and have kicked off a national conversation about the potential for design to improve public health. The guidelines themselves are rife with real-world examples of design strategies that promote activity. We sifted through those, and through more besides, to identify a host of promising new directions for active design, shown on these pages.

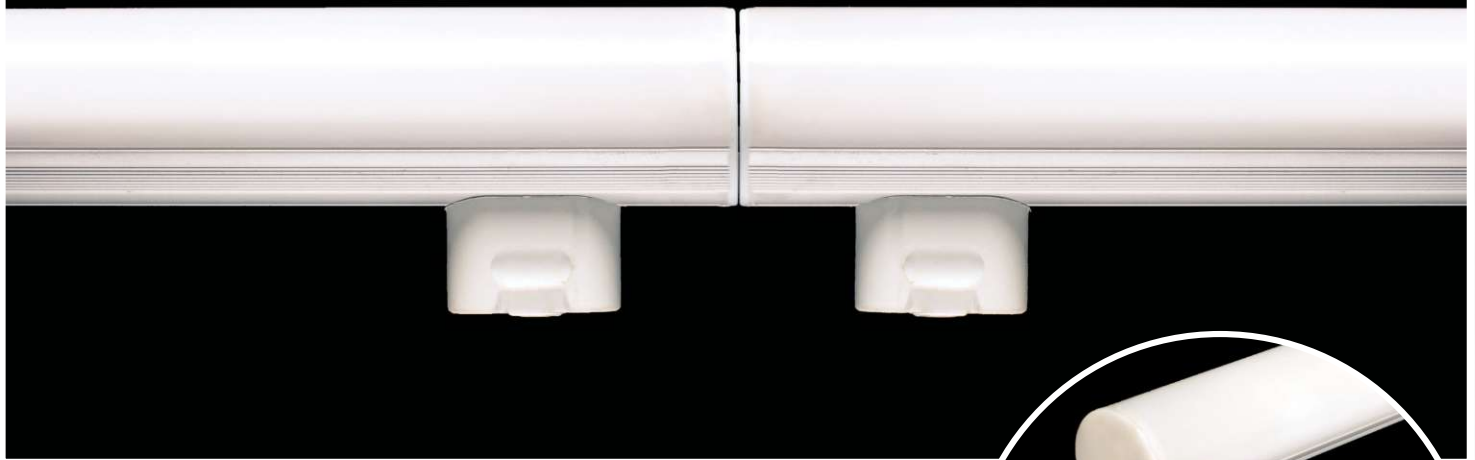
SOURCES, COUNTERCLOCKWISE FROM TOP LEFT: "CHECKING THE FOOD ODOMETER," LEOPOLD CENTER FOR SUSTAINABLE AGRICULTURE, IOWA STATE UNIVERSITY (PHOTO: CORBIS); CAPITAL BIKESHARE (D.C.) AND TREEHUGGER (BARCELONA); ACTIVE DESIGN GUIDELINES, CITY OF NEW YORK (PHOTO: TAGGART SORENSEN, COURTESY OF KATIE WINTER); "EFFECT OF INNOVATIVE STAIR DESIGN ON PHYSICAL ACTIVITY" (C. ZIMRING AND G. NICOLI), ACTIVE LIVING RESEARCH (PHOTO: ESTO); STILLVOLL; SENSEABLE CITY LABORATORY, MASSACHUSETTS INSTITUTE OF TECHNOLOGY; "REGIONALIZING THE FOOD SYSTEM FOR PUBLIC HEALTH AND SUSTAINABILITY" (M. CONARD AND K. ACKERMAN); COLUMBIA UNIVERSITY URBAN DESIGN LAB.

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CHARLES CORREA ASSOCIATES	94
FIELD ARCHITECTURE	100



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LOU RUVO CENTER FOR BRAIN HEALTH

LAS VEGAS
GEHRY PARTNERS

TEXT BY JOSEPH GIOVANNINI
PHOTOS BY IWAN BAAN

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The Lou Ruvo Center for Brain Health in downtown Las Vegas is composed of two buildings—a revenue-generating event space and the clinic’s research-and-treatment building—connected by a draped steel façade (this image). And although architect Frank Gehry’s sources are never strictly literal or singular, sand dunes of the desert suggested the twisting volumes of the four-story event hall (above), while the cubic massing of a hillside village in Morocco inspired the clinic building (opposite).





FRANK GEHRY, FAIA, HAD always turned down commissions in Las Vegas, knowing that the city would inevitably turn his architecture into yet another theme. So when Larry Ruvo, a beverage entrepreneur, came calling, Gehry nearly turned him out. But Ruvo, a salesman on a crusade, won the architect over with the prospect of designing an Alzheimer's research center in the emerging 61-acre Symphony Park, a development that aims to revitalize downtown Las Vegas, away from the lights of the Strip. The two made a deal. Gehry would design the building if Ruvo would stretch the research mandate to include Huntington's disease, which Gehry has long championed. With Gehry signed on, Ruvo—who had lost his father, Lou, to Alzheimer's—tried to enlist a research institution that would occupy and run the building. "I believe that with a great building, people will come," Ruvo says. In 2009, two years after construction started, the Cleveland Clinic signed on.

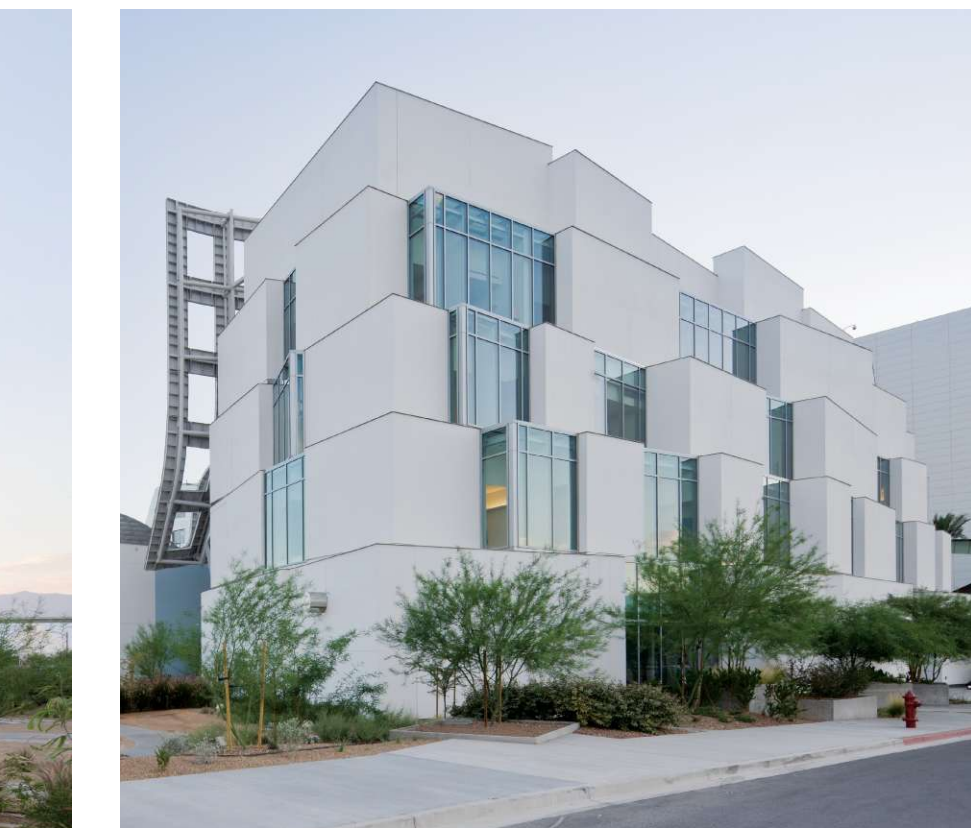
Now commanding the edge of the emerging cultural campus is a distinctly Gehry building, draped and wrapped with a mountainous metal-clad skin, faced in shingled panels and punctured with a grid of windows. The voluminous structure—which serves as a revenue-generating event space as well as a space for patient programs—stands at the back of an orthogonal, four-story working structure that serves as a clinic, research center, and Ruvo's nonprofit Keep Memory Alive foundation headquarters.

With a technologically difficult and ambitious design on an idealistic mission, Gehry escaped the architecturally promiscuous ethos of the city, where architecture is, as analyzed in *Learning from Las Vegas*, a matter of decorating sheds with signage. "I met with the mayor, Oscar Goodman," Gehry says. "He said to me, 'Frank, you have to do something that's not in Vegas. The Eiffel Tower is here, NYC is here. Do something that's not in Vegas.' So we used to say I was creating the mouse that roared." And according to director Jeffrey Cummings, the center inspires its occupants: "When we go to work in a sculptural masterpiece, it has the effect of making you want to live up to the expectations established by the building."

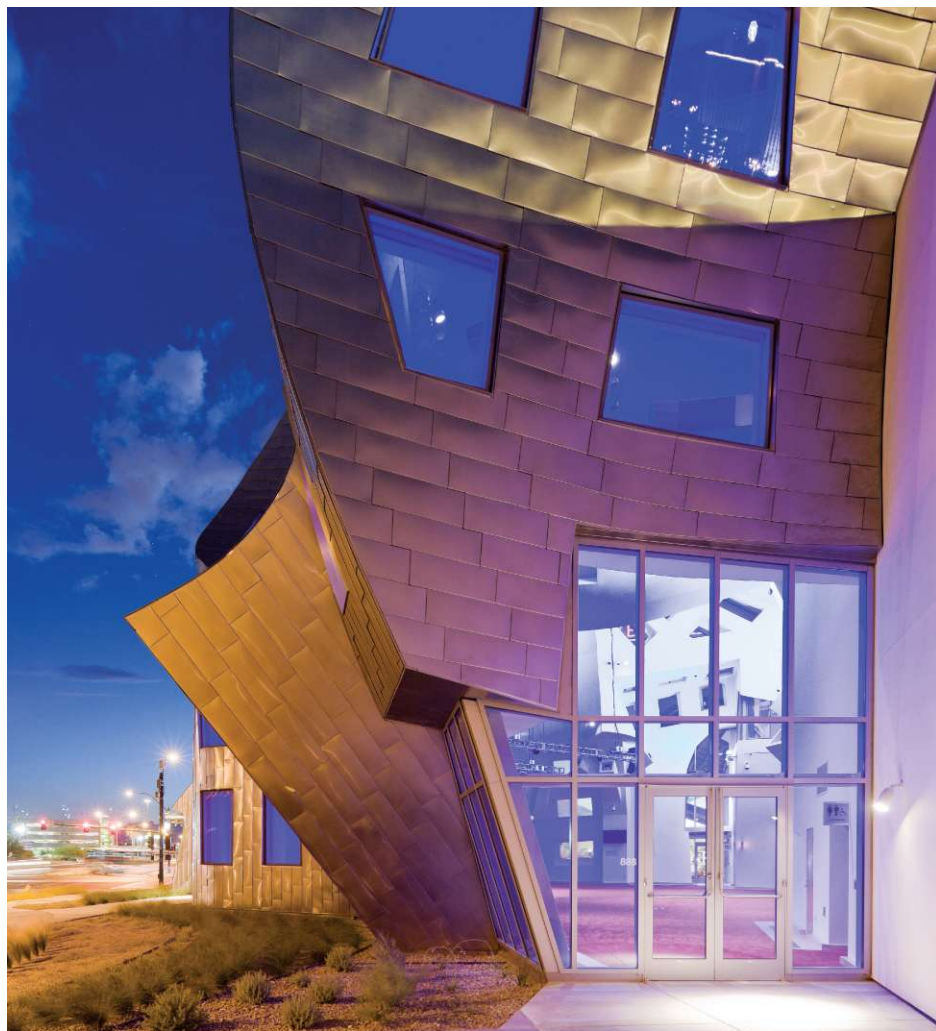
The composite 60,000-square-foot complex is basically composed of two radically different buildings joined by a partially clad steel trellis shading an outdoor patio. Guests and patients park in front of the clinic, with its clifflike façade of angled glass-and-stucco cubes that steps back at each story. A breezeway through the base of the clinic leads to its entrance and out to the courtyard and the activity center beyond.

Inside the clinic, Gehry took pains to create an environment that doesn't evoke a medical setting. He ensured that all doors, frames, and furniture were built from rich, honey-colored Douglas fir. This is the same wood that he used to great effect in the Walt Disney Concert Hall in Los Angeles, there to create a psychological connection to the instruments, here to create a calming presence. Corridors curve, creating carefully tailored sight lines to limit interaction between patients in different stages of illness.

Within Gehry's opus, the design of the complex forges new territory. Gehry usually wraps buildings in a skin, but here he separates the wrapper from the understructure to create a freestanding structure



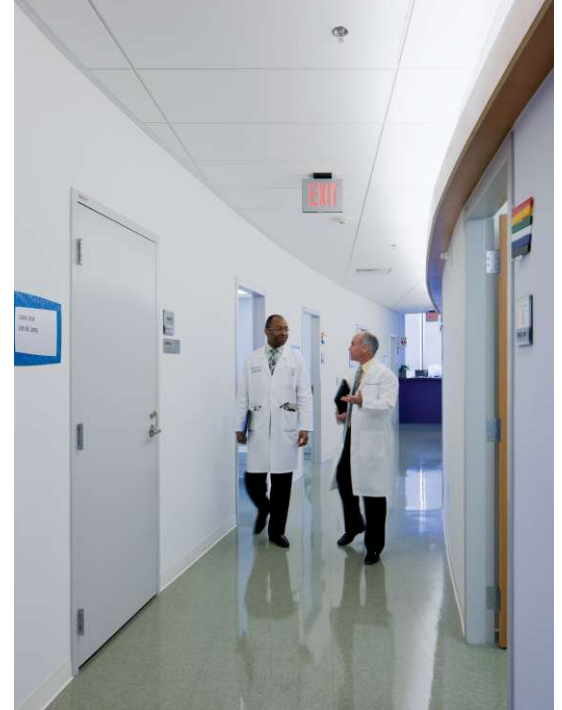




The draped steel façade that dominates the complex is composed of an undulated steel frame (above) clad in 560 unique panels. The skin is supported by a series of columns and supports attached to the building, which can be seen most clearly in the courtyard between the event space and clinic (opposite). As it meets the ground, the skin peels away to reveal larger windows and entry doors (left).

that envelops a vaulting, cathedral-like space with swooping lines and deeply coffered windows—especially successful in Las Vegas where architecture is considered entertainment and authenticity is mostly irrelevant. Having separated the wrapper from the main clinic structure, Gehry ties them together with a trellis, but the web of steel is awkward. The side elevations reveal that the clinic remains a closed form that resists the wrapper. Neither invades the other.

Gehry delivered the architectural gravitas that Ruvo needed. “For me, architecture was a necessary marketing tool,” Ruvo says. “We wanted a statement that would show we were serious about curing a disease and would let the doctors know we were not underfunded.” Ruvo uses the architecture as a symbol to rally donations and volunteers, while the activity center generates a steady income stream, playing host to weddings, galas (including the foundation’s own), and other upscale happenings. “I told Frank that I was going to put his celebrity and talent to use to help cure chronic brain diseases,” Ruvo says. Gehry understood the need. “The building is very successful because it brought attention to the foundation, it linked Larry up with the Cleveland Clinic, and it helps him get grants. That wouldn’t have happened” otherwise, he says.



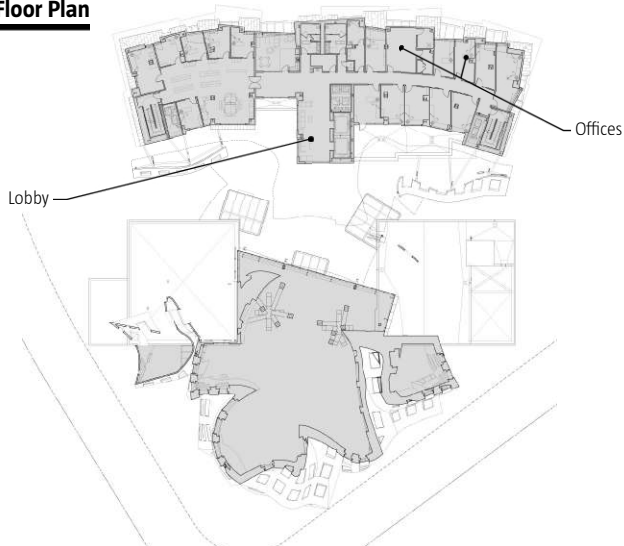
First-Floor Plan



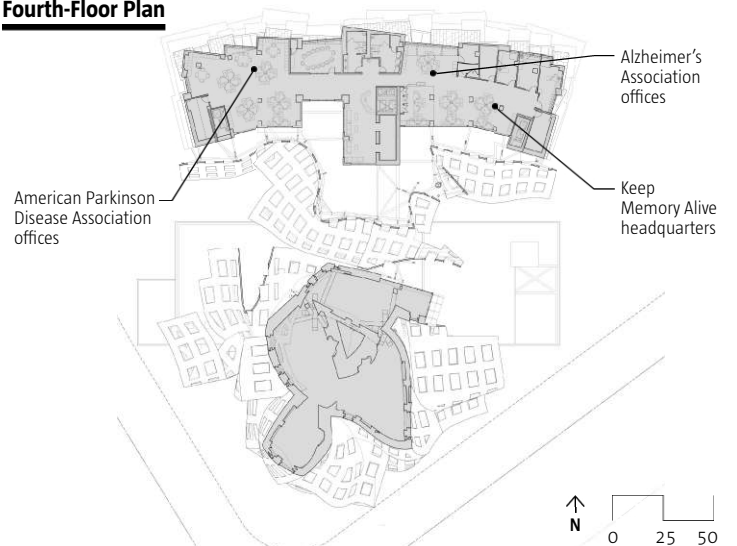
Second-Floor Plan



Third-Floor Plan

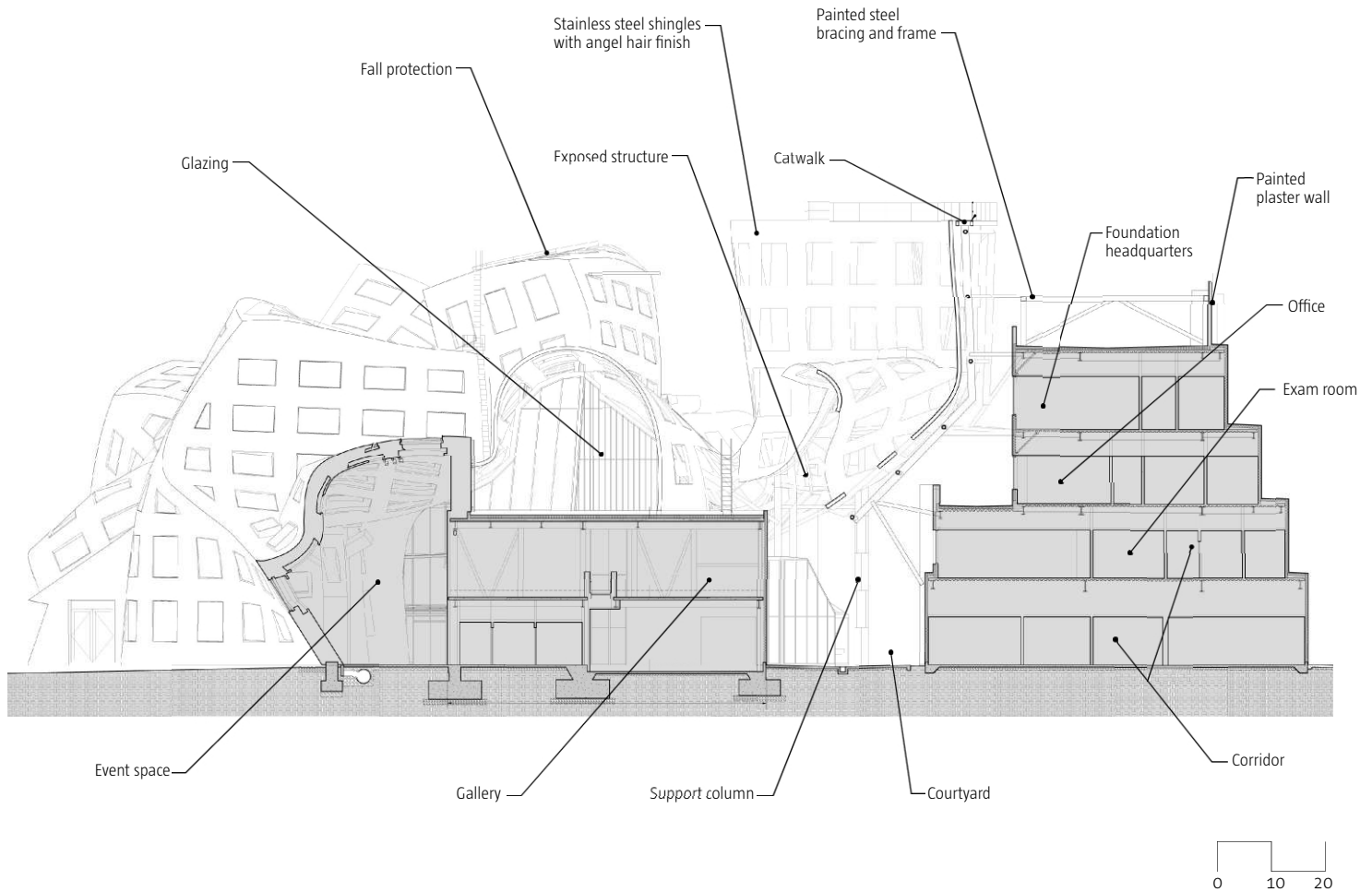


Fourth-Floor Plan





In the clinic, patients enter into a main lobby (opposite left) and move through curved hallways (opposite right), which help to limit patient interaction. But the adjacent event space (this image), which holds 450, is designed to bring people together. "Its purpose is to generate money," Gehry says. "This has got to be a banquet room like none other in Vegas. It had to be different to compete." It has been an overnight success, according to Gehry, and allowed Ruvo to raise as much as \$20 million in one night for the clinic.

Building Section**TOOBLOX:
DRAPED STEEL FAÇADE**

Frank Gehry's demanding designs may push technology, but high-tech is never the point, either as aesthetic or meaning. But in the Ruvo Center, advanced computational technology both enabled the ambitious design and established a high new benchmark in building.

"The cladding is similar to what I do but I took more risks with it," Gehry says. "I did try to study a curtainwall that wasn't just vertical." What distinguishes the draped façade of the Ruvo Center from his other buildings is that rather than hang a metal façade on a steel frame, here Gehry integrates the steel structure and the façade, basically creating a monocoque structure, the chassis becoming part and parcel of the body.

Gehry designed the structure in his Los Angeles office, in association with his consulting firm, Gehry Technologies. The event space portion of the building was engineered in Germany, requiring about 65,000 hours, and the 560 unique panels—which together have 199 differently-sized window openings—were prefabricated in China. On site, the panels were installed from the base up, supported in place by a temporary scaffold. The individual panels weigh between 2,000 and 10,000 pounds, and each was

attached to adjacent panels with up to 120 bolts in a self-correcting process that assures the correct position of the next panels. As the panels were fitted on site, the location points were surveyed by GPS and sent to engineers in Germany for confirmation. Each of the thousands of stainless steel shingles surfacing the exterior façade panels were fabricated from drawings measured on the weather membrane of the built shell. Services had to be integrated into the structure as well: Air handling is achieved through truncated trees located in four "corners" of the event space. An integrated window shading system, controlled by solar sensors, helps to minimize heat gain.

Once all the panels were in place, the scaffold was removed, leaving a void in which the event space was then constructed. This interior wall structure takes the form of a Basaphan system with many layers—drywall, fiberglass mesh, and three layers of porous plaster (left unpainted to assure its acoustic properties) among them—all hung from a spiderweb of supports attached to the structural shell. "The curtainwall is the banquet envelope," Gehry explains. "It's cladding with holes, and it was pretty risky to try and do it. We had some budgetary pushback, the first models were more exuberant."

Project Credits

Project Cleveland Clinic Lou Ruvo Center for Brain Health, Las Vegas

Client Keep Memory Alive

Architect Gehry Partners, Los Angeles—Frank Gehry, FAIA (design partner); Terry Bell (project partner); Brian Zamora (project designer); Kristin Ragins, Ronald A. Rosell, David Rodriguez, Michael Sedlacek (project architects); Andrew Galambos, Eun Sung Chang, AIA, Izaburo Kibayashi, Michael O'Boyle, Mok Wai Wan, Natalie Magarian, Natalie Milberg, Nora Wolin, Sameer Kashyap, Sarah David, Yvon Romeus (project team)

Structural Engineer WSP Cantor Seinuk

M/E/P/FP, Security, Telecommunications Engineer Cosentini Associates

Lighting Design L'Observatoire International

Acoustical Engineers McKay Conant Hoover; Nagata Acoustics

Building Transportation Edgett Williams Consulting Group

Life-Safety Engineers Aon Fire Protection Engineering Corp.

Climate Engineer Transsolar

Door Hardware Finish Hardware Technology

Landscape Architect Deneen Powell Atelier

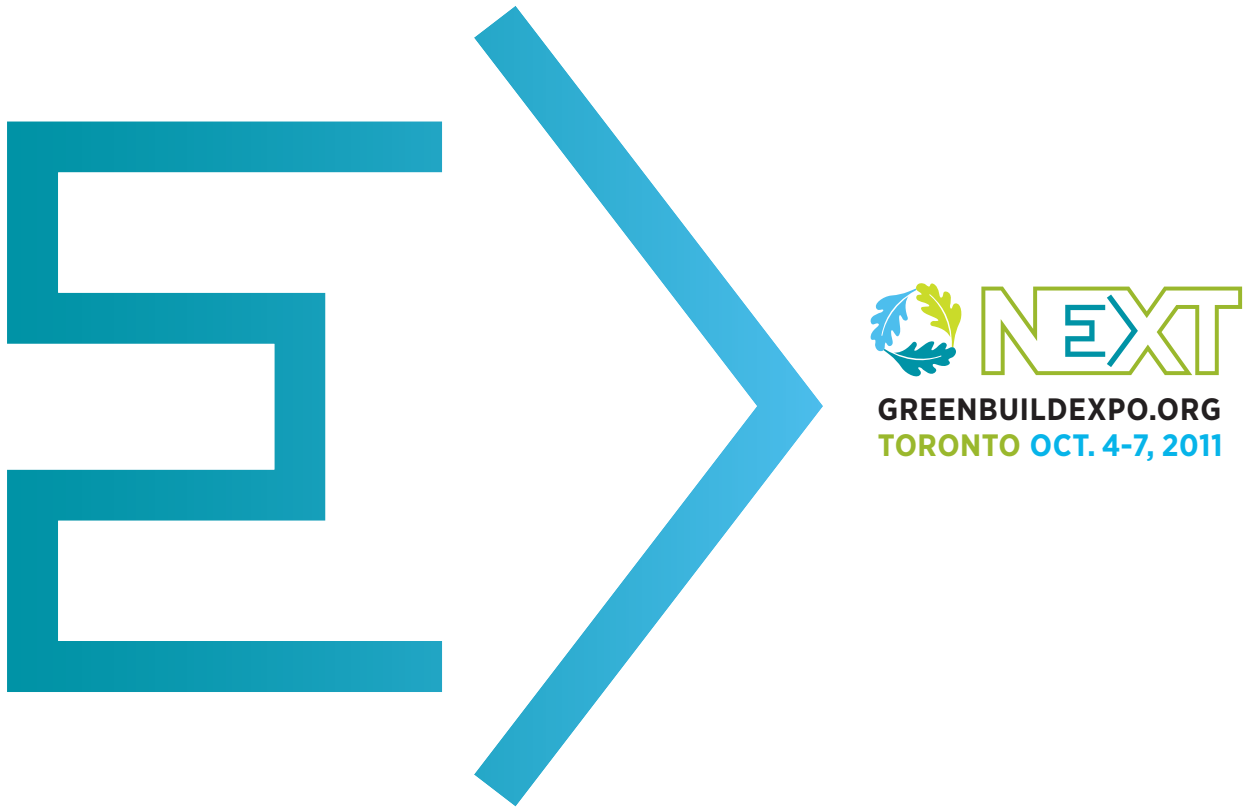
Civil Engineer G.C. Wallace

Building Maintenance Lerch Bates

A/V Engineer Spurgeon Design and Development

General Contractor Whiting-Turner Contracting Co.

Size 85,180 square feet (site area), 60,000 (total building area)



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CHAMPALIMAUD CENTRE FOR THE UNKNOWN

LISBON, PORTUGAL

CHARLES CORREA ASSOCIATES

TEXT BY VERNON MAYS
PHOTOS DORA NOGUEIRA

CHARLES CORREA, HON. FAIA, was awestruck the first time he walked the site for the Champalimaud Centre for the Unknown in Lisbon, Portugal. Standing near the mouth of the Tagus River, within view of the Tower of Belém, built in the 16th century to fortify the city during the Age of Discovery, he felt that he was standing on hallowed ground.

“For me, this was a very special place,” he says. “How did Vasco da Gama and the other great navigators find the courage and imagination to sail down that bend, take that corner and plunge into the unknown ocean that lay beyond?” To Correa, principal of Charles Correa Associates of Mumbai, India, seafaring exploration seemed an extraordinarily apt metaphor for the scientific journeys that would soon be taking place at the Champalimaud Foundation’s new research center. João Silveira Botelho, one of the center’s directors, agrees. “That’s why we call it the Center for the Unknown, because, likewise, our discoveries are from the realm of the unknown,” Botelho says.

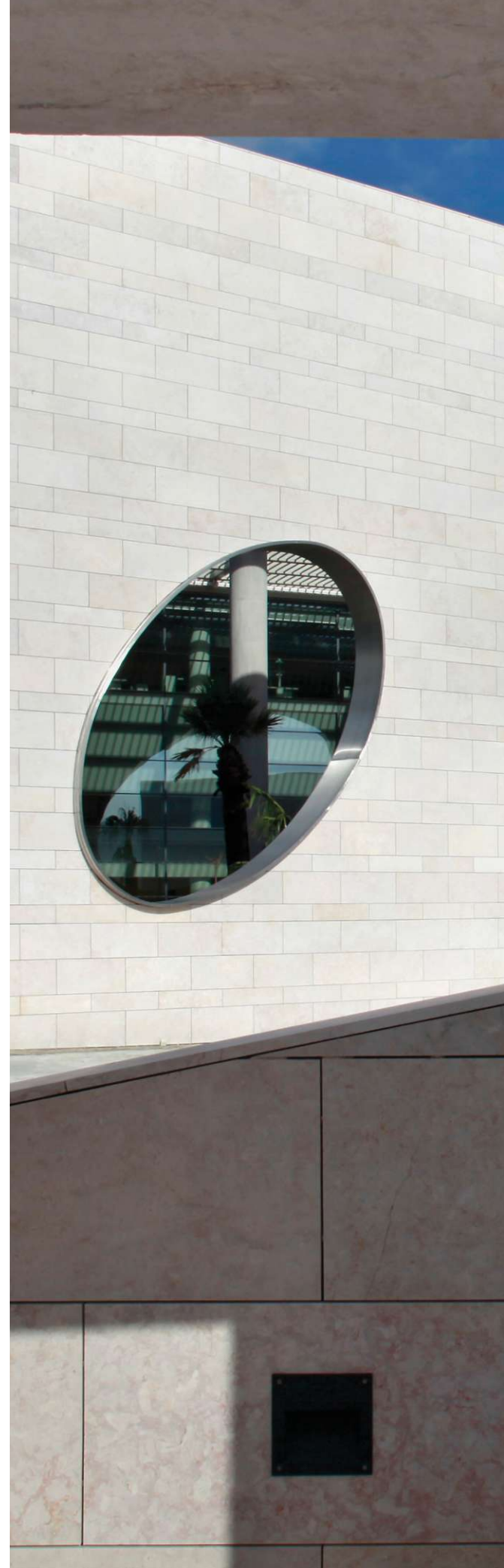
Correa’s design for the complex—a rare integration of research and clinical facilities (which are often considered separate disciplines) with aspirations to become an international leader in neuroscience and cancer research—taps the poetic dimensions of the site’s historic legacy. An open plaza paved in granite cobbles (according to the local tradition) slices through the site, weaving past curved lioz limestone walls toward the water’s edge. The path rises at a gentle slope that obscures the ocean view until the end, where two concrete monoliths frame a view to a pool of water and the Atlantic beyond. There, just breaking the surface of the pool, is an enigmatic stainless steel form that has been likened to the back of a turtle, a tropical island, or a treasure chest.

Funded by a bequest from entrepreneur António de Sommer Champalimaud, who died in 2004, the 641,500-square-foot facility is populated with doctors and researchers recruited from some 20 countries. The main feature of the project is the four-story research-and-treatment building, which occupies the north side of the site. Diagnostic and treatment areas occupy the lower two levels, while the upper two floors are dedicated to research laboratories built to accommodate 440 scientists. Double-height cutouts through the section of the building’s interior provide visual connections between the research floors, and an expanse of glass inside the spacious lobby gives patients glimpses of the research efforts conducted on their behalf. Glass walls on all four floors face a large indoor-outdoor sunken garden—Correa likens it to a Brazilian rain forest—defined on its south edge by a curved stone wall and topped by a pergola.

To the south of the main block, a smaller structure houses the foundation offices, a restaurant, exhibition space, and a 400-seat auditorium. A generous dining terrace extends from the restaurant, overlooking the waterfront promenade. Connecting the two buildings at the upper level is a 69-foot-long bridge supported by tension cables and encased in curved, laminated glass. “The bridge is a piece of engineering jewelry,” Correa says. “We wanted something very delicate.”

An important goal was to build the center as “a public campus, not a private campus,” Botelho says. “We created spaces where the public can be in all the places surrounding the building.” The third main element of the complex, the amphitheater, helps to fulfill that goal. This public theater hosts regular programs of music and lectures, conducted with the city and river as the backdrop. All told—counting the promenade, outdoor theater, and public gardens—the Champalimaud Centre allows public access to half of the site.

Underscoring the national importance of the project, the Portuguese government provided the land for the complex and pressed for its opening in 2010 to coincide with the 100th anniversary of the Portuguese Republic. Likewise, the rich potential of the Champalimaud Centre is not lost on people such as neuroscientist Rui Costa, a Portuguese native who returned from the United States to work at the facility. “There are lots of museums for art, but this is for science—an awesome building that will call the attention of the public,” Costa says. “It’s a very important statement for Portugal.”





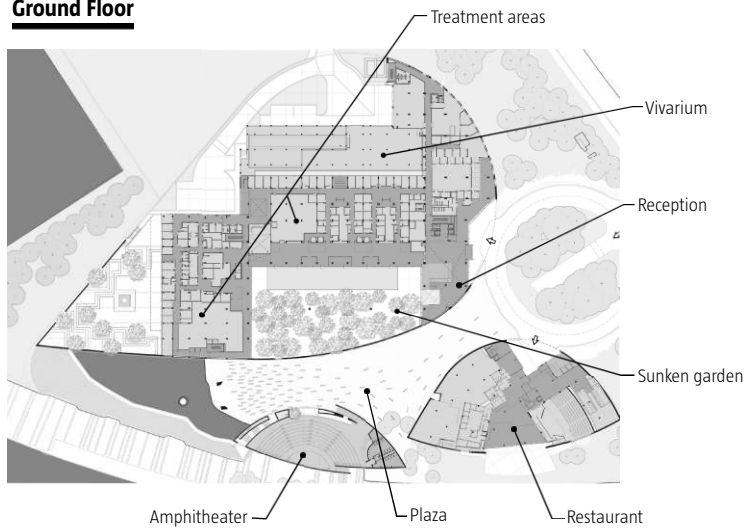
The Champalimaud Centre for the Unknown, designed by Mumbai, India-based Charles Correa Associates, is a facility for neuroscience and cancer research in Lisbon, Portugal.



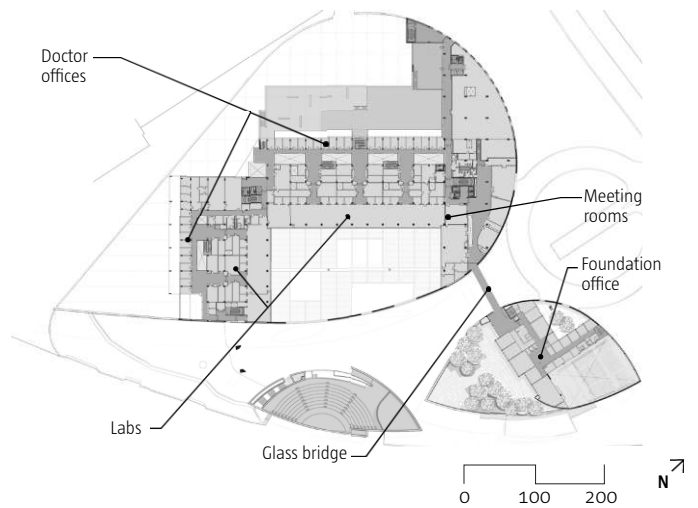
The center's site includes several outdoor gathering spaces that are open to the public, including an amphitheater (this page) which is used for concerts and other performances. Inside the research building, double-height lobby spaces (opposite, top left) allow visitors to see into lab spaces, furthering the goal of opening the center to the community. An on-site restaurant (opposite, top right) caters to the scientists, and an indoor-outdoor garden (opposite, middle) brings greenery into the stone complex.



Ground Floor



Second Floor

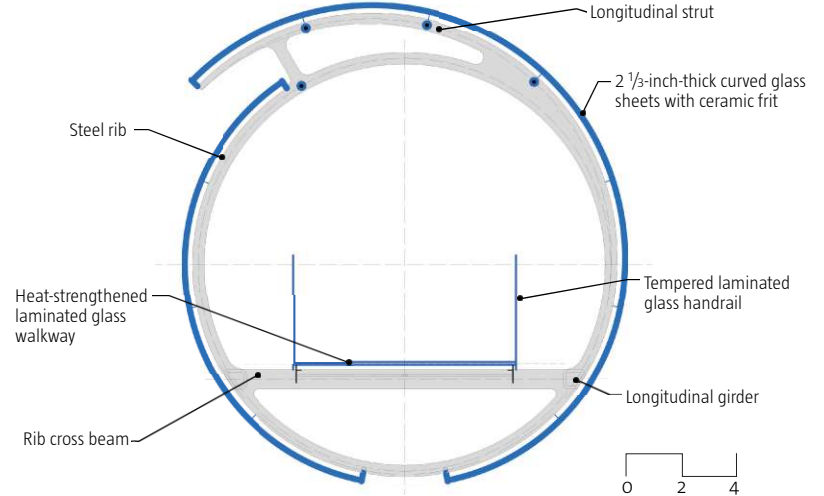
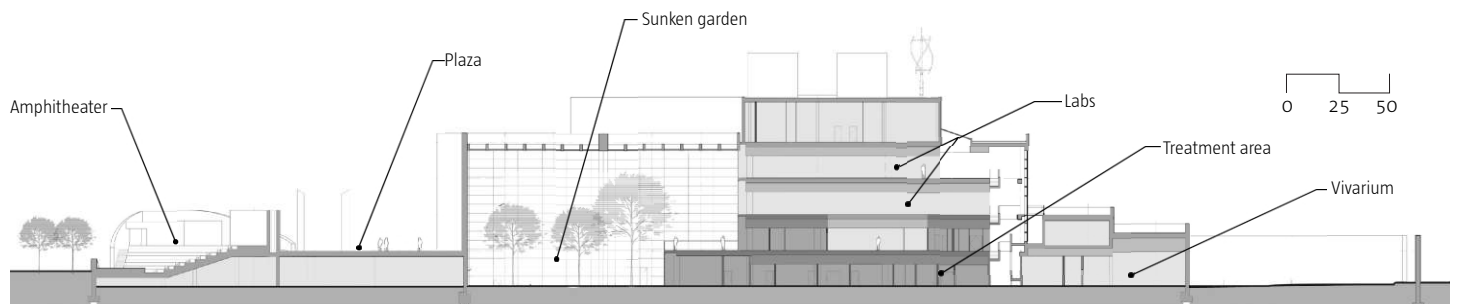


Project Credits

Project Champalimaud Centre for the Unknown, Lisbon, Portugal
Client Champalimaud Foundation
Project Management PM7-Project Management—João Pós-de-Mina, Pedro Providência
Concept Architect Charles Correa Associates, Mumbai, India—Charles Correa, Hon. FAIA (design architect); Sachin Agshikar (main architect); Manas Vanwari, Dhaval Malesha (project team)
Local Architect of Record Glintt—João Abreu, Paulo Teixeira
Lab and Clinic Design Architects RMJM—Collin Mosher, David Moos, AIA, Ruth McQueen
Concept M/E/P Vanderweil Engineers—David Pinto (principal); Mark Csontos; Val Levin; Marlon White
Structural Engineer LNM - Engenharia Civil—Luís Gão Marques, Paulo Ribeiro
Local M/E/P Engineer MGSantos—Fernando Batista, Manuel dos Santos, Miguel Feliz
Electric Engineer Copreng—António Almeida
Plumbing Engineer Grade Ribeiro—Grade Ribeiro, Pedro Durão
Landscape Architect Proap—João Oliveira Nunes, Inaki Zoilo
Lighting Designer DPA Lighting Consultants—Nick Hoggett (partner); Ian Clarke (senior designer)
Bridge Designer Schlaich Bergermann und Partner—Klaus Straub
General Contractor Mota-Engil; HCI Construções
Construction Manager Fernando Pinto
Size 641,500 square feet
Cost \$140.08 million (€100 million)

Materials and Sources

Acoustical System Knauf (Knaf 6/18R) knauf.com
Adhesives, Coatings and Sealants Sika Group sika.com
Building-Management Systems and Services Sauter sauter-controls.com
Carpet Desso desso.com; Ege egecarpet.com
Ceilings Armstrong (metal panel) armstrong.com; Pladur (gypsum) pladur.com
Concrete Mota-Engil mota-engil.pt
Exterior Wall Systems Portuguese stone (Lioz); Halfen halfen.com
Flooring Recer (ceramic tile) recer.pt; Revigrés (ceramic tile) revigrés.com; Armstrong (vinyl) armstrong.com
Glass Saint-Gobain (SKN0.65) saint-gobain.com
Gypsum Pladur pladur.com
HVAC Trane trane.com; Trox trox.de; Carrier Corp. carrier.com; Accutrol (Accuvalve) accutrollc.com
Insulation Danosa danosa.com
Lighting Control Systems Helvar helvar.com
Lighting Erco erco.com; Bega-US bega-us.com; XAL xal.com; iGuzzini Illuminazione iguzzini.com; Se'lux selux.com
Masonry and Stone Portuguese stone (Lioz, Valverde)
Metal Alucobond alucobond.com
Millwork DorteK dorteK.com; Hörmann hoermann.pt; CT-RAD www.ct-rad.com
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Photovoltaics and Other Renewables Viessmann Werke (solar panel) viessmann.com; Alfa Laval Group (river intake) alfalaval.com
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UBUNTU CENTRE

PORT ELIZABETH, SOUTH AFRICA
FIELD ARCHITECTURE

TEXT BY LISA FINDLEY
PHOTOS BY JON RIORDAN

The Ubuntu Centre's program includes facilities for HIV care and education. To destigmatize getting tested in this South African community, the center folds a healthcare mission into one of adult education, community engagement, child care, and more.





WEDDINGWANA





ALMOST FORTY PERCENT of the population of the windswept former black township of Zwide, a poverty-stricken suburb of Port Elizabeth, South Africa, is infected with HIV. Over the past two decades, HIV and AIDS have convulsed the community, decimating families and derailing children's lives, including their schooling. In 1998, a young American tourist and a local teacher teamed up to form the Ubuntu Education Fund, a nonprofit focusing on getting children access to higher education and employment. The fund provides prenatal and child healthcare, HIV testing, counseling, and treatment for mothers, along with initiatives such as after-school programs, exam study sessions, university scholarships, and an array of counseling services. The foundation's original offices were housed in an old shipping container, the building of choice for those who are starting a business in the townships—because they are cheap, portable, and secure.

In early 2006, Jacob Lief, the American co-founder of Ubuntu, interviewed 17 South African architects to find the right one to design a new facility for the growing foundation. None were selected because none understood that Ubuntu wanted something more than a serviceable building. "I told them," Lief says, "that it had to be a fantastic building, that it must win architecture awards, that the access to such architecture is not a privilege, but rather a right." In April, Lief was referred to Stan Field, Intl. Assoc. AIA, and seven minutes into their first phone call, Lief hired him. While Field practices in Palo Alto, Calif., he was born in Port Elizabeth and embraced the opportunity to work in his hometown. And the project came along just as Field was forming his own firm, Field Architecture, with his son Jess Field, Assoc. AIA.

On his first trip to Zwide, Stan Field met one-on-one with the entire staff of Ubuntu. He knew the organization needed new clinic and education spaces, offices, and a community meeting hall, but each person he spoke with added to the program his or her desires and aspirations. Field also noted how people moved within the township

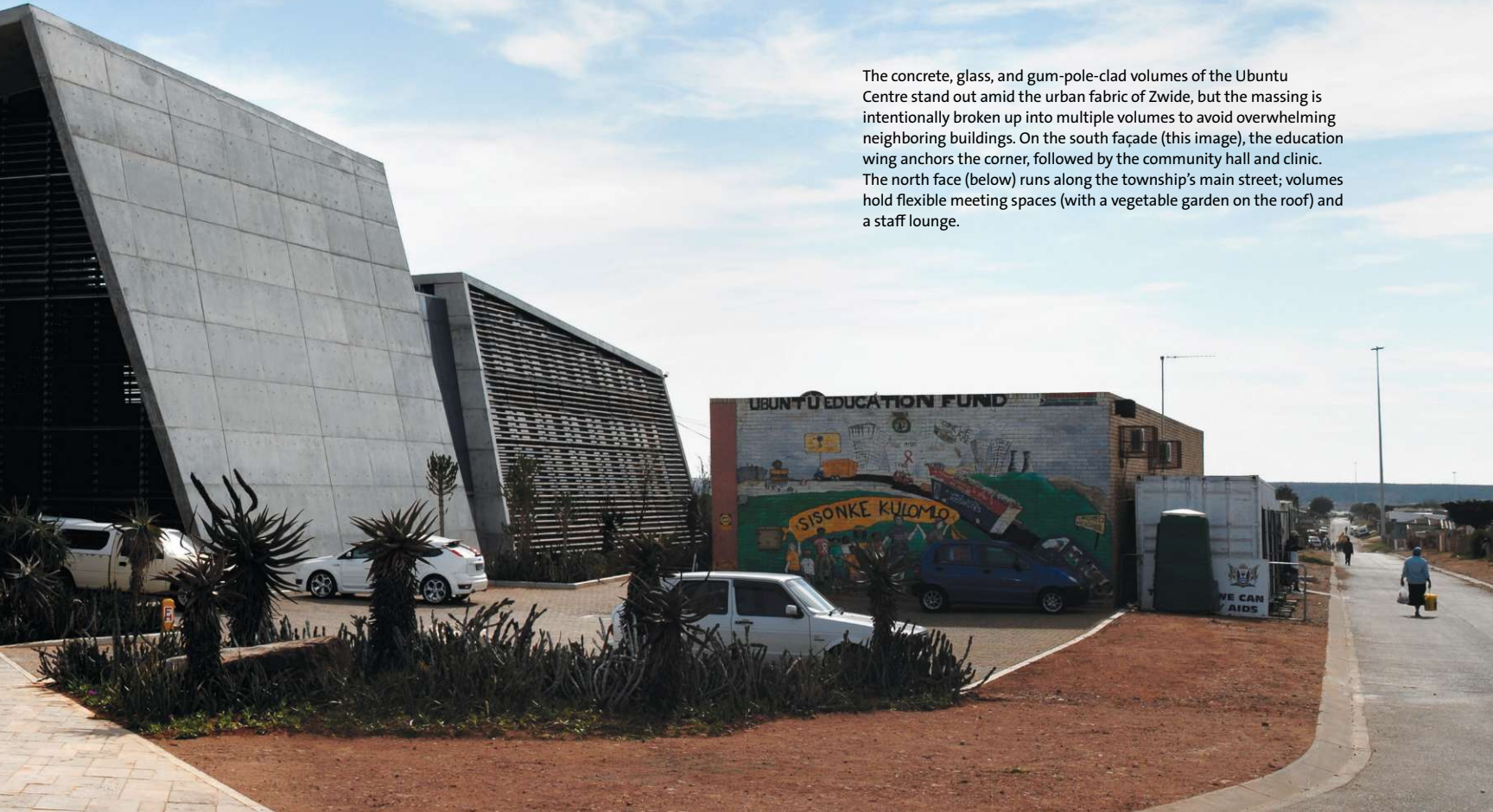
by using an informal network of paths that spider across the landscape according to the shortest distances between transit nodes, shops, and other centers of daily life in a place where people cannot afford cars. Along with an agenda for low energy consumption, these paths formed the program and influences for the building.

Field convinced the foundation to forego a compound wall around the building; the tall broken-glass- or razor-wire-topped walls provide security for most township institutions. Instead, he thought the building should reinforce a path across the site, making it part of life in Zwide and ensuring that getting a still-stigmatized test for HIV can happen as part of a daily routine. The path—defined by pavers that echo the intense red of the local soil—begins as a plaza at grade along the sidewalk on the township's main road, winds through the building, and out to the street again. It passes a reception area, the entries to the clinic and the education and empowerment wing, and the huge hand-textured wood doors that open to the soaring community room. Then it slides out into a desert-landscaped yard where it expands once again into plaza.

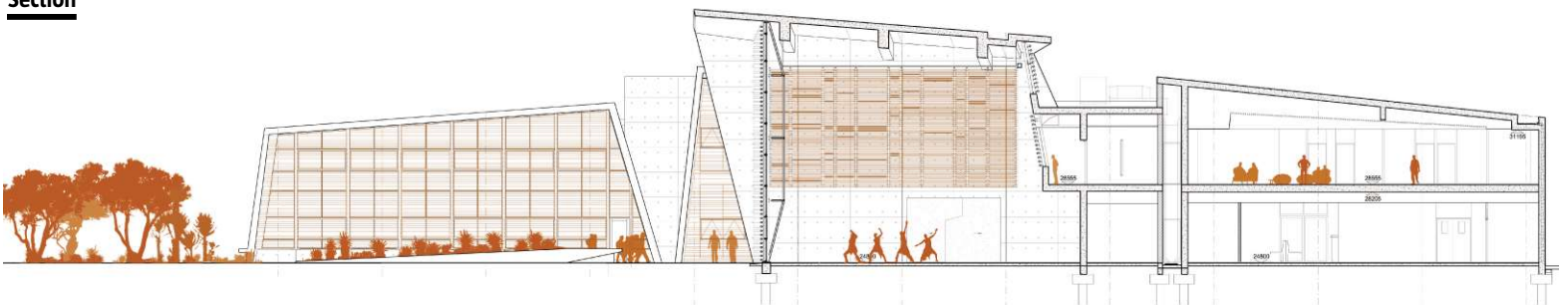
But making a \$6 million, 21,000-square-foot building at ease in the township fabric of tiny, one-story houses on little lots requires a nuanced solution. The Ubuntu Centre has a clear presence, yet is scaled not to overwhelm the neighborhood, and it avoids creating an intimidating presence. Field Architecture accomplished this by breaking the program into three main masses, each defined by lofty folded and angled concrete forms: The education wing occupies the street corner, while the clinic tucks behind a low entry piece along the main road; the community hall sits between the two. Second-floor spaces in the education and clinic blocks include offices, classrooms, and study areas. The concrete masses are stitched together by circulation spaces framed in light steel and glass, and each mass sits casually on the site.

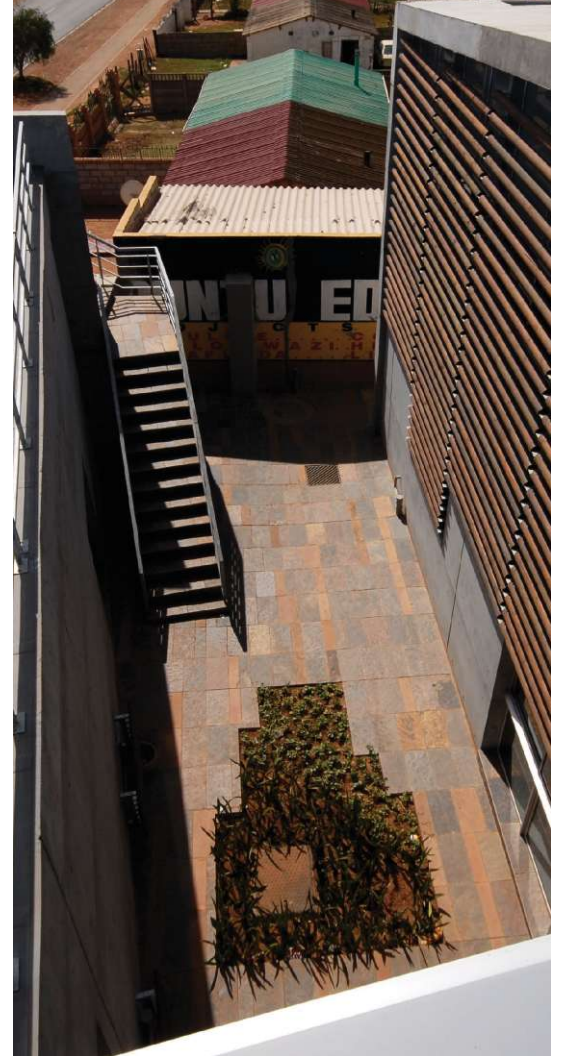
In a locale where plaster, swathing rough brick, or concrete block is the usual finish material, poured-in-place concrete was not a logical

The concrete, glass, and gum-pole-clad volumes of the Ubuntu Centre stand out amid the urban fabric of Zwidie, but the massing is intentionally broken up into multiple volumes to avoid overwhelming neighboring buildings. On the south façade (this image), the education wing anchors the corner, followed by the community hall and clinic. The north face (below) runs along the township's main street; volumes hold flexible meeting spaces (with a vegetable garden on the roof) and a staff lounge.

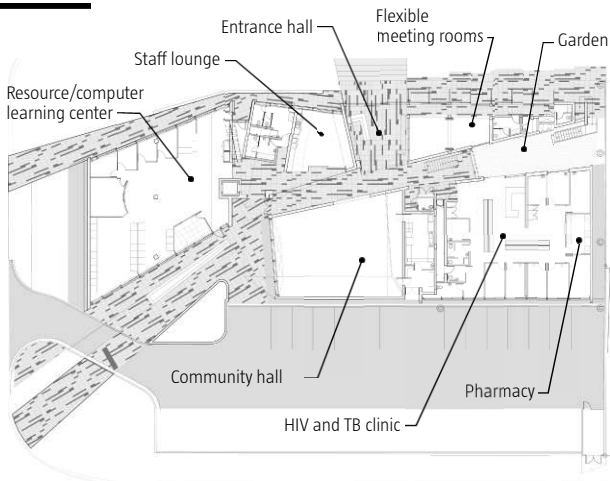


Section

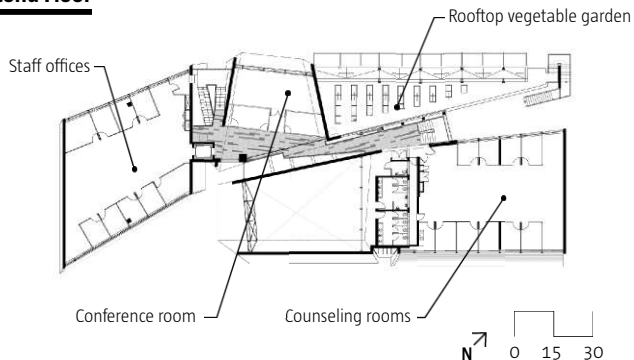




First Floor



Second Floor



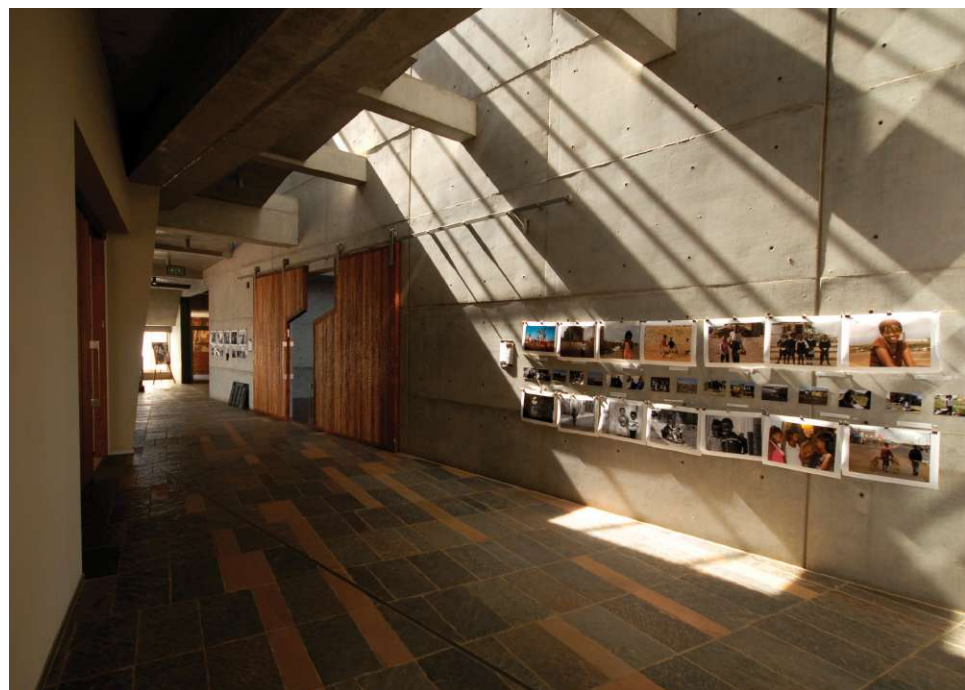
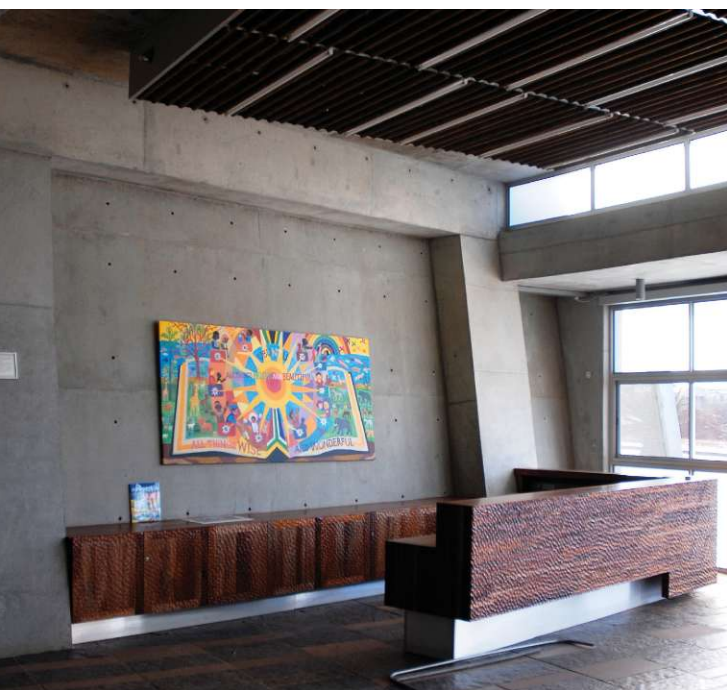
choice, but it works. “Here, the final finish was the concrete, so everything had to be done with more care,” Field explains. “And this level of attention began to become the ethic of construction. It was not a new skill the builders had to learn, but rather a new approach.” While the builders, including low-skill local laborers, gained new expertise with concrete, other materials and details were chosen specifically to benefit from local skills. Glazing at the ends of the concrete structures is covered by a trellis of horizontal gum poles—a local building staple—that screen the sun and provide security. “We were using something that was so familiar, that has been used there for generations, so we could just design the method of fabrication to suit skills the community already had,” Jess Field says.

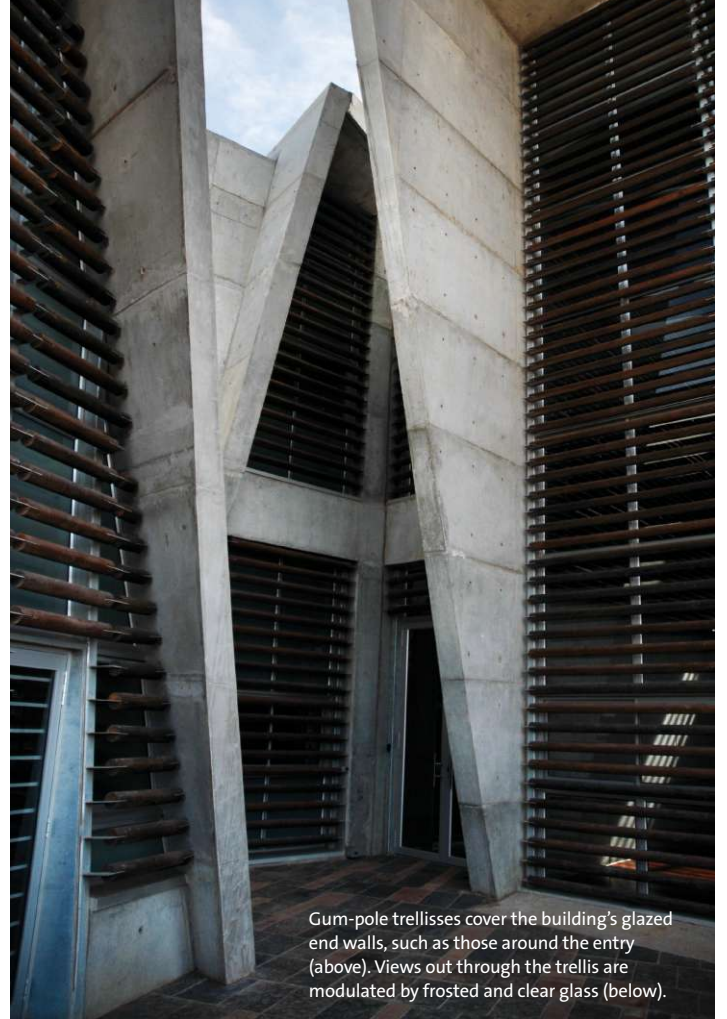
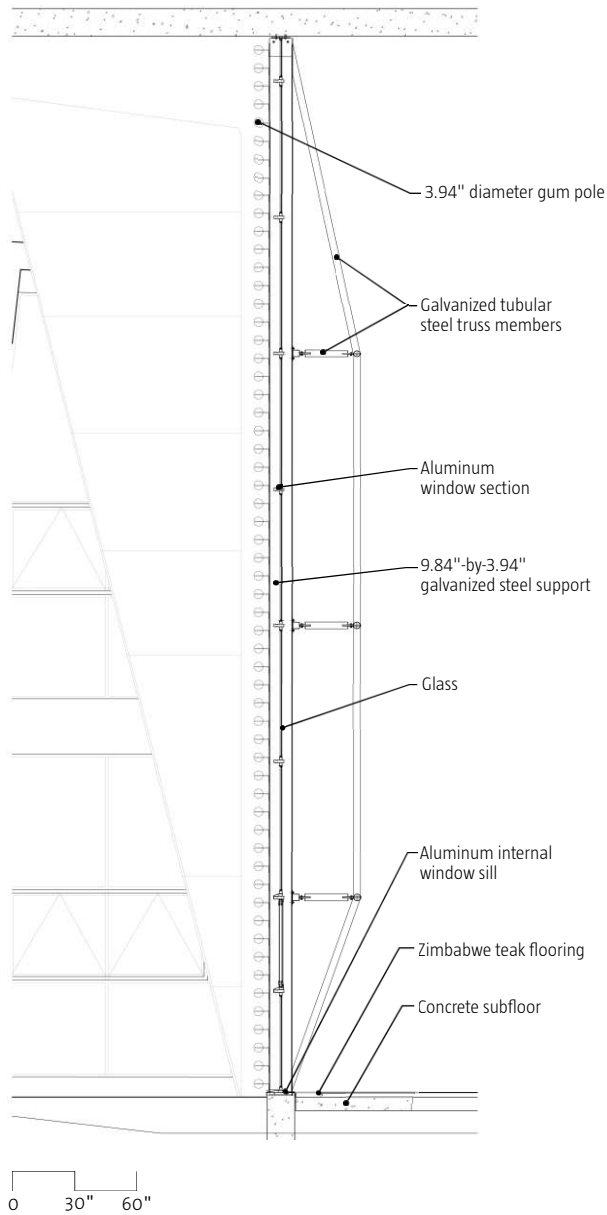
A number of smaller moves embed foundation staff’s desires into the building. On the roof of the entry, one staff member is growing a vegetable garden; the yield is used to feed children at the center. Benches invite people to sit along the sunny edge of the building on the main road, as well as at the edge of planters in the back garden. Local artwork and crafts are incorporated throughout the center. But much of the space is designed to be flexible, allowing for Ubuntu to adjust it to fit whatever needs arise. Already, a space originally intended for offices is being used for children’s craft workshops.

Jacob Lief has not been disappointed by his decision to hire Field. Not only has the building been successful in supporting the agenda of the organization, but the Ubuntu Centre won a Progressive Architecture Award from ARCHITECT in 2009. The new center embodies Ubuntu’s innovative and uncompromising attitude toward everything it does. As Lief was fundraising for this project, some people challenged the idea that Ubuntu, as a socially minded nonprofit, should spend such large sums on a building. Why not use that money for programs instead? But Lief rejects this logic forcefully. “Buildings are symbolic,” he says, “and this building shows the children of Zwidwe that they are worthy of everything the world has to offer”—including ambitious architecture.



The center has outdoor space, such as a rooftop vegetable garden (opposite left) and a garden court (opposite right), that serves as a gathering space and helps bring natural light into the adjacent clinic. Multiple entry points direct visitors to a main reception space (below left), and interior circulation is handled via a skylit path (below right). The double-height community hall (this image) is used for concerts and other events that encourage neighbors to engage with the center.



Glazing Section

Gum-pole trellises cover the building's glazed end walls, such as those around the entry (above). Views out through the trellis are modulated by frosted and clear glass (below).

**Project Credits**

Project Ubuntu Centre, Port Elizabeth, South Africa

Client/Owner Ubuntu Education Fund

Architect Field Architecture, Palo Alto, Calif.—Stan Field, Intl. Assoc. AIA, Jess Field, Assoc. AIA (lead architects); Mark Johnson, AIA, Andy Lin, Jeff Pilotte (project team)

Local Project Architects John Blair Architects in association with Ngonyama Okpanum & Associates—John Blair (project manager); Tim Hewitt-Coleman

Interior and Lighting Design Field Architecture—Stan Field, Jess Field

Mechanical/Electrical Engineer Clinkscapes Maughan-Brown—Dohan Erasmus, Ntala Lelimo, Syd Darlow

Structural/Civil Engineer Iliso Consulting—Elred Boonzaaier, David Dikanifuwa, Tony White

General Contractor SBT Construction (East Cape)—Grove Louwrens

Landscape Architect John Elliott, Matt Elliott

Joinery Subcontractor LotzaTimber

Special Joinery Drostdy Carpentry and Joinery

Acoustic Consultant for Hall Ivan Kadey Design—Ivan Kadey

Quantity Surveyor Rousseau Probert Elliott—Anton Rousseau

Mosaic Mural Dolla Sapeta

Electrical Subcontractor Jutes Electrical

Size 21,000 square feet

Cost \$6 million

Materials and Sources

Acoustical System, Ceilings, and Drywall Partitions Ceiling Master

Adhesives, Coatings, and Sealants Pelican Industrial Maintenance

Appliances Vulcan Catering Equipment vulcan.co.za

Concrete Concrete 4 U concrete4u.co.za

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Exterior Wall Systems Atlantic Glass & Aluminium atlanticga.co.za

Flooring East Cape Carpet Contractors; Slate Flooring (Bushveld Sunset); Webster's Flooring (carpet)

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Furniture Drostdy Carpentry and Joinery (seating, reception desks, benches)

Walls Ceiling Master

Windows, Curtainwalls, and Doors Atlantic Glass & Aluminium; Drostdy Carpentry and Joinery (carved sliding door)

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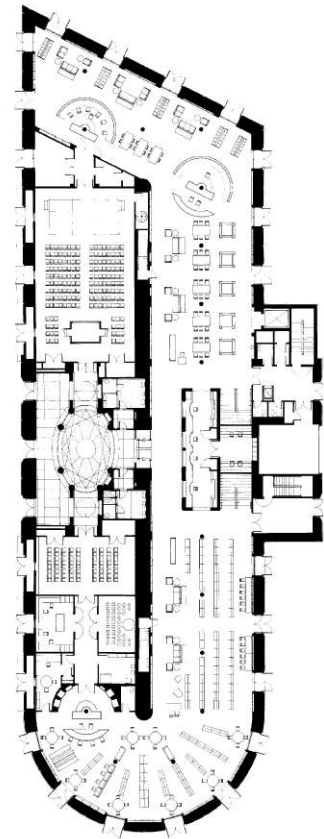
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A CHICAGO BRANCH LIBRARY FROM THE EARLY 1980S EXEMPLIFIES POSTMODERNISM'S DESIGN STRATEGIES.

TO DESIGN ONE of Chicago's branch public libraries, city architect Joseph W. Casserly engaged consulting architects Hammond Beeby & Babka, a firm then becoming known for the mix of Modernism and historical allusion that constitutes Postmodernism. The resulting Sulzer Regional Library—still a neighborhood anchor—exemplifies Postmodernism's principles and their thoughtful application.

While "PoMo" has since been widely derided, it was based on the premise that buildings should communicate their purposes through recognizable design conventions. This library design was intended to express the stability of a public institution and reinforce the street wall of the major avenue where it stands. And it represents its building type, the public library, with classical massing, regularly spaced windows, and a prominent central entrance.

The whole design concept—with its masonry enclosure and a metal-framed, skylit reading room above a low-ceilinged street floor—recalls Henri Labrouste's 19th-century Bibliothèque Ste. Geneviève in Paris, widely admired as a precursor of Modernism. But as a true Postmodernist work, the building doesn't simply replicate a historical model, but juxtaposes traditional features with others that are conspicuously modern. Here, exterior window surrounds and pilasters are composed of steel sections, and the reading room is spanned by exposed steel framing.

Postmodernism predominated among the 14 architectural design projects honored in 1983. But the jurors were so clearly divided on matters of design that no project earned more than a citation. The period of PoMo P/A Awards winners, which peaked around 1980, was drawing to a close. □

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