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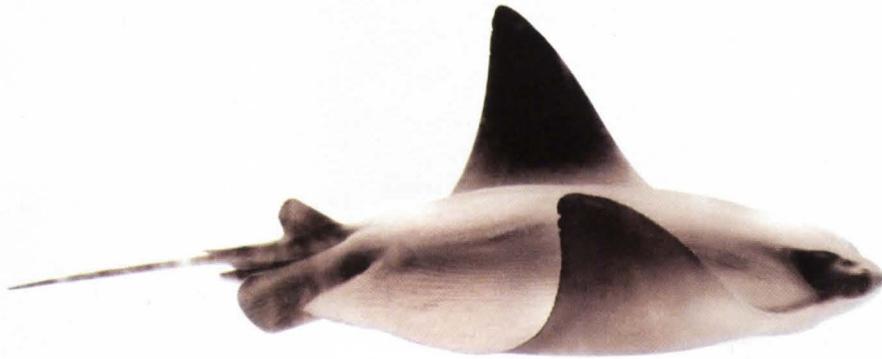
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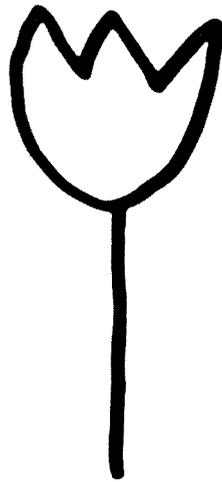
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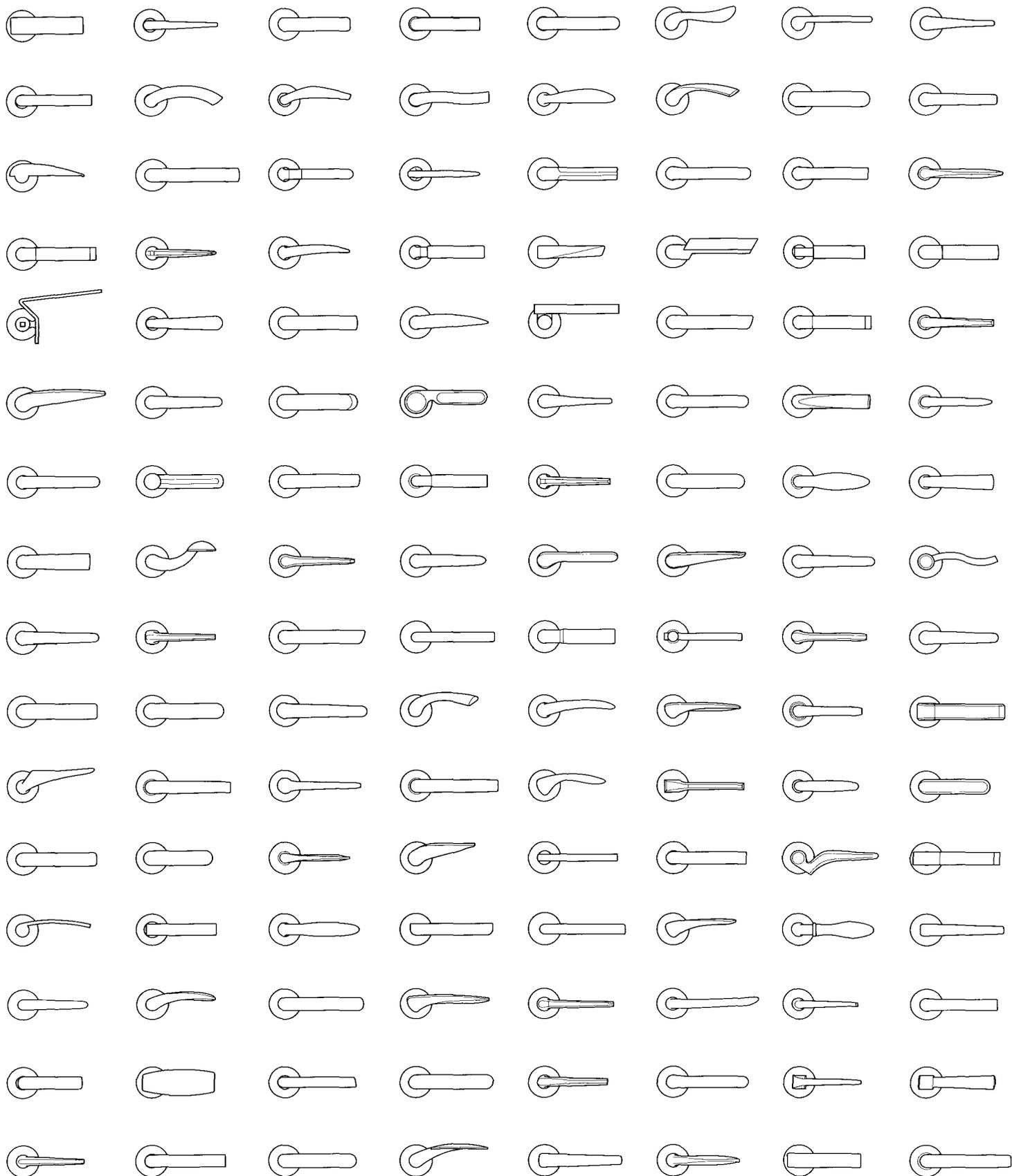
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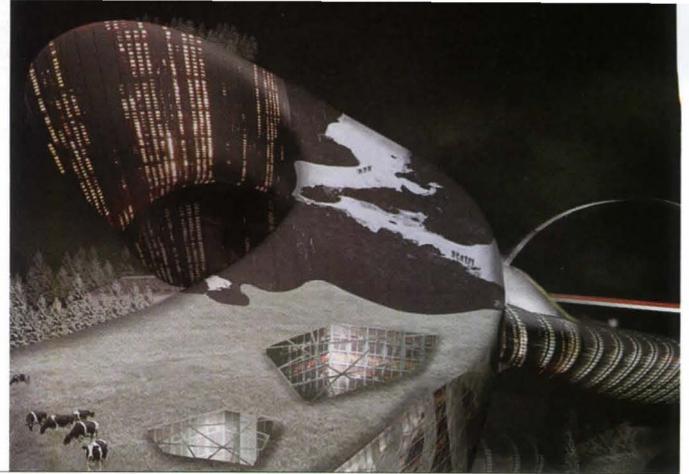
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# ARCHITECTURAL RECORD

## 10.2008

**On the Cover:** A new house for Katrina victims in Biloxi. Photo by Alan Karchmer.  
**Right:** Transit City, by the Oslo-based firm Code.



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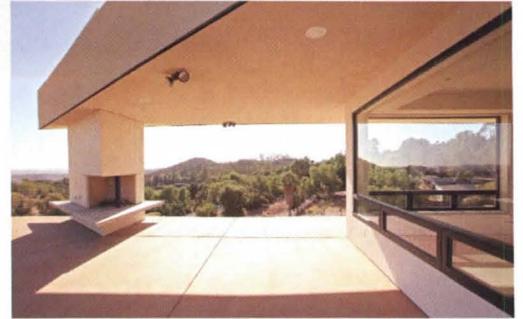
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On the Web 

This month, RECORD's focus on **social responsibility** carries over to our Web site, where we profile projects and speak with people at the forefront of **humanitarian design**. We also offer a platform for readers to weigh in on **people-centered architecture** by participating in online forums, commenting on our stories, and sharing images of projects at architecturalrecord.com.



**Reader Photo** The Hollis House in San Diego, California, designed by Silva Studios Architecture, is one of nearly 2,000 images posted by our readers.

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- COMMENTS



**Record TV**  
Watch some 50 videos in our Library, including a tour of Philip Johnson's Glass House led by RECORD editor in chief, Robert Ivy, FAIA.



**Newsmaker Interviews**  
Weekly interviews with people making headlines. New this month: A conversation with Kyu Sung Woo.



**House of the Month**  
Houston can be an architectural free-for-all. But these two town houses, designed by Francois de Menil, provide a sculptural solution to a difficult site.

**Your comments**  
*"Do the AIA bigwigs think our purpose in life is to sit in classrooms rather than serve our clients, doing our own cutting-edge research as we once did?"*  
— Reader ljmiles, on the AIA adding sustainability to continuing education requirements.

Expanded Coverage



**Practice Matters**  
How to balance doing good with the bottom line? Join a discussion about incorporating pro bono service into your firm's practice in our online forum.



**Profiles**  
Web-exclusive profiles of architects designing with social responsibility in mind include the award-winning South Africa-based firm MMA Architects.



**AR2**  
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#### The Case for Certified Wood

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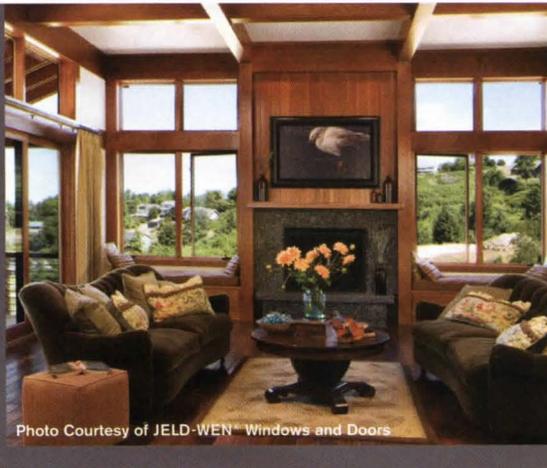


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New technology and code revisions  
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Seeing through today's spectacular  
bolted structural glazing systems to  
the precision engineering inside

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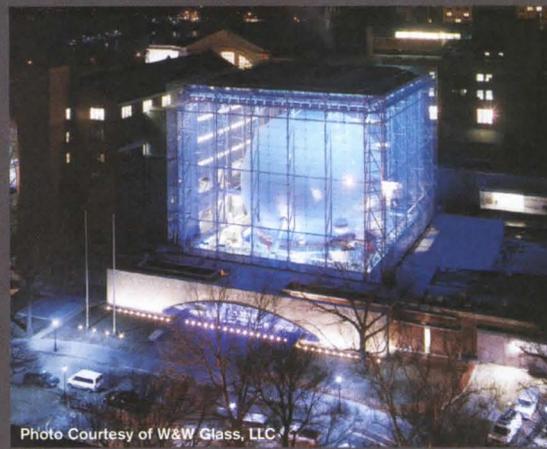
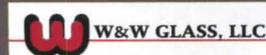


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# Making It Real

## Editorial

By Robert Ivy, FAIA

**R**eality television may compel you to run away shrieking, but as an architect, you owe it to yourself to tune into Architecture School. Conceived by two individuals with experience both in film and architecture (Michael Selditch—a director trained as an architect—together with architecture professor Stan Bertheaud, currently teaching at Woodbury University in Southern California), the series highlights the acute, nail-biting joy and anguish of the architectural studio. For any architect who has been through school years before, the six-part series induces a frisson and a welcome peek at our shared past.

At the same time, Architecture School seems wholly new. We meet eight bright young ones, eagerly signed into professor Byron Mouton's fourth-year studio in a program called Urbanbuild. We laugh or cheer or shrug for the designs and the personal decisions of Amarit, Adriana, Chris, Kim, Ian, Alex, Carter, and Casey. Should Chris have gone rock climbing with a design review looming? Can Amarit transfer his smarts into a compelling house? And former dean Kroloff's design critique, fully earned by the student, may make you squirm. We've all been there; it's a rite of passage.

Unlike your own school experience, this Tulane program (full disclosure: The writer is a Tulane graduate, never mind when) works in partnership with a nonprofit, the Neighborhood Housing Services of New Orleans, in a post-Katrina midcity neighborhood, allowing students to design and build a low-cost residence for a future client. The students get to build the house the entire studio chooses, and then meet the prospective owner. What an exhilarating education for students and their teachers.

For a profession traditionally cast as the servant of the rich and powerful (think god/king or C.E.O.), how refreshing to move architecture away from the Masters of the Universe and answer the call enunciated 150 years ago by Walt Whitman. Whitman, perhaps our greatest poet, followed his father's path and became a carpenter, building simple houses for working people. In the mid-1850s, the lyric genius of democracy read Emerson, hammered, and moved from house to house, forming ideas as he built, read, and reflected, a period when he began his masterwork, "Leaves

of Grass." Building and art occurred almost simultaneously. Who designs for the common man or woman today? Today's architects increasingly do.

Visit any architecture campus in the United States, where community-based design and design-build have taken a hold. The enthusiasm for socially conscious architecture witnessed in the academy and on Architecture School, in locales from the now-famous Rural Studio to the heart of Manhattan, reflects a core value that students are hungry to share.

Throughout history, architects have been drawn to the need for shelter. This social art has attracted architectural leaders who have been articulating its values, including, in our time, many of the architects featured in this issue of ARCHITECTURAL RECORD. Socially conscious architecture need not be limited to a single issue of one publication. Active practitioners such as Michael Pyatok, Larry Scarpa, Michael Lehrer, Michael Rotondi, Frederick Schwartz, and Carol Burns, each of whom has stood up for real people with real needs, have managed to interweave a range of human needs into the fabric of their practices throughout their careers.

At a time that electronic technology allows us to think and practice differently, to encounter our architectural subject in the abstract, to conduct the architectural discourse in a virtual, hands-off way, is it any wonder that the incoming generation is seeking new answers about what it means to be an architect? Architecture consists of more than three-dimensional digital mastery, or technical skill, or formal inventiveness—all qualities that have been trumpeted and practiced for the past decade. Architecture shelters real people living real lives, with real needs and wants. Architecture School reminds us of the social milieu that gives rise to our design ideas. Students remind us that architecture serves the whole culture—more than any individual firm or practice. Our calling is both humble and profound, pragmatic and inspired, but people-centered. Check out the reruns.



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CIRCLE 15

# Letters

## The power of knowledge

Since the first time I read your respectful magazine in 2003 when I was just a student in the first stage (in the architecture and engineering department), I understood how it could twist my mind in a right way. ARCHITECTURAL RECORD raised my thoughts to high levels and kept me in touch with international updates in the architectural world. The magazine became one of the most important and trusted sources in our academic field. It aided me in the period of war when it was impossible for me to reach any source from which to study. And even after war, in an environment of destruction, I was inspired by your publication. It gave me the power not to give up and let my big dreams go with the sound of clashes and guns.

— Dina G. Omar  
University Of Technology  
Baghdad

## The straight story?

As an enthusiastic reader of the Record, I have been somewhat puzzled by the heading above the sponsored Continuing Education features: "Educational – Advertisement," as it seems to me to be a contradiction in terms unless the articles are somehow vetted by your editorial board to confirm the educational value of the claims made by the advertising promoter.

I was therefore surprised to read the recent advertorial "Hot Water on Demand" provided by GE Appliances [September 2008, page 161], which states that "hot water on demand is one way to reduce energy costs" and, "The higher cost of a typical tankless hot water system is offset by the energy savings." I had just received the October 2008 issue of *Consumer Reports*, which states: "Tankless water heaters – they're efficient, but not necessarily economical," and, "because they

cost much more than storage water heaters, it can take up to 22 years to break even ..." *Consumer Reports* notes that "tankless models' electric controls mean that you'll also lose hot water during a power outage" as opposed to the available hot water stored in a home's tank. But this important consideration is only mentioned obliquely in your article by a footnote to one of the photos. As those seeking credits from AIA are "required to read the entire article," I wonder if they are being given the entire story?

— John Hylton  
Toronto, Canada

## More on moisture

It is unfortunate that Robert Campbell has done such sloppy research to support his Critique about moisture problems at Werner Otto Hall [August 2008, page 53].

Contrary to the implication that the design team was oblivious to vapor dispersion (as well as diffusion) in a climate-controlled building, Gwathmey Siegel issued a thorough and extensive package of details specifically addressing barrier – and insulation – continuity, and we alerted the owner and contractor to the importance of their correct installation. Numerous field reports further documented our concern with those details. The problems resulted from poor and incomplete installations, not inadequate design, communication, or documentation.

Campbell accuses Harvard of "shortsighted ... cost cutting" in using galvanized supports at the exterior panels – another false accusation. We designed the building to last: All the angles and clips supporting the exterior limestone and metal panels are stainless steel.

Campbell's presentation of the "art guys" as unbending in their demand for totally static temperature and humidity conditions is also

false. Many conservators (including those who advised this project) agree that sudden changes in relative humidity are dangerous for works of art, but that very gradual shifts over time are perfectly fine. Harvard has ramped the relative humidity at Otto Hall between 40 percent RH winter and 50 percent RH summer, the same as it has at the Straus Center for Conservation, a project with no evidence of condensation issues.

Finally, the overarching allegation in his piece that the moisture problems were "probably incurable" is also false. When signs of interstitial condensation first appeared around and on the windows, the contractor remedied the flawed installations uncovered in those areas – and the level of condensation precipitously dropped. After an analysis by an independent consultant identified various steps that could be taken to arrest remaining interstitial condensation, the client opted not to pursue those efforts. Otto Hall has been a successful home for the Busch Reisinger Museum since 1991; it closed last month, simultaneously with the two other Harvard Art Museums, only as part of a complete institutional makeover by Renzo Piano.

— Charles Gwathmey, FAIA  
New York City

## Not so fab

I was looking forward to the opening of the Home Delivery show at MoMA [September 2008, "Some Assembly Required," page 139] and was very disappointed by the houses erected on the empty lot. It was sweltering in New York when the show opened, and each time I visited the structures I marveled at the lack of attention paid to how fresh air might flow through them. Each was a hot box. How they would be cooled did not seem to be considered unless

the solution was going to be air-conditioning. Somehow that is not a good enough answer considering how even primitive cultures have dealt with this problem using vents, overhangs, recessed openings and so on. There were also no real gestures made toward the idea of sustainability except for the housing for New Orleans. And none seemed dedicated to meeting the needs and comfort of real people who might occupy them one day. One of a museum's charters is to educate; if these structures were meant to educate about the advantages of prefab housing, they didn't do a good job.

— RitaSue Siegel  
New York City

## Corrections

A juror's quote about 25 Bond Street, one of the winners of the AIA Housing Awards [July 2008, page 197], inaccurately referred to the project as a renovation. In fact, it is a new building. In the September On the Boards News section [page 42], two photos were inadvertently swapped. Of the two photos below, the top image should have accompanied the description of the border station in Maine by Robert Siegel Architects. The bottom image should have accompanied the description of the Olso Central Station redesign by Space Group.



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Architect: Cindy Rendely Architecture Project: The Ravine Residence, Toronto, Ontario

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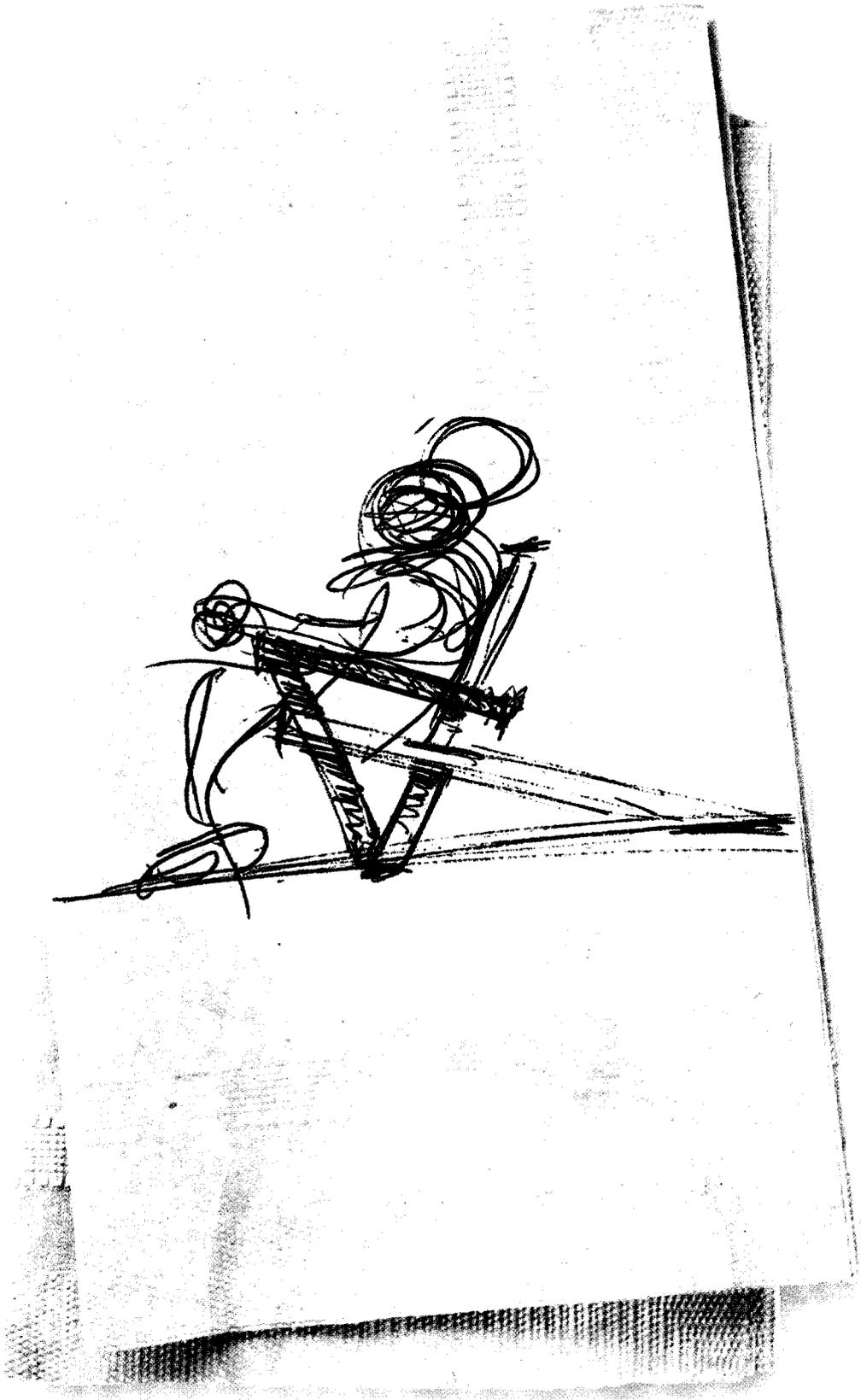
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## Stephen Kliment, former RECORD editor, dies

Stephen A. Kliment, FAIA, who was the editor of ARCHITECTURAL RECORD from 1990 to mid-1996, passed away on September 10 while visiting Germany. He was 78 years old. The cause of death was cancer, according to his wife, Felicia Drury Kliment.

Kliment had a varied career, working as a magazine and book editor, an architect, and a teacher. He led RECORD during the construction industry's worst recession since the 1930s, shaping a leaner publication that emphasized straightforward writing and concern for architectural practice, not just architectural design. "Stephen Kliment upheld the century-old traditions of ARCHITECTURAL RECORD, bringing personal experience and deep commitment to the practice of architecture to its pages," says current editor in chief Robert Ivy, FAIA. "He had an understanding of architecture as a multifaceted profession engaged with real people, calling for business acumen and technical savvy, as well as an aesthetic sensibility."

While at the magazine's helm, Kliment oversaw a redesign of the magazine by Vignelli Associates, RECORD's 100th anniversary celebration in 1991, and special issues on topics such as the new workplace and social housing. It was during Kliment's tenure that RECORD helped bring early attention to some of today's architectural stars, including Steven Holl in the United States, Rem Koolhaas in Europe, Enrique Norten in Mexico, and Ken Yeang in Asia.

Before joining RECORD, Kliment served as an acquisitions editor at John Wiley & Sons. He returned to the company in the late 1990s with the concept for the book series *Building Type Basics*, which grew



Stephen Kliment (top, at left) and designer Massimo Vignelli work on a redesign of RECORD in January 1991. Kliment was a longtime member of the University Club in New York City (left).

to include 15 volumes. "I have many fond memories of my years of collaboration with Steve," says Amanda Miller, Wiley vice president and publisher. "He was focused when he needed to be, but his humor was often a terrific distraction."

Born in 1930 in what was then Czechoslovakia, Kliment grew up in England, and emigrated to the United States in 1950. He graduated with a B.Arch. from the Massachusetts Institute of Technology in 1953, and

an M.Arch. from Princeton University in 1957. He also studied at the École Spéciale d'Architecture, in Paris, and at the University of Havana, in Cuba. He was a partner with Caudill Rowlett Scott from 1968 to 1980, and worked for Skidmore, Owings & Merrill for a year and a half after graduating from Princeton. He served as editor of *Architecture and Engineering News* from 1960 to 1968, at a time when the technical aspects of architecture were not widely covered in journals.

Kliment was a prolific force in

both publishing and architectural circles. He served on the board of directors for the New York Chapter of the American Institute for Architects (AIA), and as editorial director of the chapter's *Oculus* magazine, he played a key role in the launch of *e-Oculus* in 2003. He was editor of the *Principal's Report*, a newsletter for managers of architecture and engineering firms, and the author of *Writing for Design Professionals*. He also taught writing courses at the Harvard Graduate School of Design and City College of New York. Furthermore, he drew attention to the need for greater diversity in the architectural profession and was named an honorary member of the National Organization of Minority Architects for his efforts.

Rick Bell, FAIA, executive director of AIA New York, says Kliment was a gifted editor who knew how to deliver information to traditionalists, yet also embraced new technologies with gusto. He was vigorous and young-spirited—and always armed with an anecdote or quip. "Steve had an effect on people, even if they didn't spend a lot of time with him," Bell says. "His presence was radiant."

Kliment is survived by his wife, an author of books on alternative medicine; daughters Pamela Drury Kliment and Jennifer Kliment Wellander, both of Seattle; and two grandchildren. His brother, Robert, is a partner at New York-based Kliment Halsband Architects.

AIA New York plans to host a remembrance ceremony in the upcoming months at the Center for Architecture.

ARCHITECTURAL RECORD staff

## Vertical gardens sprout in L.A.'s Skid Row

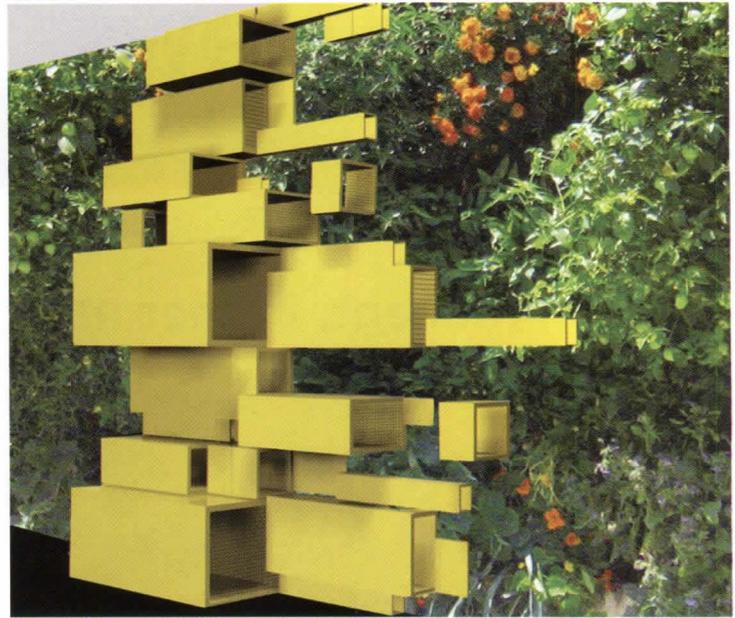
Brilliant inventions usually result when someone asks the right question at the right time. Taja Sevelle, the founder and executive director of Urban Farming, a Detroit-based nonprofit dedicated to eradicating hunger, had just such a query for architect Robin Osler when the two met last year for the first time: If sedum and other nonedible plants thrive on green roofs and walls, why not tomatoes, peppers, and onions? If so, she reckoned, these gardens could supply free, healthy food for economically distressed neighborhoods.

Sevelle had consulted the right person. Osler's Manhattan-based atelier, Elmslie Osler Architect, created a 2,000-square-foot green wall – the largest in the U.S. – for the Huntsville, Alabama, location of clothing retailer Anthropologie. After meeting Sevelle, Osler contacted George Irwin, whose firm, Green Living Technologies, manufactured the Anthropologie wall system, and discovered that he

was already experimenting with how to grow crops vertically. The team quickly came together and dubbed their project the Urban Farming Food Chain. It debuted this summer at four sites in Los Angeles's Skid Row, a district with one of the nation's largest homeless populations. The sites include a courtyard at the Michael Maltzan-designed Rainbow Apartments, a transitional housing facility for the homeless and mentally ill.

Each 30-foot-long-by-6-foot-high wall contains 4,000 plants growing in 180 square panels made of stainless steel; the panels, in turn, are divided into 4-inch-by-6-inch soil-filled cells. Drip lines irrigate the crops from above, and water drains through X-shaped slits on the underside of each cell. A fully loaded wall weighs roughly 15 pounds per square foot and can attach to an adjacent building or a freestanding metal framework.

"Bees and butterflies arrived within seconds after we put the



Walls covered in food plants are being installed in areas rife with homelessness.

walls up," says Joyce Lewis, Urban Farming's L.A. project manager, who organizes local volunteers to tend the vertical gardens. "They greened an environment that would otherwise just be concrete and steel."

Lewis is still raising money to complete the first L.A. sites, but she's already eyeing new locations across the city. Osler and Sevelle likewise hope to take the project to Chicago or New York, forming a

nationwide "chain" of green walls akin to Frederick Law Olmsted's Emerald Necklace park system.

"There's been a definite shift across the country in understanding the value of locally grown food, but as a society we're not very good about giving up valuable urban real estate for parks," Osler explains. "The advantage of vertical farming is that it doesn't take up a lot of space." *James Murdock*

## Yale students design house for disabled veteran



**The 2,100-square-foot dwelling contains an upstairs apartment, which the homeowner can rent out to offset mortgage costs.**

project from start to finish in just over five months as part of the Yale architecture school's Building Project, a mandatory

course for first-year graduate students. This year's project was completed in collaboration with nonprofit developer Common Ground and the Connecticut Veterans Administration at a cost of \$200,000 – in addition to plenty of free labor and donated materials.

Doing good while gaining hands-on building experience, Yale students have constructed a prototypical residence in New Haven, Connecticut, for a disabled female veteran of the U.S. Armed Forces and her family. Responsible for both design and construction, 64 students took the

"The brief was to design and construct a two-family house for a female veteran returning from either the conflict in Afghanistan or Iraq, in order to address the burgeoning crisis of homelessness related to veterans," says project director Adam Hopfner. Indeed, the National Alliance to End Homelessness estimates that veterans represent roughly 26 percent of homeless people, but only 11 percent of the civilian adult population.

The students originally split into seven teams and were given five weeks to develop proposals. After presentations to Yale faculty and partner organizations, one scheme emerged as the winner: a home with a 1,500-square-foot ground-floor unit for the owner and a 600-square-foot apartment for a tenant, to help offset mortgage costs.

All students regrouped to finalize the chosen design; one week later, construction began. "There was a whole host of decisions that were made on the fly once the walls were going up," says student J. D. Messick. "It's a fun and unique opportunity to be there on-site, constructing the house, and to know that everything isn't set in stone."

The project, completed in late August, went beyond providing the emerging architects with an educational experience. Given its flexible design and considerations related to accessibility, Messick says the house is a good candidate for reproduction. "Common Ground noted that this project might be something of a prototype for future development on a variety of different sites," he says. *Tim McKeough*

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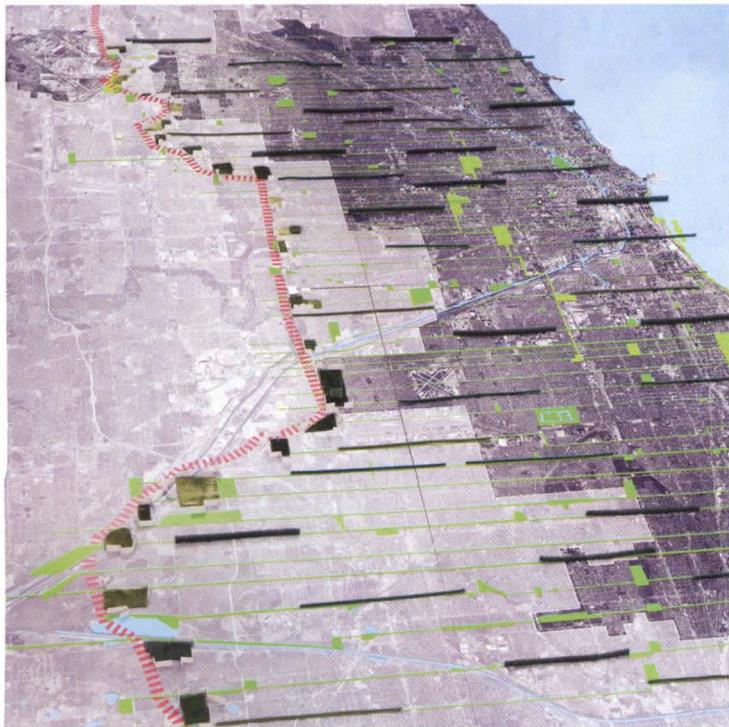
## Momentum grows for futuristic scheme

In 2007, the nine-year-old architecture studio Urban Lab won the History Channel's City of the Future ideas competition with its entry, Growing Water. Most notably, the submission envisioned how Chicago could insert "eco-boulevards" into the street system that would clean wastewater and storm water by bioremediation. The concept has gained traction in various city's departments, according to Martin Felsen, AIA, Urban Lab coprincipal with Sarah Dunn. But for a young office juggling a gamut of projects, Felsen says, "the water project is much bigger than our firm."

The architects are about to get help with their futuristic scheme. In September, Felsen and Dunn took over as director and research director, respectively, of Archeworks, a Chicago school that pairs designers-in-training with the nonprofit community. Archeworks was founded in 1993 by designer Eva Maddox and architect Stanley Tigerman. "Initially, when Stanley

asked us, we were very excited but a little worried," Felsen says, noting that they wanted to ensure Urban Lab wouldn't get neglected. The two principals started to develop ways the school and their firm could work together, particularly with regard to realizing Growing Water.

They have since developed four projects that will help advance the scheme. In one, students will work with residents of Little Village, a predominantly Latino neighborhood, to design pocket parks that deploy water-management strategies. In another, the students will conceive an exhibition highlighting eco-boulevards in conjunction with Chicago's bid to land the 2016 Olympics. Felsen notes that the school has focused primarily on Chicago's underserved South Side, and these projects will continue in that tradition. "The South Side does not have to become a replica of the North Side," Felsen says. "It can transform to be a better urban model. We want to be part of that." *David Sokol*



"Eco-boulevards" inserted into Chicago's street grid would clean wastewater.



WWCOT has helped create a new master plan for a city in Sichuan province.

## U.S. firm helps China rebuild after deadly quake

Dujiangyan, a city of 630,000 people in central China, ranks among the most visited tourist destinations in the country. Historians cite its Qingcheng Mountains as the birthplace of Taoism, and at the base of these forested peaks is the famous Dujiangyan Irrigation System, a 2,250-year-old network of distributaries that still provides water to farmers. Furthermore, the local panda reserve is home to 43 of the nation's beloved giants.

More recently, however, Dujiangyan has drawn worldwide attention for the tragic scene that unfolded there on May 12: It was the city nearest the epicenter of the 7.9-magnitude earthquake that rocked Sichuan province, killing more than 80,000 people and leaving at least 4.8 million homeless.

While the ancient dam largely escaped harm, the cityscape did not fare so well. The downtown was mostly wiped out, and in addition to 3,000 deaths, more than 50 percent of residences were destroyed. The devastation was so massive that the rubble will not be cleared entirely from the downtown core until the close of 2009, says architect Chengzhi "Harry" Lu.

Lu is managing principal of the Shanghai office of WWCOT Architects, a 59-year-old California-based firm. On June 10, the firm was selected by the planning department of Chengdu, Sichuan's capital city, to participate in the rebuilding of Dujiangyan. The department chose 10 different entities, from a Beijing-based social science institute to WWCOT, to create plans for different

aspects of urban life, such as public transportation and sanitation infrastructure; WWCOT is envisioning basic urban-design principles. The firm had only one month to submit its ideas. According to Lu, authorities want to complete all residential construction within seven months, and all rebuilding by mid-2010.

WWCOT's contribution involves several changes to the city plan. Most momentous, the city center will be shifted 20 miles to the east, closer to Chengdu. Beyond accommodating a forecasted 30 percent population growth, this allows the government to start reconstruction while it continues to clean up the quake wreckage. "If someone's home was damaged, usually he would have to live in a tent, and then move among three or four different temporary apartments," Lu explains. "The government would rather have victims move from tents to permanent residential areas." The strategy also places Dujiangyan residents closer to the Chengdu airport.

In the new core, significant green space between buildings will provide a public amenity. And once cleared, the former downtown will be maintained as a public park, amplifying efforts – such as construction of 10 art museums [RECORD, August 2008, page 40] – to further entice visitors to the city. Lu says that due to the size and visibility of the rebuilding effort, not to mention the government's strapped resources, many of these design principles likely will be adopted by cities throughout the province. *David Sokol*

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## Correa, Maki tapped for Aga Khan Center

One of the world's great architecture patrons has hired two distinguished architects – the Indian Modernist Charles Correa and Pritzker Prize winner Fumihiko Maki – to design a \$200 million cultural and religious complex in Toronto.

Development agencies for the Aga Khan recently announced details of the scheme, which will include a pair of buildings on a 17-acre suburban site: a religious and community center by Correa and a new Islamic art museum by Maki. While both designs are inspired by traditional Islamic architecture, says project coordinator Shamez Mohammed, the idea is to create modern structures “with modern materials, glass and steel, that are of the time and of the country.” The Aga Khan, spiritual leader

to the world's Ismaili Muslims and sponsor of a major international award for architecture, has been closely involved in the design of the complex, Mohammed says.

The two buildings, each about 100,000 square feet, will be knitted together on publicly accessible grounds designed by Vladimir Djurovic. The Lebanese landscape architect has envisioned formal gardens inspired by the “four gardens” plan found throughout south Asia and the Near East. A series of water features will help counter traffic noise from an adjacent expressway.

First to break ground, later this year, will be Correa's Ismaili Centre. The limestone-clad structure will include a *jamaatkhana*, or prayer space, topped with a grand, complex glass dome that reflects its signifi-



A religious center and art museum are planned for a 17-acre site in Toronto.

cance to Ismailis. The center is one of just six such institutions in the world. “It's akin to a cathedral compared to a local parish,” says Mohammed, noting that it will serve Ismaili communities in eastern Canada and the northeastern U.S., all within a day's drive.

The adjoining museum by Maki likely will draw more attention. Run by the nonprofit Aga Khan Trust for Culture, the building was added to the Toronto site plan several years

ago when a deal to place it in central London fell through. Still being finalized, Maki's design includes a dome of its own, a central courtyard, and wall planes that cantilever outward on all four sides. It will house permanent exhibitions of Islamic art and artifacts from the Aga Khan's personal collection, along with large galleries for visiting exhibitions and a 350-seat auditorium for cultural events. Ground breaking is scheduled for next year. *Alex Bozikovic*

## Gehry designs first major project in Canada



The \$217 million redesign of the Art Gallery of Ontario includes a new facade (left) and a four-story wing (below) clad in titanium and glass.

the present, with an emphasis on Canadian

artists. With the recent installation of limestone floors and Douglas fir walls, the Art Gallery of Ontario (AGO) is wrapping up a top-to-bottom, four-year redesign by Frank Gehry, who spent much of his childhood just streets away from the Toronto museum.

The \$217 million project, Gehry's first major commission in Canada, increases the museum's size by nearly 20 percent, from 486,000 to 583,000 square feet. This added space will allow the institution to display twice as many pieces from its collection, which features artwork from 100 A.D. to

the world's largest collection of works by the British sculptor Henry Moore.

The AGO is North America's tenth-largest museum. Founded in 1900, it first was housed in the Grange, a Georgian mansion built in 1817. Over the decades, the museum has undergone six expansions – the Gehry project being the seventh – giving rise to a sprawling complex with an eclectic aesthetic. For the front elevation, Gehry has designed a new facade, a 600-foot-wide sweep of ribbed glass, which replaces a redbrick version from a 1993 renovation by Barton Myers

and Kuwabara Payne McKenna Blumberg Architects.

In order to stay within the museum's footprint, as it already takes up most of the roughly 13.5-acre block, Gehry expanded vertically, most notably placing a four-story wing on top of the museum, near the rear. Clad in titanium and glass, its blue hue recalls the architect's Guggenheim Museum in Bilbao, Spain, but its linear form is more conventional. In fact, a staircase that squiggles up through a skylit court is one of the only features in the entire project that

embodies Gehry's sculptural style.

In many ways, the redesign brings the museum in line with its layout in the 1930s, when Gehry, now 79, lived for extended periods with his grandparents in a row house about two blocks to the south. Specifically, he returned the main entrance to the building's mid-point, realigning it with the Grange. The museum has been closed during construction and is scheduled to reopen on November 14.

As Gehry well knows, museum architecture can help boost a city's global stature. “Throughout history,



the buildings that define a city are the public ones,” the architect says. “Museums are important pieces of our culture, so they deserve to have an iconic presence.” *C.J. Hughes*

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## Big-box stores slim down for urban settings

Attribute it to empty-nest syndrome, falling crime rates, or high gas prices: Suburbanites are downsizing to apartments and condos located near theaters and cafés on walkable downtown blocks in San Diego, Milwaukee, Atlanta, and other cities nationwide. And it's a trend gaining steam, according to the United Nations, which expects the population of the country's 10 largest cities to increase by 8.5 percent by 2020.

Big-box retailers are in hot pursuit, eager to grow beyond their longtime suburban locations to tap these emerging markets. But the traditionally sprawling floor plates of these stores aren't a good fit for densely settled urban areas. So architects are laying them out more up-and-down than left-to-right – with more floors, less



parking, fewer signs, and more glass facades – even if it breaks with the look that once helped define the store's brand.

"Big-box retailers across the country are becoming substantially more flexible about what kind of box they can use," says John Bemis, an Atlanta-based director of Jones Lang LaSalle Retail, a national real estate firm.

A decade ago, 1 percent of big-box stores were in cities; today, that figure is up to 7 percent – about 120 current stores, Bemis says, noting that "future growth will be

exponential from here on in." Going vertical means making do with less square footage. For example, Circuit City's new "The City" format, designed in-house, shrinks its size by 42 percent, to 20,000 square feet from 34,000 square feet; 18 stores were open by March, says

Jim Babb, a company spokesman.

Making sure that size reductions don't result in the loss of too many signature interior design details can be a tough task for architects. Eric Lagerberg, a principal of the Seattle-based firm Callison, recently completed a prototype for Cabela's, the outdoors outfitter, whose new, 85,000-square-foot, two-level stores will measure less than half of their 200,000-square-foot one-level forerunners. However, the prototype retains Cabela's distinct Adirondack-cabin mien. Interior ponds, now smaller, will be consolidated into one corner; taxi-dermy pieces will glower closer to the front door. Though they're shedding muntins, windows will still have heavy wood frames, and entry gables will replace porte cocheres. "I had to decide what was important and how important it was," Lagerberg says. "There still needs to be continuity across the whole."

Even if a store looks the part, though, its multiple levels can put

off customers used to shopping with carts, retailers say. Architects for Target faced that problem at the store's year-old outpost in Glendale, California, which at three stories is the chain's tallest. Their solution was to reconfigure the escalator banks in the 180,000-square-foot facility. There are still escalators, but next to them runs a special lift system for carts. Also, parking-garage entrances on two floors help funnel customers to the store's upper reaches, says Eames Gilmore, an in-house architect. "We needed to make sure the entrances were intuitive," he says.

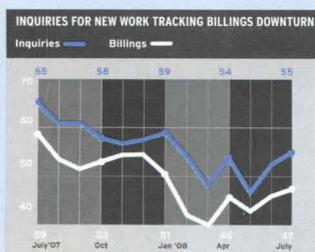
Luring people to the store can be made easier if it's not set back from the street, says John Clifford, principal at GreenbergFarrow. With that in mind, Clifford is eliminating a plaza outside an Atlanta office tower in order to extend the building's ground-level retail berth toward a major thoroughfare. The design, which enlarges the retail space from 20,000 square feet to 50,000 square feet, also calls for a 40-foot glass facade, he says. These features should help the owner attract a big-box tenant.

Not every big box is seeking out cities. Ikea, the Swedish furnishings store, for instance, has largely avoided urban areas, viewing on-site parking as fundamental to its business plan. Even its new outpost in Red Hook, Brooklyn – another GreenbergFarrow project – manages to squeeze in a parking lot. "The idea is you buy a chair, carry it out, put it in your car, drive it home, and put it together yourself," Clifford says. "That's why we can sell it to you for \$14." *C.J. Hughes*

A three-level Target store in Glendale, California (below), is the chain's tallest. Alongside escalators (top) is a special lift system for shopping carts.



## As economy weakens, architects feel the pinch



Architects are feeling the effects of the stumbling U.S. economy. The Architectural Billings Index (ABI) was at 46.8 in July, up slightly from June, yet still far below the 60 score in July 2007. Above 50 indicates an increase in billings, and below 50, a decrease. "Financing for new proj-

ects continues to be a problem," reports Kermit Baker, AIA chief economist. "Many projects are being reconsidered due to construction cost increases." In terms of regional averages, the West had the lowest score – 42.2 – while the Midwest had the highest – 50. The

future does not look promising, given that the ABI score reflects a nine- to 12-month lag time between architectural billings and construction spending. On a brighter note, July's inquiries score rose to 54.6, after dropping to an all-time low of 46.5 in May. *Jenna M. McKnight*

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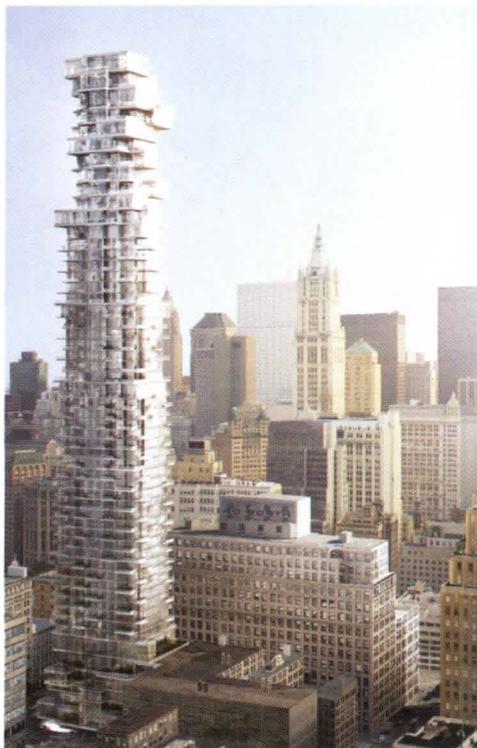
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## First skyscraper by Herzog & de Meuron rising in Manhattan



The Switzerland-based firm was hired to design a luxury condominium tower for Tribeca.

On September 15, developers Izak Senbahar and Simon Elias unveiled the design of 56 Leonard Street, a 57-story condominium tower now under construction in New York's Tribeca district. It will be the first skyscraper realized by Switzerland-based Herzog & de Meuron, founded in 1978.

The 2001 Pritzker Prize winners Jacques Herzog and Pierre de Meuron completed their

The design of 56 Leonard Street equally promises to upend expectations of luxury condo towers in a place still teeming with them. (Homes at 56 Leonard Street will start at \$3.5 million, and prices are expected to reach \$33 million.) Whereas many of these buildings feature highly transparent skins or gestural facades, 56 Leonard Street joins a smaller family of buildings whose forms pose alternatives to the ubiquitous terraced setback scheme.

Constructed by rotating structural slabs from axis – and comprising cantilevers, protruding balconies, and profiled slab corners – the tower will appear something like a Brobdingnagian stack of glass Jenga pieces or a flamboyant nod to architecture's Metabolism movement. This irregular arrangement of blocks yields a different floor plan for each of the 145 condo units.

Above the double-height lobby – under whose shifting volumes artist Anish Kapoor will slip a giant, kidney-shaped mirrored sculpture – and a private parking garage on the second level, the building divides into several zones. The lowest, contained within four floors that the architects have dubbed “the town houses,” includes amenity spaces such as a 75-foot-long pool and adjoining sundeck, a film screening room, and conference and fitness centers. Two- to five-bedroom residences populate floors eight through 45. The top nine stories, seemingly precariously stacked, contain 10 full- and two half-floor penthouses ranging in size from 3,650 to 6,380 square feet.

Inside, the material palette, which includes travertine and Thassos marble, complements the exterior glass and exposed concrete. Elements



Inside, the material palette includes travertine and Thassos marble.

first building in New York just last year. That project, the 11-story upscale residential building 40 Bond, features a gate in which graffiti was transformed into three-dimensional ornament, and rounded green-glass mullions that evoke the cast-iron facades of the city's industrial buildings,

such as sculptural enamel-steel fireplace hearths and undulating black-lacquer kitchen islands will provide a counterpoint to the orthogonal geometry of the architecture.

Ground was broken last year, and occupancy is tentatively scheduled for fall 2010. *David Sokol*



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## News Briefs

### Aditya Prakash, a British-trained architect who worked closely

with Le Corbusier, died August 12 at the age of 82. He was hired by Corbu to work on the Chandigarh project, an undertaking to build a new capital for the state of Punjab after India gained its independence in 1947. Prakash had just graduated from London Polytechnic in 1952, when he joined the project, and devoted much of his career to realizing it, along with other projects (Agriculture University Hostel in Ludhiana, right). In 1996, the Indian Institute of Architects awarded Prakash its Gold Medal. *David Sokol*



**Yale University has turned within its own ranks** in selecting an architect to design the first new residential colleges at the Ivy League school since 1963. The university announced on September 4 that Class of 1965 alumni Robert A.M. Stern, FAIA, who is current dean of the Yale School of Architecture, was selected for the job. The nearly \$600 million project will add 460,000 square feet of space to the New Haven, Connecticut, campus, which has seen a flurry of new construction in recent years. The new colleges should allow Yale's undergraduate enrollment to grow by about 800 students, to a total of 6,000, school officials say. The siting of the buildings, next to a cemetery and former canal on a 6.2-acre plot on the campus's northwestern edge, also is an attempt to physically unite the campus, which unfolds across 320 acres. The school expects to break ground on the project in 2011 and finish by 2013. *C.J. Hughes*

**Architect Clifford Curry and his wife H. Delight Stone** have teamed up with the University of Kentucky College of Design, in Lexington, to establish the Curry Stone Design Prize, which will be bestowed each year to an individual or group for design innovations that make a positive contribution to humanity. Modeling itself on the MacArthur Fellowship, the prize invites leading designers and global thinkers to nominate between one and three designers each. A jury-selected winner is awarded \$100,000, and up to four finalists receive \$10,000 each. The 2008 finalists, announced in September during the 11th International Architecture Biennale in Venice, are Shawn Frayne, Wes Janz, MMA Architects, Marjetica Potrc, and Antonio Scarponi. A winner was to be named on September 25 at the IdeaFestival in Louisville, Kentucky. *Anya Kaplan-Seem*



**On July 3, the City of Frankfurt am Main, Germany,** and its partners DekaBank and the Deutsches Architekturmuseum announced five finalists for the 2008 International Highrise Award. The prize of 50,000 euros and a sculpture by artist Thomas Demand are awarded every two years to a project completed within that period. For 2008, 26 projects were nominated from 11 different countries. A jury of architects, engineers and critics, including Alejandro Zaera Polo (jury chair) of Foreign Office Architects, and RECORD's Suzanne Stephens selected the finalists and the winner. The finalists are the Hearst Tower, New York City, Foster and Partners; the TVCC, Beijing, Office for Metropolitan Architecture; the New York Times Building, New York City, Renzo Piano Building Workshop and FXFOWLE; Newton Suites, Singapore, WOHA; and Missing Matrix Building (left), Seoul, Korea, Mass Studies. The winner will be announced November 14 in a ceremony at Paulskirche in Frankfurt. *Suzanne Stephens*

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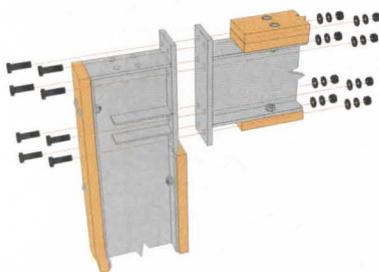
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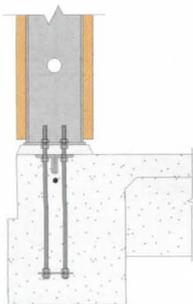


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## News Briefs

**The Pentagon Memorial, which commemorates the 9/11 terrorist attacks,** was dedicated on September 11. Designed by Kaseman Beckman Advanced Strategies (KBAS), a Philadelphia-based architecture firm founded by Keith Kaseman and Julie Beckman, the \$22 million memorial is composed of 184 cantilevered benches – one for each victim who died at the site on September 11, 2001. KBAS won an international competition for the commission in 2003. “The concept was about creating a place that’s truly like no other, simply because the day of September 11th was like no other day we had ever experienced,” says Beckman. “We really wanted to emphasize the individuals, as well as the collective.”

Each of the cast-stainless-steel benches is engraved with the name of a victim on the tip of the cantilever. The units have granite seats and hover above their own small reflecting pools. At night, custom light fixtures buried at the edge of each pool illuminate the benches with a cool glow from below. The benches sit within a two-acre bed of granite gravel on the Pentagon’s West Lawn, adjacent to where American Airlines Flight 77 struck the building. *Tim McKeough*



**Entries are being accepted for a competition** to design a Washington, D.C. monument honoring Dwight D. Eisenhower, the 34th president of the United States. For a 4-acre site south of the Mall, and near many Cabinet agencies that Eisenhower had a hand in creating, the Dwight D. Eisenhower Memorial Commission seeks proposals that emphasize open space. One of the only requirements is a canopy to protect against rain, plus 2,500 square feet of enclosed space for a bookshop, bathrooms, and ranger station, which could be contained in one structure or several, says commission spokesman Daniel Feil, FAIA. The \$110 million project, expected to be completed by 2013, is part of the General Services Administration’s Design Excellence Program. The first deadline is October 8. For more information, visit [archrecord.construction.com/news/daily/](http://archrecord.construction.com/news/daily/). *C.J. Hughes*



**On August 13, the Museum of the City of New York** celebrated the completion of the first phase of an extensive, \$97 million renovation and expansion plan designed by Polshek Partnership Architects. The most notable component of phase one is a new single-story, 3,000-square-foot glass pavilion attached to the rear of the museum’s Georgian Revival building, designed by Joseph H. Freedlander in 1932 and designated a city landmark in 1967. This first phase also adds two additional levels beneath the

pavilion for a much-needed curatorial center, which provides environmental controls and equipment to help preserve the museum’s photographs, prints, textiles, and other artifacts. Furthermore, the museum’s entrance has been restored (pictured above), and outdoor terraces have been revamped.

The expansion was designed as a three-phase project so the museum can remain open during construction. Phase two, now under way, includes new offices, the renovation of galleries and classrooms, and the redesign of the museum shop. Phase three will involve the renovation of the north wing. Polshek’s firm originally designed an expansion plan for the museum in the mid-1980s, but it was scrapped due to lack of funding. The firm began working on the current plan in 2003. The entire project is scheduled to be finished by 2011. *Tim McKeough*

Read the full stories at [architecturalrecord.com/news/](http://architecturalrecord.com/news/).

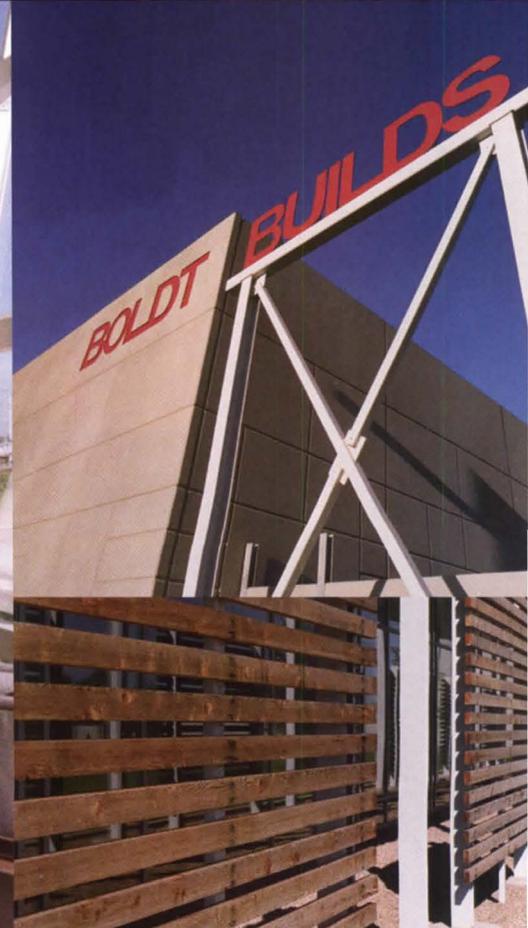


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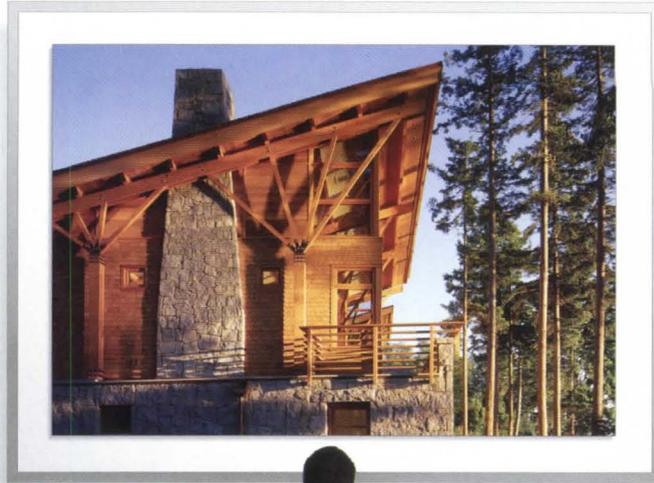
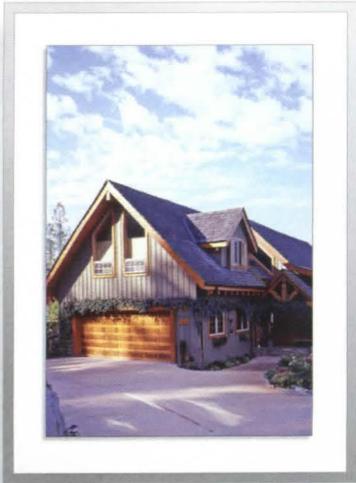
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# For and about the emerging architect

## archrecord2

DEPARTMENTS

**For our featured young guns this month, the process is really where interest and impact collide. Meet Atlanta-based Houser Walker Architecture – two architects who have taken the time to define their firm's core values, gathered an expert team, and are now finding that their region is taking notice. Also, meet Wikitecture: These guys believe in the power of many, and they're shepherding a new day in design. Online: Do you think architectural design works better if it comes from one or many minds? Respond at [construction.com/community/forums.aspx](http://construction.com/community/forums.aspx).**

## Design

### Houser Walker Architecture: Half a glass, full plate



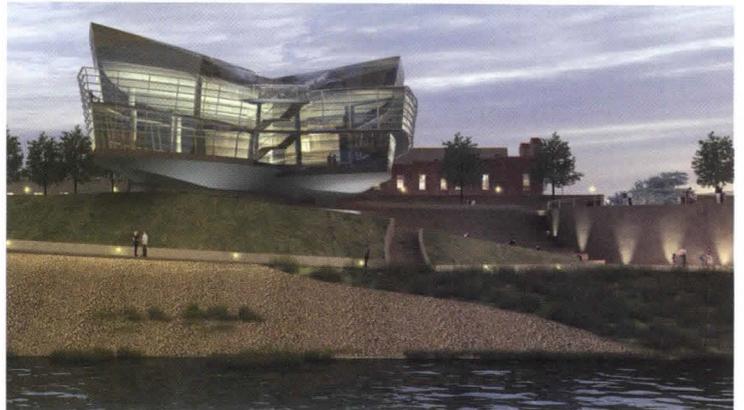
Gregory Walker, AIA, and Hank Houser, AIA, principals of Houser Walker Architecture worked in different departments at their previous jobs at the large Atlanta firm of Lord Aeck Sargent Architecture, with Walker in the science

arena and Houser in the arts and culture studio. Yet they don't think each of them contributes a left brain or a right brain mentality to their business partnership. "It's more of a glass half empty, glass half full kind of thing," laughs Houser, admitting he's the glass half full. Whatever the two young architects bring to the mix that makes up their seven-person firm, it's working, and despite equivalent shares of optimism and pessimism, they're both equally surprised at their success. An example is the Toco Hills Library, which just broke ground and is scheduled for completion in 2009. The city of Atlanta had a bond referendum pass allowing it to choose a pool of architecture firms to design 14 branch libraries. "We killed ourselves to get in that pool," says Walker. Despite the effort to get into the water, they were shocked to find themselves, well, swimming happily in the deep end, so to speak. "It was surprising to us how well we did against the firms we were competing against," says Houser. "But that success has given us the impetus and confidence to go out there and figure out how to compete again."

In a place where big well-known firms like Lord Aeck Sargent; Mack Scogin Merrill Elam; and Thompson, Ventulett, Stainback, among others, are at the forefront of people's minds when they think of Atlanta architectural firms, it's not easy for a small, young startup to become known. "Especially when you're as horrible as we are at promoting ourselves," says Houser. Houser Walker began in 2004, and with the work now speaking for itself, the firm is gaining a reputation with cultural and academic institutions as well as developers and private clients. Houser and Walker's design for the River Heritage Museum in Paducah, Kentucky, a 32,000-square-foot expansion in three phases that has an estimated completion date of 2016, is both dramatic and ambitious. The new museum, with its

#### Big House, Atlanta, Georgia, 2006

*An addition to an existing 1920s bungalow includes a new kitchen, family room, master suite, and stair to the attic rooms. Each added volume is a different material texture.*



#### River Heritage Museum, Paducah, Kentucky, 2016

*This 32,000-square-foot expansion will be a pivotal project in the redevelopment of Paducah's riverfront arts community. The expansion features a new building linking to a twin-pronged satellite pavilion and riverfront park via a glazed bridge.*



**Common Pond, Eljay, Georgia, 2009**

*Five spec homes, each constructed for \$120 per square foot, and each with radiant heating and renewable local materials.*

bold, new building, twin-pronged satellite pavilion, and riverfront park, is part of Paducah's riverfront redevelopment.

Houser and Walker admit that the road from new firm to new-firm-with-clients has meant a lot of long hours and intense work establishing the firm's core values. "We are really into the process," says Houser, "and we think that putting a lot into process has a direct correlation to sustainability. I don't mean that in the usually understood sense, but sustainability as approaching a design from an ecological framework: One

## Work

### Wikitecture: From clicks to bricks, avatars to architects



It takes a village to conceive architecture. Just consider Studio Wikitecture, which won Architecture for Humanity's Founders Award in the 2007 AMD Open Architecture Challenge. For its design of a health-care and telemedicine facility in the

western Nepal settlement of Sanfe Bagar, Studio Wikitecture assembled the insights of more than 40 people into a cohesive scheme. Not only were approximately half of these contributors not architects, but also the group never collaborated in the same room.

As the prefix "Wiki" suggests, this Open Architecture Challenge entry was designed by a community of Internet surfers who had sketched, commented on, and redrawn the medical building. It is a visual analog to how people might write and edit an entry on the popular reference Web site Wikipedia. But in this case, they used a proprietary interface plugged into the online world Second Life, developed by Studio Wikitecture's Jon Brouchoud and Ryan Schultz.

Previously classmates at the University of Wisconsin-Milwaukee



One of Studio Wikitecture's entry boards for the Open Architecture Challenge (above). Hosted by the Open Architecture Network, the design is for a telemedicine center for a village in Nepal.

thing affects another thing affects another thing, and so on.

Affecting the firm, at least since the 1996 Olympics in Atlanta, is the renaissance Atlanta seems to be having. It could mean more work for Houser Walker – if they want it. Houser Walker has already had the luxury of turning down some potential clients who were looking only to hire a firm to give them a cookie cutter design. "What we want is clients with high standards," says Houser, "clients who demand a lot." Walker agrees. "We're not particularly good at just handing over a box. That's just not us." For these up-and-comers, knowing what they're not is just as crucial as knowing who they are. *Ingrid Spencer*



**W House, Dacatur, Georgia, unbuilt**

*The design for an expansion to a 1950s house features a wood floor that wraps up one wall, areas between different materials that define openings, and interweaving inside and outdoor areas.*

For other images of projects by Houser Walker Architecture, visit [architecturalrecord.com/archrecord2/](http://architecturalrecord.com/archrecord2/).



For Jon Brouchoud (portrait far left), and Ryan Schultz (portrait, near left), architecture is a democratic process.

School of Architecture, Brouchoud and Schultz celebrated a virtual reunion – their avatars bumped into one another on Second Life. They learned that both had been inspired by their domain: In 2002, Brouchoud tried garnering public participation in a design-competition entry, although Internet technology at the time thwarted the process; Schultz had been researching architectural applications for open-source software.

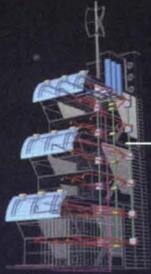
Together they pooled their knowledge to improve the making of Wikitecture, using Second Life as their venue. Whereas Brouchoud and Schultz's first attempts were crude – relying on instant messages or a public Flickr group to allow participants to comment on work, for example – for the Open Architecture Challenge the duo created a dashboard where users could build forms, vote and comment on others' contributions, share screen shots, and modify their colleagues' designs, all in Second Life. This interface, called the Wiki-Tree, looks something like a Doric column clad entirely in buttons. The tree also tracks the design's progress. Above it hovers a so-called Ocanopy in which each leaf represents a design iteration, with the branches between them highlighting the evolution of those three-dimensional models. Leaves are color-coded according to their popularity among contributors.

You can say that the Sanfe Bagar conceptual project doesn't belong to Brouchoud and Schultz, per se. They were simply the tech-savvy conduits for making it possible. Indeed, Studio Wikitecture's Open Architecture Challenge design is the result of more than 50 iterations and 200 votes. Moreover, if the project were constructed, Brouchoud and Schultz would welcome the residents of Sanfe Bagar to log on and make tweaks. And yet the designers clearly are the shepherds of the work, and currently they are simplifying the interface and pursuing other ways to allow as many people as possible to dance around the Wiki-Tree. *David Sokol*

For information that can provide a more thorough understanding of the Wikitecture process and technology, visit [architecturalrecord.com/archrecord2/](http://architecturalrecord.com/archrecord2/).



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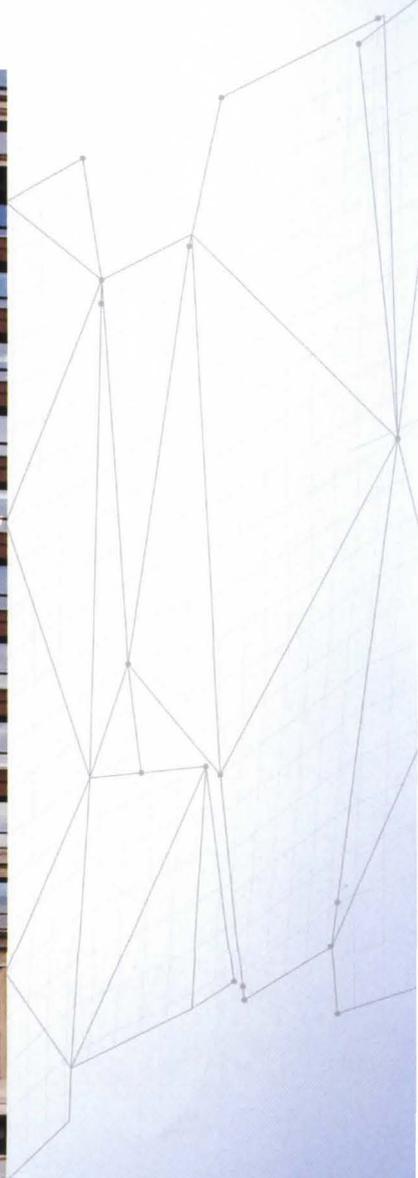
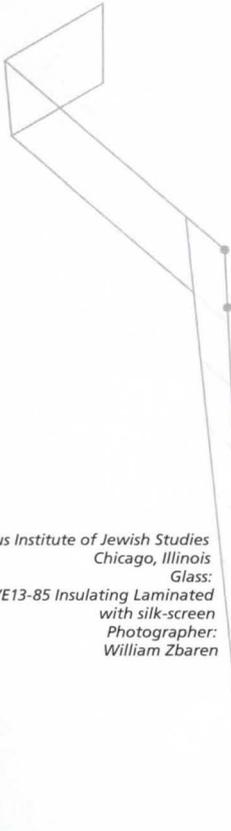
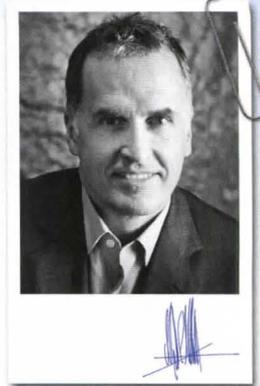
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MY TURN

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# Sending the wrong message to the rest of the world

## Commentary

By Robert Campbell, FAIA

Forty thousand people die every year in auto accidents in the United States – 400,000 every decade. Far, far more than have died from terrorism in this country. But we do not respond by withdrawing the right to drive.

It's an analogy that occurs to me whenever I see the latest field of bollards or other barriers in front of a government building, or enter a corporate lobby that's been privatized by security guards. Because of the threat of terrorism, we are slowly withdrawing the right of free civic movement and assembly.

Safety is important, of course. But how does a society locate the balance point between security and freedom? And who makes that determination for the rest of us?

These are thoughts I've harbored since a recent visit to the new American Embassy in Berlin, which opened in July on a site near the Brandenburg Gate. In what now seems like decades ago, I served as a juror in the design competition for this embassy. That was back in 1995. A brilliant proposal by Santa Monica architects Moore Ruble Yudell (MRY) beat out designs by five other distinguished architects.

That competition jury reached its verdict in a surprising manner. We jurors were a diverse group of seven: a former mayor of West Berlin, a former U.S. ambassador, three architects who mostly practiced, one who mostly taught, and

one (me) who mostly wrote. After the State Department filled us in on the program in great detail, each of the competitors came and presented its design in person. We were asked by the professional adviser, Don Stastny, not to discuss the entries among ourselves; he didn't want cliques forming. Finally, we took what was supposed to be merely an informal straw ballot to get a sense of which designs had a chance at winning. Each of us could vote for as many as we wished. But not a single juror voted for any of the five other entries. All seven voted only for the one by MRY. Seven diverse observers had arrived, independently and without discussion, at the same conclusion. It was a result unique in my experience.

After such a prologue, I was, needless to say, looking forward to seeing this remarkable design as actually built. I was in Berlin in September for a one-day symposium, held in the embassy itself, where a group of a dozen or so invited guests gathered to discuss the subject of embassies and embassy architecture. We were led by John Ruble of MRY and writer Diana Ketcham. We toured the embassy with Ruble, and also the nearby British Embassy with its architect, Michael Wilford.

I came to several conclusions, all of them depressing.

The American government and its security experts turned a potentially great building into a merely acceptable one. (I don't go so far as a writer for one German newspaper, who called it "an aver-



age state government building from New Jersey.") I admire MRY for hanging on to as much of the quality as they did. But to most people, including me, the embassy looks like a lonely fortress, withdrawn from the city behind wide swaths of what I can only call no-man's-land, which isolate it like a noxious germ on a microscope slide. Sometimes the strip of no-man's-land is filled with a hideous forest of black bollards; at other times, it's hidden behind a fence of fierce, tall steel palings.

All those bollards and barriers are described as necessary for security. But in fact they're dealing with only a single threat: car bombs. There are, obviously, other kinds of terrorism: biological; electronic (in which the enemy disables computer systems and records); or even, in the worst case, nuclear. When you lock the door against one kind of terrorism, another one may open. I'm not an expert in security, but I'd

**The new U.S. embassy in Berlin sits next to Brandenburg Gate, but is set back from the street.**

guess that the most useful antiterrorist weapons don't require the defacing of architecture. These are, surely, intelligence, surveillance, and redundancy.

Security did other damage. By shrinking the building back from the streets to create the no-man's-land, the government, of course, reduced the size of the floor plate. It thus casually destroyed the best single idea the architects originally had. This was their brave decision to build one wing directly along the east property line, sharing a party wall with what later became the wonderful DZ Bank building by Frank Gehry. None of the other competitors had the nerve to do this, although it turned out that the State Department had no objection. By this simple move, MRY achieved an

*Contributing editor Robert Campbell is the Pulitzer Prize-winning architecture critic of The Boston Globe.*

## Commentary

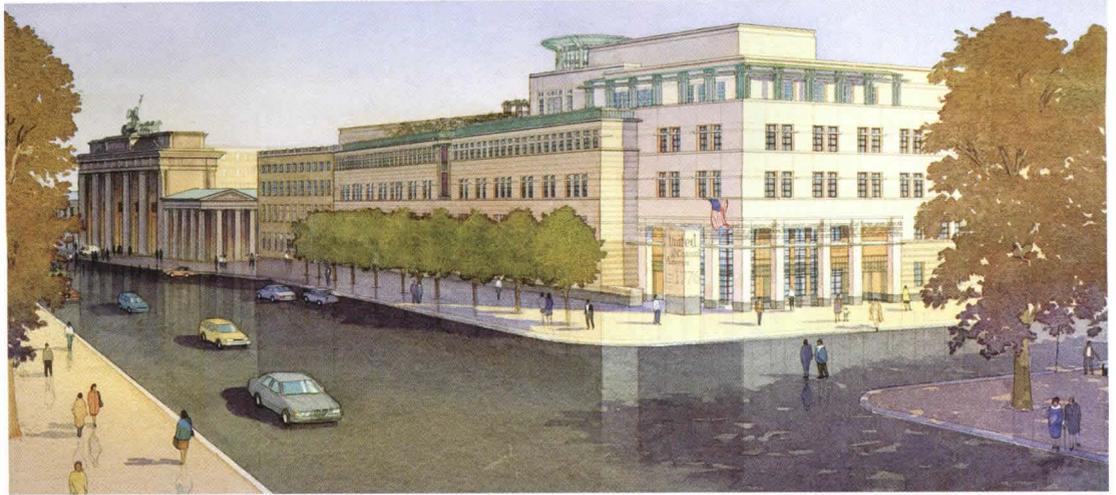
infinitely superior plan, a squared-off figure 8 in which the cross bar was a social center – the “lodge” – that pulled the whole design together. Now MRY’s building, too, has been squeezed like all the others into a C-shape plan with dead-end corridors, and with the DZ now exposed as a huge windowless blank wall along the courtyard. Security also required that windows be no larger than 30 percent of floor area, thus mandating a facade that is peppered with repetitious identical windows that remind you of a prison.

Finally comes the question of meaning. Any building, of course, must possess two basic qualities: It must function for its users, and it must express some meaning to the world outside. “It’s an office function, not a museum,” we were told by the American ambassador,



William Timkin. But a building cannot help being a bearer of messages. And if it there were no desire to broadcast a message, why would we build the embassy in such an internationally prominent location? At Berlin, alas, the message is clear: We hate and fear the world around us, so we’ve retired behind a moat of defensible space.

I realize, of course, that an embassy is a special case. After the bombings of American embassies in Tanzania and Kenya in 1998, and the tragedy of 9/11, it’s clearly necessary to protect users from car-bombers if we wish to build an emblematic national embassy like this one. But that merely raises the whole ques-



In a rendering (above), MRY shows an intention to capture the spirit of Karl Friedrich Schinkel’s work. The embassy’s neighbors include Gehry’s DZ Bank (left in photo, bottom left) and Eisenman’s holocaust memorial (bottom right).

tion of the emblematic embassy.

If a building is placed on a prominent site as an emblem of the presence and prestige of the U.S.A. – a site like the Pariser Platz – then it is advertising itself as a target. One obvious alternative is to forget about being a nationalist emblem

and build, instead, a fortified embassy somewhere on the urban fringe, where it can be safe. The U.S. government has, in fact, built dozens of such embassies in recent years, seldom with the help of a distinguished architect. Here, though, the message is once again clear: We’re running away and hiding; we do not wish to socialize with the locals; and we care nothing for sustainability.

I would speculate that it is just possible that the safer you try to make an embassy, the more dangerous it will be. I’m reminded of that paradox as it was defined by architectural sociologists in the case of elementary schools back in the 1970s. Kids were vandalizing

schools, so administrators responded, for a time, by erecting nearly windowless buildings that looked like forts. Studies showed that vandalism went up, not down. The visibly fortified school was especially appealing as a challenge to the vandal. The visibly fortified embassy is, maybe, a similar target to the terrorist.

So what’s the answer? One possibility is to abandon the emblematic embassy. Embassy functions could be dissociated and scattered here and there more or less invisibly through a city, con-



nected by information technology. So far as I could find out at our Berlin conference, there is no research to prove that workers are safer in a defended emblematic embassy than they would be in such a dispersed world. And the concept of the emblematic American embassy, after all, is less than a century old. It arose in the wake of nationalism in the early 20th century. Before that, diplomatic functions were centered in

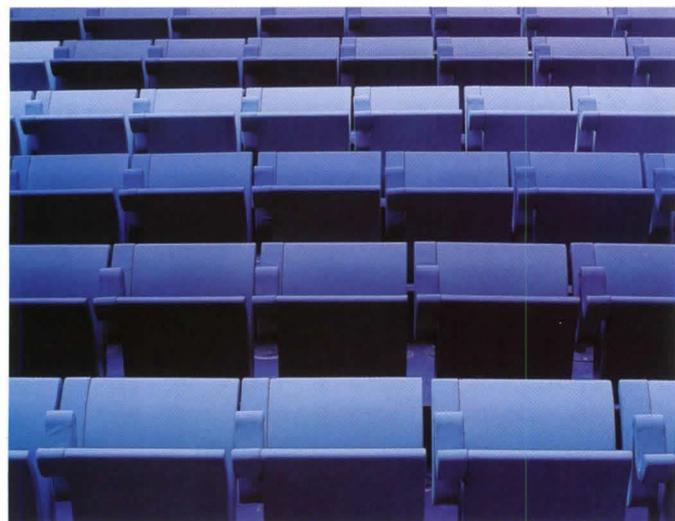
the ambassador’s residence, with no showy billboard presence of an embassy building.

It’s just a thought. But it does seem better than offering to the world, in a major public setting, a message of fear and loathing.

All that said, I still like much about the Berlin embassy. It will certainly improve as landscape plantings by Laurie Olin begin to fill in the no-man’s-land. I have quarrels with some changes the architects made on their own, mostly because they came to believe their marvelous original design was too “genteel” to hold its own in the presence of Gehry’s bold DZ Bank or Foster’s nearby Reichstag. I don’t agree, but that’s a minor matter of taste.

Security guys aren’t the only villains. There were the usual excitable cost-cutters, too. You can’t create a worthy emblem of America with a tightwad’s purse, and in 2002 our government cut an astonishing 40 percent from the embassy’s budget. I’m reminded of the Senate committee that once censured architect Henry Cobb’s federal courthouse in Boston because it committed the sin of having “above-standard light fixtures.”

But the major villain here is the security expert who is, apparently, accountable to no one. Security is important, but let’s keep it in balance with other values. Including good architecture. ■



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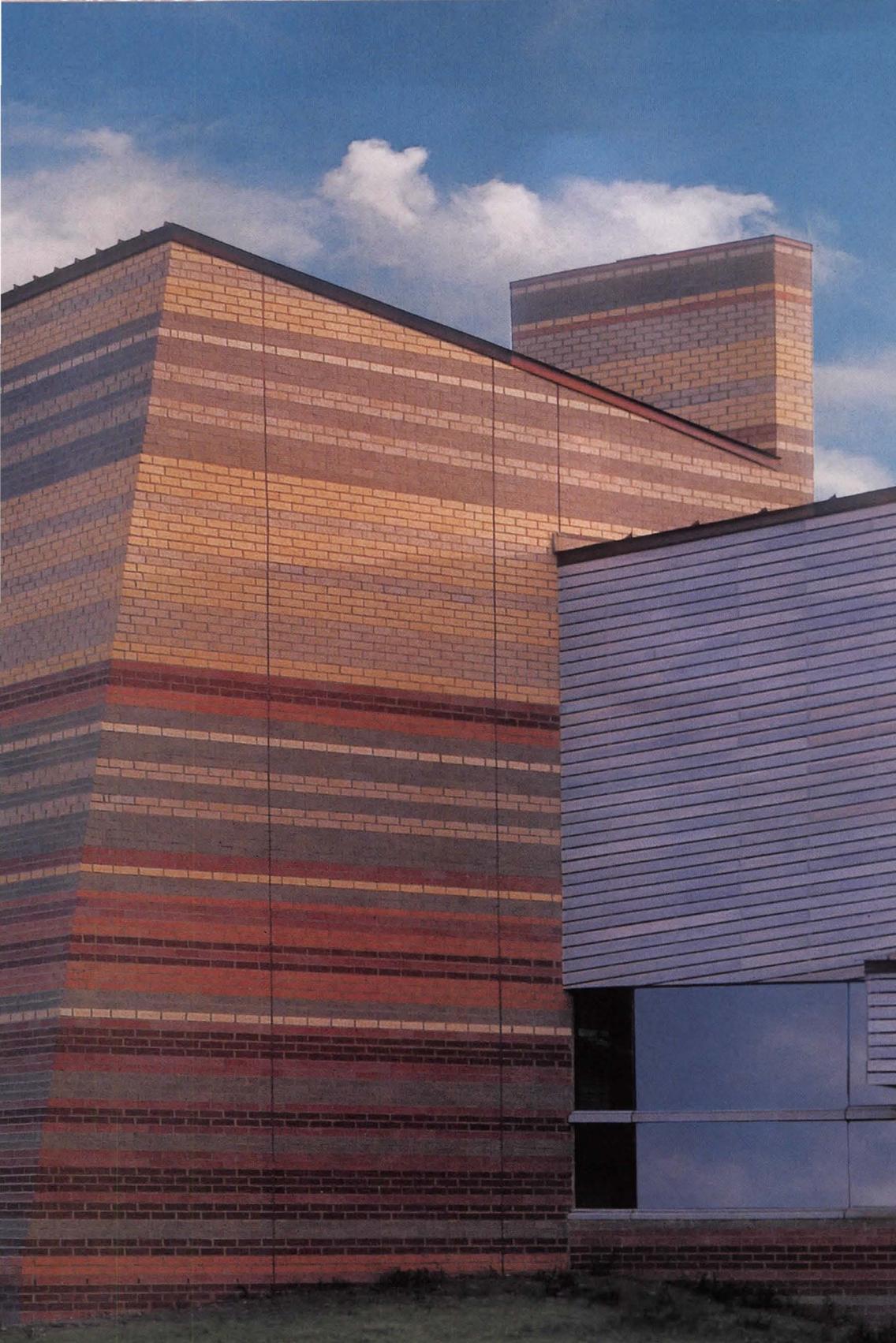
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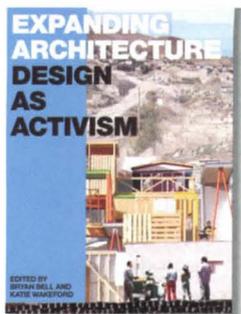


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# Architecture that makes a difference

## Books



**Expanding Architecture: Design As Activism**, by Bryan Bell, Katie Wakeford, Steve Badanes, and Roberta Feldman. New York: Metropolis Books, 2008, 288 pages, \$35.

In the introduction to this inspiring volume, Jose L.S. Gamez and Susan Rogers complain that today's "architectural discourses and practices are almost entirely apolitical due to the loss of a unifying agenda." In fact, there's little to suggest that architecture ever had – or should have – one agenda. "Most of us doing this work do not need to decide whether we are in a movement or not," writes Bryan Bell, founder of the North Carolina-based Design Corps (which builds housing for migrant workers), in his preface. The label-defying diversity of public-interest architecture is reflected in the scope of this idea-packed directory.

The book's projects range from helping the Yaqui women of Sonora, Mexico, build homes to using text messages to explain public art installations. The difficulty of finding a single rubric for these activities is underscored by Elizabeth Martin and Leslie

Thomas's account of a competition held by cityworksLosAngeles, an urban version of Samuel Mockbee's Rural Studio. When the group invited architects to propose ways to improve the built environment of Southern California, the entries were so varied that, in the words of Ray Kappe, a juror and renowned architect, it was impossible to "compare the projects as equals."

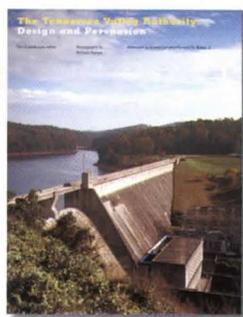
Similarly, there is no comparing a plan by Ryan Gravel for Atlanta's vast Beltline development with Sean Donahue's fascinating experiments in graphic design for the blind or with efforts to turn a former slaughterhouse in Zagreb into a concert venue. For this reason alone, the weakest of the book's 30 essays are the ones that attempt to generalize about what architects should do. The strongest are those that recount real-world experiences. Darl Rastorfer describes the achievements of Community Design Collaborative, a Philadelphia group that helps nonprofit organizations obtain architectural services. It does not, however, provide those services. Rastorfer writes, "One key to the organization's enduring success is the narrow scope of assistance it offers." Russell Katz, of Washington, D.C., in describing his effort to develop affordable housing, notes, "problems stemming from lack of experience started cropping up."

Erik Van Mehlman writes of entering a competition, sponsored by Habitat for Humanity of Wake County, North Carolina, for a 1,000-square-foot house to be built with \$48,000 in materials. He was

thrilled when his design was chosen. But Habitat's clients eschewed Van Mehlman's house for more conventional models. A client eventually selected the house, but the costs and difficulties of getting it built left Habitat administrators – and, to some degree, Van Mehlman – chastened.

These bittersweet stories should be a warning to anyone who thinks America's affordable housing problems can be solved by activist architects. Only government can do the job. But in the meanwhile, it's great that architects – though overworked and underpaid – are still working pro bono publico.

*Fred A. Bernstein*



**The Tennessee Valley Authority: Design and Persuasion**, edited by Tim Culvahouse. New York: Princeton Architectural Press, 2007, 144 pages, \$40.

Once upon a time when America was down and out, she was not afraid to dream big. During the Great Depression, we embarked on a series of visionary, publicly funded, massive infrastructure projects – iconic visions of progress to this day. One of the most audacious was

the TVA. *The Tennessee Valley Authority: Design and Persuasion* recovers this history in a thoroughly enlightening narrative told in essays by authors from different disciplines and intellectual perspectives.

The TVA, chartered by Congress in 1933, sought to better the lives of the poorest Americans, those residing in the seven-state watershed of the Tennessee River. The TVA set out not only to control floods and improve navigability but also to reforest hills, advance agriculture, jump-start industry, and above all provide electrical power.

Design propelled the TVA's success. It was directed by a Modernist architect from Budapest, Roland Wank, and included everything from remaking the territorial landscape, creating 34 dams, and detailing the graphic design of posters. The TVA was a visionary exercise not only in building but also in branding, which is driven home by the book's rich selection of period images and powerful new photographs by Richard Barnes. Unfortunately, the volume is too small to do its contents justice.

The TVA story also has a poignant personal side, as reflected in the recollections of Tim Culvahouse, Jennifer Bloomer, and Senator Howard Baker Jr. – Tennesseans all. Each had relatives in the valley who were deeply affected by the TVA project, for better and not. With America now in need of bold new initiatives for sustainable infrastructure, the Tennessee Valley Authority should be a source of study and inspiration.

*John A. Loomis*

## Books

### Sublime Spaces & Visionary Worlds: Built Environments of Vernacular Artists,

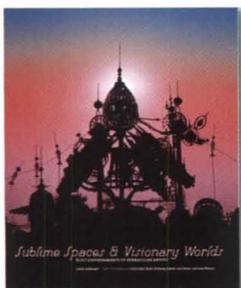
by Leslie Umberger. New York: Princeton Architectural Press, 2007, 427 pages, \$65.

**Fantasy Worlds**, edited by Angelika Taschen, text by John Malzels, photography by Deidi von Schaewen. Cologne: Taschen, 2007, 240 pages, \$13.

**Hundertwasser: Architecture**, edited by Angelika Taschen. Cologne: Taschen, 2007, 319 pages, \$40.

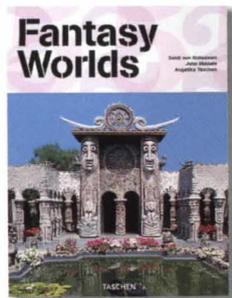
**Heidegger's Hut**, by Adam Sharr. Cambridge: MIT Press, 2006, 139 pages, \$25.

These four books dealing with unconventional vernacular architecture might seem far removed from the practical business of practicing architecture, but only if you read without questioning your definitions of "professionalism" and "function." These volumes can broaden your ideas about what architecture is.



*Sublime Spaces & Visionary Worlds: Built Environments of Vernacular Artists* is a spectacularly produced catalog from a recent exhibition at the John Michael Kohler Center in Sheboygan, Wisconsin. The book offers a discerning and entertaining guide to "folk artists of the built environment." Short biographical essays about unconventional, often untrained builders are punctuated with large, detailed photographs of

their creations. This may be the most comprehensive text ever of folk architectural exotica, a term that might not be apt. Consider Buckminster Fuller's remark about Simon Rodia, creator of Watts Towers: "I am not amazed by the fact that Rodia was an unlearned man. I believe in intuitive intelli-

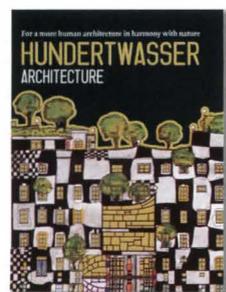


gence ... almost all great design is first intuitive design. Rodia was a master of his material, cement."

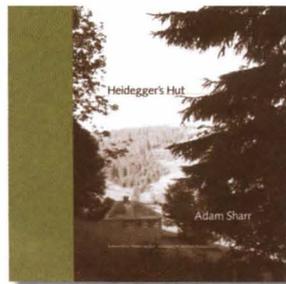
Fuller's insight goes to the heart of professional architecture's essence: design and mastery of materials. Further, the Watts Towers have functioned since their inception in 1955 not merely as folk art, but as an architectural monument, a gathering place, and the symbol of a neighborhood perpetually regenerating itself. The towers, made largely of recycled materials and devoid of welds and bolts, have withstood major earthquakes with minimal damage. They are among many examples of oddball vernacular architecture that holds valuable lessons for architects.

*Fantasy Worlds* is a quick Baedeker to quirky vernacular architecture, a coffee-table book with brief text and terrific photographs. Budget-priced and with a useful bibliography and map of sites, it works as an attractive primer.

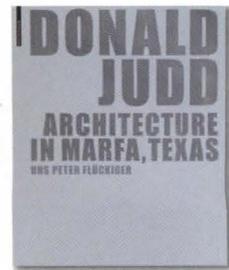
*Hundertwasser: Architecture* is a must-read for any architect who



is serious about sustainable design. Think green roofs crowning high-rises are cutting-edge? The Austrian artist, originally named Friedrich Stowasser, was designing them in 1951. Lacking a degree in architecture, Hundertwasser (1928-2000) fashioned himself into a highly individual building rehabilitator, what he called an "architecture doctor," who gave new life to sick buildings by applying principles of nature. This book, filled with building plans, photographs, manifestos, and analytic essays, is a freewheeling catalogue raisonné. And don't let Hundertwasser's predilection for onion domes on industrial buildings and crayon-bright cladding fool you. His was the work of a sophisticated (if unschooled) architectural theorist and practitioner whose triumphs included an industrial incinerator and public bathrooms infused with riotous beauty and environmentally sensitive functionalism.



*Heidegger's Hut*, a slim, provocative volume, answers the question: Why the architectural interest in the drab, three room, 20-foot-square Black Forest hut without running water or electricity inhabited by the German philosopher Martin Heidegger throughout his career? The photographs of the little building suggest its nearest cousin was Thoreau's rough-hewn hut at Walden Pond. Author Adam Sharr argues that Heidegger's hut successfully performed as an incubation chamber for philosophizing about the principles of building and dwelling. With a lively curiosity and careful scholarship, Sharr clarifies the connection between a philosopher's minimal digs and his philosophical quest. *Norman Weinstein*

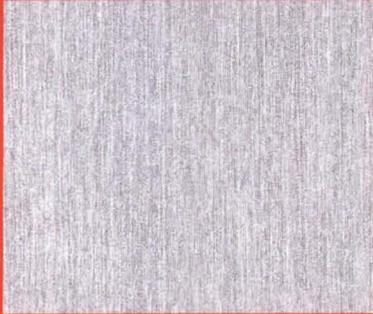


**Donald Judd Architecture in Marfa, Texas**, by Urs Peter Flückiger. Basel: Birkhäuser Verlag AG, 2007, 150 pages, \$45.

In southwest Texas, a remote, flat, and dusty land against a backdrop of the distant Chinati Mountains, the sculptor Donald Judd saw beauty and possibility. In 1979, he began construction on a complex at Marfa blending art, architecture, landscape architecture, and furniture design. The artist gave new life to run-down main street buildings and military structures at the former Fort D.A. Russell. After transforming an old bank into his design studio, Judd converted airplane hangars, warehouses, and offices into a library, studios, a compound for his family, and multiple art galleries. He linked many of the buildings by courtyards and walls and used his own designs to furnish many interior spaces.

Judd also placed furniture by Schindler, Aalto, Rietveld, and Mies throughout the complex, as well as pieces by Stickley and a collection of Swedish furnishings. He included artworks by Dan Flavin and Frank Stella, Matisse and Albers, and dedicated a former office and warehouse to the colorful, twisted metal sculpture of John Chamberlain. And he installed Richard Long's *Sea Lava Circles*, which meshes landscape architecture and art.

Photographs throughout the book illuminate Judd's primary thesis, the importance of light's effect on form in Minimalist art, architecture, and landscape. Drawings by Flückiger and his students at the College of Architecture at Texas Tech clarify the artist's thought process. Flückiger's fascination with Donald Judd's work at Marfa has resulted in a fascinating book. *Barbara Karth*



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# Professionalizing pro bono practice

## Practice Matters

By Casius Pealer

The architecture profession faces one practical obstacle in making the case that architects bring larger value to the public than simply providing design and construction services. That is, that many individuals and organizations simply cannot afford to hire an architect, or doing so would create a significant hardship for them. And unlike law and medicine, which have developed strong programs to provide access to legal representation and health care for all members of society, for the most part, architecture is currently structured as a fee-for-service industry.

Victoria Beach, AIA, a former professor of ethics at the Harvard Graduate School of Design and current member of the AIA National Ethics Council, says, "Professional ethics involves skills and situations that are unique to architects as professionals, not just as citizens." She adds, "Pro bono service is based on the idea that professionals have 'special knowledge.' Providing this special knowledge even to people who cannot pay for it is what distinguishes a profession from a mere business."

She distinguishes professional ethical activities from more general philanthropy with a memorable shorthand of Pro, Joe, and Schmoie. In this hierarchy, refraining from fraud or deceit – not stealing from your client, for example – is a

*Casius Pealer cofounded ArchVoices and is currently an affordable-housing attorney based in Washington, D.C.*

Schmoie activity in that it is discouraged more by the threat of jail time than by a higher professional code of conduct. Painting a Habitat for Humanity house would be a Joe activity, as it does not require professional skills or abilities, but does represent a voluntary contribution that benefits society. Pro activities involve the use of skills and abilities that are unique to our profession.

Last year, the AIA added a sentence to its Code of Ethics & Professional Conduct encouraging architects to provide pro bono design services. A draft of new guidelines the AIA released for comment this summer defined pro bono services as "of a professional nature that are typically provided by a registered/licensed architect, firm, AIA component, or college/university, but for which those involved receive no financial compensation."

This definition is broadly consistent with other professions that have pro bono expectations for their professionals. For example, the medical and legal professions have created networks of community-based clinics, supported by government funding as well as contributions of time and dollars from practicing professionals. Additionally, professionals in those professions are widely expected to contribute some form of pro bono service as an integrated part of their professional practices. According to the American Bar Association (ABA) at least 28 states have established specific annual goals for pro bono service in their codes of ethics.



The McCall Design Group provides pro bono services to Goodwill Industries.

### A trend toward pro bono service

Although many firms do pro bono work, recently some have begun to coordinate these services as part of their overall business model. Nationally, this trend is supported by The 1% program of San Francisco-based Public Architecture. The 1% is a three-year-old program encouraging design firms to commit 1 percent of their billable hours each year to pro bono service. Public Architecture currently has enlisted over 400 design firms to pledge a total of 200,000 hours of pro bono design services. In the aggregate this contribution is the equivalent of a 100-person firm working full-time on behalf of low-income communities and the nonprofit organizations that serve them. Approximately 10 to 20 new firms sign on to The 1% pledge each month.

Through The 1% program, Public Architecture focuses on firms

rather than on individual architects, based on the belief that the coordinated resources of a firm are needed for pro bono clients just as they are for fee-generating clients.

### Supporting pro bono work

HOK has long had a commitment to pro bono design work, and over the past year formally pledged its time firm-wide via The 1% program. According to vice chairman Clark Davis, the firm's pro bono projects are driven almost entirely by the initiative of the employees in each office. "HOK is a lot of different things to a lot of different people," says Davis, "but in each case, our people are rooted in their local communities."

For one of its pro bono efforts, the Toronto office of HOK connected with a nonprofit providing hospice care for terminally ill children. Professionals in that office worked

## Practice Matters

over six years to select a site for a significant expansion, developed planning and design drawings, and then led a fund-raising campaign to make the project a reality. The sheer scale of this long-term commitment could only have been accomplished through the coordination of an entire office, not by one or two individuals acting alone.

The Asia Pacific office of HOK is working on a project in Mumbai, India, and a number of the firm's planners and urban designers grew interested in the Dharavi section of the city. Dharavi, one of the largest urban slums in Asia and home to about one million people, is on the brink of being affected by a large-scale redevelopment project undertaken by the Indian government in partnership with local developers. Working on its own rather than with a formal government client, HOK independently developed an alternative approach, which would give developers access to certain sites, but also make them responsible for infrastructure improvements and affordable housing adjacent to those sites to minimize displacement and preserve the culture, livelihoods, and lifestyle of the locals. The scale of this project also required the resources of a professional office.

Clark says that pro bono service has provided tremendous bonding experiences for HOK employees, who need to communicate and collaborate effectively all of the time. And what works for one firm can also work for our profession as a whole. "Architects have often been so introspective that it has often hurt us and our standing as leaders in the community," says Clark. "If we have the attitude that 'we can do it better,' then we've got to be ready to show the public how."

### **Pro bono clients like any other**

The McCall Design Group, a 35-person firm based in San Francisco,

also pledged its time through The 1% program and integrated pro bono service into its business model. The firm specializes in retail interiors for corporate giants like Banana Republic, Williams-Sonoma, Gap, and Victoria's Secret. This national commercial work is balanced by local pro bono design efforts, including an ongoing relationship with Goodwill Industries to design new Goodwill retail stores.

"People say how good it feels to give back, but our primary motivations for doing this work go way beyond a kind of 'feel-good' result," says the firm's president, Michael McCall, AIA. "The work has to complement our own mission and goals, including by providing specialized training opportunities overseen by our managers, direct client contact, and increased morale generally."

After a recent experience working on a cultural arts project for a significantly reduced fee, McCall recommends doing design work either for a full standard fee or completely pro bono. "Once you accept some money, you're treated as a project manager and not a project partner," says McCall. "The relationships and implications are very different."

McCall also ensures that he has a written contract with each pro bono client. "In California, we're actually required to have a written contract for pro bono projects, but it's good practice to do so. We typically have very simple letter agreements with our pro bono clients." As with any inexperienced client, it is often especially important to describe in detail the anticipated scope of work and the final work product in order to manage expectations.

Although pro bono service can be an opportunity to gain experience with different kinds of projects, liability issues remain a top consideration for firms, according to a recent survey by Public Architecture. "When possible, we try

to do pro bono work in an arena that we feel comfortable with, which for us is a retail environment," says McCall. Professional standards of care apply equally to work done for free as to traditional fee-for-service work, and providing professional liability coverage is part of the firm's pro bono contribution.

### **Formal firm policies**

Although many firms do pro bono work, very few have instituted policies and formal structures to support and guide this work. One firm that has been rigorous about formalizing its pro bono program is Perkins+Will, which crafted a firm-wide policy on pro bono with the aid of Public Architecture back in 2006

In 2007, the firm developed a firmwide Social Responsibility Initiative (SRI) mission statement and structure, including an SRI committee in each of the firm's 22 offices in North America. These local committees are overseen by senior staff or principals representing three geographic regions.

Individual offices take the lead in identifying local projects, and then office-designated leaders submit regular information and updates to the principal responsible for their region. Each submits a quarterly SRI report to the firm's governing board. These include the total annual budgeted hours per office, as well as each office's progress to date in achieving that amount.

Some of Perkins+Will's pro bono design projects presently include transitional housing for homeless families in Seattle; a national training center for a children's health nonprofit in Los Angeles; site selection for a nonprofit working to stop human trafficking in Houston; and master planning for a homeless and runaway youth facility in Minneapolis.

Asked to identify the single-most unique element of the SRI program, Mark Jolicoeur, the principal responsible for offices in the central region of the U.S., settled on the firm's internal communication about the program. Perkins+Will established an SRI intranet site for

the entire firm, where individual offices can track their pro bono projects, and SRI teams can learn from each other. The Chicago office is currently working on a central physical space where employees can post information about their community-based activities. Jolicoeur says, "This connection will have a positive impact on the overall collaboration that we need to accomplish high-quality work for all of our clients."

Even with a firm the size of Perkins+Will, there is still a limit to what the firm can take on. According to Jolicoeur, "There is occasionally a tension between projects we know are good projects, and projects that fit our mission statement for SRI. We try to look critically at whether each new project helps us achieve our written SRI mission statement." One reason to have a formal structure for a firm's pro bono work is to credibly reject projects as well. "We're simply trying to direct the firm's resources in a targeted way that best fits the firm's stated mission."

Perkins+Will is also a member and financial sponsor of The 1% program. This is the firm's second year of participation, and data being collected through the SRI program will be reported internally. Additionally, the 1 percent goal has been incorporated as part of the firm's 2009 budgeting process. The opportunity to measure and assess the firm's pro bono contribution will help communicate the extent of the firm's commitment and provide a baseline on which to improve in future years.

### **Increasing public appreciation**

It is possible to do well by doing good. Pro bono service is a way for large firms to have more local relevance and to build collaboration and teamwork. For smaller or more specialized firms, pro bono service can also be used to stand out in an otherwise crowded field. And, as more firms expand that access through pro bono design efforts, the public appreciation of the benefits and necessity of architectural services will also expand. ■

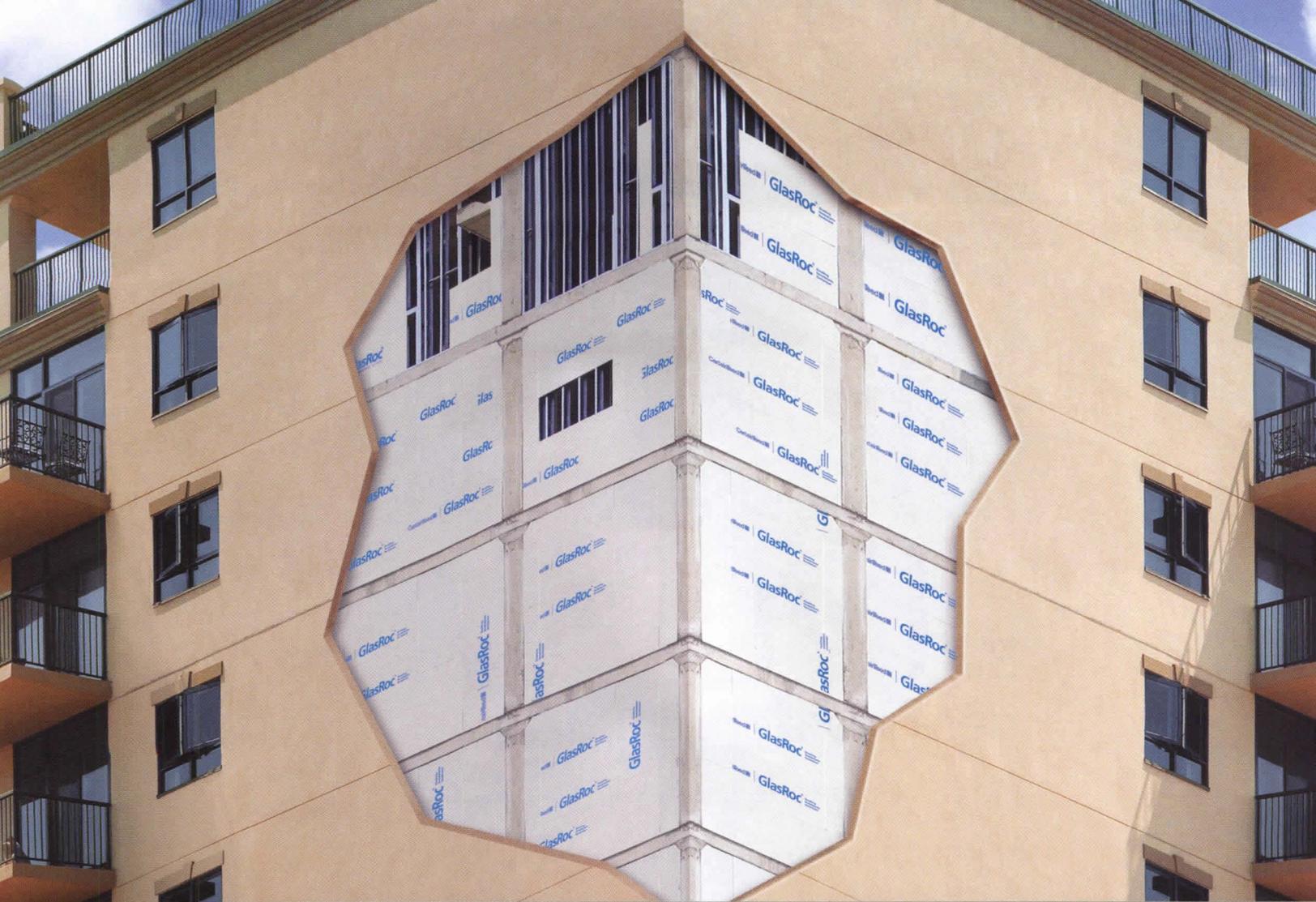


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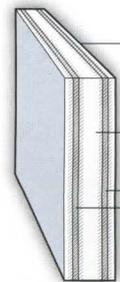
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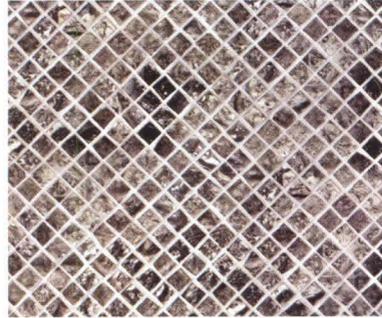
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**CIRCLE 41**

# Trade Show Review Orlando • Coverings

The premier exhibition of tile and stone in the U.S., this year's Coverings, held April 29 to May 2, showcased an innovative mix from the world's top producers featuring larger formats, color-through bodies, digitally printed patterning, textural surfaces, recycled glass, and advanced glazing. *Linda C. Lentz*

**1 Vitreous microcosm** Mesh-mounted on 12" x 12" sheets, MetroMosaics are made of 484 jewel-like ½" square, ⅛" deep Venetian glass tile available in 11 colors, including iridescents and precious metals. Epro, Bloomville, Ohio. [www.eprotile.com](http://www.eprotile.com) **CIRCLE 200**



1

**2 Layered effects** Made of color-body-porcelain stoneware, the 3D configuration of the Soho Collection's supersize, mesh-mounted mosaic is ideal for residential, medium-commercial, and light-institutional wall applications. Marazzi USA, Sunnyvale, Tex. [www.marazzitile.com](http://www.marazzitile.com) **CIRCLE 201**



2

**3 Forbidden pleasures** Evocative of richly appointed gentlemen's quarters, Horn porcelain stoneware tiles have been treated with a highly specialized glaze imparting a satiny "under glass" effect. Rex Ceramiche Artistiche, Fiorano Modenese, Italy. [www.florim.com](http://www.florim.com) **CIRCLE 202**



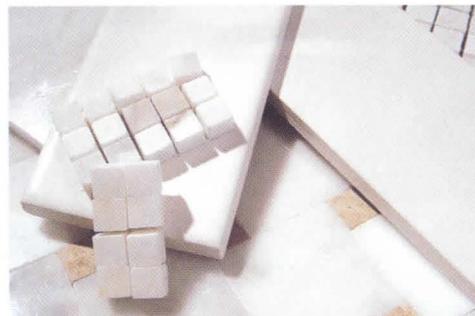
3

**4 Material goods** Digitally printed to mimic the texture of woven cloth, Tex porcelain tile by Land Porcelanico is available in lime and orange, as well as black, white, and brown. Suitable for floor and wall applications, sizes include 17.6" x 35.2", 8.8" x 35.2", and 11.7" square. Tile of Spain Center, Trade Commission of Spain, Coral Gables, Fla. [www.spaintiles.com](http://www.spaintiles.com) **CIRCLE 203**



4

**5 Basic whites** Developed to integrate with the most popular natural stones, the Metro Cotton collection is offered in five shades of white. Sizes include 3" x 6", 3" x 9", 4" square, 4" x 12", and 6" square. Trikeenan Tileworks Londonderry, N.H. [www.trikeenan.com](http://www.trikeenan.com) **CIRCLE 204**



5

**6 The Wright way** New to the Frank Lloyd Wright Collection, 7373 Storer Triplet and 5353 Storer Cascade border tiles are an homage to Wright's 1920s textile block creations for the John Storer House in L.A. Motawi Tileworks, Ann Arbor, Mich. [www.motawi.com](http://www.motawi.com) **CIRCLE 205**



6

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## Trade Show Review Orlando • Coverings



7



8



10



9



12



11

**7 What goes around** Nearly 24" square, Penthouse porcelain floor tiles feature overlapping  $\frac{1}{4}$  circles enhanced by a textural metallic glaze that combine to form a large-scale circular patterning in four dual-toned colorways. Viva, Sassuolo, Italy. [www.cerviva.it](http://www.cerviva.it) **CIRCLE 206**

**8 A natural approach** Based on a single stone, the Basaltina Stone Project is a series made up of three sizes: 47.2" x 23.6", 23.6" square, and 11.8" x 23.6". Available in a natural tone and shades of gray, plus smooth or chiseled nonslip textures, this porcelain floor tile can work for interior and exterior installations. Lea Ceramiche, Fiorano Modenese, Italy. [www.ceramichelea.com](http://www.ceramichelea.com) **CIRCLE 207**

**9 Thin is in** At .12" thick, Lam'Slab is an advanced ceramic offered in a variety of colors that can be bonded to other materials and cut to suit many interior and exterior applications: ventilated facades, walls, floors, counters, and furniture. Laminam, Fiorano Modenese, Italy. [www.laminam.it](http://www.laminam.it) **CIRCLE 208**

**10 Elegant formations** Intentionally irregular, the handcrafted, mesh-mount Gregoriana Stone honed-brick mosaics are part of an extensive through-body porcelain collection that is available in three shades. The collection also includes pencil listellos in glass, stainless steel, and mirror, plus stair treads, corners, cove bases, and skirting. Seneca Tiles, Attica, Ohio. [www.senecatiles.com](http://www.senecatiles.com) **CIRCLE 209**

**11 Awash with color** A natural for baths, Keraben's high-gloss Tribeca comes in 12.6" x 23.2" and 3" x 23.2" wall tiles and 12.6"-square floor tiles, plus mosaic listellos in gray, turquoise, and an orangey red. Tile of Spain Center, Trade Commission of Spain, Coral Gables, Fla. [www.spaintiles.com](http://www.spaintiles.com) **CIRCLE 210**

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# Snapshot

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## A building as playground for displaced orphans

By Elizabeth Zevallos

In 2005, Indonesia's Nias Island was struck by two devastating natural disasters. The combination of tsunami and earthquake within a span of three months took hundreds of lives and destroyed nearly 90 percent of infrastructure, leaving thousands of inhabitants internally displaced. Isolated among Indian Ocean waters, just miles from the fault line between two tectonic plates, the island had only its precarious location to blame. In 2007, the Catholic relief organization Caritas Osterreich, and a design-build team from the School of Architecture at Vienna University of Technology in Austria, joined together to create a recreation center for displaced orphans. Under the guidance of Austrian architect Peter Fattinger, 20 graduate students completed the Nias Design-Build Project in May 2007, on the northeast coast of the island.

Tucked into a landscape of palms, the new 2,000-square-foot hall replaces a smaller, worn-out hut to accommodate a now considerably higher number of homeless children. In conversation with the architects, the Franciscan nuns who had been running the nearby orphanage for 20 years asked for a building that would accommodate the children's various recreational interests while serving as a meeting and dining place. Restricted by a \$58,000 budget and relying on topographical measurements made by the island's locals, Fattinger's determined team designed a building that is playfully dynamic and physically transformative, accommodating the nuns' many requirements despite the project's small scale.



## Snapshot

Tucked into the landscape (opposite, top and bottom), the new, 2,000-square-foot hall replaces a smaller hut. The use of corrugated metal and exposed concrete (right) kept construction costs down, while a system of sliding doors and folding walls make the center a versatile, well-ventilated place for children (below).



“By integrating sliding doors and folding walls, we were able to construct a segmented yet continuous building,” explains Fattinger. “This also helped create a comfortable climate throughout the structure.” The building, made of corrugated-metal cladding over a wood-framed structure, follows the downward slope of the rocky hill on which it sits. Running the length of the building is the main atrium, which acts as a communal sitting and play area, auditorium space, and stairway to the upper level. Its shape allows soft breezes to sweep through the building while hot air rises up the hill. At the lowest point, the music room can be opened to form an extension of the prosceniumlike stage or closed during performances to become a backstage. When needed, the workshop converts to an additional performance space and play area while the library, on the highest level, can open to provide an outlook post or audience mezzanine. Equipped with ladders, nooks, and jumping areas, the center is a veritable child’s playground.

After eight rigorous weeks on the island, “working with the local people and being part of the community was one of the most rewarding aspects of the process,” notes Fattinger. Although the team benefited from this formative experience, more important is what they left behind. Like the 80 children who enjoy it on a daily basis, the Nias Design-Build Project symbolizes a hopeful future for Nias Island. ■

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Completed in March 2008, the 442,000 square-foot Great Wolf Lodge in Grand Mound, Washington features an indoor waterpark, conference center, 398 guest rooms and other amenities. In addition to their aesthetic quality, the waterpark's massive 65-foot-long glulam beams reduced the number of support columns while providing a natural resistance to corrosion in the humid natatorium. Compared to other building materials wood remains a great value. Bureau of Labor Statistics show that over the past four years steel prices have doubled, concrete is up 35%, while wood has declined 6%.

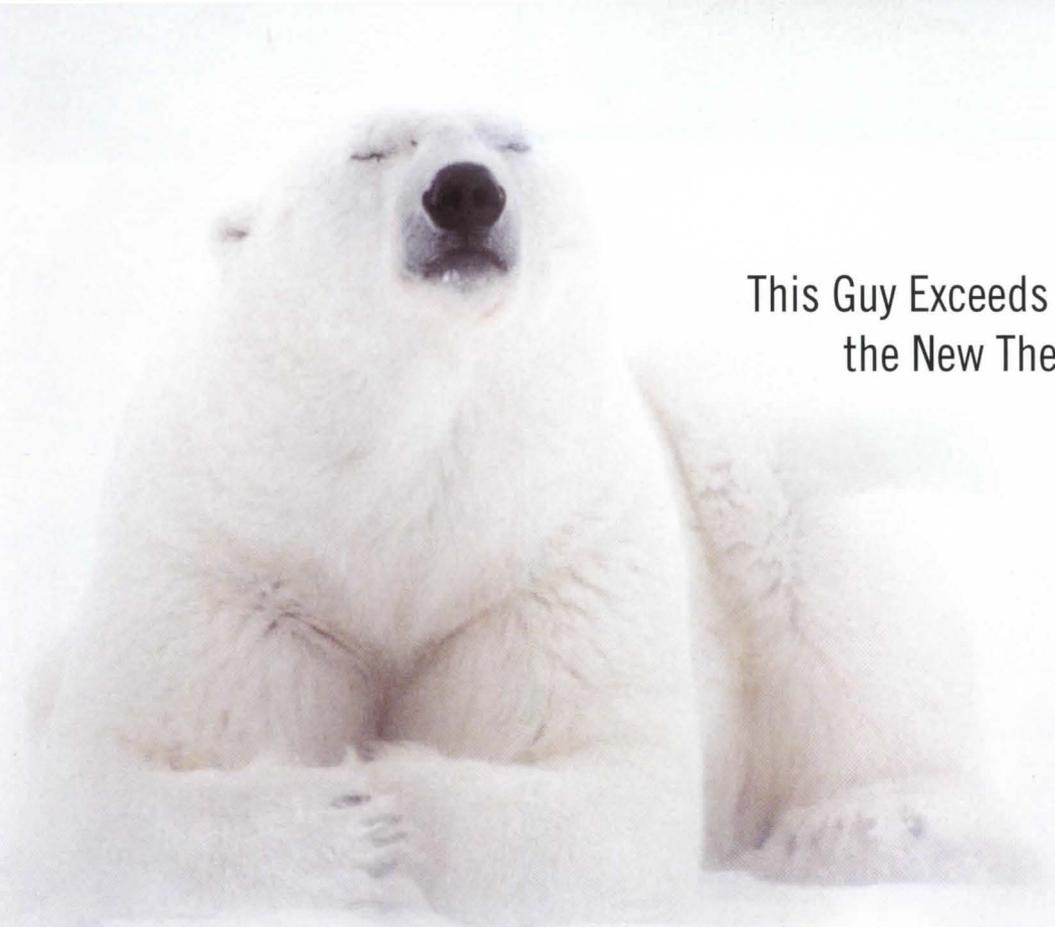
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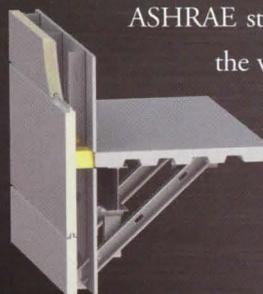


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# DESIGN WITH CONSCIENCE

BY DAVID SOKOL, GUEST EDITOR

**A**rchitects have embraced social responsibility longer than the media has acknowledged. In fact, an optimistic view of design's ability to improve the world has defined great movements in the profession's history. But only recently has activity in this field and attention from the press reached critical mass. This issue of RECORD considers the flourishing of design with conscience—from isolated instances in the academy to an increasing trend in practice.

Why the explosion? "What may be different today is that we can no longer isolate ourselves from factors that compel ethical, more inclusive practice," says Sergio Palleroni, who, as cofounder and director of BaSiC Initiative, now based at the University of Texas at Austin, has helped students realize desperately needed facilities for underserved communities all over the world since the late 1980s. The insight partly refers to the information technology that connects us immediately to natural disasters and political genocides. Yet global crises have not only flashed across our computer screens, but also arrived at our doorsteps. The phenomenon of do-good architecture may, in fact, reflect a critical mass of wealth bifurcation, government neglect, and environmental degradation that have propelled desperation, anger, and ultimately, the desire to help.

So while this issue features stories investigating the people, buildings, and concepts that wed humanitarianism and architecture, there is still a nagging sense that more needs to be done. In the introductory essay that follows on the next page, visionary thinker Bruce Sterling underscores that need. Following Sterling's commentary, we highlight the potential of conscientious design and suggest that after a decade of prosperity and self-indulgence the profession is returning to the social contract upon which architecture is founded. *David Sokol is a contributing editor for RECORD.*

**D**o-good architecture is the noble aspiration to better the shelter of mankind. Today it gets a louder hearing than usual, because the housing situation is a shambles.

By 2040, a third of mankind will live in slums. Not just the poor; a third of everybody. That's the motivating fear—the growing dread that the political and economic systems we've built do us active harm. There was the major trauma of Katrina, of course. Historic New Orleans collapsed, becoming a sudden

sister city to the urban mayhem in Africa, Southeast Asia, the Balkans, and the Caucasus.

The climate crisis is everywhere, from the jungles to the poles. No city, no matter how rich or well engineered, is prepared for the scale, scope, and speed of the floods, fires, and droughts brought by global warming. Then add soaring transportation costs turning car-dependent cities inside out. A global real estate crisis: Half the world has already urbanized, with a billion people in 200,000 monstrous “informal cities,” and the U.N. projects that urban areas will absorb all of the world's population growth—2.5 billion people—over the next four decades. The built environment has turned sour.

So a jittery populace turn their smoke-reddened eyes toward visions of do-good architecture, which is old and comes in various forms. The first and largest is state-sponsored public housing. It is commonly installed after wars, major depressions, or big urban riots—state disasters, in other words—and com-

monly, it is ungainly, aggressive, and glumly bureaucratic. From Prague's dour worker barracks to Cabrini-Green in Chicago, people vote against public housing with their feet.

Next come the housing schemes of Architects Without Frontiers, Architecture for Humanity, Habitat for Humanity, and their friends. These volunteer charity operations have strong ethics, but they lack political muscle or a steady revenue base. They are tiny voices in an emergency-rescue complex that overwhelmingly comprises the military, the Red Cross, U.N. refugee agencies, and civilian contractors.

The quintessence of do-gooder is the student activism pioneered by the late Samuel Mockbee. This model removes young architects from their classroom seats, employs their labor as sweat equity, and lets them directly confront fellow human beings who are wretchedly housed. As a hands-on moral education, this superb method is the architecture profession at its finest: straightforward, practical, immediate, and

# Do-Bad

ESSAY

authentic. It's hard and daunting work, almost a Gandhian direct action. However, like a Gandhi ashram, it doesn't translate to a larger scale. Despite their sympathies, most architects don't make careers housing the poor because the housing industry can't make that pay. That's why, all over the planet, the poor are housing themselves inside corrugated metal and tarpaper.

Architectural ingenuity has repeatedly attacked the architectural problems of emergency housing. It's scarcely possible to get much cheaper, lighter in weight, or more portable than the paper tubes and tents of Shigeru Ban—but only a handful of people have erected them. The late Iranian-born, California-based architect Nader Khalili invented solid, roomy, even elegant structures made entirely of ultra-cheap sandbag fabric, barbed wire, and dirt. Poor, displaced people could have settled the moon with those constructions—in fact, Khalili's "superadobe" was originally designed for that purpose. But you don't see these structures in real life, especially in the slums.

Or in refugee camps. From Sudan to Sichuan Province, the world is pockmarked with them. None are brilliant places using minimal resources and maximal design genius to make the inmates safe, healthy, and comfortable. Do-good architecture cannot create such places. That's because while refugee camps are marginally better than the mayhem refugees are fleeing, they are also punitive by their nature. Happy refugees are not "refugees." They are strange people living in a new town built at somebody else's doorstep and expense. Jealous locals naturally ask why they themselves are so badly housed in comparison.

So refugees live in do-bad architecture: the dominant architectural expression of our times.

Do-bad architecture comprises informal, emergent, spontaneous, make-do structures. It is built to manage and contain seething problems rather than to resolve or transcend them. Do-bad architecture hurts and harasses.

And do-bad architecture is eminently practical. We are all afraid of it, because we all sense that its invisible hand

**Bruce Sterling considers the one small voice of socially responsible architecture – and the nefariousness overwhelming it**

# Architect

is waiting for us. And it is.

The ultimate do-bad facility is the graveyard, following, in varying degrees of harm, gulags and extermination camps, battlefields, prisons, refugee camps, poorhouses, and the colossal global variety of slums, barrios, favelas, and ghettos.

Then come the semilegalized slums and squats that are found in urban areas throughout the world.

Finally, we arrive at some legal, conventional, low-income housing. This is the first of these vast and growing structural complexes not directly intended to hamper or harm people, and the first that directly involves architects and architectural ethics.

But do-good architecture does not merely respond to material poverty. Instead, it tangoes with the colossal dysfunctionalities outside any blueprints. Today's durable disorder is the playground of city-busting militias, gangsters, armed fanatics, and the blooming demimondes of narcotics, offshore pollution, and human trafficking. A vast, planet-girdling belt where the majority of the population has been systematically marginalized. Meanwhile, the elite is increasingly sequestered in gated containers like so many figures encased in snow globes.

It's easy to recognize the worst in do-bad architecture, because it's the stuff that happens to "them"—say, in some obscure Chinese boom town where children are buried in an earthquake-shattered heap of criminally substandard cement breeze-blocks. Like fish in water, we are surrounded

by the do-bad architecture that shapes us.

The American prison system, by far the largest in the world, comprises huge-scale badness engineered for those Americans legally guaranteed to be bad. It is so unwieldy, yet so vital to the country's identity, that the mentally ill and the penurious are left untended to wander American streets. Their ghostly, ill-considered presence means that American cities must take on the general character of flop-houses and madhouses.

Every passerby experiences the mildly psychotic affect of Jersey barriers, metal detectors, and vidcams. American cities have evolved a baroque decor of bum-repellents, including jagged sawteeth on all sittable and sleepable surfaces.

American do-badness has become the architecture of the "stealthy, slippery, crusty, prickly, and jittery," as the geographer Steven Flusty memorably puts it. These spaces are much worse than the weirdly abandoned Koolhaasian "junkspace" where individuals have no opportunity or incentive to engage in the civic realm. These Flusty spaces—fence-ringed green spaces, uninhabitable "public" plazas, policed shopping malls—are bent on our frustration, since they are hidden from our sight, physically unreachable, legally inaccessible, built to repel or irritate, or placed under scary levels of surveillance.

Do-bad architecture is native even to societies that claim cohesion and common purpose. As the general levels of misery rise, even the respectable and the privileged regard their neighbors as potential bad actors. Thus, at the same time that Russian and Chinese wealth is expanding, Americans find themselves in an increasingly predatory environment taking on the classic symptoms not of imaginary "late capitalism," but of real-world late Communism. The Stalinist-gingerbread erections of the *nomenklatura* no longer disguise the morale-crushing

*Bruce Sterling, contributing editor at Wired magazine, is the author of Tomorrow Now: Envisioning the Next Fifty Years. In 2005 he was the "Visionary in Residence" at Art Center College of Design in California.*

# cture

decline of the infrastructure, the loss of direction and confidence. The whole shebang is visibly going bust. Even if they can't guess why, people sense it.

Architecture has the power to recognize and reverse the ills of bad construction. That is its very purpose. However, the social influence of architects is in inverse proportion to the problems: the explosive growth of the world's poorest and least-organized cities, and the can't-go-on exhaustion of oil-fueled suburbs mortgaged past the hilt.

Consider the modern spectrum of private apartments, homes, offices, prestige public buildings, transport

**It's easy to recognize the worst in do-bad architecture, because it's the stuff that happens to "them." Like fish in water, we are surrounded by the do-bad architecture that shapes us.**

hubs, stadia, museums, resort complexes, and at the needle-like Dubai apex, an astounding blowout of mega-palaces for the new fossil-fuel plutocrats. Since form follows finance, architects are absolutely necessary at the top of this scale. Architecture's importance dwindles rapidly all the way down. Finally, the practitioners cross the border into the shadowy world of illegality where they have to go underground. There they must look and act rather like architect Teddy Cruz.

As a writer, Teddy Cruz is terrific. The Voltairean

contrast between the gated communities of right-wing San Diego and the heterogeneous slums of Tijuana—those vernacular constructions made of wrecked American tires and refrigerator doors—inspire Cruz to fits of prophetic oratory worthy of his dystopic pal Mike Davis. But architecturally, the slums of Tijuana can make little use for the services of Teddy Cruz. Any barrio local who strikes it rich doesn't redesign his slum with smart touches and appropriate technology. Instead, he flees the do-badness for something as much like San Diego as he can afford.

Cruz knows that San Diego is transforming into

Tijuana even faster than Tijuana is becoming San Diego. In 2008, that's the world's story in brief. The quickest way to turn San Diego into Tijuana is to set fire to it. Given that San Diego undertook the largest peacetime evacuation in American history due to wildfires of unprecedented scale, that's quite plausible.

Because Tijuana is San Diego: It's made from San Diego's exported debris. The underclass inhabiting the debris are not a thrifty proletariat gamely working in the informal sector. They're scary agents of the

badness, just like you and me.

Entropy requires no maintenance. The Golden Straitjacket, as *New York Times* columnist Thomas Friedman once described it, of neo-liberal laissez-faire gleams brightly when the economic boat is rising. If the boat is taking in water, though, a golden straitjacket is the fastest way to drown. We're in the straitjacket. We're hoping for someone who can undo its knots.

Where are they?

By Naomi R. Pollock, AIA

**ARCHITECTURAL RECORD:** *What inspired you to take on relief work?*

**SHIGERU BAN:** When I came back to Japan after studying in the U.S., I realized that architects are not respected in Japan, and I wondered why. One of the reasons is that the profession has a very short history in Japan. Another is that many people think architects drive up costs and create unusual buildings to call attention to themselves. Historically, architects worked for privileged people, such as kings and religious groups; it is the same today when big corporations and government entities use architecture to make their power and money visible. Some medical doctors and lawyers work for the money while others engage in pro bono, humanitarian activities—yet architects rarely take on this kind of work. So I thought it was really important for us to do something for society, not just to build monuments or help developers make money.

My relief work started in 1994

*Naomi R. Pollock, AIA, is RECORD's special correspondent based in Tokyo and is the author of Modern Japanese House, published by Phaidon in 2005.*

after I saw some shocking photos of refugees in Rwanda. I thought most African countries are hot, but the United Nations gave these refugees very poor plastic sheets that couldn't keep them warm during the rainy season. In addition, the U.N.'s solution was creating a serious deforestation problem since the 2 million-plus refugees were cutting down trees to make wooden poles to support the plastic sheets. In response, the U.N. supplied aluminum pipes, but the refugees sold them and then resumed cutting trees. I thought we ought to improve their shelters, so I contacted the U.N. High Commissioner for Refugees (UNHCR) in Geneva, and I proposed using paper tubes instead of aluminum. I was hired as a consultant to develop this idea further.

**AR:** *How do you select which disasters to work on?*

**SB:** In 1995, shortly after I started working with the UNHCR, the Great Hanshin Earthquake struck Kobe. I knew I had to help after I read about a Catholic church, where many Vietnamese worshipped, that burnt down. Because of my work with refugees, I thought that minorities must have a more difficult time after a disaster, so I went to Kobe to look for this

church. When I found the congregation, they were having their morning service outside, gathered around a fire. It was such a heartwarming moment. And so I offered to rebuild the church out of paper tubes. The priest refused. After that, I commuted to Kobe every Sunday and tried to convince him. I also visited the park where the Vietnamese congregants were living. The conditions were horrible, yet these people had no choice but to stay there, since they worked nearby. So my students and I started building temporary shelters for these people out of paper tubes and plastic beer-bottle crates. After that, the priest permitted me to rebuild the church out of paper tubes as long as I raised the money and gathered volunteers to build it.

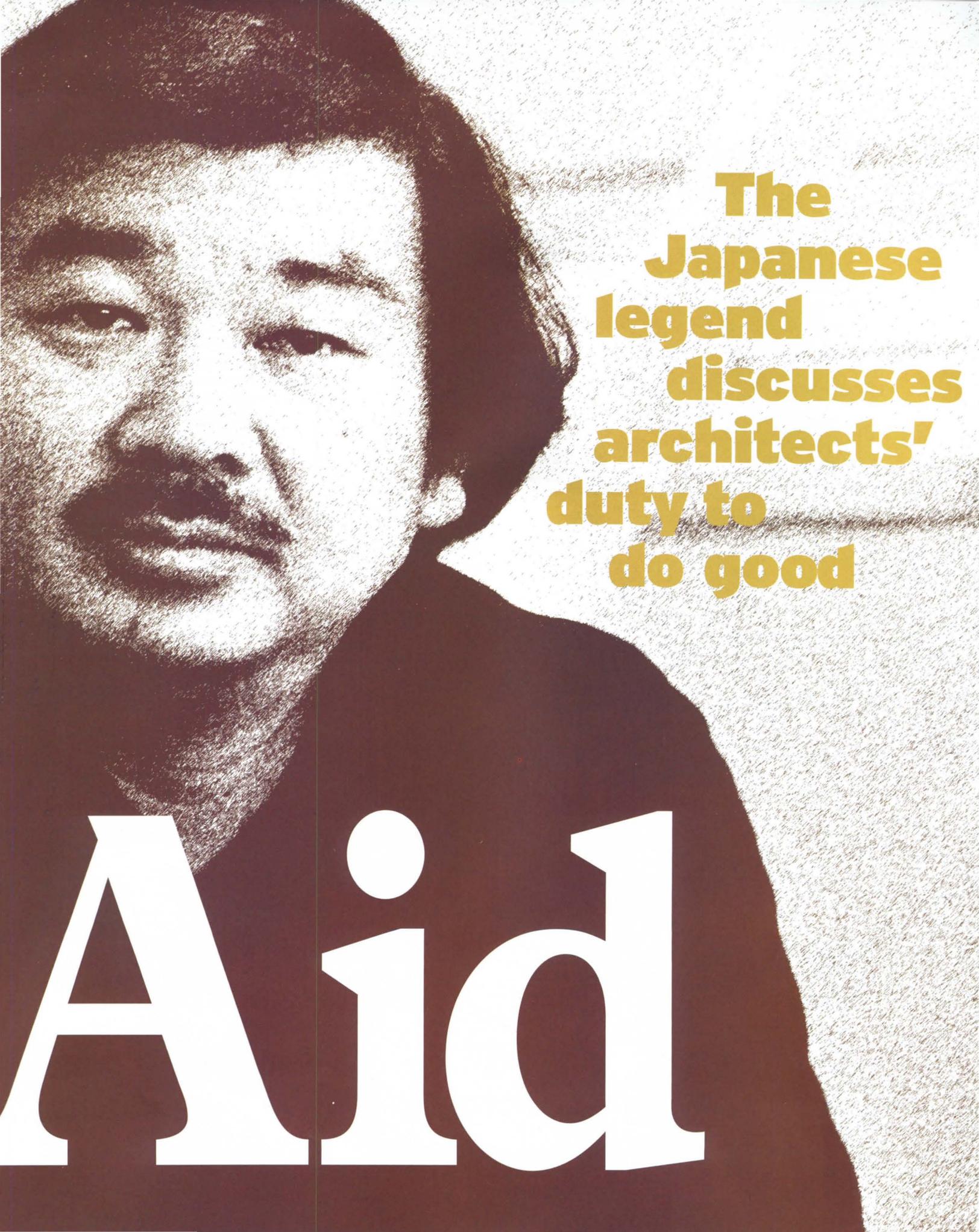
**AR:** *With so many disasters, how do you choose?*

**SB:** After Kobe, I got many faxes and e-mails from disaster-stricken areas asking me to help.

**AR:** *So it sounds a little bit like the disasters choose you.*

**SB:** When the Gujarat Earthquake

# Ban.



**The  
Japanese  
legend  
discusses  
architects'  
duty to  
do good**

**Aid**

struck India in 2001, I got a fax from a woman who helps villages preserve their tradition of making handmade paper. She knew about my paper buildings, so she asked me to design a refugee shelter and offered to finance the project. In addition, her nephew's firm, Kartikeya Shodhan Associates, volunteered to be the project's local architect.

**AR:** Do you have any specific criteria for projects that you take on? What

**1. The Rwanda genocide inspired Shigeru Ban to launch into humanitarian architecture, in 1994. He introduced paper-tube structures in this first effort. 2. While Ban's Paper Church may be his best-known work in Kobe, Japan, following the Great Hanshin Earthquake, he also designed Paper Log Houses for those refugees, using sandbag-loaded beer crates for foundations. 3. Ban adapted the Paper Log House design from Kobe to shelter victims of the Izmit Earthquake in Kaynasli, Turkey, in 2000. Ban enlarged housing units to accommodate Turkey's larger plywood specs – and its bigger families. Extra insulation was inserted into the tubes and wrapped along surfaces.**

*makes one project more appropriate than another?*

**SB:** Since I work with nongovernmental organizations (NGOs), I tend to do projects that do not interest government agencies. The government aids the majority of people, but there is always a minority they cannot help. I always try to find those people. In the case of Sri Lanka, where most people are Buddhist, I helped Muslim fishermen rebuild their village after the 2004 tsunami.

**AR:** How did you end up working in Sichuan Province this year?

**SB:** After the recent earthquake, I went to China without an invitation but with a contact at a university located in the disaster area. I hoped to build temporary housing, but because of tight government control I realized that this might be quite complicated. Luckily, I met some local school officials who asked me to build temporary classrooms for an elementary school instead. Actually, this school wasn't as badly damaged as others, yet it was still slated for demolition—this would require kids to travel to other schools far away. Because the government put more money and resources into the heavily damaged area, the less damaged school did not get any funding or attention.

**AR:** Practically speaking, how do you actually build these projects?

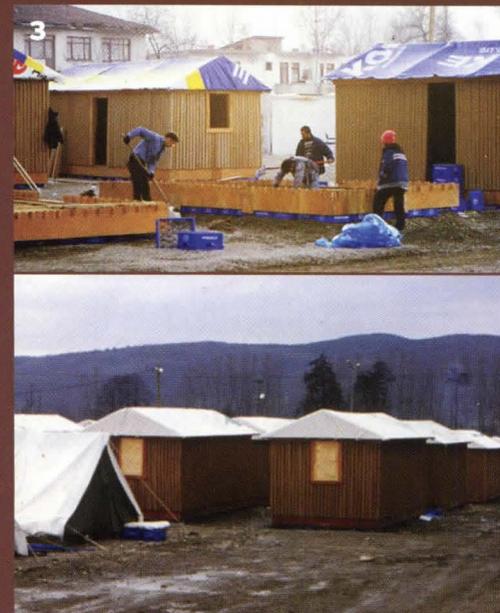
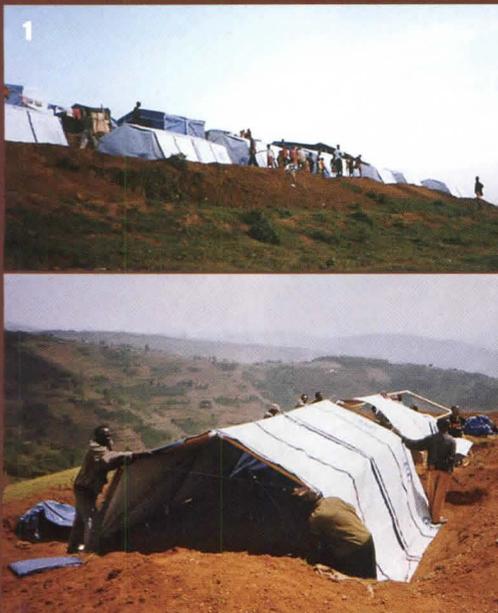
**SB:** We always work with local architects who know the regulations and climate and can facilitate communication with the beneficiaries.

**AR:** Do you spend a long time at the site?

**SB:** No, usually a few days is enough. The important thing is to go there immediately and meet the right people. Architects tend to be very bureaucratic. So there are lots of discussions but nothing happens. From experience, I know I just have to go there, even without any connections, to find out who needs what. Then one thing leads to another. A realized project is the most powerful means to convince people of your willingness to help.

**AR:** After you create a prototype, do the local people clone it or do you stay around to help? Do you create a system and then leave?

**SB:** Essentially, yes. In Kobe, the church financed the temporary structures and student volunteers built them. In India, students and the local NGO helped us.



And after the 1999 Izmit Earthquake in Turkey, we worked with students from Istanbul Technical University.

**AR:** *Is your relationship with these relief clients—that is, the users—and your commercial clients very different or the same?*

**SB:** In some ways it is very different, and in others it is very similar. Both groups are very demanding. In Turkey, we started by asking the villagers who lost their houses what they wanted. It is important to hear people's opinions and then devise or adapt a design to some of their requests. They are more comfortable if we start building after we have heard their ideas.

In Sri Lanka, the government wanted to control the size of the houses and so they provided a standard plan to all NGOs. I designed my prototype according to this size but inserted a semi-outdoor space covered by a roof in the middle. The families love this space and do everything here. Because of the hot climate, people usually eat or walk under the trees, so I thought a shaded area like this would be very important. But my solution created a new problem, since other villagers, whose homes were not destroyed or

who moved into houses made by other NGOs, also wanted my houses.

**AR:** *What is the biggest challenge you face when doing relief work?*

**SB:** Everything is a challenge, but the most important thing is meeting the right people.

**AR:** *Given your hectic schedule, how do you manage to find time for relief work?*

**SB:** Actually, I give priority to and rearrange my schedule for this relief work. If a disaster strikes, I cancel or postpone other things to go to the site as soon as possible.

**AR:** *Do you ever get paid to do relief work?*

**SB:** No. Never. [Donors covered Ban's travel expenses to India and Turkey. In Kobe and China, Ban paid not only for his travel, but also the cost of prototypes.]

**AR:** *Do you ever test out new materials or structural systems in your relief projects that you then use for commercial projects? Is there a crossover of ideas?*

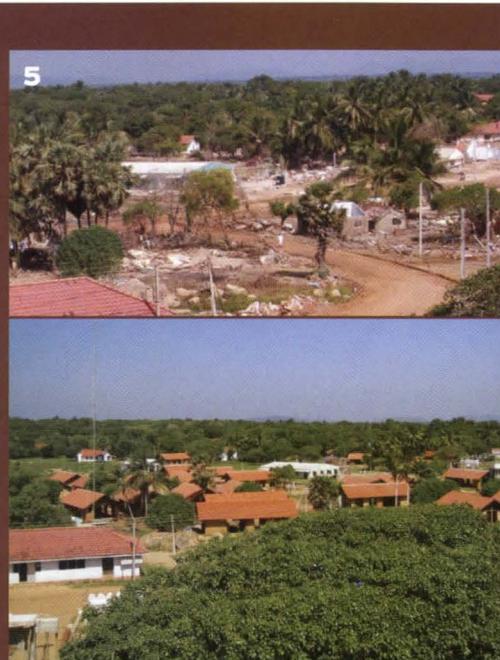
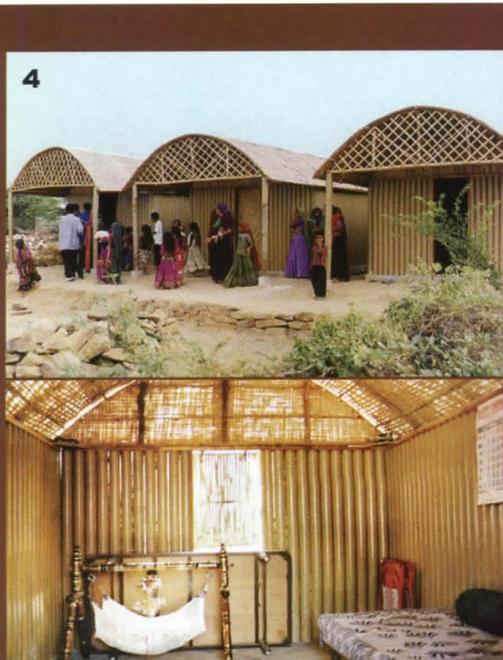
**SB:** For me, there is no border between commercial and noncommercial work. I approach both the same way—by working with the climate, finding good

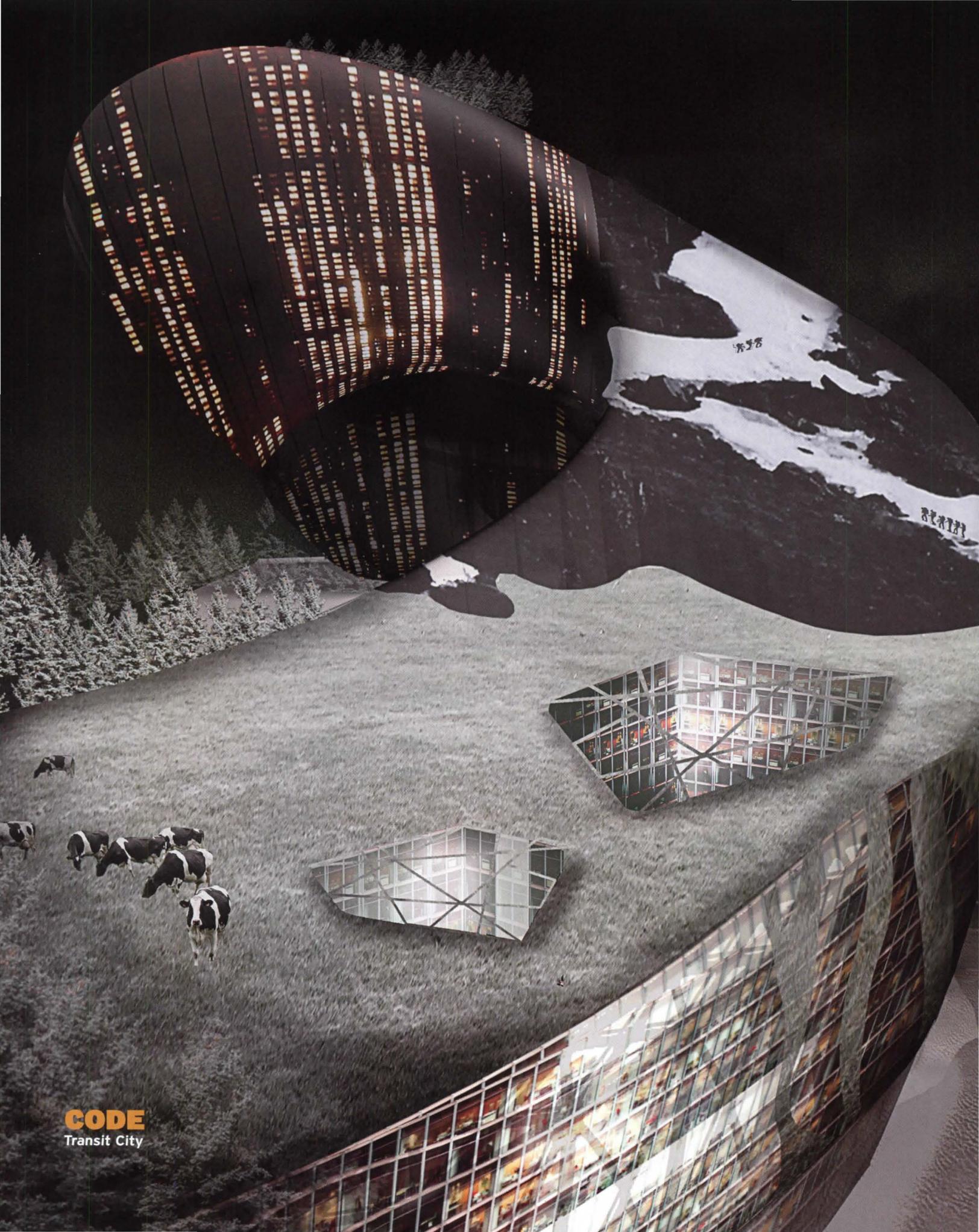
local architects [who, in disaster cases, will volunteer their services], and choosing suitable materials.

**AR:** *Do you have any advice for architects who want to do relief work?*

**SB:** Go to the site first to find out for yourself what people need. That is the most important thing. ■

**4.** Ban responded to the Gujarat Earthquake in 2001 by bringing the Paper Log Houses to Bhuj, India. Building rubble was deployed for foundations, and vaulted roofs were fabricated from bamboo and laid with woven-cane mats sandwiching clear tarpaulin. **5.** In the aftermath of the Indian Ocean Tsunami of December 2004, more than 10 organizations approached Ban to aid victims of the natural disaster. The architect ultimately partnered with Colliers Kirinda Trust to help rebuild Kirinda, a small fishing village in Sri Lanka populated largely by Muslims. **6.** For his most recent relief work, Ban is working with Chinese and Japanese students to build a temporary elementary school in Chengdu, one of the major Chinese cities located near the epicenter of the May 2008 Sichuan Province Earthquake.





**CODE**  
Transit City

# INBOX



RECORD invites designers  
to redefine the  
refugee experience

By David Sokol

**D**espite the best efforts of global capital and the Internet to erase boundaries between countries, citizenship—and its attendant rights—still is defined by geography. The world's 10 million refugees, then, occupy intermediate places where everything from basic services to a sense of dignity is defined by design. Since these schemes rarely transcend the minimal requisites of survival, we asked three architects to imagine enlightened alternatives to the tent cities and training centers that tend to dot the refugee landscape today, either in the architects' own neighborhoods or abroad. Each of these participants has earned social-responsibility stripes. Oslo-based firm Code has realized 24 units of transitional housing for homeless Norwegians, which blends elegantly into the capital city's Moss neighborhood. Melbourne, Australia's PHOOEY Architects recently completed a playground for child residents of public housing in South Melbourne. And Deborah Gans of New York was cocreator of a shipping-pallet design honored in Architecture for Humanity's 1999 competition for emergency housing for refugees returning to Kosovo.

# CODE

## Transit City *(previous spread)*

Although Norway normally receives several thousand asylum seekers annually, this year the number of applications has increased to a projected 15,000. Currently, Code partner Henning Kaland explains, refugees are housed in rundown hotel rooms and report to one of approximately 200 asylum reception centers. Although refugees can attend language classes during their application period, “they are basically offered to do nothing for one to two years, waiting to get an answer from our well-developed bureaucracy. This can be a very frustrating period, when people feel insecure about what the future will hold.”

Bjarne Ringstad, another of Code’s five partners, says that Norway can support the influx. The country enjoys an unemployment rate of 2½ percent, and popular economic forecasts predict a million-person labor shortage by 2038. The government could prepare its refugees for this work. “Many politicians and regular Norwegians talk about refugees as a problem,” Kaland adds. “They should think of them as an asset.”

According to Code’s proposal, Transit City (see previous spread), capitalizing on the refugee population requires consolidating it first. “If we replace the 200 different spots with one location, we would have some 30,000 people gathered, a small city,” Kaland says. “Here, it would be possible to concentrate the ‘investment’ and offer education, health care, and job training.”

Code would locate Transit City in Svinesund, a scenic coastal town on the border of Sweden and Norway. Even though the place has few permanent residents, Norwegians frequently pass through it, crossing the fjord bridge to purchase cheaper foodstuffs in Sweden. Expressing that movement between nations and symbolizing the malleability of refugee identity, the sculptural building alights on the tops of Norwegian and Swedish bluffs and touches down in the body of water that separates them. “This model draws inspiration from Norwegian topography,” Kaland says of the compound-curved form.

The building represents the landscape, too. The rooftop-cum-ski slope is one example of how Code imagines providing refugees with activities through architectural performance (and donated gear) in addition to government services. Similarly, wind turbines, photovoltaic arrays, and other sustainable elements integrated throughout the building would contribute to the country’s 2050 carbon-neutrality goal: The development would launch eco industries with refugee employees on-site or nearby, and lend symbolic meaning to the experiences of those Transit City residents who had escaped nations where conflicts are fueled or exacerbated by the effects of climate change.

# PHOOEY ARCHITECTS

## Flemington Youth Center *(opposite)*

In October 2007, Australia’s then minister of immigration, Kevin Andrews, admitted that the government had altered its refugee policy in response to the impression that Africans, and particularly Sudanese asylum-seekers, had trouble assimilating with the culture. In the wake of the murder of Sudanese refugee Liep Gony, Andrews said, “I have been concerned that some groups don’t seem to be settling and adjusting into the Australian way of life as quickly as we would hope, and therefore it makes sense to put the extra money into slow[ing] down the rate of intake from countries such as Sudan.” Africa’s portion of the country’s annual 13,000-personal refugee allocation had been slashed from 70 percent to just 30 percent in two years.

PHOOEY Architects principal Peter Ho denounces the insensitivity of Andrews’s remarks, but recognizes the complexity of refugee identity. “If given the opportunity to create a new life in a different place, it is likely I would bring my own baggage to the process,” he says. PHOOEY’s concept for a youth center in the Melbourne suburb of Flemington would be both a refuge from the pressures of assimilation and a facility for cultural adaptation.

The design is informed by Skinners Playground, PHOOEY’s year-old activity center for children living in public housing in South Melbourne. Both are fabricated from old shipping containers, but Ho notes important differences between them. The intended users of the Flemington design, for example, are teenagers and young adults who require services with far more breadth and depth than what young children demand. So whereas Skinners Playground comprises four containers linked in an imaginative series, Flemington’s shipping containers are raised on pilotis and arranged in a circle: At grade, Sudanese-Australians can congregate outdoors as they had traditionally, while volumes above are devoted to compartmentalized functions such as athletics, job training, and meal preparation. The cooking courses are a vital component of the scheme, Ho says. “There is no discrimination with food. It celebrates family heritage and cultural diversity.”

Although the youth center should attract crowds, the structure itself treads lightly on the city. Rainwater cisterns as well as photovoltaic and solar hot water panels minimize resource consumption, the site plan preserves existing trees, and film screenings on the exterior of one shipping container offer an amenity to the wider neighborhood. “The facility takes a good-neighbor approach,” Ho notes. “It is a place that breaks down the stigma that local public housing is separate and foreign, and invites all members of the community to be part of it.”



# DEBORAH GANS AND DENISE HOFFMAN BRANDT

## Dadaab Urban Plan *(this spread)*

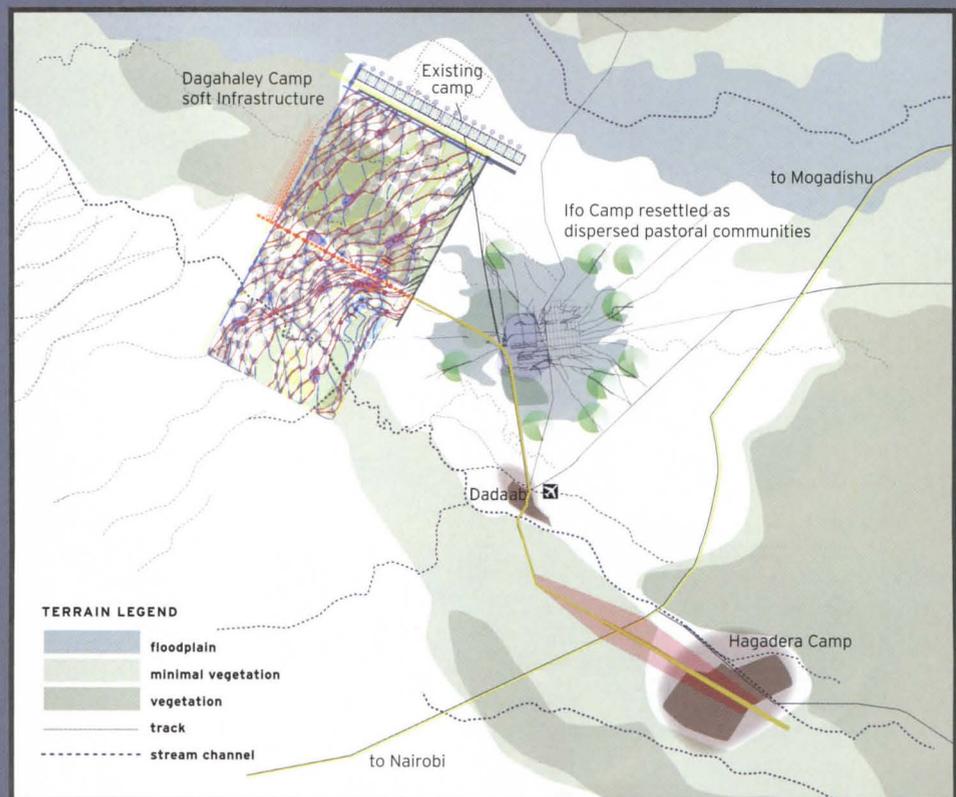
“The refugee camps of today are the cities of tomorrow,” says New York-based architect Deborah Gans, who, with landscape architect Denise Hoffman Brandt, proposes reconfiguring Dadaab, Kenya, to better accommodate its three refugee settlements. Dadaab proves Gans’s point. The region around this arid town near the Somalia border, which ballooned to 200,000 people during Ethiopian military actions in Somalia in 2006, has housed the Dagahaley, Hagadera, and Ifo camps for more than 30 years. More recently, the trio of camps counted 135,000 inhabitants, mostly Somalis.

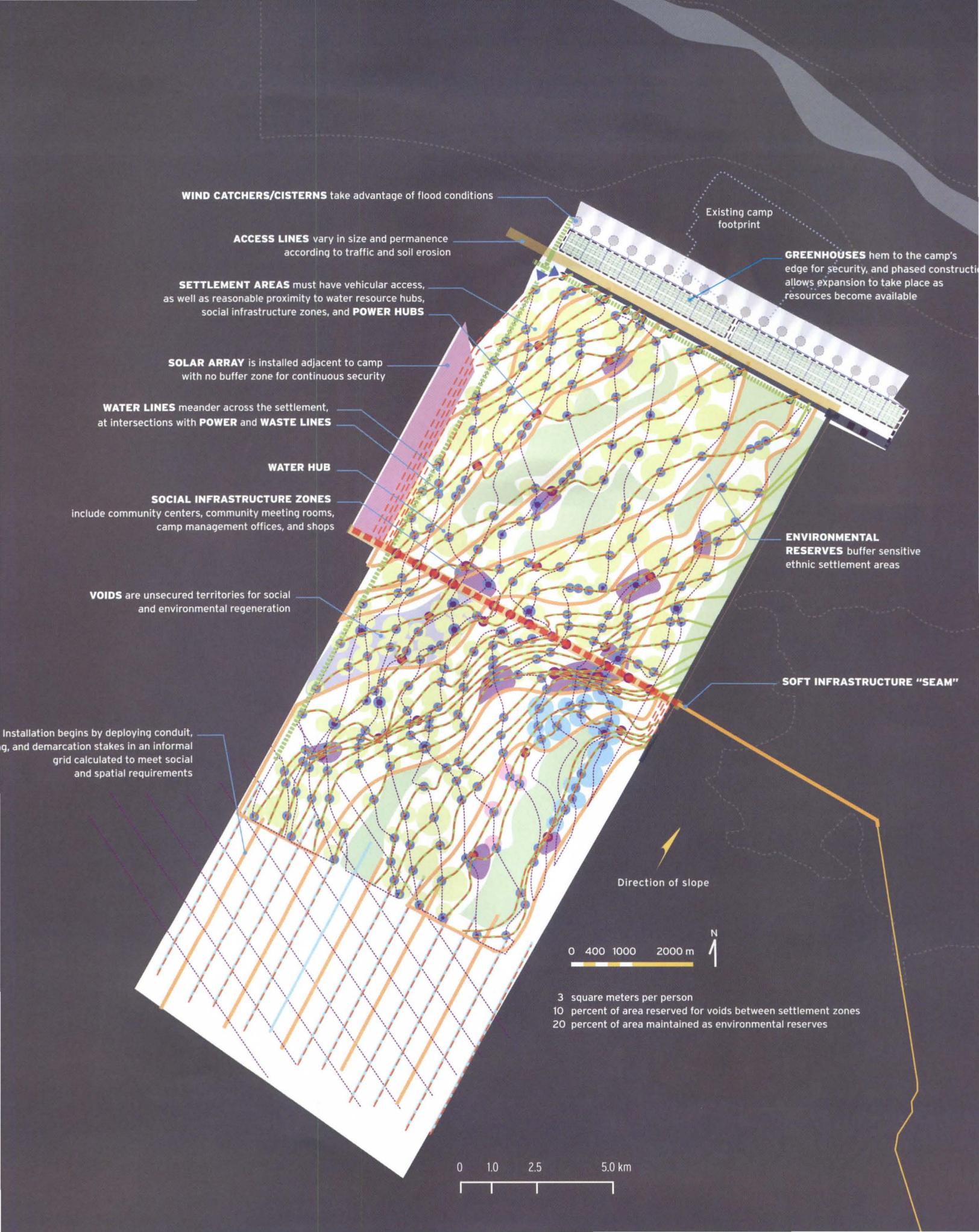
Although these gridded communities adhere to United Nations planning criteria, they underscore that organization’s shortsightedness and Kenya’s uncooperativeness—and, Gans and Hoffman Brandt suggest, magnify the failures of cities in general. Thanks to poor siting, the settlements were decimated by flood in 1996 and 2006; inhabitants have stripped forests within a 31-mile radius to retrieve fuel wood; feuding clans are kept within close proximity; and U.N. security forces a vast majority of people to go without employment, many of whom trade emergency food supplies to obtain other necessities. “These settlements are not temporary,” Gans says, “so why not rewrite the [U.N.’s] heterotopian version of a city so that it’s a good city?”

Doing so means giving refugees access to the means of production they once enjoyed as citizens. The different clans occupying Dadaab represent agriculture, trade, and merchant professions, Hoffman Brandt explains. “You need to provide different livelihoods for these lifestyles.” The population of flood-prone Ifo would be dispersed to 116 square miles of intensely managed rotational grazing land, to be worked by Somali pastoralists. Merchants and tradespeople would likely

choose to reside in Hagadera, which sits on a major trade route between Nairobi and Mogadishu. The remaining population, which includes Ugandan and Sudanese refugees, would gravitate toward the agricultural cooperative Dagahaley (see the detailed plan on the opposite page).

In Dagahaley, ethnically affiliated individuals would live in buffered clusters, with neighborhoods serviced by unprogrammed open space as well as community facilities. Within each, artisan studios and gardens would be nourished by rain-water cisterns and renewable power delivered by Hoffman Brandt’s concept of a “soft infrastructure”—above-ground conduits that expand or contract according to population stresses. “By addressing environmental conditions, you can address social conditions,” she says of the Dagahaley scheme. And Gans notes, “These refugee camps can be testing grounds of new environmental practices for all cities,” adding, “The architecture of the camp is less important than the planning of the camp.”





**WIND CATCHERS/CISTERNS** take advantage of flood conditions

**ACCESS LINES** vary in size and permanence according to traffic and soil erosion

**SETTLEMENT AREAS** must have vehicular access, as well as reasonable proximity to water resource hubs, social infrastructure zones, and **POWER HUBS**

**SOLAR ARRAY** is installed adjacent to camp with no buffer zone for continuous security

**WATER LINES** meander across the settlement, at intersections with **POWER** and **WASTE LINES**

**WATER HUB**

**SOCIAL INFRASTRUCTURE ZONES** include community centers, community meeting rooms, camp management offices, and shops

**VOIDS** are unsecured territories for social and environmental regeneration

Existing camp footprint

**GREENHOUSES** hem to the camp's edge for security, and phased construction allows expansion to take place as resources become available

**ENVIRONMENTAL RESERVES** buffer sensitive ethnic settlement areas

**SOFT INFRASTRUCTURE "SEAM"**

Installation begins by deploying conduit, grid, and demarcation stakes in an informal grid calculated to meet social and spatial requirements

Direction of slope

0 400 1000 2000 m



3 square meters per person  
 10 percent of area reserved for voids between settlement zones  
 20 percent of area maintained as environmental reserves

0 1.0 2.5 5.0 km

# BILOXI CLUES



PHOTOGRAPHY BY ALAN KARCHMER

Edward Parker poses in front of his wheelchair-accessible home, which was largely completed in a 10-day "blitz build."

**A**lmost three years after Hurricane Katrina pushed a 30-foot-high surge of water through East Biloxi, Mississippi, tall weeds grow along streets once lined with houses. Biloxi's casinos have been reconstructed, larger than their former selves. Many residents have returned to neighborhoods that missed the worst of the flooding. But those weeds rise in the easternmost part of the city, on a low-lying peninsula where almost half the houses were destroyed. It was a neighborhood of modest cottages and bungalows, with long-time residents who lived in the same houses for decades shopping and attending church alongside newer residents, primarily Vietnamese, who had revitalized the city's fishing fleet. Many lost everything.

Rebuilding after the disaster has been slow here, but no community has handled the recovery of worst-hit neighborhoods better. Its success has been due to a unique partnership between the Gulf Coast Community Design Studio (GCCDS) and the East Biloxi Coordination Center.

Since London's Great Fire in 1666 architects have seen disasters as opportunities to cast off the mistakes of the past and build bigger and better. The GCCDS, which has taken on most of the architectural-design duties of the partnership, views its mission as considerably more modest. "We work like a design practice," says David Perkes, who heads the studio. Yet he rejects the big-picture role designers often choose. "You can't have any impact without partnering with people already there." The key question, Perkes underlines, is not what needs to be designed, but "How can we help?"

Perkes is an associate professor of architecture at Mississippi State University's College of Architecture, Art + Design, based in Starkville. He had been helping low-income communities for seven years already, running the Jackson Community Design Studio. But as the enormous scope of Katrina's devastation became clear, Perkes and his dean at Mississippi State decided to move the studio to the coast within weeks of Katrina's landfall.

As the Biloxi move was being planned, local city councilman Bill Stallworth and Sherry-Lea Bloodworth—whom Architecture for Humanity (AFH) hired as its Gulf Coast coordinator—set up the East Biloxi Coordination Center in a flooded African Methodist Episcopal church to synchronize the work of dozens of relief organizations. "I met Bill Stallworth early on," Perkes explains, "and he saw the benefit of having the architecture school involved. For us, it proved a

really important decision." The center not only coordinated the work of dozens of volunteer organizations, but it also surveyed the conditions of homes and helped local residents with cleanup. Since then, it has assigned case managers to help with paperwork for insurance and government grants, and assisted people in scoping out needed repair work and working with contractors. Nowhere else in the post-Katrina landscape do you encounter any government or nonprofit agency offering such systematic and comprehensive aid of the kind residents—especially those of limited means and education—have needed most.

At the start, the work ranged from "GIS mapping to crawling under a house," Perkes says. The tasks were unglamorous but key: "If you help a community group make, say, a map, they see that architects have design skills. It introduces to people the possibility of improving their own environment." As they faced utter devastation, many didn't know they could do better than buy plans from hardware stores or use drawings that church groups had downloaded from the Internet. "It opened opportunities to do things people hadn't thought about before," Perkes says.

Only when homeowners' needs are understood and financing is in place (cobbled together from savings, insurance, and grant programs from state, federal, and private sources) do center case managers refer them to the GCCDS for architectural services. Perkes says he typically has about \$70,000 to build a house from the ground up, which means that the house must be small and exceedingly simple to erect, since volunteer labor is essential to stretch such limited funds.

Most of the new home designs subtly upgrade the hip-roofed cottages and small bungalows commonly found in the area. An attractive wheelchair ramp wraps some houses such as Edward Parker's (opposite), since as many as a third of the resi-

## The Gulf Coast Community Design Studio provides a model for rebuilding after Katrina

dents, many retired, need mobility aid. In other houses, a few carpentry flourishes dress up a screened porch. Studio designers often push ceilings to the underside of rafters and add clerestory windows to aid ventilation and brighten the interiors.

"We're not looking to make a sweetened vernacular," Perkes explains. "If anything, we're looking for something energetic or a bit more robust." A striking butterfly roof allows the

*James S. Russell, formerly an editor at RECORD, is the American architecture critic for Bloomberg News.*



Louise Odom's house (this page) is shared with her daughter and grand-nephew. Le and Nghia Tran in front of their butterfly-roof home (opposite).

house for Le and Nghia Tran (opposite) to fit gracefully under mature trees and directs runoff to a cistern to water the garden. Working with students from Penn State University, as well as University of Texas, Austin professor Serge Palleroni and Bryan Bell of the Charlotte-based social-outreach organization Design Corps, the studio designed a fretwork of wooden braces to enliven the underside of a house for Patricia Broussard (next spread), which is raised 13 feet. "I love my garden," Broussard says. Even though it's now a flight of stairs away? "You learn to adapt."

One of the toughest problems would be easily overlooked by designers less attuned to the way people live. "We worry that neighborhoods with elevated houses may not be so socially active as when they had porches on grade," Perkes says. Porches or generous landings at intermediate levels ease the transition. The designers try to program the ground level and encourage the gardening culture that has long flourished locally. "That's important here, with the lush plantings and long growing season," Perkes adds.

In contrast to the studio's low-key pragmatism, in the months immediately after Katrina's landfall AFH gave the GCCDS a \$25,000 grant and provided vital support in establishing operations in Stallworth's Center, and then, in the summer of 2006, it launched a high-profile model-home program. The

prototypes had an ambitious agenda: to be wind- and flood-resistant and to lower environmental impact, and yet be attuned to the owner's specific needs at an affordable cost. Studio Gang, Huff & Gooden, Marlon Blackwell, CP+D Design Workshop, and MC2 architects participated.

These prototypes were indeed innovative, but most cost too much to be built as designed. AFH, too, had to rely in

## "WE'RE NOT LOOKING TO MAKE A SWEETENED VERNACULAR. WE'RE LOOKING FOR SOMETHING ENERGETIC."

part on volunteer labor, including the GCCDS's: The studio created construction drawings for CP+D and designed a house for Louise Odom, her daughter, and grand-nephew, which replaces a more complex scheme by Studio Gang but retains the gestures of the original. Regardless of AFH's helpmate, realizing the model homes required design simplification. "It's hard to reconcile making a housing model for the future with the needs of a family still living in a FEMA trailer," reflected AFH program manager Michael Grote on a visit last year.

AFH's Biloxi houses are not alone in having to pare down their aspirations. A similarly ambitious prototype in New









The interior of Patricia Broussard's home is clad entirely in southern yellow pine (opposite). The East Biloxi Coordination, Relief, and Redevelopment Agency is a hub of activity (this page).

Orleans built by Global Green was completed largely as designed, but only because fund-raising covered much higher than anticipated costs. Make It Right, also in New Orleans, intends to build 150 model homes designed by prominent architects. It is likely to face similar barriers since government support—scandalously absent—or large-scale charitable funding would be needed to realize innovations yet to be embraced by market builders.

AFH's seven-house prototype program is nearly finished, and it is winding down work in Biloxi to concentrate on its core mission of immediate disaster relief. "The AFH houses had somewhat larger budgets, and we have been able to learn from what they could devote more resources to," says Perkes, citing beefed-up foundation designs. The East Biloxi Coordination Center now calls itself the East Biloxi Coordination, Relief, and Redevelopment Agency as it changes its focus to ongoing social services as well as rebuilding.

Grote is now working for the GCCDS, which relocated to larger quarters on the grounds of the East Biloxi Church in spring 2007. The redevelopment agency's case managers share the studio space as well, tracking their clients on large blackboards. About a dozen people—a mix of full-time Mississippi State staff, interns, and volunteers, mainly from universities all over the country—share drawing boards and

computers. Now the studio, having helped rehabilitate hundreds of homes and built about 30 new houses with the Biloxi Housing Authority, the local Back Bay Mission, Mercy Housing, and Habitat for Humanity, is growing. It's opening branches with local partners in nearby Bay St. Louis and Moss Point, supported by expanded state funding.

With more than 2,000 empty lots in East Biloxi, the work of the studio so far, Perkes admits, "is a small chip out of a huge obligation." He adds, "We're trying to get our head around the fact that this could be a fragmented community for quite a

## "THIS COULD BE A FRAGMENTED COMMUNITY FOR QUITE A WHILE."

while." In the meantime, the studio is planning on a larger scale, mapping bayous and other vulnerable areas to assist the city of Biloxi in encouraging owners of risky sites to trade their property for plots on higher ground.

Perkes urges architects to "break down the professional structure" that tends to keep citizens at arm's length. "It often gets in the way of being useful to the community." The rewards can be different and perhaps more gratifying. Edward Parker says that the many people who designed and built his house "are in my prayers every night. Bless them and their families." ■





PHOTOGRAPHY (CLOCKWISE FROM TOP LEFT): © RICKY RIDECOS; COURTESY KIERANTIMBERLAKE/MAKE IT RIGHT; MARLON BLACKWELL; © IVAN CHABRA; WILL CROCKER (BOTTOM TWO); COURTESY SHOP ARCHITECTS; HUFF + GOODEN

**1A The Pink Project** (2007), New Orleans  
*Graff, Los Angeles*

The brainchild of Brad Pitt, the Pink Project was a large-scale, outdoor installation of internally illuminated faux-houses constructed of pink Earthtex fabric on aluminum frames. The spectacle of illuminated pink structures drew publicity for Pitt's Make It Right rebuilding project in the Ninth Ward.

**1B Make It Right House** (2008), New Orleans  
*KieranTimberlake, Philadelphia*

Pitt established the Make It Right Foundation in 2006 with the belief that rebuilding New Orleans was an opportunity to build a greener city. In 2007, the foundation commissioned 13 original designs from as many firms, and construction is under way or completed on several of the projects, such as the energy-efficient KieranTimberlake design shown here.

**2A Robinson Residence** (2008), Biloxi, Mississippi  
*Huff + Gooden, Charleston, South Carolina*

Huff + Gooden designed this residence for the Robinson family of Biloxi in conjunction with Architecture for Humanity's Biloxi Model Home Project. The architects consulted with the Robinsons before finalizing the open-plan design, which will replace their three-generation home. The construction budget for this, as with each AHF model, is \$110,000.

**2B Porchdog** (2008), Biloxi, Mississippi  
*Marlon Blackwell, Fayetteville, Arkansas*

Each of the designs for the Biloxi Model Home Project is elevated 12 feet off the ground to endure a Category 4 hurricane. This project's namesake feature is a one-and-a-half-story porch extending from the interior of the home. It can be shuttered against excessive sunlight or inclement weather.

**3A 39571 Project** (2006), DeLisle, Mississippi  
*SHoP Architects, New York City*

Shortly after Katrina hit DeLisle, local businesswoman Martha Murphy contacted SHoP Architects to design a community center for her neighborhood. The 39571 Project, named for DeLisle's zip code, features a café, bookstore, computer center, and art gallery screened by an undulating canopy.

**3B Laundromat and Information Center** (2006), DeLisle, Mississippi  
*Parsons Design Workshop, New York City*

Members of the Parsons Design Workshop erected the Laundromat and Information Center adjacent to 39571 Project, thanks to the suggestion of a recent graduate. Students took cues from SHoP's massing and material choices in designing the much-needed facility.

**4A URBANBuild Prototype 1** (2006), New Orleans  
*Tulane University School of Architecture and Professor Byron Mouton, New Orleans*

URBANBuild is part of Tulane's design-build program: Students under Professor Byron Mouton designed four prototype houses for different New Orleans neighborhoods, and constructed them with nonprofit community agencies through 2008. Each home, such as this Treme district building, was designed to suit context.

**4B URBANBuild Prototype 3** (2008), New Orleans  
*Tulane University School of Architecture, New Orleans*

The third URBANBuild prototype is a three-bedroom, 1,200-square-foot home constructed with SIPs (structural insulated panels). Both the project and the school have played starring roles in *Architecture School*, the reality TV show filmed at Tulane that appears on the Sundance Channel through October.

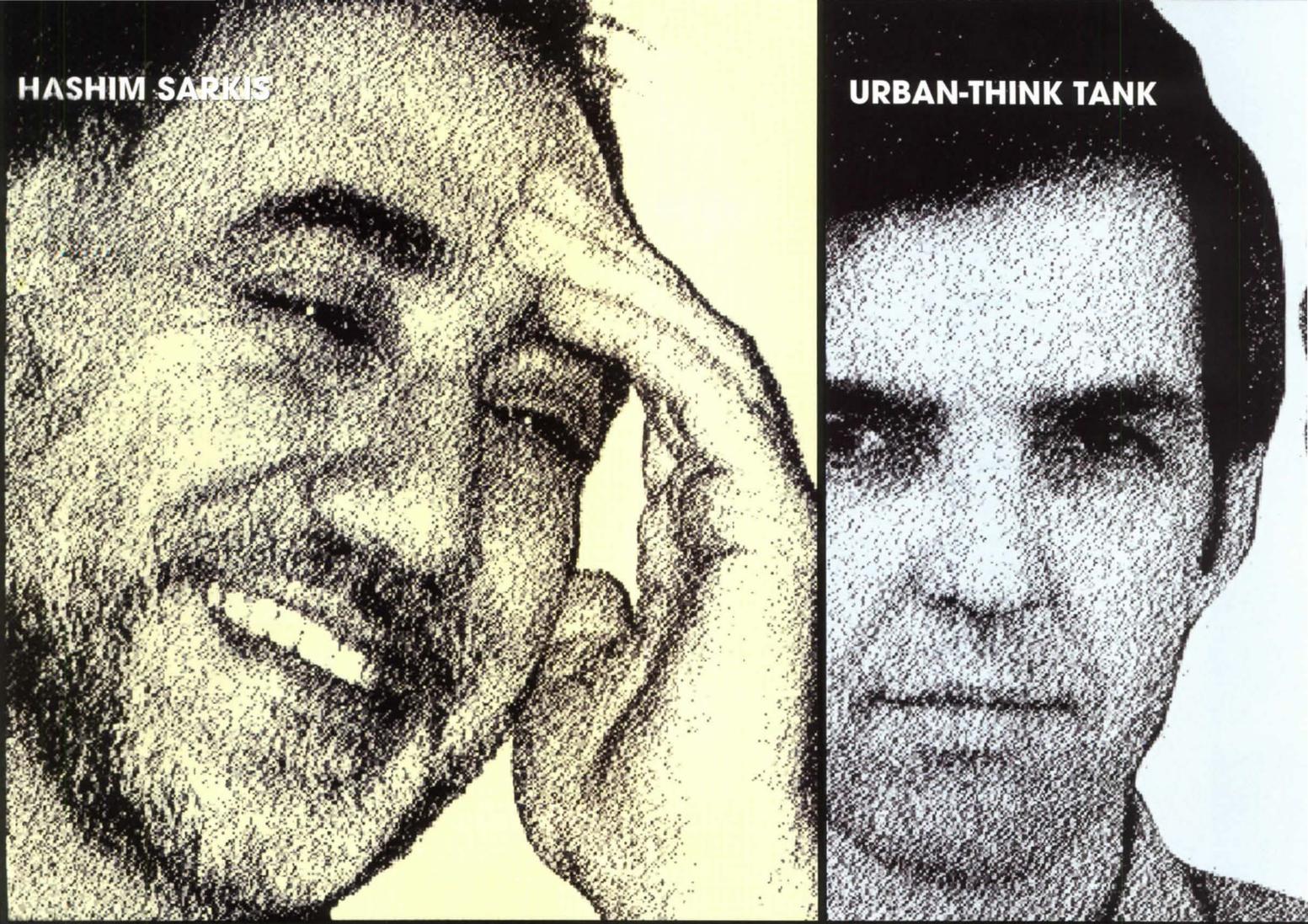
BY SEBASTIAN HOWARD

**Design-build studios, NGOs, community outreach organizations, and private practices have risen to the challenge of rebuilding the Gulf Coast since Hurricane Katrina**

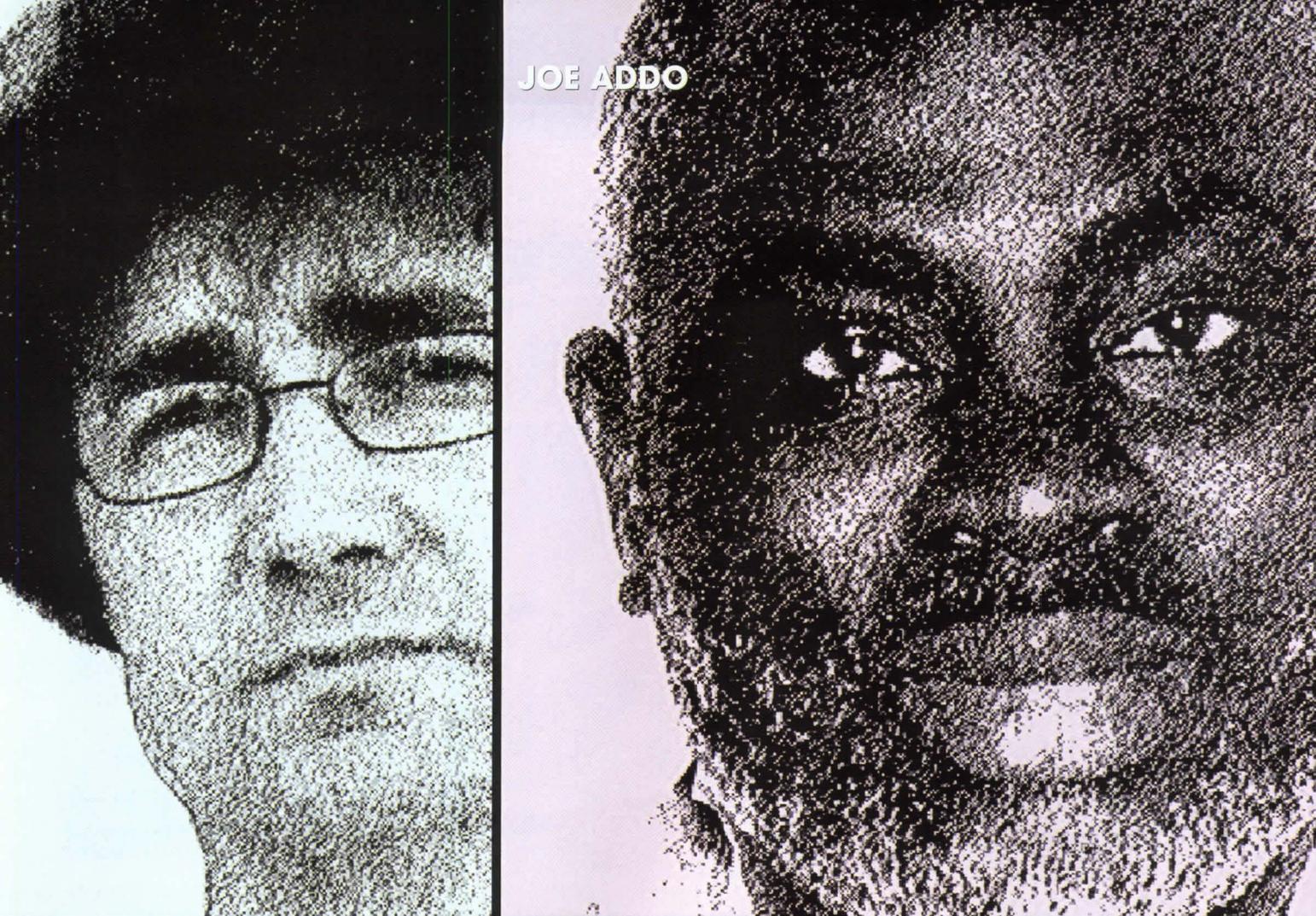
# THE COASTGUARD

HASHIM SARKIS

URBAN-THINK TANK



YOU CAN GO  
HOME  
AGAIN

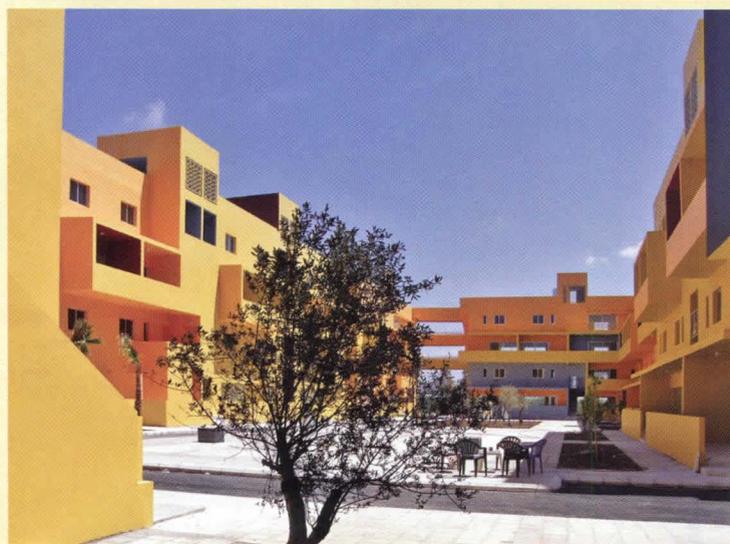
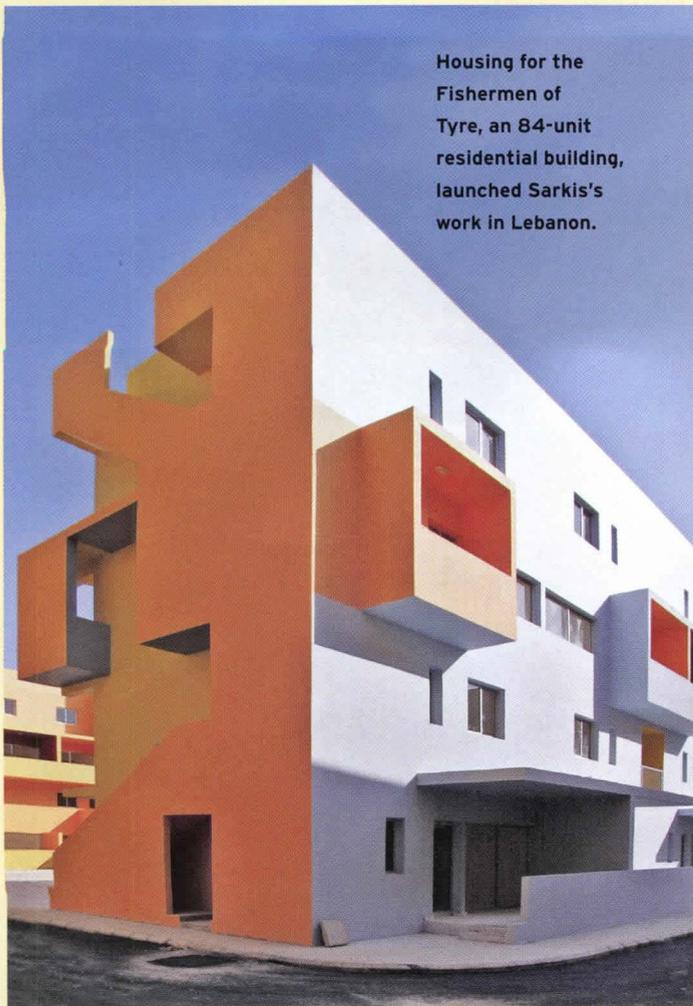


## JOE ADDO

**W**hen Alfredo Brillembourg and Hubert Klumpner told their fellow Columbia graduates they would hang the shingle of their studio, Urban-Think Tank, in Venezuela, they were greeted with disbelief. South America, riven by political turmoil, as well as immense poverty represented by the barrios, was no place to make a name in high design. Yet the architects recognized the value of the barrios—there could be something to learn from millions living off the grid, and social housing schemes to replace barrios had largely failed. They also aspired to create buildings that would capitalize on that knowledge, benefit deserving people, and lend dignity to overlooked landscapes.

Brillembourg and Klumpner are not alone. Harvard Graduate School of Design professor Hashim Sarkis splits his time between Cambridge, Massachusetts, and his native Lebanon, and architect Joe Addo from Ghana has reestablished his Los Angeles studio in the Ghanaian cities of Accra and Tamale. On our Web site, [archrecord.com](http://archrecord.com), you can read about other variations on this theme of homecoming. German architect Anna Heringer, for example, recently returned to Bangladesh, where she had designed the Aga Khan Award–winning METI school, to complete housing and another school that meld local resources and a modern architectural idiom. In South Africa, local firm MMA Architects has designed an array of buildings that address both the needs and memories of its countrymen, and it has exported their stories to Berlin with a design for the South African Embassy there. Together, these profiles introduce architectural talents who have come into their own by meeting challenges on home turf. The result is inspiring design possessing the foresight of an outsider, the sympathy of a compatriot, and none of the formal pretensions that so often characterize contemporary architecture in the global marketplace. *David Sokol*

Housing for the Fishermen of Tyre, an 84-unit residential building, launched Sarkis's work in Lebanon.



By Jessica Dheere

Like the village wise man, Hashim Sarkis has a knack for making the counterintuitive intuitive, which accounts for some of his success meeting the needs of his buildings' users—among them farmers, fishermen, and child workers—who often depend less on formal education than on their keen observation, close relationship to the environment, and common sense in their daily lives.

“Thinking about space helps us to imagine certain political, social, and economic circumstances and situations,” says the Lebanese-born Sarkis, who is Aga Khan Professor of Landscape Architecture and Urbanism in Muslim Societies at the Harvard Graduate School of Design and principal of his own firm in Cambridge, Massachusetts. Whether creating a new Gulf Arab city or a subsidized housing project on the outskirts of a rural town, for Sarkis the process of learning about a community and of designing for it are intertwined. “It’s not

possible for us to imagine what their community is without building a building,” he says.

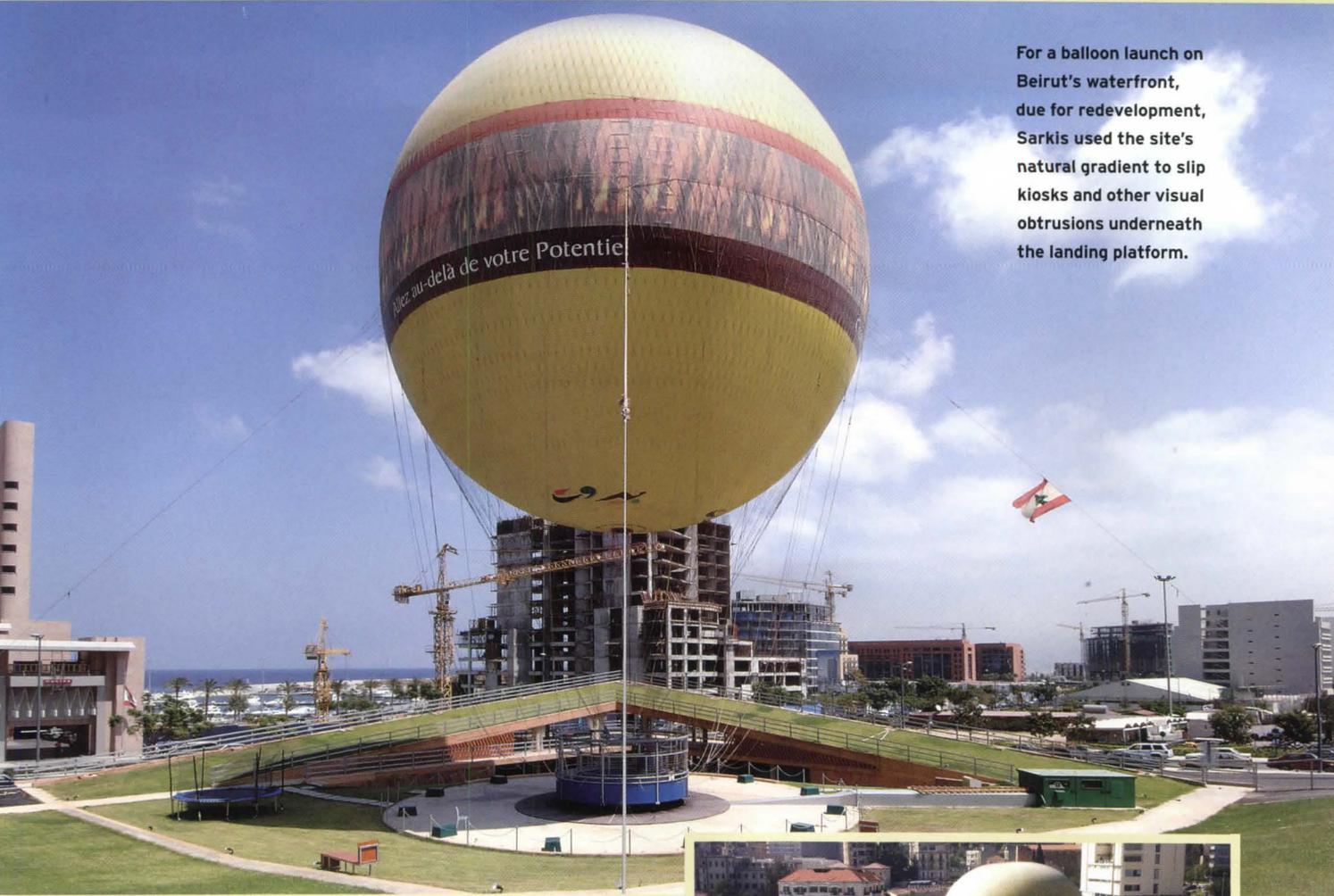
The fishermen’s housing project in the ancient port city of Tyre in south Lebanon was the first of several commissions from Lebanese civil society organizations that he has tackled. Others include a cooperative olive-oil press, an agricultural center, a school for working children, and a public library branch.

Because of Tyre’s rich archaeological history, the city was designated a World Heritage site by UNESCO in the late 1990s. This meant that local fishermen were not permitted to add onto their homes, which were located within the boundaries of the historic site, as their families expanded.

Sarkis was in the country at the time working on the Beirut souks project with Spanish architect Rafael Moneo, when he was approached by a friend, the head of the nongovernmental organization (NGO) funding the fishermen’s project, to propose

**HASHIM SARKIS** designs for Lebanese communities by collaborating with them

PHOTOGRAPHY: © BILAL KASHMAR (THIS PAGE)



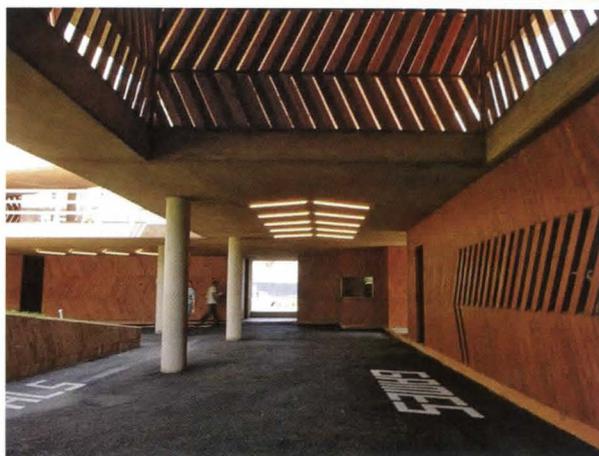
For a balloon launch on Beirut's waterfront, due for redevelopment, Sarkis used the site's natural gradient to slip kiosks and other visual obtrusions underneath the landing platform.

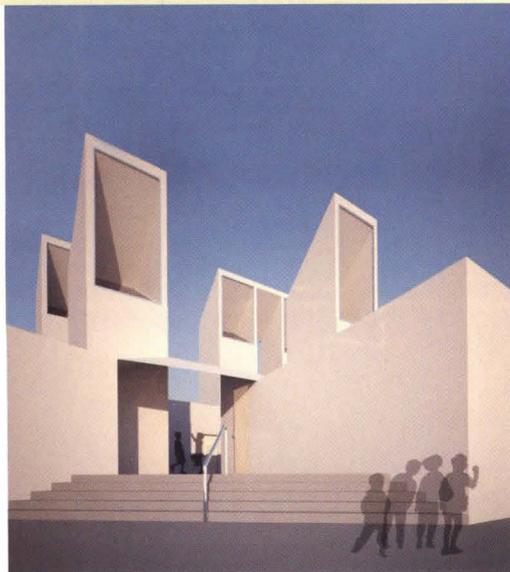
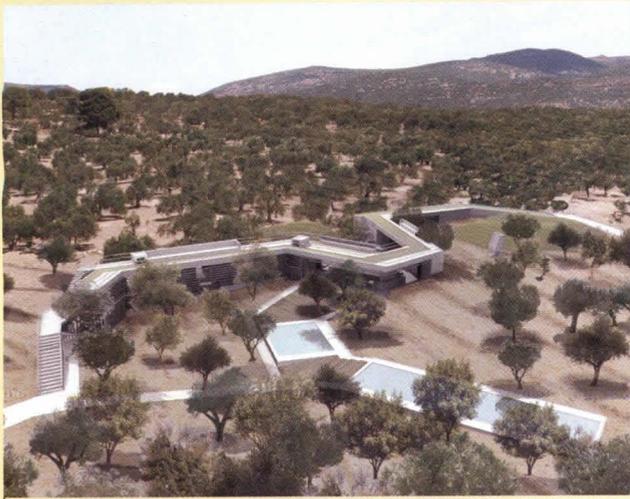
a design for new housing or the fishermen's extended families in a radish field donated by the Greek Orthodox Church outside the heritage site. His challenge was obvious: How do you create modern apartments that feel like home for a community that has lived for generations in traditional houses by the sea?

Working against the notion dating from the 1960s that social architecture lacks "continuity with formal explorations," Sarkis was convinced that you can "empower people through design." He tailored each corner of the housing complex to respond differently to the adjacent sites, a hodge-podge of uninspired, unregulated construction that rose during Lebanon's 15-year civil war. The interior courtyard—a common feature of many of Sarkis's projects—provides an oasis of greenery and cool breezes, and a gathering place for residents.

The 84 units were designed with various configurations, a feature Sarkis favored despite the initial objections of the future tenants, who feared that this would create unwanted competition. Over the course of several conversations with them, Sarkis reasoned that, because some apartments were duplexes, some had

*Jessica Dheere is a freelance journalist living in Beirut.*



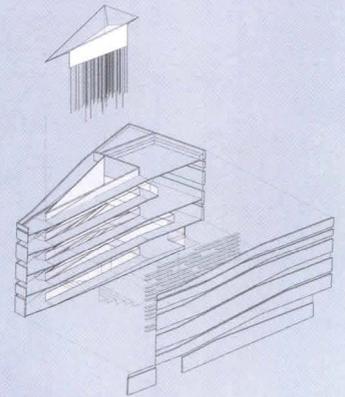


Sarkis's designs in the region include a landscape-hugging private residence on the Aegean coast (top two).

For children of a poor neighborhood in Tripoli, Sarkis has conceived a school jutting with wind catchers (above).



To accommodate a small site, a public library in Beirut's Hamra neighborhood will feature a book-stack-lined ramp (above and below).





In the village of Kfifane, Sarkis designed an olive-oil-press building whose external veil prevents direct light from hitting the press equipment. Inside, a viewing platform allows farmers to follow the oil-pressing process.



roof access, and others ground-level gardens, to be truly equal, they had to be different. The prospective tenants found this acceptable, seeing that each unit would have something special.

The housing commission led naturally to projects with other NGOs in Lebanon, who often partner to pool resources. And while Sarkis acknowledges that “there is a bit of altruism in all of us,” he admits that his conscience isn’t necessarily what motivates him to take these assignments. “What private clients would come up with these kinds of projects?” he asks, his enthusiasm evident. They provide “freedoms at certain levels that are not usual in architectural projects,” such as dealing with unique programs; having a say in site selection, phasing, and other aspects that are typically predetermined; and working with first-time clients to achieve “self-expression through the architecture.”

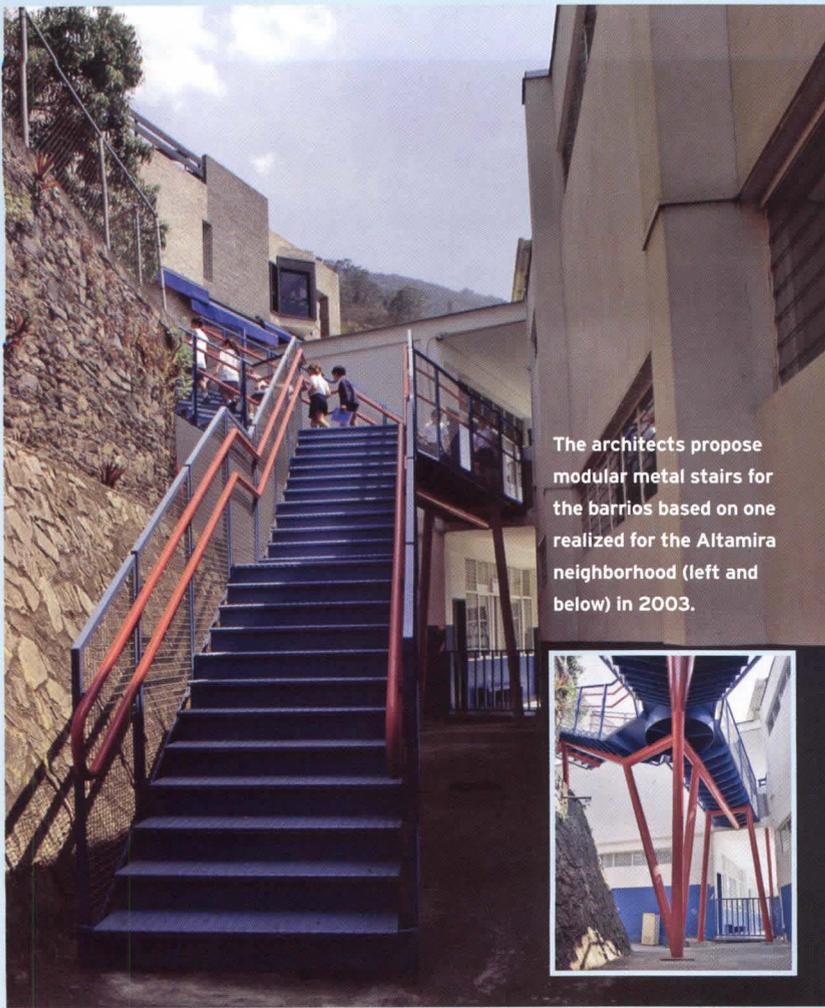
One of his latest commissions will help develop an area of the Lebanese capital that few see. A branch library devoted to travel and the Mediterranean Sea will be located in Hamra, Beirut’s most vibrant and diverse district, and will bring together books and readers in a city that would benefit from higher concentrations of both.

To comply with requirements for two means of

egress and handicap access on the 4,844-square-foot wedge of a site, Sarkis configured the book stacks along a ramp that wends back and forth. The peripheral incline and central atrium are illuminated by a skylight and a band of glass that wraps around the building—“scores the pigmented concrete facade,” as Sarkis says—getting more expansive in areas where light is wanted and narrowing where books are stored. A rooftop café will afford views across the city to the sea.

Sarkis pores over these projects with love, but confesses that if they were all he did, there would be no practice: “I play a bit of Robin Hood with my other clients.” In the meantime, like many in Lebanon these days, he makes ends meet by “looking for the necessary” and “trying to achieve the most with what is available.”

The facade of the fishermen’s residence was in fact supposed to have a different finish—either stone and stucco or stencil on stucco—instead of the bold blue, red, yellow, and orange pigments it now displays. The colorful exterior, unusual for Beirut, was inspired by the contractor, who told Sarkis at the end of the project that with the money left in the budget for the facade, “We could buy a bucket of paint.” ■



The architects propose modular metal stairs for the barrios based on one realized for the Altamira neighborhood (left and below) in 2003.



### By Suzanne Stephens

During the past 10 years, when a burgeoning economy meant that even young architecture offices could attract commissions with hefty budgets, Urban-Think Tank (U-TT) has operated somewhat differently in the barrios of Caracas, Venezuela. “We work in an environment with problems of poverty, violence, and migrating populations,” says principal Alfredo Brillembourg. When Brillembourg and Hubert Klumpner started their Caracas-based research and design firm in 1998, the two architects went into the barrios, where 60 percent of metropolitan Caracas’s 4.7 million inhabitants live. “We want to address the bottom of the pyramid, not the top,” Brillembourg says. These slums, lacking a city infrastructure of electricity, plumbing, or garbage removal, and euphemistically called “nonformal” or “informal” cities in planning circles, have been getting intense scrutiny lately. In university and college design studios, plus conferences, exhibitions, and publications

(such as the recent *Harvard Design Magazine’s* Spring/Summer 2008 issue), barrios, favelas, and slums loom large as the next architecture and planning frontier.

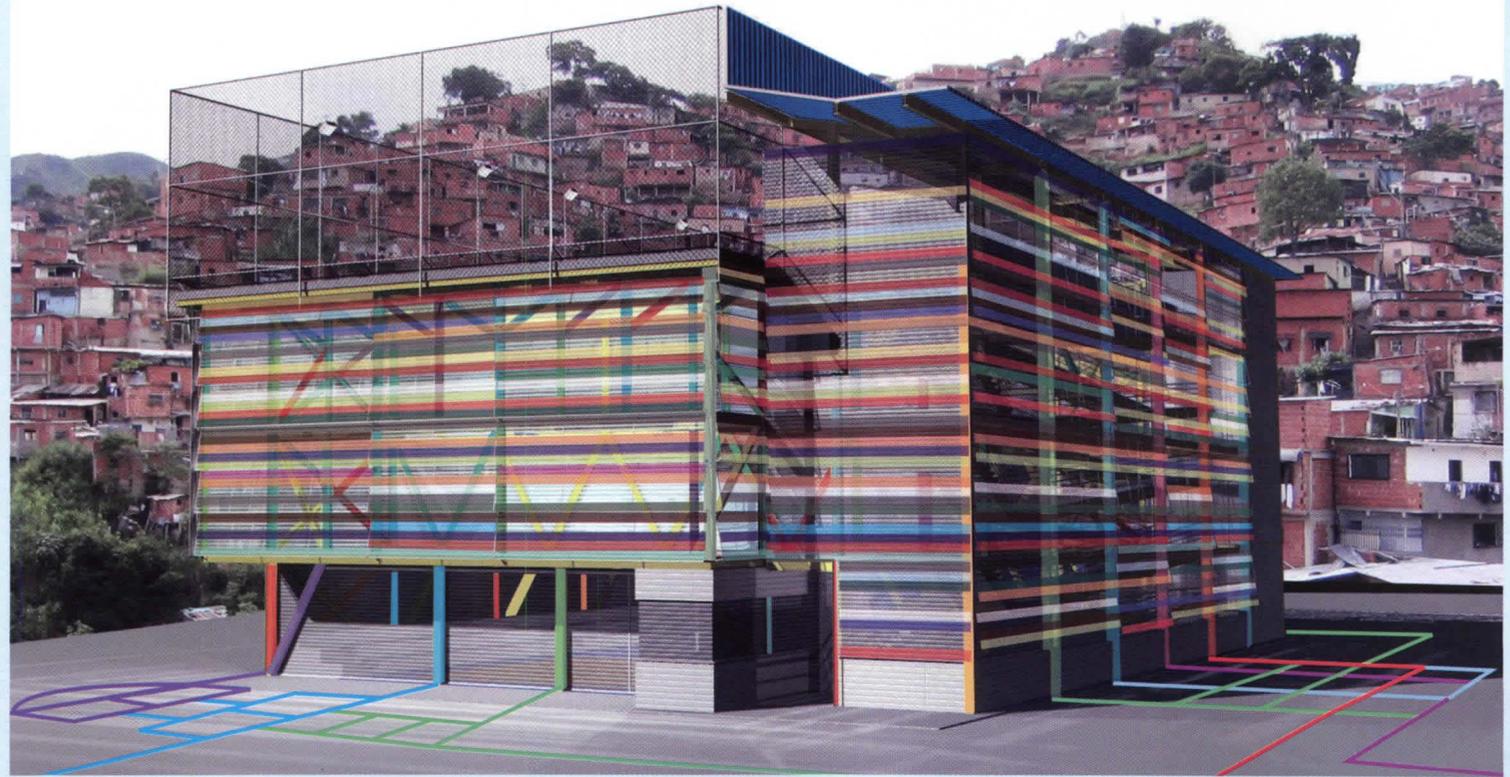
Brillembourg, who was born in New York but has family ties to Caracas, and Klumpner, who grew up in Austria, both studied architecture at Columbia University’s Graduate School of Architecture, Planning and Preservation in New York City. After having worked in separate firms in Caracas for several years, they joined forces first as a nonprofit research group, later expanding into a design practice. “We had already been moonlighting together,” Brillembourg says. “We began by holding forums and working with community groups.”

In order to improve the living conditions of the barrios through architecture, U-TT finds small-scale intervention and insertion is best in responding to community needs. “Since people may not have the money for their design or realization,”

**URBAN-THINK TANK** stacks multiple structures to meet the myriad needs of the barrio

Currently Urban-Think Tank is working on two vertical gyms for the barrios. One, proposed for Los Teques (opposite,

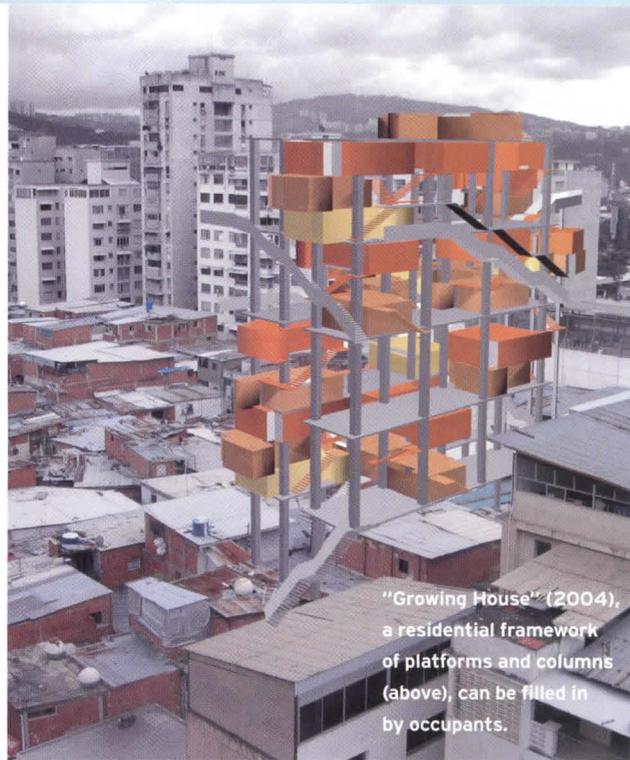
right), includes a swimming pool. Another gym, in construction in Baruta, features a colorful polycarbonate skin (below).



says Klumpner, “we design for free and then present projects to institutions and politicians to get the needed backing for their realization.” Funding has come through foundations, as well, such as the German Federal Cultural Foundation (Kulturstiftung des Bundes), which has helped U-TT with conferences, publications, and prototypical designs. Brillembourg and Klumpner not only consult for government agencies that affect infrastructure, but as Brillembourg puts it, “We also want to get corporate players to join in ventures with us.”

One project in the barrios the firm finds is catching on is the vertical gym. Brillembourg says observing New York City’s solution to tight spaces where gyms and recreational facilities often occupy the roofs of buildings led him and Klumpner to work on a prototype to fit into playing fields of the barrios. Here, a narrow four- or five-level structure could provide basketball courts, dance studios, space for weightlifting, and a running track for the barrio youths.

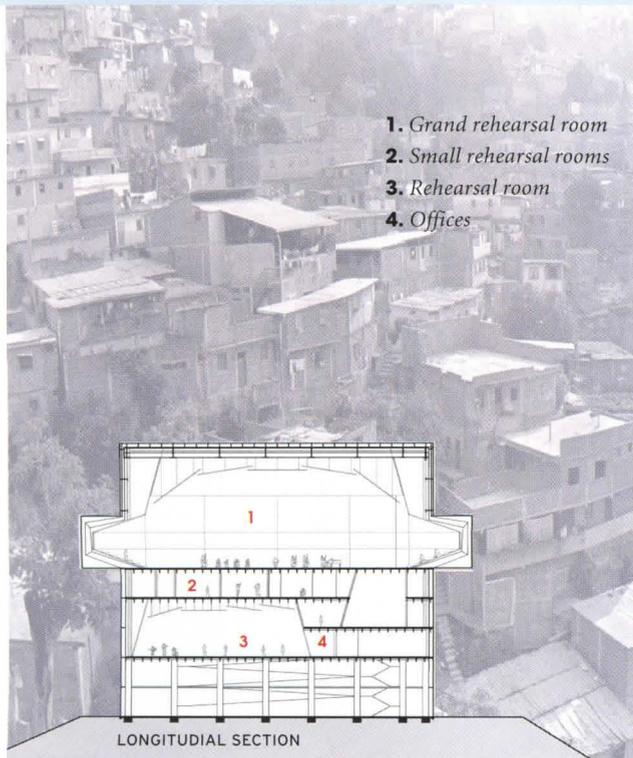
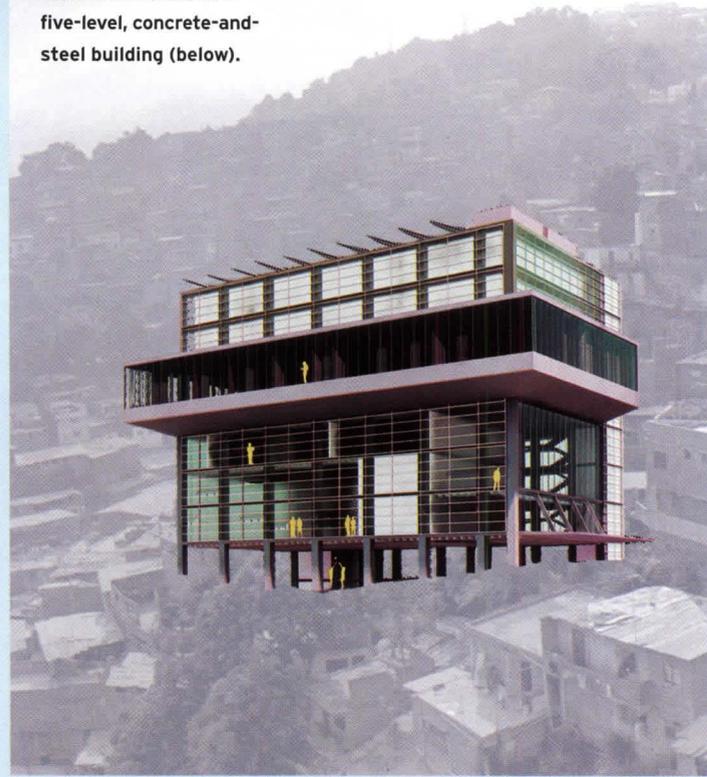
Klumpner and Brillembourg currently have a 47,899-square-foot vertical gym in construction in the Baruta section of the city. The Paris-based graphic design firm Integral Ruedi Bauer et Associés acted as a consultant for the splashy facade where



“Growing House” (2004), a residential framework of platforms and columns (above), can be filled in by occupants.

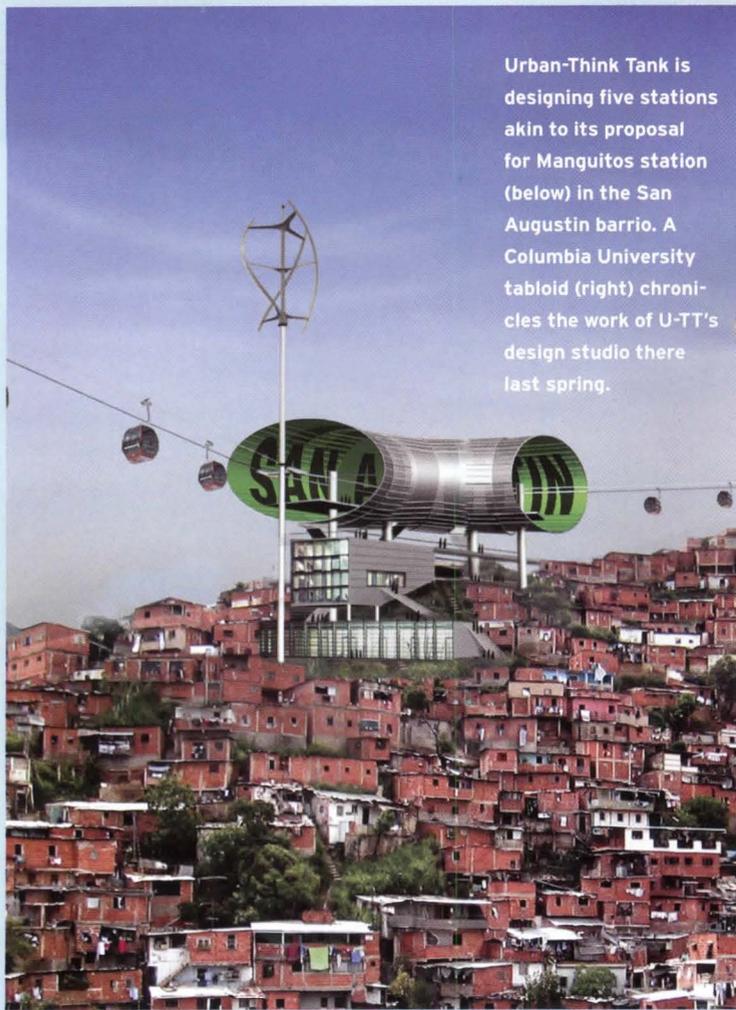


A proposal for a music center in the barrios for young students evolved from a structure with a folded-screen wall (left) to a five-level, concrete-and-steel building (below).

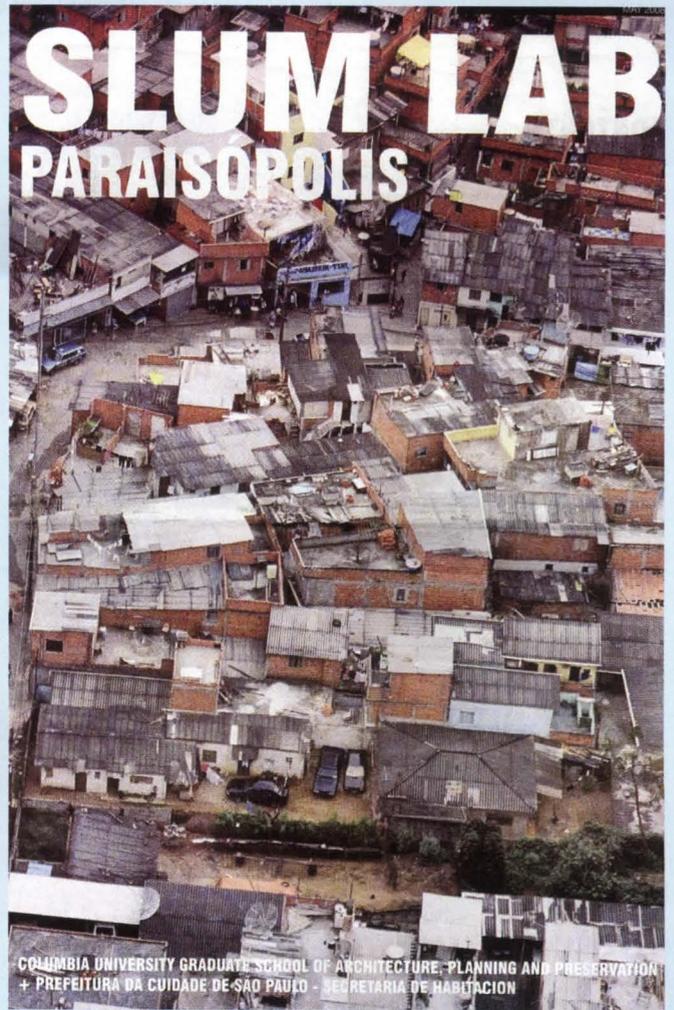


colored bands of polycarbonate clad a prefab steel structure. Another gym is being planned with Metro Los Teques and Odebrecht, a construction company, as its clients. Here, a 47,899-square-foot, prefab steel vertical gym on a 11,840-square-foot site will include a swimming pool along with other sports facilities.

Now Brillembourg and Klumpner want to bring music-education facilities to the barrios. In late August, during the Salzburg Festival in Austria, U-TT exhibited its design for a prototypical music building, the Centro Comunitario de Acción Social por la Música, which it is proposing for the Venezuelan barrios. Designed for the Fundación del Estado para el Sistema Nacional de Orquestas Juveniles e Infantiles de Venezuela (FESNOJIV), founded by José Antonio Abreu in 1975, the music building is lifted on columns so that it could hover over a playing field in a barrio. "We have to design these buildings to fit into leftover spaces," says Klumpner. The architects have identified 100 sites in Caracas where the five-level building, which is estimated to cost about \$14 million, could be inserted. The 48,438-square-foot-structure, with a poured-in-place concrete frame and concrete-block infill, is designed to accommodate 800 to 1,000 children a day. With Karl Heinz Muller of BBM Muller in



Urban-Think Tank is designing five stations akin to its proposal for Manguitos station (below) in the San Augustin barrio. A Columbia University tabloid (right) chronicles the work of U-TT's design studio there last spring.



Munich as the acoustical consultant, U-TT included a 200-seat performance hall, rehearsal space, and individual practice rooms. Since the buildings have to be constructed in places where there is no electricity or potable water, U-TT proposes installing solar panels on the roof, along with a rainwater-collection system.

U-TT well knows that infrastructure is a major part of the problem in the barrios. The firm designed five stations for the Metro Cable, a 1.3 mile loop developed to connect the San Augustin barrio to Caracas's metro system. Three stations are expected to be completed by the end of this year. A standard structure based on a 64.5-foot-by-131-foot module, and built of concrete with a steel roof deck, allows the stations to be tucked into crowded neighborhoods without displacement of the population. "We call this 'urban acupuncture,'" says Klumpner.

Similarly, the architects have designed a flexible, modular stair system of colored metal prefab stairs with bolted steel columns and sheet-metal landings that can also be built outdoors in the hillside barrios. Besides promoting normal access in these hilly areas, the stairs should provide informal gathering spots. "It can be reconfigured in different directions for flexibility," says Brillembourg. Another project, a vertical "Growing

House," is currently being constructed for Lecuna Avenue, which is not in the barrios of Caracas. Called Edificio Teatros, it is part of a large development being undertaken by Metro de Caracas. Nevertheless, U-TT plans to develop the concept for the barrios, where the expandable framework system would be filled in by the occupants.

The two architects also teach an advanced design studio at Columbia University, which is called SLUM (Sustainable Living Urban Model) LAB. Last spring they turned their attention to the slums of São Paulo, Brazil, and produced a tabloid documenting the work. This fall the studio is concentrating on three phases of improving the barrios—upgrading buildings; using alternative technologies for energy, water, waste, and so on; and researching green infrastructure. Not surprisingly, the two have often turned to student interns to work in the Caracas office, including ones from Columbia. "It's a nice umbilical cord," says Brillembourg. With part of the office working on researching prototypes and part oriented to specific clients, says Brillembourg, "we are now more balanced financially." The two architects well know that being socially responsible, or designing with a conscience, cannot be done without serious financial input. And a lot of energy. ■



Addo's Modernist family home comprises timber and adobe.



### By Joann Gonchar, AIA

**T**wenty years after leaving his native Ghana to attend the Architectural Association in London and then seek employment abroad, Joe Osae-Addo found himself contemplating a return to his homeland during a visit in 2000. The West African nation had just elected a new president, and Addo sensed a “democratic fervor” that had not existed before. “There was an atmosphere of optimism and euphoria, and I wanted to be part of it,” he says.

In Los Angeles he had started a practice in the early 1990s focusing on small civic projects and private houses, and gained local renown for founding the A+D Museum with fellow architect Stephen Kanner. From this base, he began paving the way for his return. He started actively seeking projects in Ghana, and by 2005 he established his firm, Constructs, in its capital city, Accra, and in Tamale, the capital of the country’s northern region.

Addo’s approach to design combines advanced techniques with traditional materials and methods. His own house is

decidedly Modern, but made of adobe and timber. For a conference center nearing completion in Tamale, Addo created two concrete-framed structures raised on pilotis that have adobe infill and operable glass louvers. The buildings are wrapped in bamboo slats, providing shade and evoking locally made baskets.

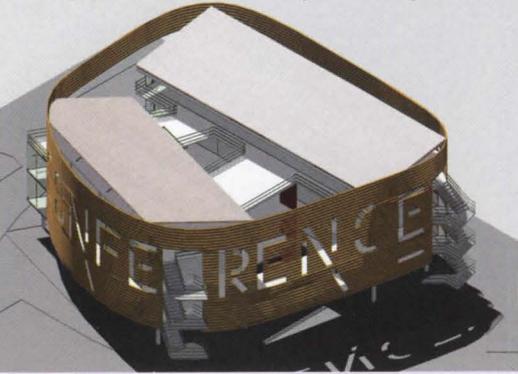
His firm is working on housing projects at both ends of the socioeconomic spectrum. It has completed the master plan for a \$150 million mixed-used development in Accra, for which it is now designing two residential towers for affluent Ghanaians.

Conversely, Constructs is designing a new town for Salman Village, which sits on top of a deposit of gold reserves. Addo has proposed rammed-earth courtyard houses arranged in clusters around park spaces. The relocated town will have schools, a clinic, and civic buildings, and sustainable strategies will be deployed throughout the site. He hopes to parlay this experience into other affordable housing projects for salaried Ghanaians of modest means, such as civil servants. His firm is now negotiating

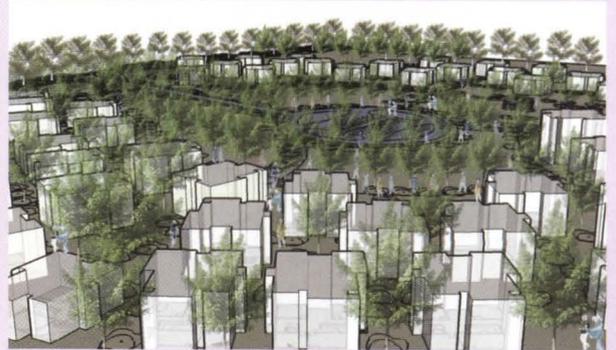
**JOE ADDO** looks beyond architecture for his native Ghana

IMAGES: COURTESY CONSTRUCTS LLC

A conference center in Tamale comprises two buildings separated by a triangular courtyard. It is wrapped in bamboo (top left and right).



To relocate Salman Village, Addo has proposed community-oriented planning and green technologies.



with the teachers' union and the judiciary service.

But designing buildings is only one facet of Addo's oeuvre. The architect's desire to improve the quality of life in his homeland has generated work at all scales, and in multiple design disciplines. For the government of Tamale, Constructs has developed a "branding and beautification" scheme that includes street signage and motorized vendor carts; a microfinancing initiative will allow the vendors, who are primarily women, to buy their carts and thereby provide them with financial independence.

Addo also has ventured into the development and manufacture of building products that rely on locally available raw materials. He is setting up a processing plant that will produce wall studs and laminated beams from bamboo, and he is part of a group of investors, which includes his longtime collaborator Kanner, that own the rights to manufacture and distribute a variant of pozzolana ash. The material, dubbed Pozzoghana, is made by firing clay with palm kernel shells, a waste product of palm oil production. In a typical concrete mix, Pozzoghana can be used to replace as much as a third of portland cement—a material that is imported into Ghana and requires tremendous amounts of energy to produce and transport.

Addo designed carts for Tamale street vendors.



For Addo, these efforts are business ventures. Yet he also hopes that they provide employment for Ghanaians while making construction more affordable. "We will never solve the housing problems of Africa if architects do not shift their concerns to the development of locally manufactured systems and materials that inform design and improve our way of life," he says.

Addo sees no conflict between these entrepreneurial efforts and his architectural practice. "Working in Africa demands looking at needs on the ground and responding to them," he says. Describing his current role as a "design socioeconomist," he says, "I've had to come back [to Ghana] and reinvent myself." ■

By David Sokol

**S**ince the inauguration of the Yale Building Project in 1967, bolstered by Samuel Mockbee's Rural Studio work through the 1990s, design-build workshops have flowered in universities throughout the U.S. From the start, student-run design-build conflated with community action, and as a result these real-world classrooms have produced landmark examples of socially responsible architecture. This academic phenomenon continues to achieve practical solutions that inspire the design community at large and produce young activists as well as knowledgeable architects. Recently, we invited several leading professors to join us in a telephone roundtable to discuss the surging popularity of design-build studios, the challenges they still face, and the impact of completed projects on designers and their clients. (Go to [architecturalrecord.com](http://architecturalrecord.com) for the unabbreviated text.)

# TEACHING BY

# EXA



In 2004, DesignBuildBLUFF moved its studio to Bluff, Utah, to work more closely with the Navajo Indian Reservation. For their first undertaking there, students built a home for Rosie Joe, a single mother working three jobs. The design is an exercise in local ingenuity: The house features a rammed-earth Trombe wall, its ceilings and roofs are made of recycled pallets, and discarded road signs clad interior walls.



# MIPLE

Design-build  
educators talk  
pedagogy and  
realpolitick

**Steve Badanes** In addition to cofounding Jersey Devil and teaching at Yestermorrow Design/Build School, Badanes has conducted design-build workshops at schools from Helsinki to San Diego. At the University of Washington in Seattle, he runs the Howard S. Wright Neighborhood Design/Build Studio, producing small-scale work for Seattle nonprofits.

**Thomas Dutton** Professor at Miami University in Oxford, Ohio, Dutton established the Over-the-Rhine Design/Build Studio in 1996 to design and rehabilitate housing for residents of the namesake Cincinnati neighborhood. That was followed by the founding in 2002 of The Miami University Center for Community Engagement in Over-the-Rhine, in Cincinnati, and in 2006, the Over-the-Rhine Residency Program for students.

**Andrew Freear** Freear is the Wiatt Professor at Auburn University Rural Studio in Alabama, where he moved in 2000. Since Samuel Mockbee's death from complications of leukemia in 2002, Freear has directed the renowned program while also advising fifth-year undergraduate students' thesis projects.

**Adam Hopfner** Hopfner is a critic at the Yale School of Architecture, and since 2007, director of the Yale Building Project. This was founded

**ARCHITECTURAL RECORD:** Are design-build studios more popular than ever?

**Steve Badanes:** The students at the University of Washington come here specifically for the Neighborhood Design/Build Studio. That's true for a lot of other programs.

**Adam Hopfner:** That's why I went to Yale, and it's why a vast majority of the graduate students come here today. Although design-build workshops have been going on for decades, they are now becoming recognized as great learning vehicles.

in 1967 by then department head Charles Moore and professor Kent Bloomer, and has since mostly produced affordable houses for deserving New Haven residents.

**David Lewis** Lewis is a cofounder of Lewis.Tsurumaki.Lewis—a RECORD Design Vanguard firm in 2000—and an associate professor of architecture at Parsons The New School for Design. Since 2007, he has directed The Design Workshop there, a design-build studio founded by Karen Van Lengen in 1997, and further developed by Peter Wheelwright with Terry Erickson.

**Hank Louis** Louis is an adjunct professor of architecture at the University of Utah College of Architecture + Planning, which supports DesignBuildBLUFF. That design-build studio, launched in 2000, creates sustainable homes on the Navajo National Indian Reservation located outside Bluff, Utah.

**Dan Rockhill** Rockhill's eponymous firm has been widely recognized for Modernist work that resonates with the landscape and culture of Kansas, and the affordable buildings realized by his University of Kansas design-build workshop Studio 804 have earned two AIA Honor Awards, the NCARB Prize, and other accolades.

**Hank Louis:** Ours is probably the most fledgling of the programs represented at this roundtable, but I'm getting word from students now that they're coming for DesignBuildBLUFF. That worries me, because we don't have room for everybody.

**AR:** Surely some students are more intrigued by design-build and others more by the social engagement. How do you balance their needs?

**Badanes:** There are students who are interested in the social-justice issues and underserved communities. And then there's



an architecture student who wants to build and become a better designer: There's a high level of frustration from looking at a computer screen all day.

**David Lewis:** In addition to students wanting to bridge social responsibility and the tectonics of architecture, a number of my Parsons students have done internships at larger firms where often they've been involved in projects up to schematic design, particularly with firms doing large works in Asia and the Middle East; they have no sense of how things go together because it's not their responsibility. We have students coming in with the experience of doing million-square-foot malls, but they want to experience the exact opposite as a pedagogical challenge to themselves.

**Andrew Freear:** Design-build also exposes students to working in teams and accepting that they may not be great at everything. Like most people on this roundtable, I went through an education that was essentially a star system: You sit at your desk and you're expected to be wonderful at everything.

**Louis:** My students come for the hands-on experience. But once we get to the Navajo reservation, the whole social aspect of it becomes very strong and there's a love affair that develops between the Navajo family and these students. They come back to remodel parts of the house that don't seem to be working.

**AR:** *Do any of you consciously try to differentiate your design-build studio from those of your colleagues?*

**Lewis:** We respond not to other design-build programs but to local conditions—the constraints, obligations, possibilities, and opportunities that exist. Inevitably you learn from the other programs to find out what works and what hasn't. But the internal

logistics of, say, trying to build in New York City helps shape the identity of the program. Geography and institution proclaim the condition more than the comparative method.

**Hopfner:** To build in New York or to build in the City of New Haven is much different from building in Hale County. And a lot of that is what shapes the program.

**AR:** *Hank Louis organized a project in Africa, and David Lewis has led Parsons students to create a park pavilion in the Catskills town of Margaretville, New York. If geography and institution shape your design-build programs, does that identity shift when you work outside your typical places?*

**Louis:** The reason we went to Uganda is that a Ugandan coalition came to see our work and asked us to build a clinic there. Last year we didn't have a social component to our work, because we had to build more student housing on our little campus in Bluff. I thought Uganda would be a great way to incorporate the social aspect that year. I think we'll continue to do that, because it's so remarkable to watch the students fall in love with the people they're helping.

**Badanes:** All these programs are rooted in a place. I've been to India, Cuba, Mexico, Vermont, doing this kind of stuff: You do a project and you raise expectations and then you disappear. So we stopped doing it. I think this idea of thinking globally and acting locally is at the heart of what we do. You don't see any of these programs going to New Orleans.

**Dan Rockhill:** This year we left home and went to Greensburg, Kansas (see story, page 134). It could have been Uganda. The town had been wiped out by a tornado.



Instead of taking on one of its usual city-based clients, in 2006 The Design Workshop, a program of Parsons The New School of Design, built a park pavilion in the 650-person town of Margaretville, New York (left and far left). Last year, DesignBuildBLUFF also went far afield, doing work in Uganda (below and bottom). Studio 804 deployed prefabrication to erect its so-called Sustainable Prototype in Greensburg, Kansas (bottom right).



**AR:** *The Greensburg project is a prefabricated, 1,600-square-foot office and gallery, not to mention the first LEED Platinum building in the state of Kansas. Dan, why did you decide to wrap up-to-the-minute prefab construction into Studio 804? Was there longstanding student demand for it?*

**Badanes:** It has to do with the Kansas winter!

**Rockhill:** We still froze our tails off in the warehouse, but it really was for that reason Steve mentions: We took down a building no more than 15 minutes away from the school, and we recycled it into prefab modules that we eventually brought to Greensburg. It wasn't philosophical. These kids have never had their hands in concrete, nor driven a nail. They need to have some of that under their belt before taking it to the next level.

**Hopfner:** There is a push for prefabrication and digital fabrication in general at our school. So prior to a Yale Building Project design, we look at what is possible with our time frame and support. Given that I have 60 laborers, it's harder to justify the lead times of prefabrication for the entire thing. And yet we do try to identify components that might be made on a CNC mill, whether it's a stair or a cabinet piece or a cladding system. So there's exposure to it. I don't see this technology as a danger, but as just another tool with its own opportunities and limitations.

**AR:** *Tom, the Over-the-Rhine Design/Build Studio has a political component. What's the origin of that?*

**Thomas Dutton:** Design-build is just one of many things we do. We also do agitprops—artistic installations that are devised with community leadership to make people aware of what happened at a particular site. They're like learning devices to raise questions about history and urban space. We also do straight-up advocacy planning. It's all determined by the community at that particular time.



**AR:** *What other task besides design-build consumes most of your time?*

**Rockhill:** For us it's really fund-raising. We're not supported by the university. As a not-for-profit corporation, the burden is on us to raise whatever funds we can from year to year. That consumes a *lot* of time, at least for students, who think of the studio as all nails and two-by-fours.

**Freear:** Our students traditionally have raised phenomenal material donations, but because of gas prices and the economic squeeze in the past year, it's become very difficult. We are contemplating completely different approaches to projects for the next couple years simply because of that: The tax write-offs and material donations are not going to be there.

**AR:** *What preparatory advice would you give all those professors who are considering starting their own design-build studios, especially in an economic downturn?*

**Badanes:** They always think they should start with something on campus, and that's often a bad idea. My advice is to start with something small, out in the community. The biggest problem is that faculty and students start new programs thinking they can do large projects faster and cheaper than is realistically possible.

**Rockhill:** I find that people tend to overthink the complexity of the issues in front of them. They tend to meet with everybody on campus and get everybody involved, and that's a surefire way to draw something out for eternity. I tell them to just do it.

**AR:** *Adam, Andrew, and Dan, you've all inherited your programs. How have you dealt with that legacy, or shaped these studios in your image?*



Working with the Yale Building Project, in 2004 Adam Hopfner began exploring prefabrication and digital technology with a stair system made entirely of CNC routed sheets of Baltic birch plywood (left). In addition to doing traditional building and rehabilitation projects in Cincinnati's Over-the-Rhine neighborhood, such as a laundromat and meeting room (middle right), Thomas Dutton's design-build studio will stage "aqitprop" art installations that commemorate events such as the demolition of the SRO Milner Hotel (right).

Steve Badanes recommends that design-build studios take on small public spaces, such as the Garden Gathering Place his University of Washington students completed for Danny Woo Community Gardens in 2007 (left). For the second year of the Yale Building Project's collaboration with Common Ground, students constructed a house for a disabled female veteran and her family, which also includes a one-bedroom rental unit (right).



**Hopfner:** This is my second year directing the Yale Building Project. I take the stance very strongly that I do not have authority. I think there's a danger in that, and I'm certainly not teaching to get my aesthetic agenda across.

I have tried to make housing issues a little more current, and to that end we've been working with an organization called Common Ground, a nonprofit to end homelessness, since last year. We found that veterans make up 28 percent of all homeless, and that people are coming home from these conflicts with huge emotional disorders. We've identified female veterans as the group in need of housing. We did a lot of research into the psychology and brought these social issues to the fore to see how that would affect the design position. The second thing I've tried to do is make more explicit the process as opposed to the product—the constraints of site, zoning, budget, time, and environment that really come to bear on a project.

**Lewis:** One thing that I think is really critical is, even though it's design-build by students, the design absolutely has to be of the highest mark of excellence. The students have more time than an architecture firm can give to this project, so the results should exceed what professionals should be able to do. Instead of just learning how to work materials, this is an opportunity you won't have when you go out into the profession. It's something I've inherited, and I think it's critical to maintain that position, especially with the client.

**Freear:** From my point of view, when Mockbee dropped dead, it was simply a case of keeping up. It never has been a deliberate "I've got to establish my own style." I hope what I have tried to do is protect the luxury of time: The Rural Studio has a huge luxury of time over a lot of these other programs. Fifth-year students, for example, are here technically for nine months, though

they stay upwards of a year afterward to finish their projects on their own time and dollar. I get a lot of grief from the university for allowing that to happen. But it's about raising the standards, the craft, the level of detail and the quality—it's about being more rigorous. I don't really apologize for any of it. There are few places where you do something because you want to do it and you want to do it right. I'm trying to be fiercely protective of that opportunity, and to have students understand how long it takes and how difficult it is to do something well.

**AR:** *What long-term effects have your design-build programs wrought on their communities?*

**Louis:** What I've found, especially with the Rosie Joe House, is that it afforded her the opportunity to go back to weaving rugs, which now command as much as \$10,000. Previously, she had to give up the loom to be a receptionist at Motel 6 or waitress somewhere else.

**Badanes:** It's the students who really feel the long-term effects. Our goal is to deflect them from finishing architecture school and taking their portfolio to an office and getting a job. We're trying to create a different kind of architect. Our most successful people have become nonprofit housing developers, developers of community gardens, and a lot of them have gone into design-build, which from my experience is a bit more satisfying than the office alternative, especially as things become more automated. We teach building and practical things, but the real lessons are perseverance and self-motivation, teamwork, and community service. It's a big agenda. I think that's where we can make a real difference.

**Dutton:** That's one of the things I've learned from Steve Badanes. We're not just trying to help a community, but we're



Thanks to the Rural Studio's long-term engagement with the surrounding community, design-build participants' works are getting bigger and affecting more people. Andrew Freear says the 40-acre Lion's Park (left), Hale County Animal Shelter project (below), and Hale County Hospital courtyard renovation (bottom) are emblematic of that sea change.

trying to deconstruct students' privilege. We're trying to get them to be better citizens, better community advocates, and to understand the complexity of urban areas. We'd like to institutionalize ourselves even more into that community—develop job-training programs, get high school industrial-education kids involved with us—so that the center is not only a site of student and faculty learning but community learning, as well.

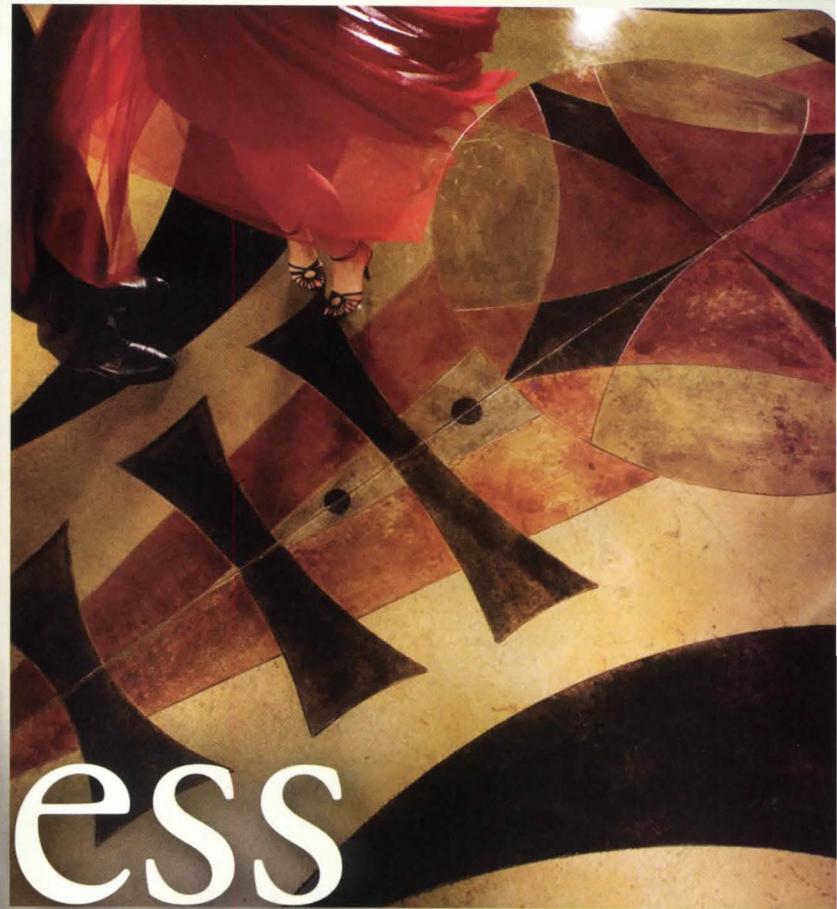
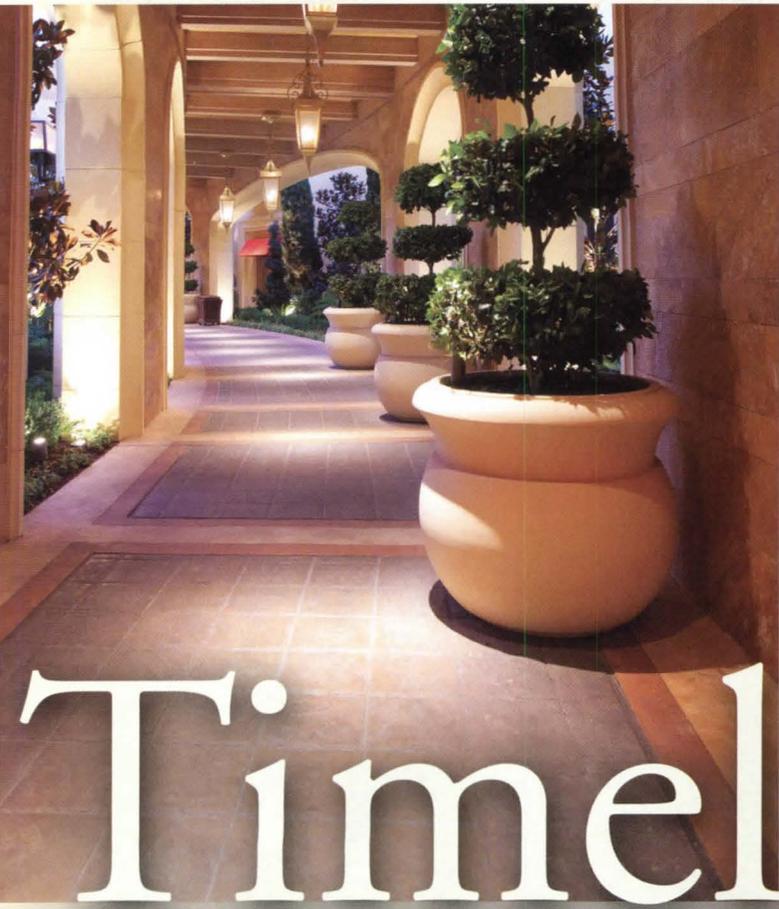
**Freear:** The Rural Studio began 16 years in one place and is becoming a neighbor there. I'm starting to see the fruits of that. The local politicians and community groups are coming to us now, and they're actually bringing grants and dollars to the table themselves. It's great to see they have the imagination and also the courage to be involved with us. I think that's reflected in the scale of recent projects, like a 40-acre public park, an animal shelter, and a hospital, which may serve more people than all the other projects put together.

From the students' point of view, I hope they leave here feeling empowered. I know when I left school, I had no idea who to ask or what to do in an office. Everything was a complete mystery to me. At least these students know how an engineer and architect engage in a dialogue, and where to look for things and whom to talk to.

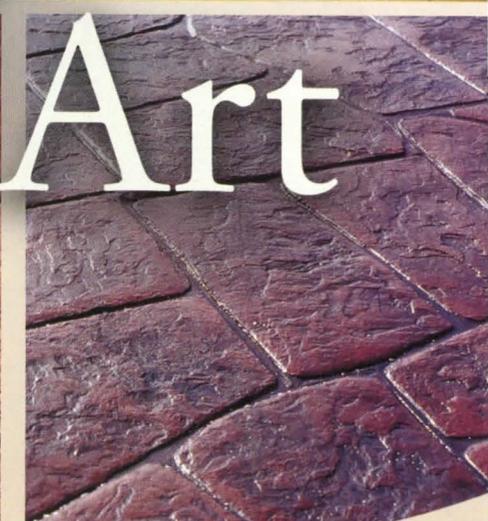
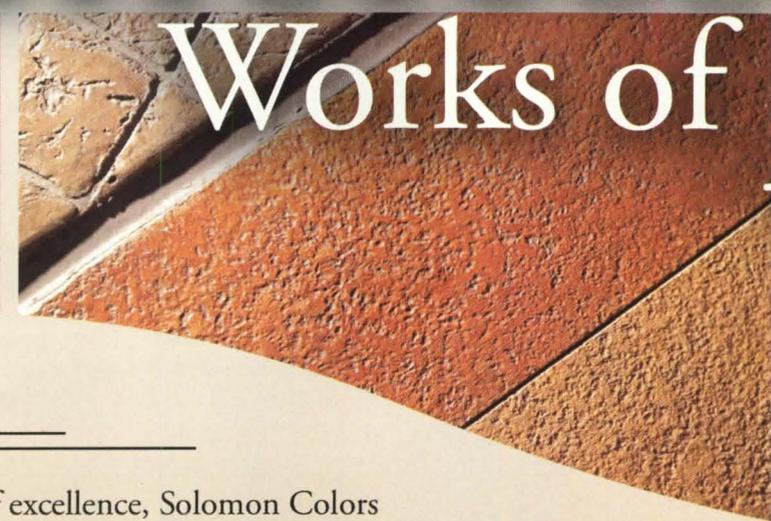
**Hopfner:** One other thing that I'm beginning to push is addressing issues of the profession: Architects have really divorced themselves from the building process. In such a litigious society, they don't build, just design. By exposing students to all of the forces that come to bear on the making of a building, whether environmental, technical, or political, they can begin to harness them to become more effective as architects. I hope they have the courage to feel good about their decisions. ■



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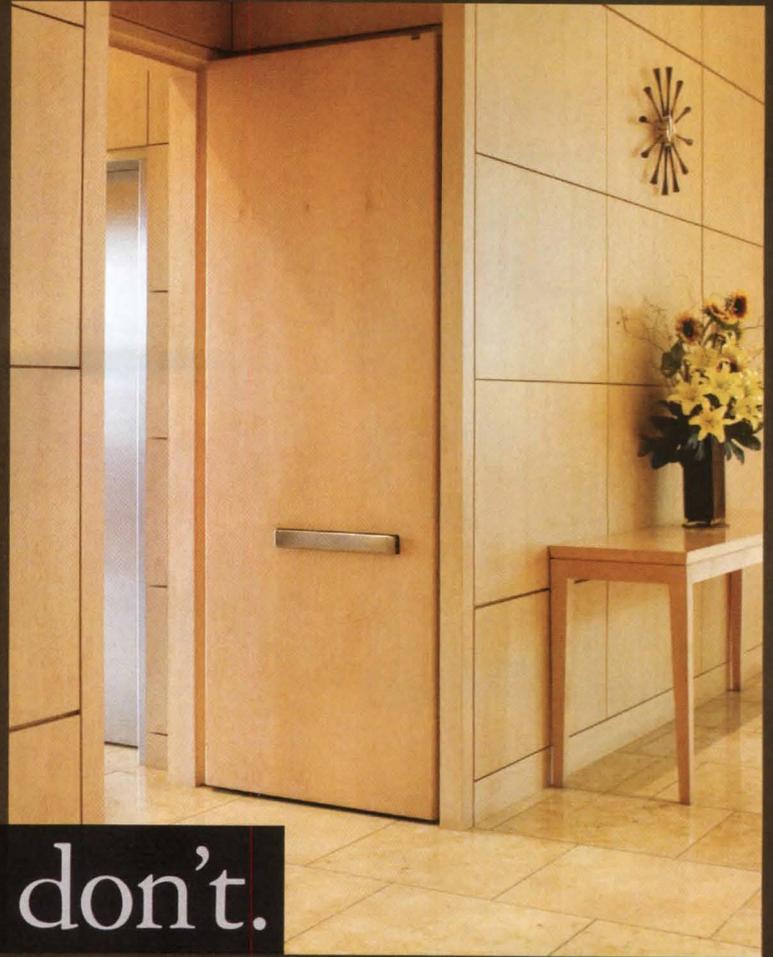
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CIRCLE 52

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Architect of Record: KZF Design Design Architect: Zaha Hadid

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CIRCLE 53

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# PEOPLE FIRST

For architects, community centers often call for sensible design on a modest budget. What these projects may lack in glamour, they make up for in relevance to people's lives.

By Jenna M. McKnight



## 5.4.7 ARTS CENTER Greensburg, Kansas

*Studio 804, a University of Kansas program led by Dan Rockhill, designs and constructs a LEED-Platinum, multipurpose building for a farming town leveled by an EF5 tornado.*



## GENTRY LIBRARY Gentry, Arkansas

*In a village of 3,500 people, Marlon Blackwell Architects cleverly transforms a century-old brick building into a handsome library, adding an elegant touch to an aging Main Street.*



## COIN STREET NEIGHBOURHOOD CENTRE London

*For a low-income district in need of a nursery and meeting space, Haworth Tompkins creates a highly adaptable, ultra-green building animated by splashes of color.*

**M**y first job after earning my journalism degree was covering the “communities” beat for a newspaper in Indiana. The position entailed producing daily stories extracted from a half-dozen rural towns bordered by corn and soybean fields and speckled with churches, farm stands, and tidy houses with white-picket fences. As a native of Phoenix, the fifth-largest city in the U.S., this beat was wonderfully exotic. To find story fodder, I spent ample time in community centers, from libraries to meeting halls, where people congregated for events such as pancake breakfasts, blood drives, and rummage sales. Architecturally speaking, these venues were simple structures typically clad in brick or wood—nothing noteworthy. For residents, however, they were prominent sites that served a vital civic function.

Even in today's Web-obsessed world, with its flourishing online communities, people still need a physical place to come together. In this month's Building Types Study, we feature projects that illustrate the importance of these venues in both rural and urban contexts.

First, we zoom in on a remarkable project in Greensburg, Kansas, a small town that was destroyed by a tornado in May 2007. Here, students from Studio 804, a University of Kansas program, designed and built the 5.4.7 Arts Center in just four months. The 1,600-square-foot center, now a popular gathering spot, has played a key role in reinvigorating the area.

Next stop: Arkansas, where Gentry Library, by Marlon Blackwell Architects, is helping revive a struggling Main Street in a village near the Ozark Mountains. In this adaptive reuse project, the firm transformed a two-story masonry structure into a striking community centerpiece.

Then, we hop across the pond to visit London's Coin Street Neighbourhood Centre, designed by the firm Haworth Tompkins. This 40,000-square-foot facility offers much-needed amenities for social housing tenants in South Bank, a once-derelict district that is now booming thanks to a grassroots movement spearheaded by residents in the 1970s. On a dense street lined with historic structures, the architects created a contemporary building that exemplifies function with style.

Modest civic projects can be supremely gratifying for architects who want their work to make a difference in people's lives. Often, these buildings don't dazzle. The standard program for a community center calls for a highly pragmatic building with a flexible floor plan, few embellishments, and a safe aesthetic. Budgets can be exceptionally tight, given that funding usually comes from taxpayers or private donors. The projects we feature this month embody these challenges. They are not jaw-dropping objets d'art; rather, they are well-designed, salt-of-the-earth buildings that enrich the neighborhood. They are projects that put people first. ■

# One: 5.4.7 ARTS CENTER

## Greensburg, Kansas

Studio 804 prefabricated and completed a LEED-Platinum community arts center for this tornado-ravaged town in just four months.

By Charles Linn, FAIA

**Designer-builders:** Studio 804—Dan Rockhill, professor; Zack Arndt, Sarah Boedecker, Krissy Buck, Jessica Buechler, Mark Cahill, Chris Clark, Justin Cratty, Corey Davis, Lindsey Evans, John Gillham, Erik Heironimus, Abby Henson, Boyd Johnson, Jenny Kenne Kivett, Will Lockwood, Simon Mance, Tim Overstreet, Katie Rietz, Corey Russo, Josh Somes, John Tarr, Megan Thompson, students  
**Engineers:** Norton & Schmidt  
**Client:** 5.4.7 Arts Center

**Size:** 1,600 square feet

**Cost:** \$336,000

**Completion date:** May 2008

### SOURCES

**Structural:** Louisiana Pacific; Universal Forest Products; Certified Wood Products (framing)

**Bath fixtures and tile:** Toto USA

**Curtain wall:** Vitro America (glass); Fastenal (fasteners); Unistrut (track); Vaproshield (rain screen)

**Roofing:** Weatherbond (elastomeric); Greengrid (roofblocks); Velux (skylights)

**Doors and windows:** Loewen (windows, doors); Lynden (wood); Hydroswing (hangar door system)

**Alternative energy:** BP Solar (PV panels); Kestral (turbines); Xantrex (inverter); Standard Renewable Energy (subcontractor); Trane (heat pump)

**ONLINE:** Rate this project and access additional sources at [architecturalrecord.com/bts/](http://architecturalrecord.com/bts/).

If you wanted to settle in a fine place that is safe, secure, and filled with friendly people, you could hardly do better than Greensburg, a town on the plains of southwest Kansas, where one's sense of well-being can be threatened by little other than occasional bursts of severe weather. Unfortunately, such was the case when, in just a few minutes on May 4, 2007, a category EF5 tornado blew most of it away.

### Program

The students of Studio 804, the intensive design-build program at the University of Kansas's School of Architecture and Urban Planning, sought a way to contribute to Greensburg's rebirth. In December of 2007, they accepted an invitation to construct a small arts center, with space for a gallery, classes, and live performances. It would be LEED Platinum, as are all public buildings constructed after the storm.

Students enrolled in Professor Dan Rockhill's full-time, one-semester, graduate-level class had to accomplish the work in four months, in time for the one-year anniversary of the storm. Studio 804 has a national reputation, having built nine single-family homes in nine years. Its students do the design work; provide labor, including skilled work such as plumbing and wiring; raise money; develop the budget; keep the books; and solicit donations of building materials.



The 5.4.7 Arts Center is sited on the block to the right of the water tower.

### Solution

The 5.4.7 Arts Center, named to remember the date of the storm, has modest requirements, and the plan is simplicity itself: Starting with the gallery, a meeting room, lobby, kitchenette, and bathrooms are arranged linearly, in that sequence. The directness of the plan belies the building's complex detailing; its construction technique; and the additional systems, energy modeling, and commissioning that are required of LEED-rated buildings. The building's site is flat, and so the structure itself was raised on a 3-foot-high plinth to give it prominence.

Studio 804 students have developed a means of prefabricating their residential projects over the past several years, and 5.4.7 used this method, as well.

Construction of the building's seven modules began the second week of January 2008, in a vacant warehouse in Lawrence, Kansas, nearly 300 miles away. They were built of wood studs, and pre-engineered wood floor and roof trusses. The modules were clad in Douglas fir that was salvaged by the students from a building that was formerly an ammunition magazine. The seven modules were framed, insulated, sheathed, roofed, prewired, and sheetrocked 12 weeks after they were begun, and then loaded onto seven semi-trailers, hauled to the site, and offloaded onto the foundation. Then, they were joined together, and the interior finishing, plumbing, and wiring, were completed.

The wood cladding was protected by a site-built curtain wall of



The tornado left little behind but debris (above) and the spirited people of Greensburg. The gallery doors on the south elevation (below) are protected by a piv-

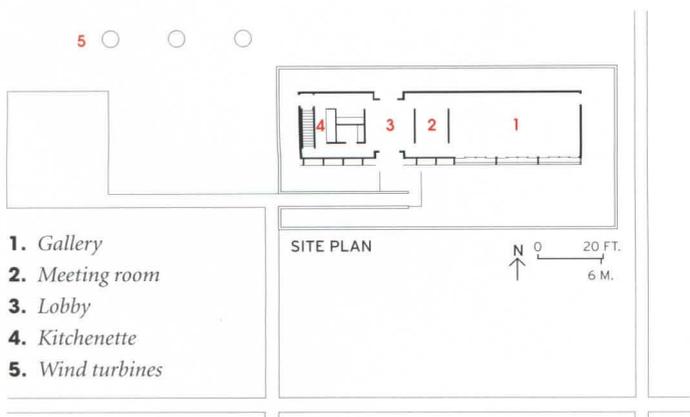
oting glass screen on a steel frame, shown here in its open position. The building is set on a 3-foot-high plinth to give it more prominence on the flat site (right).





Students prepare to load one of the prefabricated modules of the 5.4.7 Arts Center onto a truck (left); later, it was hoisted into place

(below left). The gallery (below) has sliding doors that allow access outside. A glass screen covers them when not in use (bottom).



glass panels that were drilled and bolted to galvanized-steel struts.

Sliding glass doors compose the entire south wall of the gallery. These doors are cleverly covered by a glass-covered screen that is supported by a steel frame that also carries sun-shading louvers. When a pair of hydraulic cylinders pivots the frame from its normal vertical position to a horizontal one, the sliding doors can be opened to give access to the lawn. The mechanism that allows this is adapted from one used to open airplane-hanger doors. The building has a vegetated roof, and is heated and cooled by a ground-source heat pump. Much of its energy is provided by wind turbines and photovoltaic panels.

### Commentary

On May 4, 2008, the one-year anniversary of the storm and just 18 weeks after design began, the center held its first open house, and subsequent events have been frequent and crowded. It is hard to describe how great an influence just one small building has had in a town where the civic and social life that took a century to build seemed, only a year ago, to be gone forever. In towns and cities where this kind of thing has happened (New Orleans, for instance), one finds a particular urgency for special buildings like the 5.4.7 Arts Center that can give people a sense that others believe both they and the places where they live are important. Even in the best of times, few American towns will ever be blessed with a jewel like this one. But the project is not without its critics. Hopefully, the arguments about whether it was necessary to build this now, or whether it is too fancy or costs too much – often encountered on such projects – will begin to fade soon, because the building really works. Just ask the kids on bikes who pull up about every 10 minutes to see if the center is open yet, or people in cars with out-of-state tags that circle the block slowly so that they can get a good look. For all of them, it is a nice bit of Bilbao-effect on the Plains. ■

Here the glass screen that covers the gallery's sliding doors is closed. Parallel steel louvers behind the glass shade the gallery from direct sunlight.



# Two: GENTRY LIBRARY

## Gentry, Arkansas

Marlon Blackwell Architects restores a 100-year-old former hardware store to serve as a beacon for a reawakened downtown district.

By Jane F. Kolleeny

**Architect:** Marlon Blackwell Architect—Marlon Blackwell, AIA principal; Ati Blackwell, Assoc. AIA, project manager; Gail Shepherd, AIA, David Tanner, Assoc. AIA; Julie Chambers, AIA, Scott Scales, Tony Patterson, project team

**Client:** City of Gentry

**Consultants:** Joseph Looney & Associates (structural engineer); GA Engineers (m/e/p); Civil Engineering (civil); Stuart Fulbright (landscape); SSi Incorporated of Northwest Arkansas (general contractor)

**Size:** 11,970 square feet

**Cost:** \$1.2 million

**Completion date:** October 2007

### SOURCES

**Metal/glass curtain wall:**

Preferred Systems (metal); Bentonville Glass (glass)

**Skylight:** RGC Glass

**Paints and stains:** Sherwin Williams

**Carpet:** Shaw Contract Group

**Ceilings and suspension:** Armstrong

**Terrazzo tile:** Floorazzo

**Wood floors:** Smith Hardwood Floors

**Lighting:** LSI Industries

**Hardware:** Corbin Russwin Architectural Hardware

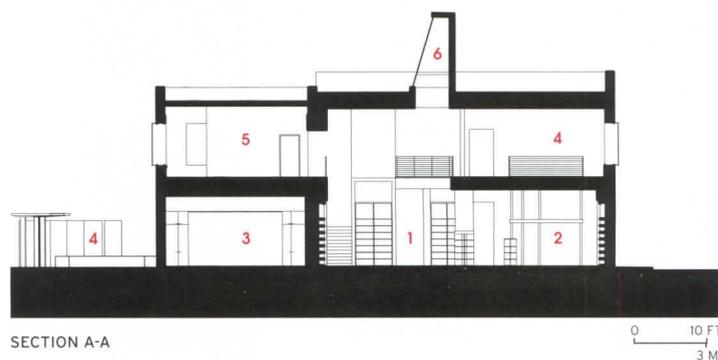
**Doors and entrances:** Marshfield Doors; Bentonville Glass; C.R. Laurence; Ceco Door Products

**ONLINE:** Rate this project and access additional sources at [architecturalrecord.com/bts/](http://architecturalrecord.com/bts/).

The modest size and budget of the Gentry Public Library (11,970 square feet, at \$108 per square foot) belies its importance to the community of Gentry, Arkansas. The library has become the cornerstone of the revitalization of its downtown district and an important resource for educating the 2,500 residents. While it took seven years to complete the project, despite budget constraints and a few naysayers, “the community never wavered,” says the architect Marlon Blackwell, AIA, of Marlon Blackwell Architects, whose offices are located in nearby Fayetteville.

### Program

Like many small towns in America, Gentry struggles with a deserted Main Street where department stores, pharmacies, and hardware shops have been shuttered in recent decades. Employment opportunities are scarce: Most of the town’s residents work at the local McKee Foods plant (best known for Little Debbie snacks). Being located near the Ozark Mountains in the northwest corner of Arkansas, one of the poorest states in the nation, doesn’t help. Blackwell describes the town’s Main Street as “a hardscrabble, somewhat faded, rough-around-the-edges place that bears the evidence of a much more vital time.” He adds, though, that “it is coming back slowly – but with purpose.”



The library was to be built in a two-story, century-old brick structure that formerly housed a hardware store. Though of little architectural significance, the building was treasured by the community, and many wished to preserve it. The program consisted of a reading room and related library services, a community room, and a history and genealogy center.

Undeveloped land around the building suggested opportunities for extending community activities at the library outdoors. Part of the project’s scope originally included a vertical garden wall on the back side of the library and construction of an exhibition building for antique fire trucks to be sited behind the library. Both these projects were put on hold due to a shortage of funds.

### Solution

Blackwell treated the gritty and pockmarked building as a historic artifact. He removed the glass from the second-story windows, leaving the masonry openings with their ornamental moldings intact, and then encased them behind shallow

1. Library
2. Computer area
3. McKee Community Center
4. Gentry Community Park
5. Library archives
6. Skylight

rectilinear glass projections. Some of the projections act as display cases for the library’s eccentric holdings, including a wildlife display of stuffed beavers playing on a log. Blackwell converted the full length of the Main Street facade into a glass curtain wall, to invite those outside to “come on in.”

Once inside, the benefits of so much glazing become evident, with a sleek but simple, well-lit interior that maximizes floor space with built-in cherry shelving. A stairway in the back leads to a second floor containing more shelving and an office for the librarian. Here, a refurbished skylight thrusts upward to bring light into an atrium and illuminate a ground-floor sitting area. Owing to a tight budget, prison inmates were engaged to remove, tag, and restore pressed-metal ceilings, and Blackwell’s own staff painted the reinstalled ceilings



The library occupies a corner of Main Street, which is lined with small businesses and empty buildings *struggling against* new commercial development along the highway to the east (left). Due to abundant glazing, the building glows like a lantern at dusk (below).



Inside, structural columns double as light boxes on the upper portion and bookshelves on the lower (this page). The transparent facade on Main Street seems to welcome passersby to *come inside* (opposite).

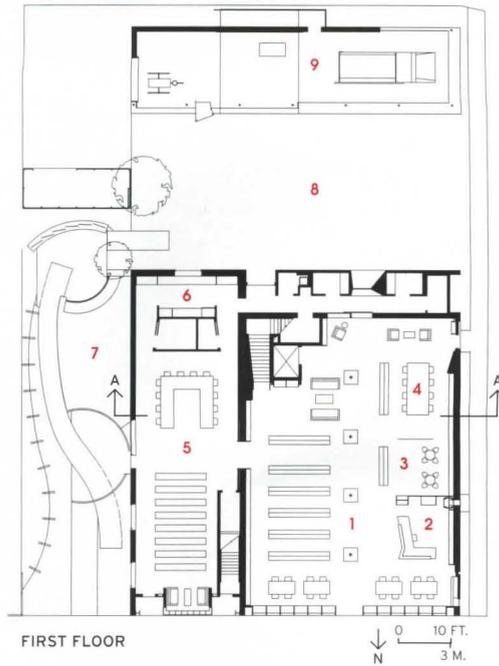


at no extra charge as a service to the community.

A vacant lot adjacent to the library was turned into a pocket park, with a pergola for climbing vines and a water sculpture. The community room on the library's ground floor opens to the park, and pedestrians from Main Street can easily wander in. A plaza behind the library was covered with grass and concrete pavers, creating a venue for events such as book fairs, cake sales, and flea markets – the expected country fare.

### Commentary

To some architects, the eclectic array of buildings on Gentry's Main Street might have appeared uninspiring, but for Blackwell, it's the canvas he knows best. His recently published monograph, *An Architecture of the Ozarks* (Princeton University Press, 2005), describes the region as having a "real natural beauty and simulta-



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SECOND FLOOR

- |                           |                                 |                      |
|---------------------------|---------------------------------|----------------------|
| 1. Library                | 6. Kitchen                      | 11. Historic lift    |
| 2. Book checkout          | 7. Gentry Community Park        | 12. Display area     |
| 3. Children's area        | 8. Community plaza              | 13. Library archives |
| 4. Computer area          | 9. Fire truck exhibit (planned) |                      |
| 5. McKee Community Center | 10. Librarian's office          |                      |



A restored skylight opens up the ceiling of the second floor, bringing light down through an atrium to a first-floor sitting area.



neously real constructed ugliness," a setup that Blackwell views as a "deep source of possibilities."

The context becomes "not just a setting for our work, but part of the work," Blackwell says. The library, part of Main Street's grittiness, is also the center of the cultural, educational, and social life of the community, a dignified civic and urban presence for Gentry, sparking the preservation of other buildings downtown. Today, 2,000-plus citizens, or 80 percent of the population, have library cards to check out books, a testament to what this community values.

Here, among the oblong chicken houses, trailer parks, sheds, and strip malls of Northwest Arkansas, Blackwell's design contributes to the vitality of the region's heritage and continues the kind of unpretentious, thoughtful work identified with his mentor, Fayetteville's celebrated E. Fay Jones, FAIA. ■



Designed by Stuart Fulbright, a community park adjacent to the library (top) replaced a vacant lot. It has new plantings, with a pergola for climbing vines. Lampposts line Main Street (bottom), suggesting the emerging vitality of this downtown district.



# Three: COIN STREET NEIGHBOURHOOD CENTRE

## London

Haworth Tompkins creates a community centerpiece that embodies function with flair.

By Jenna M. McKnight

**Architect:** Haworth Tompkins—Steve Tompkins, director in charge; Andrew Groarke and Chris Hardie, project architects; Tom Grieve, Toby Johnson, Lewis Kinneir, Hana Loftus, Will Mesher, Jim Reed, Pascale Shulte, Joanna Sutherland, Tom Wilson, Felis Xylander-Swannell, and Akira Yamanaka, project team.

**Client:** Coin Street Community Builders

**Engineers:** Price and Meyers (structural); Max Fordham (environmental and building services)

**Consultants:** Antoni Malinowski (colorist); Davis Langdon (quantity surveyor); Harry Montresor (cladding); Colvin and Moggeridge (landscape)

**Size:** 40,000 square feet

**Cost:** \$12.4 million

**Completion date:** September 2007

### SOURCES

**Curtain wall:** Wicona; Hirsch

**Glazing:** Glaverbel

**Masonry:** Baggeridge Brick

**Roofing:** Alumasc

**Flooring:** Ryebrook Resins; Freudenberg Building Systems

**Carpeting:** Milliken

**Lighting:** Alvaro Siza—designed Lorosae lamps by Reggiani

**ONLINE:** Rate this project and access additional sources at [architecturalrecord.com/bts/](http://architecturalrecord.com/bts/).

Three decades ago, the South Bank district in central London was no place to call home. Schools were shuttered and stores were vacated as its population plummeted to 4,000, spurring city planners to consider eliminating housing altogether to make way for large-scale commercial projects. Determined to foster neighborhood regeneration, residents banded together to form Coin Street Community Builders (CSCB) – named after a road that passes through the district's heart.

They were triumphant. In 1984, the nonprofit group used loans to purchase 13 acres and has since constructed four social housing complexes. In 1997, it commissioned the London firm Haworth Tompkins to design an affordable housing co-op and community center for a 2-acre block. The terraced residential buildings, which line three sides of a courtyard and sit atop an underground parking garage, were finished in 2001. The architects then set out to complete the quadrangle with the 40,000-square-foot Coin Street Neighborhood Centre.

### Program

It was a challenging brief. Due to cost, the client decided to divide the remaining 25,000-square-foot parcel in half and develop the project in two phases. The \$12.4 million Phase 1, on the eastern portion, was to include a nursery, café, meeting rooms, and a new CSCB headquarter-



lated blast furnace slag), which gives the concrete a light, creamy complexion, explains firm director Toby Johnson.

The four-story building's most striking moment is its southern elevation, which looks on a busy thoroughfare. Here,

ters, along with a rentable space for a shop or restaurant. To ensure the facility could accommodate changing needs, a flexible layout was paramount. Moreover, the building needed to allude to landmarked 19th-century brick row houses yet have a bold, Modern aesthetic – and it couldn't be intimidating or condescending, explains Iain Tuckett, CSCB director. "We quickly agreed," he says, "that a bit of color and a sense of fun should be part of what they would need to do."

### Solution

Faced with these complex conditions, the design team opted for a basic, boxy structure with varied facades and a stripped-down interior. To add visual flair, the team relied on splashes of color, both inside and out, hiring the artist Antoni Malinowski as a consultant. Because much of the building's poured-in-place-concrete frame is exposed, the architects insisted on using cement with a high volume of GBBS (ground granu-

an exuberant patchwork of dimpled glass panels is affixed to a glass curtain wall. Infused with yellow and ochre ceramic frit, the panels are backed by red aluminum reveals. According to the architects, this skin emphasizes the building's rectilinear form, and it helped convince city planners that the design sufficiently refers to the historic structures across the street.

The other facades are remarkably – and purposefully – different.

1. Community center
2. Housing complex
3. Courtyard



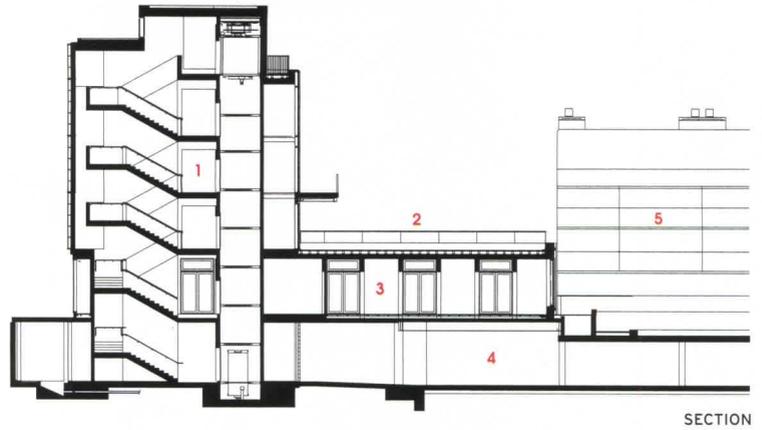
The south elevation contains the main entrance (opposite) and a facade composed of glass panels of colored ceramic frit (this page). Brickwork on the east side alludes to nearby masonry buildings.





1. Stairs and elevator
2. Outdoor play area
3. Community café
4. Parking garage
5. Housing complex

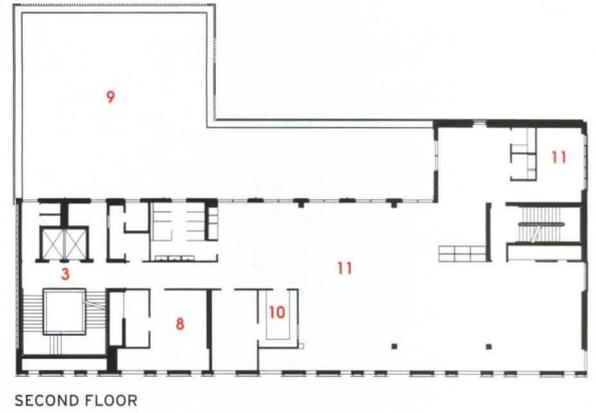
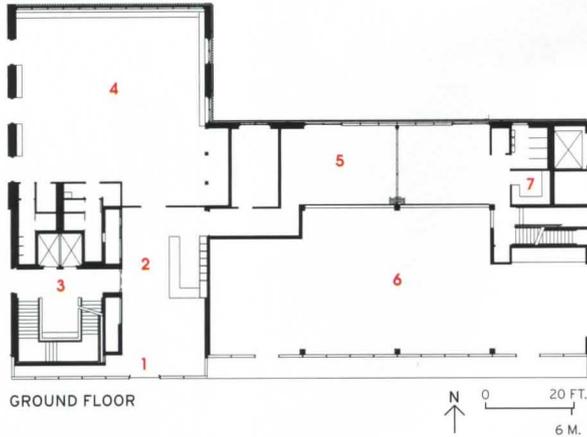
Thermal chimneys placed against the south-facing curtain wall (left) redirect heat to rooftop vents. In the nursery (below), acoustic panels add a dash of color to a concrete ceiling, and hanging lamps designed by Alvaro Siza supplement natural light.



SECTION



1. Main entrance
2. Lobby
3. Stairs, elevator
4. Community café
5. Multipurpose room
6. Commercial shell
7. Kitchen
8. Office
9. Outdoor play area
10. Kitchen
11. Nursery



On the east, a dark gray brick wall complements nearby masonry buildings, while the western elevation's pale concrete blocks can be easily removed once Phase 2 gets under way. The terraced north facade, clad in untreated timber, mimics the aesthetic of the housing complex it faces.

Inside, bare concrete columns, high ceilings, and open floor plans create an industrial-like character. "You can compare it to a late-Victorian factory building," explains partner Steve Tompkins, adding that each level's floor plan is basically the same yet accommodates "radically different uses." The ground level contains a lobby, community café, and a 3,400-square-foot commercial space with floor-to-ceiling windows. The architects placed the elevators and stairwell on the building's west side, mindful that this core will be shared with Phase 2. A robust concrete staircase leads to a nursery on the second level, the CSCB office on the third level, and meeting rooms on the fourth. A rooftop garden offers spectacular city views.

Sustainability was a guiding force in the design. With an emphasis on passive cooling, the architects placed 10 interior "thermal chimneys" of varying heights against the south-facing curtain wall. These 10-foot-wide shafts, painted bright



The glass panels seem to subtly change color, depending upon one's vantage point and the time of day. Glowing in the distance is the OXO Tower, which overlooks the Thames River.



The northern elevation faces a courtyard edged by a housing complex (above left), while a rooftop garden (below) offers stunning views of central London. A concrete stairwell reveals the project's stripped-down aesthetic (above right).



colors, funnel hot air to rooftop vents. Other green features include solar-powered water heaters, a rain-water-collection system, and ample use of FSC-certified wood.

### Commentary

Since its September 2007 completion, the facility has generated much fanfare – and rightfully so. The Royal Institute of British Architects gave it a design award, in addition to naming the CSCB “Client of the Year.”

This building does exactly what it should: It welcomes people in and offers flexible interior spaces that are modest yet stylish. The south facade’s saffron coloring is unusual, but for a city often under a blanket of clouds, it works. One element that is less successful is the exterior treatment of the dissimilar facades, which defer to the buildings around them but not necessarily to each other, revealing just how difficult it is to design a contemporary structure for an architecturally diverse, urban block. Nonetheless, Haworth Tompkins deftly succeeded in creating an economical, adaptable, and highly sustainable building that enlivens the streetscape – and provides vital amenities to a thriving neighborhood. ■

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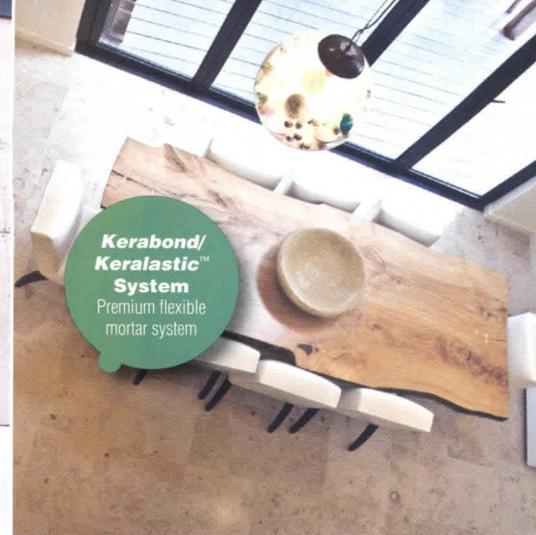
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# Getting High Design from a Low-Tech Approach

ESCHEWING COMPLEX FORMS AND TECHNOLOGY, SOCIALLY MINDED ARCHITECTS RELY ON AGE-OLD BUILDING TECHNIQUES TO CREATE MODERN MARVELS

By Josephine Minutillo

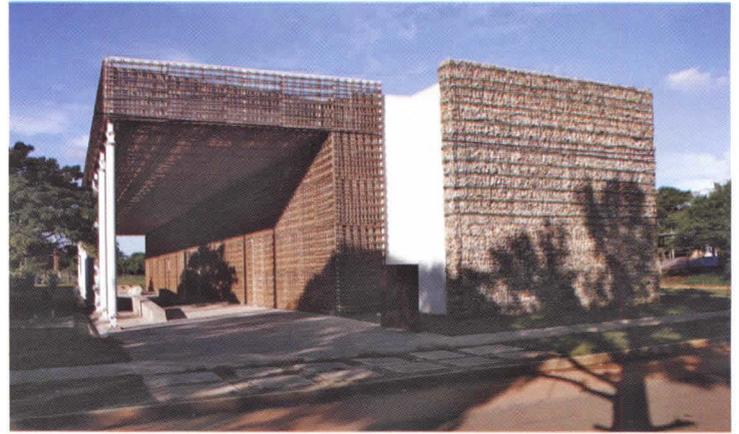
**W**hile architecture magazines are saturated with images of soaring, wriggling towers and pristine, jewel-like structures, those buildings represent a small fraction of actual construction. Most of us live, work, and play in very conventional buildings—traditional wood-frame houses, steel-and-brick high-rises, concrete-and-glass shopping malls. And for much of the world's population, the comforts of home—not to mention work and recreational facilities—are critically lacking. Governments around the globe are increasingly looking to architects to address the housing and infrastructure needs of impoverished communities, in the process hoping to improve the grim economic, educational, and security conditions that plague them. The resulting structures are almost always the antithesis of those complex, computer-driven designs that typically grace these pages. Because of limited financial resources, these projects rely on a low-tech approach using simple forms; local, unskilled labor; unusual or recycled materials; and alternative construction methods.

## Building community

Colombia has long been seen as a country where the rule of law does not exist. The armed conflict there—between left-wing guerrilla groups, right-wing paramilitaries, and the national police—is the longest-running conflict in the Americas. Drug production and trafficking, violent street crime, and kidnappings only add to the brutal way of life to which many Colombians have unfortunately become accustomed. But recent government efforts to build public spaces and educational facilities in disadvantaged areas have markedly improved living conditions for residents.

Following a large discovery of crude oil in the early 1990s, the Casanare region in the northeast part of the country has enjoyed an economic boom. Wanting to share some of its newfound wealth with the people (and taking a cue from construction efforts in Colombian cities such as Medellín), the regional government embarked on a plan to popu-

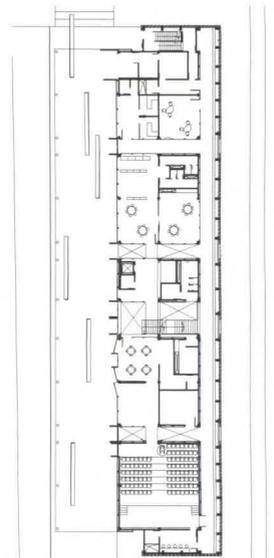
**A boxy structure is finished with simple materials in a public library in Villanueva, Colombia (right). Many interiors are left open to the elements (below).**



late its cities with libraries. The first of these was completed last year in the town of Villanueva, a 5-hour drive from Bogotá.

The job of designing the library was given to four recent architecture school graduates—Miguel Torres, German Ramirez, Alejandro Piñol, and Carlos Meza—after collectively winning a national competition, their first. “We wanted the building to have a strong signature, and be very clear in terms of materials and shapes,” says Meza. The designers could not have chosen a simpler material palette—quite literally sticks and stones—employing them to dramatic effect in a 16,700-square-foot rectangular structure that incorporates an outdoor plaza.

Though the concrete frame was poured on-site by a professional crew from Bogotá, much of the subsequent construction was carried out by residents of Villanueva and nearby towns, following workshops that taught the locals basic building techniques, as well as the unique methods used for this library. “This is a post-conflict area,” explains Piñol. “People who are no longer engaged in violence are being reinserted into civil society. This was a way to do that.”





Giving equal attention to unbuilt space, the designers created a 27-foot-wide outdoor plaza for public gatherings.

A distinctive feature of the building that required special training to construct was the gabion wall. Nothing more than cages of rocks, gabions are more commonly used in civil engineering projects for erosion and flood control. For the library, experienced road builders from the region were

## “EVEN THOUGH WE HOPED TO CREATE A MONUMENTAL BUILDING, WE ALSO WANTED IT TO CONVEY A LOCAL, CRAFTED PRODUCT.”

brought in to supervise their assembly in 12-inch-deep wire cages along the entire 234-foot-long eastern facade. Workers experimented with the look of bisected stones in some sections of the wall, but opted to keep the rocks intact—mainly because it was less time-consuming that way. Also within the wall are four unglazed openings that feature aluminum, microperfo-

rated louvers for increased ventilation. The 31-foot-high wall wraps around the north and south elevations, as well. “Most people approach the site from the east,” says Piñol. “We wanted to communicate a solid building, especially in a town that has no architectural icons whatsoever.”

The small stones, which average 4 to 5 inches in diameter, were collected from nearby rivers. For the opposite side of the building, which contains a covered, outdoor space for public gatherings, the designers chose another local product. Dimensioned pine-wood pieces from regional, controlled forests are arranged in a playful pattern in modular panels that make up the wall and overhang of the plaza. “The choice of materials was intuitive,” Meza says. “Even though we hoped to create a monumental building, we also wanted it to convey a local, crafted product.”

For many of the library’s reading, media, and meeting rooms, this lattice of sticklike pieces of pine is all that separates the interior from



### CONTINUING EDUCATION

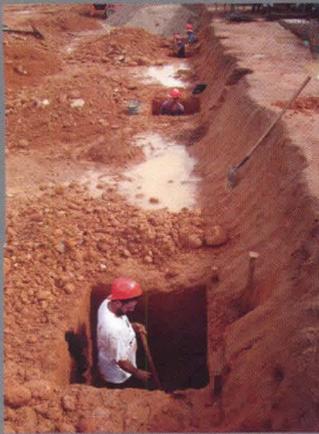
Use the following learning objectives to focus your study while reading this month’s ARCHITECTURAL RECORD/ AIA Continuing Education article. To earn one

AIA learning unit, including one hour of health, safety, and welfare credit, turn to page 162 and follow the instructions. Other opportunities to receive Continuing Education credits in this issue can be found beginning on page 165.

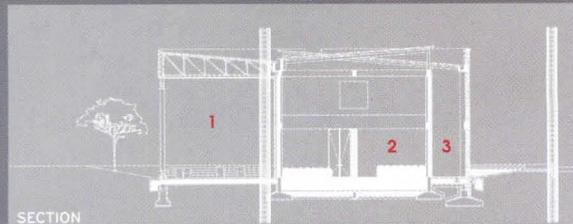
### LEARNING OBJECTIVES

After reading this article, you should be able to:

1. Describe unique low-tech construction techniques.
2. Explain how the low-tech construction techniques are suited to the local climate.
3. Describe how local people can be involved in building construction projects.



To conform to seismic regulations in this earthquake-prone region, foundations were dug 6.5 feet deep (left). Stones collected from nearby rivers are encased in PVC-coated wire (below left). The west facade is composed of panels of sticklike pieces of pine arranged in a slanted pattern (below right).



1. Outdoor plaza
2. Theater
3. Circulation

A 6.5-foot-wide cavity adjacent to the east facade's gabion wall is used for circulation (above). The metal roof above the built portion of the library is concealed behind the 31-foot-high rock wall. The clerestories formed by the alternating sloped sections provide indirect light into reading rooms on the second floor (left).

the exterior. Unlike Bogotá, whose mountainous terrain has a cool climate, the flat landscape surrounding Villanueva features an almost tropical one. Enclosed spaces include restrooms and a ground-floor theater, which is the only room that uses mechanical cooling.

Earthquakes and heavy rainfall characteristic of the region presented challenges to the builders. To conform to seismic regulations, foundations for the two-story building are more than 6½ feet deep. Each of the columns that supports the plaza's canopy—left bare to align with the clear expression of materials throughout the building—contains pin connections at the top and bottom to allow lateral movement.

The downpours typical of the rainy season are handled in the building by another striking feature, one that is concealed behind the parapet of the gabion wall. A zigzagging roof—sloping down in a west direction over large program spaces, and east over 6-foot-wide corridors—distributes rainwater to channels on both sides of the building. A particularly oversized gutter on the west side also collects runoff from the sloping, trussed roof over the plaza, which consists only of a polycarbonate sheet less than ½ inch thick. The main roof is composed of a sandwiched metal deck, whose inner glass-fiber layer helps buffer the sound of falling raindrops.

The alternating slopes of the main roof provide other benefits, as well. The raised, east-facing portions over second-floor stacks and reading areas are glazed to admit daylight. These areas also aid natural ventilation by drawing hot air up and out of the building more readily. “We wanted the building to be fresh and authentic, not a showoff,” Piñol recalls. “We designed it in the most honest and direct manner we knew how.”

### Gimme shelter

Across the globe in Cape Town, South Africa, a local firm, MMA Architects, recently completed the first of a series of houses it is building in Freedom Park, an area which, despite its hopeful name, is a crowded shantytown within the Mitchell's Plain Township, and which until a few years ago lacked basic infrastructure such as plumbing and sanitation. MMA's project is part of a larger initiative by a charitable trust to build 490 units of affordable housing there. The price tag for the first house came in well below \$10,000 and is expected to go down even further once mass production begins.

To achieve such an impossibly low figure, the architects, led by Luyanda Mpahlwa, researched alternatives to the brick and concrete block construction that is prevalent in the region. “Architects are not involved in

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CIRCLE 59



A housing project by MMA Architects in Cape Town, South Africa, was conceived as a starter home to be expanded as occupants are able to afford it. An upper terrace and a large rear garden provide space for extensions (above).



Sand is a cheap, durable, and easily obtainable building material. In this flood-prone area, foundations for the house are lined with sandbags (above). Walls of sandbags offer excellent thermal and sound-absorbing properties (right).



The sandbags are plastered over on the exterior. The bags are dampened beforehand to ensure that the plasterwork cures instead of merely drying (far left). Residents of the township participated in the construction by filling sandbags (left).

low-cost housing here in South Africa,” Mpahlwa explains. “That is usually carried out by developers with government subsidies. Without any sense of creativity or innovation, they produce a model house and then just press the repeat button. Our industry does not yet support alternative design, so you really struggle to find affordable building materials.”

Mpahlwa eventually settled on a unique construction system produced by a small, local company. Composite assembly featuring a metal truss sandwiched by timber outer layers make up the floors, staircase, window openings, and exterior walls of the two-story house. The use of this kind of assembly saves up to two-thirds the amount of timber used in conventional wood frame construction. The space between the columns of the exterior walls was filled with an unlikely, but readily available product—sand.

Members of the community, particularly the beneficiaries of the 580-square-foot house, collected sand from the surrounding dunes, sifted it to remove insects and debris, and put it into bags that they stacked within the structural framework. The resulting 15-inch-thick walls, Mpahlwa points out, provide excellent thermal properties, in much the same way that traditional African stone or mud rondavels do. The walls are also fire- and wind-resistant, besides having superior sound-absorb-

ing qualities in an area where privacy is in short supply.

The sandbags’ ability to prevent water penetration offers another benefit. Much like walls of sandbags that are often assembled for flood control purposes in the wake of rising rivers, the sandbag-walled house is particularly useful in an area prone to flooding.

As in the Villanueva project, a construction manager and a small team of skilled workers oversaw construction, which included on-the-job training for locals. Throughout almost the entire building process, no

**“OUR INDUSTRY DOES NOT YET SUPPORT ALTERNATIVE DESIGN, SO YOU REALLY STRUGGLE TO FIND AFFORDABLE BUILDING MATERIALS.”**

electricity was required on-site. Beams were fabricated to measure in a nearby warehouse, and cement to plaster the exterior walls was mixed in a hand mixer. Concrete was used only in the beams to support the second level, where the bedrooms are located. Interiors are clad in timber board.

Mpahlwa left a considerable portion of the house’s small plot unbuilt, allowing for a garden and a safe area behind the house for the recipient family’s six children to play. “These are very dense and dangerous

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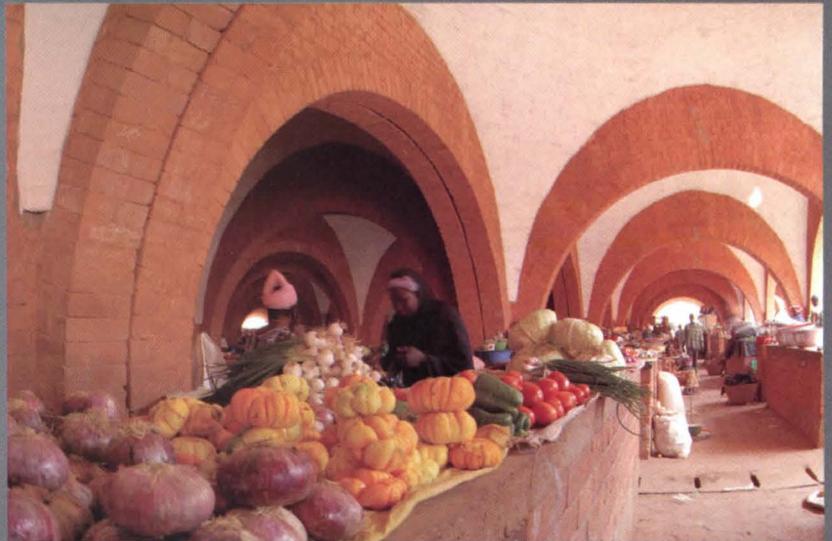
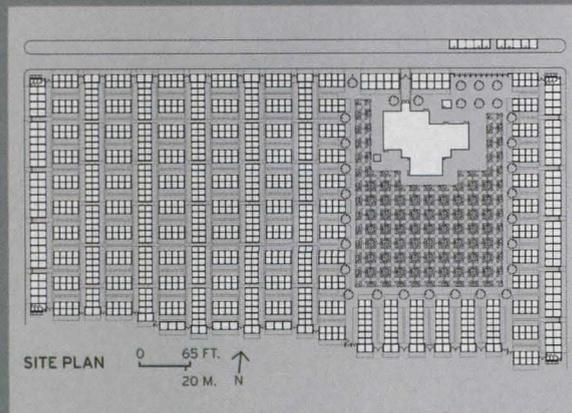
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CIRCLE 60

A section of the Central Market in Koudougou, Burkina Faso, reveals a series of arced shops (top). The market's orthogonal layout covers an area of 312,000 square feet (below).



Vegetable vendors occupy many of the market's stalls (above). Compressed earth blocks, formed with a hand-press machine, were used for roofs as well as for walls (far left). Large arches support dome-shaped roofs (left).

environments," Mpahlwa says. "It's important to think about issues of comfort and safety." The family, who had been living in a shack, was involved in the design process from the beginning. "They had never lived in a formal structure," Mpahlwa says. "It was an incredible feeling to see the look on their faces as they moved into their first home."

### Up market

Farther north on the African continent, a government program to stimulate economic growth led to the creation of an extraordinary project. The landlocked nation of Burkina Faso is one of the poorest in the world, with few natural resources. Most of the population is engaged in agriculture (despite crops' vulnerability to periodic drought), and a large part of the male labor force migrates annually to neighboring countries for seasonal employment.

In Koudougou, the country's third-largest city, the construction of the Central Market helped provide jobs and develop masonry skills among local workers. Once completed, its 1,200 shops—encompassing 312,000 square feet—offered a vibrant civic space for commercial and social exchange.

The market, which was honored with the Aga Khan Award for Architecture in 2007, was built under the direction of the Swiss Agency

for Development and Cooperation in collaboration with the Burkina Faso government. The principal architect, Swiss-trained Laurent Séchaud, has resided in Burkina Faso since 1997. "The climate and living conditions here are quite difficult," Séchaud says, "but the people are very welcoming."

While buildings made of earth—whether rammed earth, cob, mud bricks, or compressed earth blocks—are largely alien to people in the developed world, much of the rest of the world's population occupies such buildings. The one-story houses throughout Koudougou were, until recently, built from earth blocks. Construction of these homes, along with that of the city's administrative buildings and urban facilities, is now almost entirely of concrete block and other costly, imported materials.

Designers of the Central Market, including fellow Swiss Pierre Jéquier and local engineers, reclaimed the traditional building technique, using the humble, locally made product to create a sprawling bazaar of vaults, domes, and arches.

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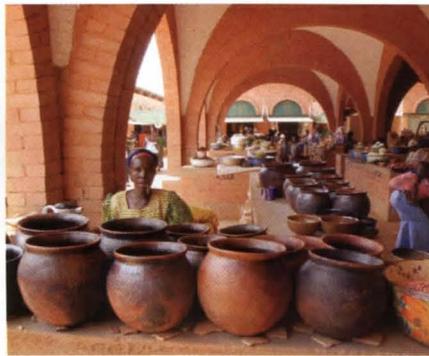
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market's blocks was manually extracted from a hill 1¼ miles from the site. A small percentage of cement was added to the mix as a stabilizing ingredient.

The blocks were made on-site using 12 hand-press machines, each supported by a rotating staff of four workers. Up to 9,500 blocks of varying sizes could be produced per day, totaling 4 million for the entire project. Smaller blocks were used in the vaults and domes. Larger blocks measuring 11½ by 3½ by 5½ inches filled in the walls—the longest dimension representing the wall's depth. The blocks were cured in the sun in two stages, each 14 days long.

The market's orthogonal layout mimics the colonial grid characteristic of Burkina Faso's cities. Around its periphery are shops that stay open past general market hours, animating the city center. In an effort to open up views, minimize solar exposure, and provide adequate air circulation within the dense market, the internal layout, while still linear, is



quite diversified. Shops oriented east–west along the width of the market form alleys, as north–south oriented shops delineate small gathering spaces. An open, domed area supported by a series of high arches contains additional stalls.

The one-story compound incorporates 85 domes, 658 vaults, and 1,425 arches. Since timber is a precious resource in the region, most of these were constructed without the use of formwork. A few of the larger arches that required temporary support used timber, but for most, earth blocks were cut and shaped to form makeshift structures.

The labor-intensive project generated more jobs than would have been possible had concrete been the building material of choice. In the process, hundreds of local workers—many of them women—gained certification as masons, and now work as freelance entrepreneurs. ■

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## AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION

### INSTRUCTIONS

- ◆ Read the article “Getting High Design from a Low-Tech Approach” using the learning objectives provided.
- ◆ Complete the questions below, then fill in your answers on the next page.
- ◆ Fill out and submit the AIA/CES education reporting form on the next page or take the test online at [continuingeducation.construction.com/](http://continuingeducation.construction.com/) to receive one AIA learning unit.

### QUESTIONS

1. Which part of the construction of the library in Colombia was performed by a professional crew?
  - a. the gabion wall
  - b. the concrete frame
  - c. the plaza overhang
  - d. the trussed roof
2. Which was not used in the construction of the library's gabion wall?
  - a. wire cages
  - b. small river stones
  - c. aluminum louvers
  - d. dimensioned pine wood
3. Experienced road builders supervised the construction of which?
  - a. the gabion wall
  - b. the pine wall and overhang of the plaza
  - c. the 6.5-foot-deep foundations
  - d. the trussed roof
4. Heavy rainfall in Colombia is accommodated for by which construction element?
  - a. 6-foot-wide corridors
  - b. columns with pin connections at the top and bottom
  - c. channels on both sides of the building
  - d. a sandwiched metal deck on the main roof
5. The prevalent construction method in Cape Town is which?
  - a. pine modular panels
  - b. metal truss sandwiched by timber
  - c. compressed earth blocks
  - d. brick and concrete block
6. The building system for the Cape Town house used all except which feature?
  - a. sand
  - b. cement plaster
  - c. conventional wood frame
  - d. lightweight beams
7. The 15-inch-thick walls in the Cape Town house provided all of the following beneficial properties except which?
  - a. fire resistance
  - b. rainwater runoff channels
  - c. thermal insulation
  - d. sound absorption
8. Koudougou's Central Market did all of the following for locals except which?
  - a. developed masonry skills
  - b. provided jobs
  - c. provided civic space for social exchange
  - d. developed an international trade market
9. Swiss architects reclaimed the traditional building technique in Koudougou for all of the following reasons except which?
  - a. earth blocks made the arches, vaults, and dome shapes more precisely
  - b. concrete blocks were not available
  - c. concrete blocks were costly
  - d. making earth blocks on-site provided local jobs
10. For which reason are the shops in Koudougou's market oriented both east–west and north–south around alleys and gathering spaces?
  - a. to provide adequate air circulation
  - b. to mimic the colonial grid
  - c. to provide a system of order
  - d. to ease crowd control



## AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION

Program title: "Getting High Design from a Low-Tech Approach," Architectural Record (10/08, page 154).

108EDIT1

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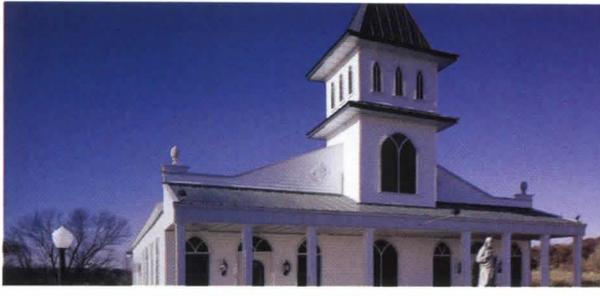
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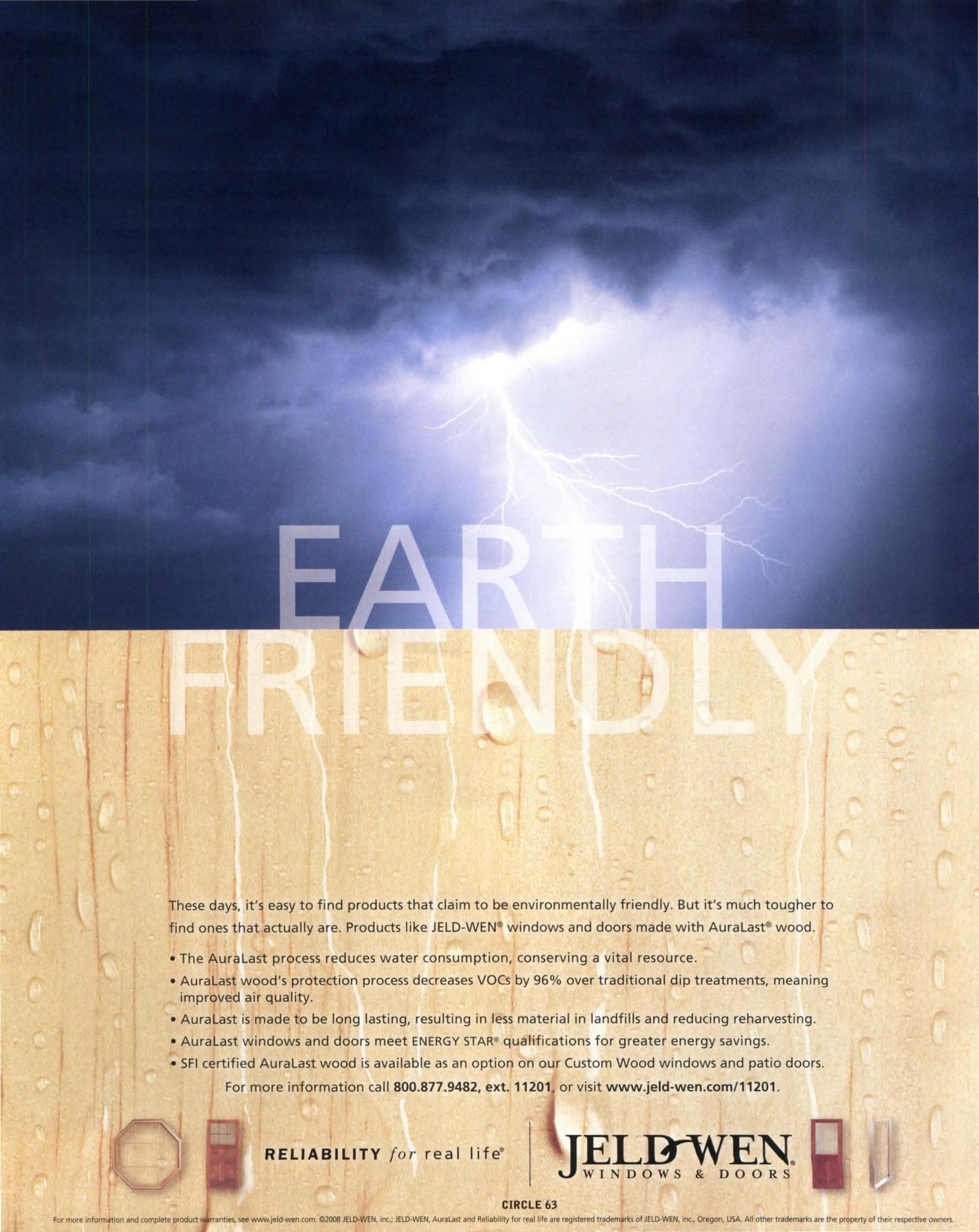
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CIRCLE 63

# The Case for Certified Wood

Forest products deemed sustainable are a growing part of today's green buildings



Photo Courtesy of JELD-WEN® Windows and Doors

Products that incorporate certified wood add to a structure's sustainability.

Provided by JELD-WEN® Windows and Doors

The demand in the United States for environmentally responsible building products continues to grow. Purchasing decisions are increasingly influenced by environmental platforms, and architects, builders, designers and consumers are looking to manufacturers for assistance. Soon, the sustainability and environmental responsibility of building products may be as important (or more so) to the building industry professional than colors, hardware or even price.

As a building material, wood has been used for centuries for its warmth, durability, longevity and natural beauty. Today, there is another reason for architects to specify wood: its contribution to a sustainable environment. This article will cover the environmental, energy and carbon-neutral attributes of wood, and explain the need for responsible forestry practices that keep wood building materials a truly green choice. Also discussed will be the various organizations that certify wood as sustainable and the ways in which points may be earned by specifying wood through the major green rating systems.

## BENEFITS OF WOOD AS A BUILDING MATERIAL

In addition to the fact that wood is one of a handful of major renewable structural materials in existence, wood has a number of other attributes that make it an intelligent environmental choice as a building material.

**Wood stores carbon.** In the carbon cycle, carbon is dispersed through the air, ground, oceans, plants and animals. Carbon dioxide is the basic raw material that plants use to convert solar energy into food, fiber, and other forms of biomass. Trees remove, or sequester, this carbon dioxide from the atmosphere during photosynthesis, using carbon molecules to make sugars and starches that feed the growth of cell walls. Trees then release the oxygen part of the

### CONTINUING EDUCATION

Use the learning objectives below to focus your study as you read **The Case for Certified Wood**. To earn one AIA/CES Learning Unit, including one hour of health safety welfare/sustainable design (HSW/SD) credit, answer the questions on page 169, then follow the reporting instructions or go to [ce.ArchitecturalRecord.com](http://ce.ArchitecturalRecord.com) and follow the reporting instructions.

#### Learning Objectives

After reading this article, you should be able to:

- Discuss the attributes of wood as an environmentally sound building material
- Compare the major forest certification agencies
- Specify certified wood for green credit

carbon dioxide molecule back into the air, but the carbon remains in the tree, even when it is made into furniture or other wood products. The carbon in these wood products is basically inert and stable, and is kept out of the atmosphere for the service life of the product — or even longer if the wood product is recycled. After decades or even centuries of use, wood buildings can be easily adapted or deconstructed and reused, which means they can continue to store carbon indefinitely. The carbon is released only when the wood rots or is burned.

Wood's ability to sequester carbon is an important attribute because carbon dioxide is a major contributor to global warming. Before the industrial revolution, the concentration of carbon dioxide was stable at some 280 parts per million — a figure that has risen to 380 parts per million, a 35 percent increase, in the last century. Today, close to eight billion tons of carbon dioxide are emitted every year, representing more than 75 per cent of total greenhouse gas emissions.

To recap, healthy forests absorb carbon dioxide and release pure oxygen, with the carbon incorporated into the trees, leaves and roots and soil, and then stored indefinitely in the wood products made from the trees. Not all trees store carbon at the same rate, however. Young, healthy trees have a higher rate of carbon dioxide conversion than older, more mature trees. In an unmanaged forest, old trees will stop capturing new carbon, though they will continue to store carbon until they start to decay.

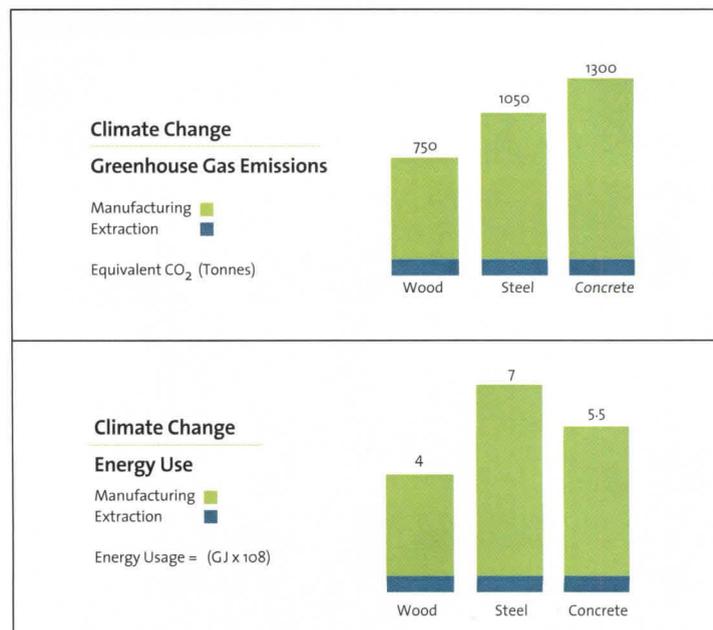
#### Wood reduces fossil fuel consumption and embodied energy.

Substituting wood for energy intensive building products like steel or concrete has a major impact both on energy usage and greenhouse gas emissions. Using low-impact wood products results in less carbon dioxide emitted and less total embodied energy used. The literature, notably by the Consortium for Research on Renewable Industrial Materials (CORRIM), is replete with life cycle assessment studies that demonstrate that wood requires substantially less energy to manufacture, transport, construct and maintain than other materials. When considering environmental impact using life cycle assessment, wood outperforms steel and concrete in the following areas:

- Embodied energy in production
- Emission of greenhouse gases
- Release of pollutants into the air
- Generation of water pollutants
- Production of solid wastes

Some consider life cycle assessment tools to provide a better picture of a material's environmental footprint than the point systems currently provided in certain popular green building rating programs. While life cycle assessment measures direct environmental impacts such as the amount of pollutants released, the rating systems gauge indirect product features such as the distance of the manufacturing plant from the site, that are to some extent related to sustainable objectives.

**Wood is a renewable resource.** With trees continually regenerating both naturally and through planting, there is more forest area in the United States today than there was 100 years ago. Forest growth in the United States exceeds harvest by over 35 percent annually.



**Wood has superior insulation properties.** Because its honeycomb cellular structure contains air pockets that limit its ability to conduct heat, wood is an efficient insulator. By comparison, steel and concrete facilitate heat transfer through a building's walls, which acts to actually increase a building's energy consumption.

**Wood's ability to sequester carbon is an important attribute because carbon dioxide is a major contributor to global warming.**

**Wood has a favorable strength to weight ratio.** In comparing strength versus weight, wood is known to be stronger than steel, most fiberglass and aluminum. In addition, wood is stiffer pound-for-pound than fiberglass and steel, making it a highly efficient material for producing a given structure.

**Wood can be engineered.** Another increasingly popular green trend is the use of engineered wood. Engineered products are recycled or reconstituted wood materials using laminated wood chips or strands that are glued together. Not only can engineered wood products be a more efficient use of wood and rely less on large, older trees, they can drastically minimize the amount of waste created in processing raw materials. Waste wood, regardless of species, shape, and age, can be used in making these products. Because engineered wood is man-made, it can be designed to meet application-specific performance requirements. Large panels of engineered wood can be made from fibers of small-diameter trees, and small pieces of wood; even wood with defects can be used in many engineered wood products. In addition, engineered wood products often have greater tolerances in stability, consistency, straightness, and strength than dimensional

lumber and consequently can be easier to work with.

Some common engineered wood products include:

- Glulams, an engineered wood product comprised of wood laminations, or "lams," bonded together with waterproof adhesives. Components can be comprised of a variety of species. Generally, individual "lams" are up to two inches thick.
- Oriented Strand Board (OSB) is made from waterproof, heat-cured adhesives and rectangular wood strands arranged in crossed layers. Like plywood in structure, OSB has many of its strength and performance characteristics. Because it is manufactured in continuous mats, OSB is available as a solid panel of consistent quality.
- Joists are T-shaped engineered wood structural members used in floor construction and flat roof applications. They are prefabricated using machine stress graded lumber or laminated veneer lumber flanges and wood structural panel webs bonded together.

## DEMAND FOR WOOD AND WOOD PRODUCTS

Building materials are not the only products made from wood. There are an estimated 5,000 different products made from trees ranging from the lumber and paper items to carpeting, clothing and even toothpaste. The average American uses about 749 pounds of paper every year. Approximately 95 percent of houses are built of wood — statistics that translate to the average person using the equivalent of a 100-foot high, 18-inch diameter tree every year for wood and paper needs. Economists predict that global gross domestic product (GDP) will double and per capita income in developing countries will triple over the next 20 years. As standards of living increase, so will the demand for natural resources, including wood.

However, the global production of wood and paper products will be hard pressed to meet the new requirements without succumbing to questionable forestry practices. The increasing demand for wood makes it more important than ever to adhere to sustainable forestry practices and avoid repeating the mistakes of the past.

## NEED FOR SUSTAINABLE FORESTRY

At the beginning of European settlement in 1630, the land that would become the United States of America consisted of approximately 423 million hectares of forest, or about 46 percent of the total area. By 1907, forest land had declined to 34 percent of the total area, a number that has remained relatively stable, with today's forest land area amounting to about 70 percent of the area that was forested in 1630. Over the centuries, forest land has been converted to other uses, primarily agricultural, with the bulk of the conversion occurring in the 19th century.

During the late 19th century and early to mid 20th century there was intensive logging on the nation's timber land. While the early logging industry was largely romanticized, as westward migration progressed, laissez-faire logging policies and farmers clearing up to four acres of forestland for every additional settler, created a lumber front that moved constantly westward, depleting native forests. In many places, rapid harvesting and irresponsible logging methods altered native forests, creating simplified forests of same-aged trees with reduced immunity to fire and disease.

An environmental consciousness gradually *took hold in the* United States, spurring a movement toward forest management, reforestation, and erosion control that were seen as keys to limiting degradation from timber harvesting. An increasing interest in sustainability has thrown low-impact logging and other responsible policies into sharp focus, as the goal has become to balance current needs for lumber with the ability of future generations to meet their needs.

Unfortunately, many of the irresponsible logging practices that occurred in nineteenth century America have been repeated around the globe. More than half of Earth's original forest cover has been destroyed due to human activity such as agriculture, development and logging — much of the destruction occurring in the past 50 years. The situation is particularly dire in the rainforest, as the following statistics illustrate:

- Rainforests once covered 14 percent of the earth's surface; now they cover only 6 percent of the earth.
- Brazil's Atlantic rainforest is approximately 4 percent of its original size.
- Half of 10 million plants, animals and insects live in rainforest land. Over 100 species are lost every day due to deforestation.
- Over twenty percent of the planet's oxygen is produced in the Amazon Rainforest.



Protecting remaining forest cover is now an urgent task. Growing populations and burgeoning global economies are creating increased demands for forest products and services, thereby placing intense pressures on the world's forests. It is a considerable challenge to balance demand for products and services with maintenance of viable forests. In simple terms, sustainable forestry can be thought of as striking that balance between society's increasing demands for forest products and benefits, and the preservation of forest health and diversity. This balance is critical to the survival of forests, and to the prosperity of forest-dependent communities.

Some of the goals of sustainable forestry include:

- Ensure a sustainable supply of raw materials
- Maximize yields
- Control costs
- Protect against unauthorized wood in the supply chain

Much of the pressure will be on private forests. Nearly 60 percent of U.S. forest land is privately owned. An estimated 89 percent of timber harvested in the United States comes from private lands, an increase from 76 percent in the 1970s. These private lands provide the bulk of the country's forest products and environmental services.

## FOREST CERTIFICATION

Forest certification helps protect forests from destructive logging practices. Designed to grant a seal of approval for wood or paper products that come from forests managed to strict environmental and social standards, forest certification programs provide consumers of windows and doors, for example, with third-party assurance that the wood in the product was sustainably harvested from a healthy forest, and not illegally sourced from a tropical rainforest or the homelands of indigenous people. By increasing consumer demand for certified products, retailers and manufacturers are more likely to use certified suppliers, which in turn prompts forest managers to adhere to ecologically sound management, avoiding such practices as large-scale inappropriate clear cutting, logging in old-growth forests and cutting down natural forests in favor of tree plantations, especially in developing countries where the initial financial gains of rapid harvesting are enticing. Forestry certification not only provides consumers with assurance of conformance to a quality or performance standard, it increases the perceived value of the product in the marketplace. Forestry certification can also be a key differentiator among products and even among manufacturers.

**To carry a forest certification label, a product must have documentation proving it comes from a certified forest. This paper trail is called the "chain-of-custody."**

To carry a forest certification label, a product must have documentation proving it comes from a certified forest. This paper trail is called the "chain-of-custody" and it provides a link between the certified forest and the certified forest product. In other words, chain of custody tracks and records the path logs take from the forest, through

the different stages of production — primary manufacturing, secondary manufacturing, wholesaling, and retailing — all the way to the end user. Compliance with this standard means that customers can be assured that from harvesting to manufacturing to delivery to their door, the product has adhered to sustainable standards.

While the intentions are pure, a lot remains to be done in the area of forest certification. With approximately 35 organizations worldwide offering certification programs, as of 2008, a mere 10 percent of the world's forestland has been certified, according to the Sustainable Forestry Initiative.

## BENEFITS OF CERTIFIED WOOD

Using certified wood comes with a number of benefits, not the least of which is the intrinsic advantage of acting in an environmentally responsible manner. It provides assurance that the product has met rigorous environmental and social standards. The use of certified

### THE NEXT GENERATION'S PERSPECTIVE WILL INCREASE GREEN BUILDING



Source: USGBC

wood may contribute credits or points to a certified project under the various green rating systems. With the increasing consumer focus on sustainable lifestyles, homeowners may increasingly place a financial value on having a demonstrated component of their house identified as certified wood. Studies show the perspectives of the next generation of consumers will increase green building. According to the USGBC, the overwhelming majority of next-generation consumers already choose brands aligned with a social cause and a clear majority will recommend brands aligned with a social cause.

Further, purchasing certified wood ensures the long-term sustainability of the forests from which the wood was harvested. It ensures that forests are maintained, with support for continual wood supply and minimization of illegal logging. In short, purchasing certified wood drives the entire market toward sustainable practices. On the other hand, buying wood from forests that are not managed in a way that can be independently audited and scientifically evaluated to protect the entire ecosystem may be an environmentally risky choice and, at worst, counter productive to the sustainable forestry movement.

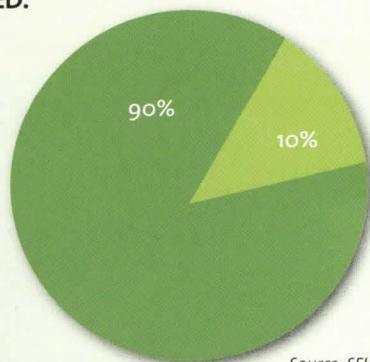
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See Quiz on the Next Page

or

Take the Quiz Free Online

**IN 2008, ONLY 10% OF THE WORLD'S FOREST COVER IS CERTIFIED.**



Certified Forests  
Uncertified Forests

Source: SFI

To receive AIA/CES credit, you are required to read the entire article and pass the test. Go to [ce.ArchitecturalRecord.com](http://ce.ArchitecturalRecord.com) for complete text and to take the test. The quiz questions below include information from this online reading.

Program title: "The Case for Certified Wood" (10/08, page 165). AIA/CES Credit: This article will earn you one AIA/CES LU hour of health, safety, and welfare/sustainable design (HSW/SD) credit. (Valid for credit through October 2010). **Directions:** Refer to the Learning Objectives for this program. Select one answer for each question in the exam and fill in the box by the appropriate letter. A minimum score of 80% is required to earn credit. **To take this test online and avoid handling charge, go to [ce.ArchitecturalRecord.com](http://ce.ArchitecturalRecord.com)**

1. **Wood releases carbon:**
  - a. after it is used during photosynthesis.
  - b. under no circumstances.
  - c. when it rots or burns.
  - d. when the product reaches the end of its service life.
2. **Using wood products results in:**
  - a. using less carbon dioxide.
  - b. less embodied energy.
  - c. less water pollution.
  - d. All of the above
3. **A wood product comprised of wood laminations bonded together with waterproof adhesives is known as:**
  - a. OSB.
  - b. Glulam.
  - c. 1-joist.
  - d. melamine.
4. **The approximate number of products made from wood is:**
  - a. 50.
  - b. 500.
  - c. 1,000.
  - d. 5,000.
5. **Rainforests once covered 14 percent of the earth's surface; now they cover this percentage:**
  - a. 1 percent
  - b. 6 percent
  - c. 15 percent
  - d. 25 percent
6. **To carry a forest certification label, a product must have documentation proving it comes from a certified forest. This paper trail is called:**
  - a. chain-of-custody.
  - b. volume certification.
  - c. accredited documentation.
  - d. labeling chain.
7. **This portion of the world's forestland has been certified:**
  - a. 50 percent
  - b. 30 percent
  - c. 75 percent
  - d. 10 percent
8. **The two primary standards for large forest ownership in the United States are:**
  - a. ATFS and SFI.
  - b. SFI and FSC.
  - c. FSC and PEFC.
  - d. PEFC and ATFS.
9. **The only certification system currently accepted by LEED is:**
  - a. ATFS.
  - b. SFI.
  - c. FSC.
  - d. PEFC.
10. **The NAHB recognizes:**
  - a. all credible third-party certification programs as they develop.
  - b. only FSC and SFI.
  - c. only ATFS and SFI.
  - d. only FSC.

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**Material resources used:** Article: This article addresses issues concerning health and safety and sustainable design.

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# Escalator Basics Today: How to Plan, Design and Update

New technology and code revisions plus the absence of standard building interface dimensions require a project by project approach to escalator design.

Provided by KONE Inc.

By Karin Tetlow

U.S. patents for escalators or moving stairways date back to the mid 19th century, but it was not until the late 1800s that the world's first operable escalator was installed in Coney Island, New York and London's Harrods department store. Shortly thereafter the first commercial model appeared in 1900 and during the first half of the 20th century manufacturers in both the U.S. and Europe found a welcome market for their models.

Since then, with improved technology, escalators have routed people within virtually every building type from hotels to department stores and transported the public in airports, office buildings and even outdoors. The world's longest system is the 2,600 ft Central-Mid-Levels escalator in Hong Kong, which transports tens of thousands of commuters between their work and residence above the streets.

Yet escalators do more than efficiently move 90-plus billion passengers each year. They encourage communication. Environmental psychologists have noticed that conversations are broken off at the arrival of the elevator and recommend that creative corporations specifically request escalators for new offices. Escalators also offer a unique organizational view that counteracts the isolation experienced by executives on penthouse floors.

While new construction is the major market for escalators, renovation and replacement is a growing sector, since an increasing number of the estimated 50,000 escalators in the U.S. are over 20 years old.

Escalators are not created equally and are unlikely to fit the same well way. U.S. code requires the angle of inclination not to exceed 30 degrees and while most manufacturers use



similar escalator components, each manufacturer arranges these components differently.

An understanding of their design concepts and installation requirements — and how their functioning varies according to the kind of project — is therefore key to designing escalators for both new and existing buildings. In addition, with the drive towards sustainable design, awareness of energy efficiencies and environmental issues in escalator design is becoming increasingly critical.

## BASIC ESCALATOR COMPONENTS

The essential components of an escalator include:

**The structural truss.** A truss is the main supporting structure of the escalator that bridges the lower and upper landings, composed of two side sections joined together with cross braces across the bottom and top of the structure. The ends of the truss are attached to the top and bottom landing platforms via steel or concrete supports. The truss carries all the straight track sections connecting the upper and lower modules.

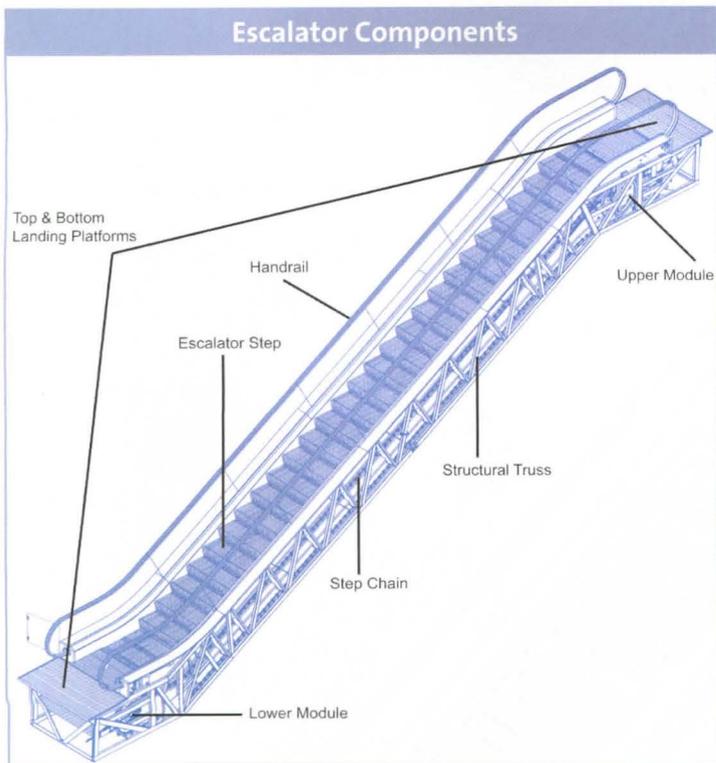
### CONTINUING EDUCATION

Use the learning objectives below to focus your study as you read **Escalator Basics Today: How to Plan, Design and Update**. To earn one AIA/CES Learning Unit, including one hour of health safety/welfare/sustainable design (HSW/SD) credit, answer the questions on page 175, then follow the reporting instructions or go to [ce.ArchitecturalRecord.com](http://ce.ArchitecturalRecord.com) and follow the reporting instructions.

#### Learning Objectives

After reading this article, you should be able to:

- Summarize the design concepts, building interface basics and essential components for escalator installation.
- Identify the pertinent features necessary for optimum escalator planning.
- Evaluate the different options available for updating escalators.



Source: KONE Inc.

**Upper module step and handrail drive system**, the main electrical and mechanical drive, is generally housed beneath the **top landing platform** at the upper end of the unit.

Early technology drive systems used worm gear drives that were about 70 percent efficient. They used a handrail drive chain/linkage which, in turn, required high maintenance and messy oiling. In addition slippage often occurred because of faulty synchronization.

New technology drive systems are about 94 percent efficient and employ a planetary gear drive, which eliminates the handrail drive chain, messy oiling and synchronization problems. The planetary gear drive uses synthetic-based lubrication and has a 30,000-hour run before the oil needs to be changed, about twice that of conventional systems.

Electrical drive systems have improved as well. Full voltage systems that required high amperage to start have been replaced with solid state soft-starting controls.

Many manufacturers also offer sensing devices, which monitor the load on the escalator and adjust motor voltage accordingly. This can result in electrical cost savings of up to 40 percent over conventional escalator systems.

**The lower module** houses the step return idler sprockets or lower reversing station. This lower reversing station component is now manufactured in cast steel, allowing for a quieter and smoother transition of the steps and chain around the lower end of the escalator.

**Top and bottom landing platforms.** In addition to housing the upper and lower modules, the top and bottom platforms anchor the ends of the escalator truss and contain a floor plate, a comb

plate and comb segments. The floor plate provides a place for the passengers to stand before they step onto the moving stairs. This plate is flush with the finished floor and is either hinged or removable to allow easy access to the machinery below. The comb plate is the piece between the stationary floor plate and the moving step. The comb segments are mounted to the comb plate and are so named because their edge resembles the teeth of a comb. These teeth mesh with matching treads on the top of the steps. This design is necessary to minimize the gap between the escalator steps and the comb plate, which helps eliminate entrapments.

**Step chain.** Each escalator contains two step chains on either side of the unit. These are basically similar in shape to a bicycle chain, but much larger, and attach the steps to the mechanical drive system which continuously pulls the steps.

Historically these chains required constant lubrication, consuming up to 600 liters of oil in a 10-year period. Further, they made for an oily mess throughout the interior of the escalator that required regular clean downs that used strong solvents and detergents. Most manufacturers now offer a patented lubrication-free chain as a standard or as an option. These dramatically reduce oil consumption, eliminate problematic oiling devices, prevent environmental contamination and significantly cut downtime associated with housekeeping and maintenance.

**The tracks.** The track system is built into the truss to guide the steps. There are actually two tracks: one for the front wheels of the steps and one for the back wheels of the steps. The relative positions of these tracks cause the steps to form a staircase as they move out from under the comb plate. On the inclined portion of the escalators, the step track is positioned to create a staircase configuration at the steps. Then, as the steps transition at the top and bottom of the escalator, the two tracks separate to allow the steps to “flatten out” at the floor plate.

**Escalator steps.** Most manufacturers offer steps in three widths: 24-in, 32-in and 40-in wide. The depth of any step tread in the direction of travel shall not be less than 400mm (15.75in) and the rise between treads shall not be more than 220mm (8.5in). Most steps today are fabricated from cast aluminum, which is stronger and lighter than older escalator step construction.

**The handrail.** As its name declares, the handrail provides a convenient handhold for passengers. Manufacturers offer a range of colors to provide an aesthetic fit.



Photo Courtesy of KONE Inc.

## Escalator Modernization

Maintained by the Port Authority of New York and New Jersey, the George Washington Bridge Bus Station has three levels—the main concourse with shops and ticket sales, the lower level with local bus and subway stops and bus platforms on the upper level. Escalators moving people between each level had been in service since the station was opened in 1963.

After 40 years of heavy use, equipment malfunctions, lack of spare parts and addressing safety code changes, escalators were periodically taken out of service, thereby seriously inconveniencing the station's 20,000 daily commuters.

Two alternatives were evaluated: rehabilitation and replacement, reports Port Authority engineers Dharam Pai, PE and Cheng Chang, PE. Each alternative was problematic. New replacement parts were hard to obtain and replacing the existing heavy-duty escalators required significantly more space that involved structural modifications.

While exploring these options, a third was presented: a modernization package where an entirely new escalator would be installed in the existing truss. The package provided a systematic way of replacing all escalator components with new custom engineered modular ASME code and New York City building code compliant components, while avoiding significant disruptions and construction costs. Two escalators were selected as a pilot project.

After extensive factory testing (the modernization was the first for the station's type of escalator) the modules were attached to the existing truss. Other components were installed in sequential fashion that followed the procedures of new escalator construction. No structural modifications were required and no major rigging, hoisting or crane requirements were necessary — and no service interruptions.

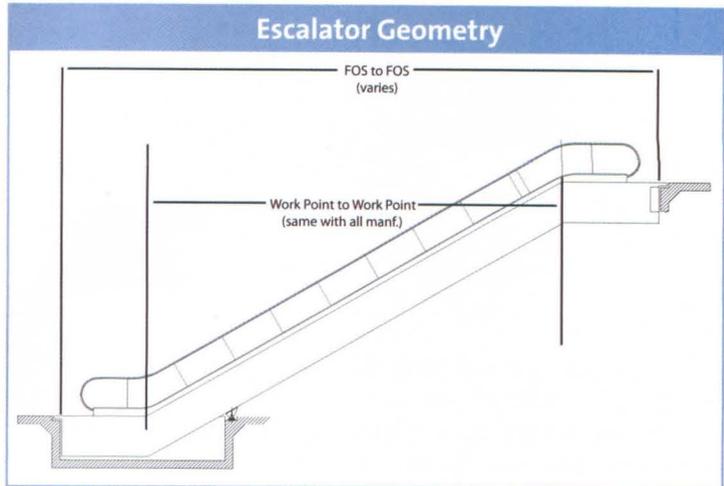
Cited as a 2007 Project of the Year by Elevator World, the two modernized escalators offer improved safety, greater reliability, lower energy use and lower operating costs. Moreover, the replacement newels, decking and stainless steel balustrades improve the appearance of the station.

## ESCALATOR DESIGN CONCEPTS

**Escalator geometry.** Governed by ASME and CSA (Canadian Standards Association) standards in the U.S. and Canada (ASME A17.1-2007/CSA B44-07 Safety Code for Elevators and Escalators), A17.1 requires the angle of inclination for escalators not to exceed 30 degrees. (Old/historic escalators must conform to the requirements of ASME A17.3 as a minimum, where adopted by the local authority.)

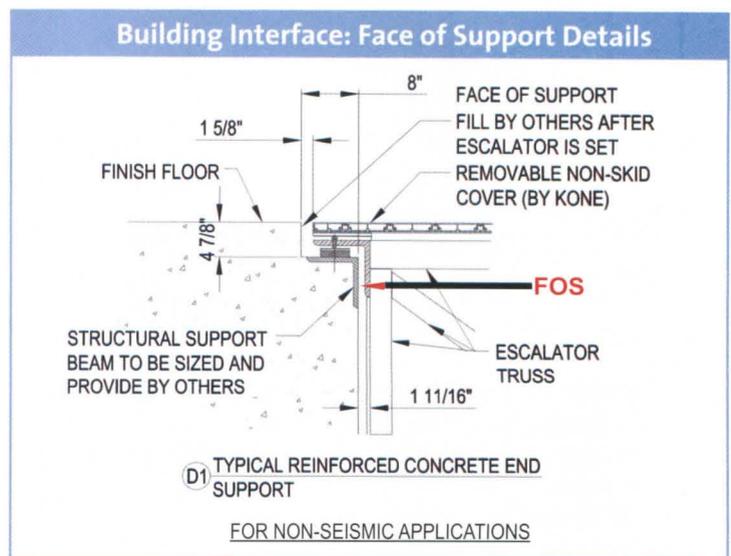
This means that for a given floor to floor rise, the work point (WP) — the point at which the 30 degree incline intersects with the floor level — to work point (WP) dimension is always the same, regardless of the manufacturer (floor to floor rise x 1.73205.)

Since manufacturers configure escalator components differently, the distance between the floor level WP and the point at which the escalator intersects with the building structure — known as the Face of Support (FOS) — varies. As a result, all manufacturers' space requirements between the WP and FOS have different dimensions.



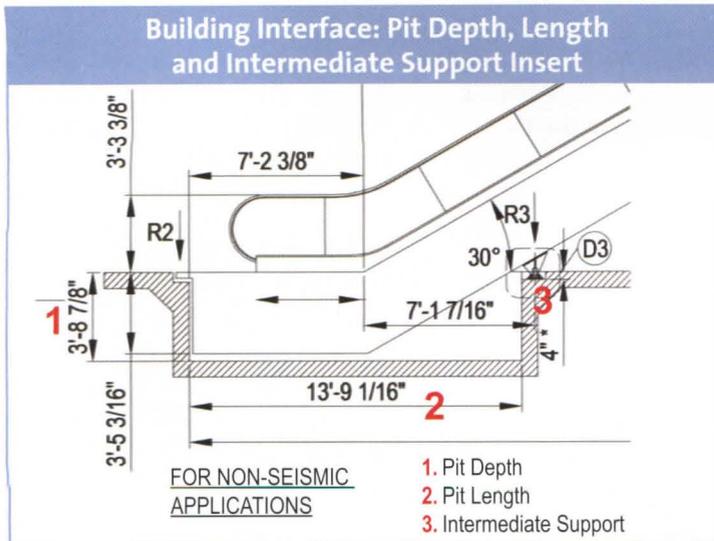
Source: KONE Inc.

**Interfacing with the building.** The distance between the FOS at the upper end and the FOS at the lower end formulates the actual structural opening of the escalator well-way. Then, an 8" pocket is typically provided at each landing to allow for the alignment of plate finishes with the walk-on plate.



Source: KONE Inc.

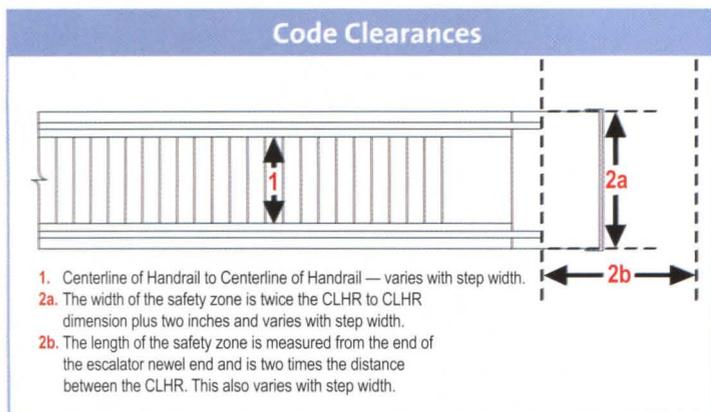
The depth and length of the pit, number of level steps and whether or not intermediate support is required at the back of the escalator pit will all vary from manufacturer to manufacturer, depending upon the rise of the escalator and width of the steps.



Source: KONE Inc.

The width of the escalator pit is typically calculated as the physical width of the escalator plus two inches to allow for construction tolerance. Side by side escalators are typically handled the same way, but the two inches is added only once, not per escalator.

Code stipulates the width and the length of the landing zone at each end of the escalator, both of which are driven by the distance between the centerline of the handrails (CLHR.) This varies with step width and among manufacturers.



Source: KONE Inc.

**Standard escalator features.** Most escalator manufacturers offer the following basic standard features:

**Balustrades** in “solid” usually #4 or #8 stainless steel and bronze or glass with thickness either 3/8” or 1/2”.

**Speed.** 100 ft per minute, which is the maximum speed.

**Step widths** in 24-in, 32-in and 40-in.

**Microprocessor based controller.**

**Maximum travel distance** varies with manufacturer.

**Painted steps** in silver and black

**High-impact step inserts** in yellow and black

**Floor Plate** in aluminum and stainless steel

**Safety features.** (See Safety Features sidebar in online section of this article.)

## ESCALATOR PLANNING

The essential feature of escalator planning is to understand that there is no one-solution-fits-all. Each project needs to be analyzed according to its particular requirements.

Applications for Escalators with Different Step Widths				
Size	Step Width	Single-step capacity	Applications	Energy consumption in Horsepower
Small	24 in	One passenger	Low-volume sites, uppermost levels of department stores, when space is limited	5 HP
Medium	32 in	One passenger + one package or one piece of luggage	Shopping malls, department stores, smaller airports	10 HP
Large	40 in	Two passengers — one may walk past another	Mainstay of metro systems, larger airports, train stations, some retail usage	15 HP

The first place to start is analyzing the market segment. Retail, office, airport, stadium, hospital or public transit, each require different features and design aesthetics. Some site-driven features include:

- **Type of balustrade.** In addition to standard manufacturer offerings stainless steel, bronze and glass, detailing in brass and ambient glass are available.
- **Step width** is specified according to space available and the requirements of passengers.
- **Number of flat steps.** Code requires a minimum of two flat steps. Most commercial projects are designed for two flat steps. Three flat steps is a common feature found in public transportation projects.
- **Weather related features.** Water resistant options include galvanized trusses, water tight control cabinets and electrical switches, sealed bearings, chain covers, and protective canopies. These are common in outdoor applications.
- **Type of chain.** Lubricated chain or lubrication free chain are options. Depending on the rise, width, and step loading requirements, chain will be sized accordingly.
- **Type of metal finish.** 304 type steel is standard. 316 is an available option for corrosion resistance.
- **Type of drive and other components.** Planetary gear drives are standard. Energy saving soft start devices are optional.

Since many of these features can add considerable cost to the escalator budget, it is important to take time to match the operating environment with the required features prior to finalizing the project budget and specification.

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Program title: "Escalator Basics Today: How to Plan, Design and Update" (10/08, page 171). AIA/CES Credit: This article will earn you one AIA/CES LU hour of health, safety, and welfare/sustainable design (HSW/SD) credit. (Valid for credit through October 2010). **Directions:** Refer to the Learning Objectives for this program. Select one answer for each question in the exam and fill in the box by the appropriate letter. A minimum score of 80% is required to earn credit. **To take this test online and avoid handling charge, go to [ce.ArchitecturalRecord.com](http://ce.ArchitecturalRecord.com)**

1. **U.S. code requires that escalators be installed at**
  - a. a 40-degree incline.
  - b. always the same distance between the work point and face of support.
  - c. always the same rise.
  - d. an angle of inclination not to exceed 30 degrees.
2. **Escalators are unlikely to fit the same well way because**
  - a. manufacturers arrange components differently.
  - b. building floor heights are different.
  - c. updated codes require different space requirements.
  - d. manufacturers use different components.
3. **Today's step chains**
  - a. are available as a lubrication free standard or option.
  - b. all still require constant lubrication.
  - c. are located on one side of the unit.
  - d. All of the above
4. **Historic escalators must conform to**
  - a. EN115.
  - b. ASME A17.3 as a minimum.
  - c. ASME A17.1.
  - d. ASME A17.1/CSA B44.
5. **Many manufacturers offer step widths in**
  - a. 24-in and 40-in.
  - b. 12-in, 24-in and 32-in.
  - c. 32-in, 40-in and 50-in.
  - d. 24-in, 32-in and 40-in.
6. **The width of the escalator pit is typically calculated as the physical width of the escalator plus**
  - a. 3 inches.
  - b. depends on comb plate width.
  - c. 2 inches.
  - d. one-half the width of the step.
7. **The width and length of the landing zones are**
  - a. different at each end of the escalator.
  - b. driven by the distance between the centerline of the handrails.
  - c. independent of the step width.
  - d. always the same.
8. **The first step in escalator planning is**
  - a. addressing energy efficiencies.
  - b. specifying safety features.
  - c. analyzing the market segment.
  - d. matching design aesthetics with that of the building.
9. **Reasons for replacing or modernizing old escalators include**
  - a. difficulty in obtaining parts.
  - b. taking advantage of the improved efficiencies of new technology.
  - c. changes in safety codes.
  - d. All of the above
10. **Modernization is often chosen over replacement because**
  - a. new trusses are more reliable
  - b. OSHA-approved barricades are not required
  - c. it is often far less costly and disruptive than direct replacement
  - d. of the opportunity to reinforce the building foundation

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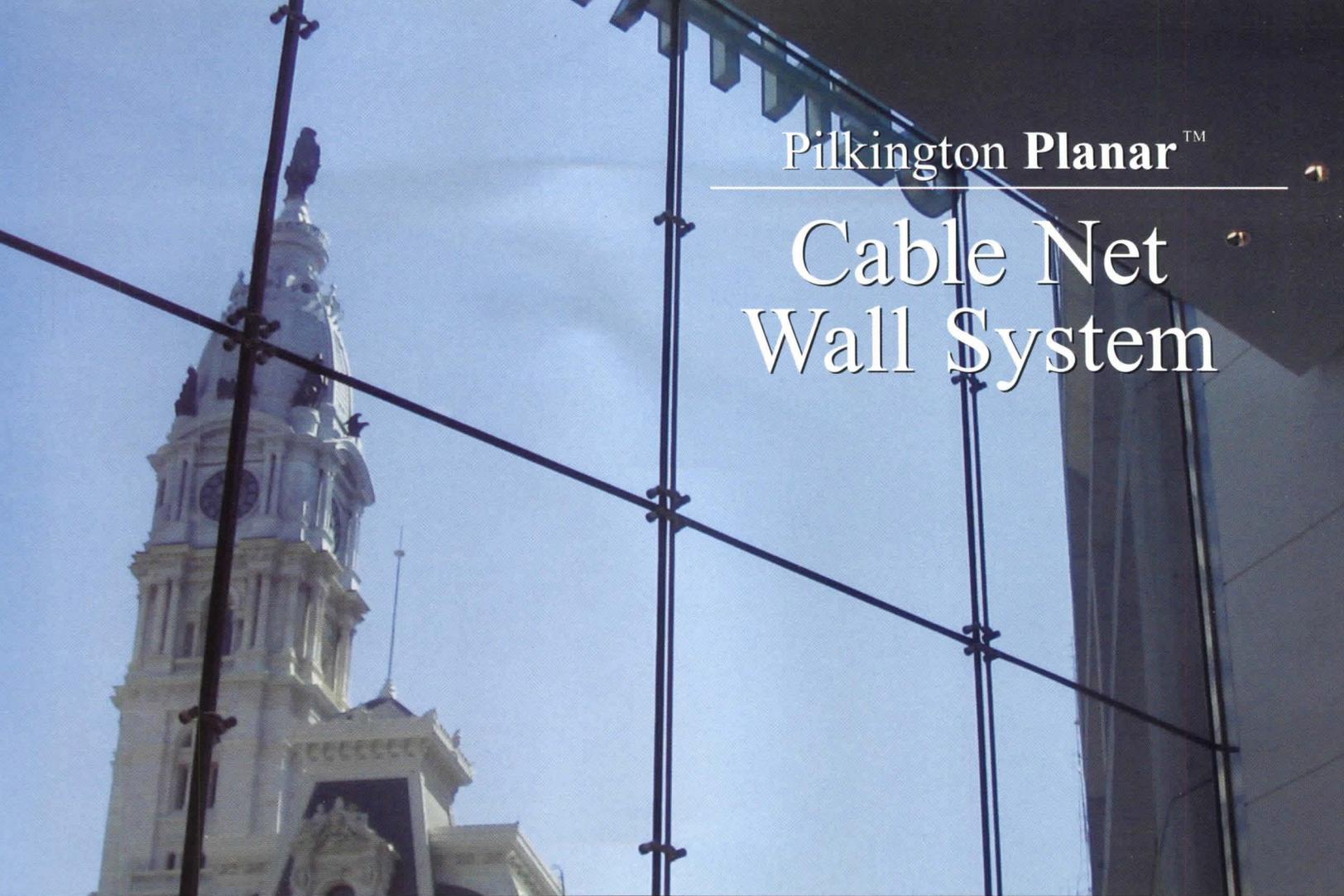
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# Glass Act: Where Beauty and Engineering Clearly Meet

Seeing through today's spectacular bolted structural glazing systems to the precision engineering inside

Provided by W & W Glass, LLC

By Layne Evans

From storefronts and lobbies to the most stunning signature buildings in the world, the expanses of glass continue to get bigger, taller, more complex and ever more transparent. The metaphors vary — disappearing walls, invisible structure, bringing the outside in, dissolving the boundaries between the building and the street and sky — but the basic desire for the most transparent structure possible has driven the development of glass architectural material for about two thousand years.

The current state of the art is the *bolted structural glazing system*, also referred to as point supported glazing: glass, stainless steel fittings and increasingly imaginative support or back-up structures conceived and executed as an integrated unit. As glass structures get clearer and buildings more see-through, the science and skill required to implement them gets increasingly complex. This article will outline the still continuing evolution of bolted structural glazing systems, the precise engineering, stringent testing and technological innovations in each of their major elements, particularly the glass itself, and the critical importance of bringing together the design, engineering, manufacturing and fabrication of these interacting elements into a single system, a sum very much greater than its component parts.



Photo Courtesy of W&W Glass, LLC  
One of the most celebrated and spectacular examples of bolted structural glazing systems in the world is the Rose Center for Earth and Space, American Museum of Natural History, New York City, NY. Architect: Polshek Partnership Architects LLP.

## CONTINUING EDUCATION



Use the learning objectives below to focus your study as you read **Glass Act: Where Beauty and Engineering Clearly Meet**. To earn one AIA/CES Learning Unit, including one hour of health safety welfare credit, answer the questions on page 181, then follow the reporting instructions or go to [ce.ArchitecturalRecord.com](http://ce.ArchitecturalRecord.com) and follow the reporting instructions.

### Learning Objectives

After reading this article, you should be able to:

- Examine the major components of bolted structural glazing systems and assess how their essential relationships to each other impact design and performance.
- Recognize the specific design, testing and engineering issues related to the fundamental properties and manufacturing processes of glass as it is used in bolted structural glazing systems.
- Compare the basic types of bolted glazing structural glazing support systems and how they function in various applications.

## FRAME FREE

Throughout the colorful history of glass in buildings, from the first not-very-clear windows in first century Rome through the stained glass of medieval cathedrals, the Sun King's mirrors in Versailles and the 293,635 panes of glass in London's famous Crystal Palace in 1851, glass was always captured in a frame. Individual panes of glass became larger in the 19th century, with the inventions that led to mass production, but frames of lead, steel or aluminum were still required. Only in the 1960s, predominantly in Europe, came the invention of the patch plate hardware fittings that could connect individual glass lites into a matrix without frames.

These early systems were a remarkable advance in transparency. They typically were suspended assemblies, consisting of panels of face glass connected to vertically oriented glass fins by sliding knuckle hinges and corner patches. The face glass hung from adjustable steel rods along the top of the structure, and was stiffened by the fins, which hung independently from the face glass and were designed to take lateral loads. The vertical and horizontal joints separating the individual lites of glass were typically sealed with two-part epoxy.

This basic system was prevalent for over 25 years, but in the 1980s, technical advances in two different areas led to the next big step forward in transparency. Structural silicone systems began to emerge, with properties superior to previous epoxies, more weather-tight and more able to withstand the flexing and stresses of large glazing systems. Around the same time, in England in 1982, the use of a countersunk hole in glass was invented and quickly recognized as a key breakthrough. A hole about the size of a quarter was drilled very close to the glass edge, and much smaller fittings, flush with the exterior face, could be used. The innovation of the countersunk hole, instead of the heavy corner patch plates used in the original suspended systems, allowed structural glazing to be used as an entire cladding system, in any plane, not just the vertically suspended facades. Each lite could be fastened back to the glass fin, making each lite independent of those adjacent. The true point supported, bolted glass façade emerged.

Impressive buildings all over the world began to incorporate these systems from the late 1980s on. The basic components – glass, fittings and support structures — remain the same today. However, as in every other technology, the pace of innovation in each of these components has accelerated in recent years. Today's glass is available in forms that are lighter, flatter, clearer, and highly engineered to meet more stringent energy and building codes. The design of fittings has been refined and expanded to include applications for the most extreme conditions. And today's glazing is often bolted to sophisticated steel supporting structures, including trusses and tensioned cable riggings, which make architectural statements of their own.

**...the basic desire for the most transparent structure possible has driven the development of glass architectural material for about two thousand years.**

But perhaps the most important overall lesson learned has been the recognition of how closely the performance of each element is connected, and how carefully these relationships have to be managed to create a single, sole source, tightly controlled, precisely engineered, integrated system.

### IT'S ALL ABOUT THE GLASS

The clear heart of the structural glazing system is the glass itself. As crucial as the right fittings are to the system, steel fittings are far simpler to engineer than glass. And even the most sophisticated design for a support structure will only perform as well as the glass performs.

Glass is one of the most mysterious substances known, the most liquid of solids and the most solid of liquids. It is technically "perfectly elastic," which means if deflected (moved), it will return to its original shape. But it is also technically "brittle," meaning that it cannot bend very far without fracturing. Theoretically glass has higher tensile strength than steel, but it does not behave in a "linear" way. Doubling the load will not necessarily double the deflection

## The Time Warner Center

The Time Warner Center located in New York City utilizes state-of-the-art cable tension design at its main entrance façade and "Prow" structure. The Prow is a three-sided transparent glass structure specifically designed to house large electronic signage. The large horizontal steel elements visible in this image are in place to support signage and do not provide any structural support for glazing. The Prow was constructed using a combination of low-iron glass, vertically-hung double steel cables, and horizontal glass fins. The horizontal laminated glass fins shown below are designed to take up the lateral wind loads. The vertically-hung double steel cables are designed to support the dead load suspended weight of the glass wall.

The 80' wide x 180' tall entrance façade is supported by a cable net, which consists of a series of cables tensioned horizontally and vertically. The boundary structure is critical in this type of design due to the large loads imparted by the cable net. Cables are tensioned at every vertical and horizontal joint, allowing the façade to move a full 23" in and out at its center (46" total), under full wind load conditions.



Photo Courtesy of W&W Glass, LLC

The famous transparent glass "Prow" at the Time Warner Center, New York City, NY.  
Architect: Skidmore, Owings & Merrill, LLP

of glass. Compare, for example, the stress and load relationships of metal and glass. A metal coat hanger will reach its yield point (it will bend) long before it breaks. In glass, however, the yield point and the breakage point are exactly the same. That point is reached with no visible warning, and not necessarily at the point where

Photograph courtesy of W & W Glass, LLC



Lead Designer: Charles Correa. Design of laboratories and research spaces: Goody Clancy and Associates. Photograph: ©Anton Grassl/Esto



On the left, standard roller wave distortion is clearly visible. On the right, the perfect reflection made possible in glass controlled for roller wave, in the extraordinary bolted structural glazing system on the facade of the Brain and Cognitive Sciences Complex, Massachusetts Institute of Technology, Cambridge, Mass.

stress is highest. A small crack from an infinitesimal imperfection or impurity will propagate at very high speed throughout the glass, causing total failure.

In engineering glass facades, the two essential design criteria are *stress* — the structural strength of the glass when subjected to various loads; and *deflection* — how much the glass will move when subjected to forces such as wind. Glass in an architectural application will be subject to multiple and constantly changing load factors: weather, positive and negative wind effects, temperature effects, snow loads, seismic factors, possibly live loads from the supporting structure, and in the case of canopies and skylights, possible falling objects. The dynamic and static loads acting on glass will cause it to deflect. The amount and shape of the deflection will depend on the glass size and thickness, and the glass edge support conditions, as well as the loads. The glass and glazing system must be designed not only to have the strength necessary to withstand the design load, but also to limit deflection.

ASTM E1300 “Determining Load Resistance of Glass in Buildings” is basically a failure prediction model taking into account the random nature of the kind of flaws and damage that can cause fractures in glass. It is the industry standard used for determining the load resistance of glass in buildings. It also includes information for calculating the deflection of glass based on its size and thickness. (ASTM E1300 specifically excludes glass with holes and notches, so they have to be accounted for by other analyses.)

Many other (often proprietary) complex and exhaustive computer models have been developed to analyze the performance, strengths and tolerance of glass. Design panel charts, for example, allow engineers to accurately predict how a given panel of structural glazing will perform under various loads. With this data the engineer can design specific panel geometries and specify glazing systems of the appropriate thickness. A typical analysis by a glass engineer would require determining the size of the panel in square meters (vertical axis) and the design wind load in Newtons per meter (horizontal axis). The cross section of these two elements will determine the appropriate thickness of glass for a given load.

So the properties of a simple pane of glass are already far from simple to quantify and predict, but drilling countersunk holes also creates areas of stress concentration that have to be taken into account. The loads on glass are normally transferred at the corners of the glass panels. Specially designed fittings that allow for movement, as talked about more below, are critical for exactly this reason, but toughened glass is still necessary to accommodate the high stresses at connections.

In consequence, the glass in structural glazing systems must be engineered and manufactured with extreme accuracy and quality control measures. Testing and analysis must be stringent, continuous and based on actual empirical data from the glass, the assemblies and the existing façades and completed projects. New building codes with higher wind and seismic requirements mean testing and analysis are even more important for compliance.

The eventual beauty, performance and safety of glass in any building, but particularly in bolted structural glazing systems, are directly determined by the level of its engineering way before the system reaches the manufacturer, and at every precise step after that.

## PERFORMANCE IN THE MAKING

The basic process of manufacturing very high quality float glass begins with melting about 70 percent silica sand, 13 percent dolomite and limestone, 12 percent soda ash and small amounts of other materials. Often some percentage of the batch is in the form of cullet, or cleaned and crushed glass recovered from previous glassmaking, which lowers the melting temperature required. About 50 other elements are available to add in precise formulas to affect performance, depending on the application. The melted mixture produces a continuously rolling 12-foot wide glass ribbon. The molten glass flows from the furnace and “floats” over a bed of molten tin. It is then “annealed”, a carefully controlled cooling process to minimize internal stresses and maximize potential mechanical resistance. For structural glazing systems, the glass is also “tempered”, to make it four times stronger than annealed glass. (The term “heat strengthened” actually refers to a slightly different process. Heat-strengthened glass, while twice as strong as annealed, will break

into large jagged fragments, unlike tempered glass, which breaks into small, much less dangerous fragments.)

Tempering involves reheating the glass to the point where it starts to soften followed by rapid controlled cooling or “quenching.” The outer surface of the glass cools faster than the inner layer. As the inner layer cools it contracts and compresses the outer layer, increasing the flexural strength of the glass by up to four times.

All fabrication of the glass is completed *before* tempering. All holes are drilled, and the other carefully controlled polishing, edging, notching and finishing processes completed, before tempering, because nothing can be altered afterwards.

Not all tempering is created equal. One measure is compressive strength. Typical furnaces average approximately 11,500 psi (pounds per square inch, a unit of pressure), and some of the most advanced modern furnaces achieve minimum compressive strength of 16,000 psi. The added strength can be especially important in structural glazing for the added safety at countersunk hole locations where maximum stress occurs.

Another measure is the occurrence of *edge dip*, *roller wave* and *bow*. These may sound like garage bands, but they are actually visual distortions that, although inherent to the tempering process, can be minimized by stringently controlled manufacturing processes. Edge dip and roller wave are caused when the ribbon of semi-molten glass sags even a small amount on the continuous casting roller during the tempering process. Bowing is caused when the two sides of the glass are cooled at even slightly different rates. These distortions are difficult to control for and are quite visible in the wavy trees and runny clouds reflected in many glass facades. The peak-to-valley “waves” in glass can be measured, and the published norm is 0.05”. However, it is possible to specify a minimum 0.0008” peak to valley wave, which virtually eliminates visual waves and results in high clarity and the perfect reflection of the surrounding environment.

The following are some of the most important additional analyses, tests and measurements that should be specified to ensure safety and performance in bolted structural glazing systems:

**Heat soak.** Many experts consider the heat soak to be one of the most important safety tests for tempered glass, to be specified and performed on all structural glazing systems before they are shipped. The heat soak process is a destructive test developed to find and eliminate the tiny, invisible impurity nickel sulfide, naturally present in the silica in float glass. Even a single inclusion of nickel sulfide can cause spontaneous breakage in a piece of glass.

In the most stringent heat soak tests, glass is exposed to a temperature of 290°C (+/-) for a period of 8 hours. In these tests 99.9 percent of the nickel sulfide impurities will be destroyed. Only the fully heat soaked glass that has survived this process should be specified for bolted structural glazing systems.

**Strain gauge.** Drilling the countersunk holes into glass creates areas of additional stress. These effects have to be factored into the system’s overall performance parameters. The strain gauge is a mechanical test to assess a variety of loads applied to glass panels in



Photo Courtesy of W&W Glass LLC  
Transparency and performance are both enhanced with an ionoplast interlayer in the glass roof of Yorkdale Mall, Yorkdale, Ontario, Canada.  
Architect: MMM International Architects.

horizontal or vertical orientations. Sensors translate pressure forces into measurable electrical resistance.

**Uniform load test.** Tempered laminated glass is loaded past the breaking point, and the laminate layer must support the weight of the broken glass.

**Finite element analysis.** a numerical analysis to define how a structure or material will react to loading conditions depending on the anticipated stress levels at various points and under various conditions. In the early 1970s finite element analysis was limited to the most expensive mainframe computers such as those belonging to aviation, defense and the nuclear industry. In our age, of course, increased computer power makes it possible for 3-D computer models to predict accurate results for all kinds of parameters and variables, such as mass, volume, temperature, strain energy, force, displacement and many others.

**Tests for specific applications.** Glass and assemblies destined for bolted structural glazing systems typically undergo many additional tests for specific conditions, including wind load resistance, hurricane performance, air and water penetration, seismic performance, impact resistance and bomb blast loading.

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Program title: "Glass Act: Where Beauty and Engineering Clearly Meet" (10/08, page 177). AIA/CES Credit: This article will earn you one AIA/CES LU hour of health, safety, and welfare credit. (Valid for credit through October 2010). **Directions:** Refer to the Learning Objectives for this program. Select one answer for each question in the exam and fill in the box by the appropriate letter. A minimum score of 80% is required to earn credit. **To take this test online and avoid handling charge, go to [ce.ArchitecturalRecord.com](http://ce.ArchitecturalRecord.com)**

1. **The invention of the countersunk hole in bolted structural glazing systems made possible which of the following:**
  - a. Fittings flush with the glass
  - b. Structural glazing in all planes, not just vertical
  - c. Structural glazing as an entire cladding system
  - d. All of the above
2. **The important difference between glass and metal when loaded is that:**
  - a. metal is stronger
  - b. the yield point and the breakage point of metal are not the same, but in glass they are.
  - c. the fracture of glass is linear and easily predictable but metal is more complex.
  - d. glass is always lighter.
3. **The two essential design criteria for glass in structural glazing systems are deflection and**
  - a. thickness
  - b. transparency
  - c. stress
  - d. coating characteristics
4. **Reheating glass during manufacturing to the point of softness and then cooling or quenching it quickly is the basic process for:**
  - a. annealing
  - b. laminating
  - c. solarizing
  - d. tempering
5. **All but which one of the following are permanent visual defects that can be minimized only by stringent manufacturing control:**
  - a. Bow
  - b. Roller wave
  - c. Surface grit
  - d. Edge dip
6. **A specified peak-to-valley wave measurement (in inches) of which of the following would indicate tempered glass with virtually no visual waves and the highest transparency and clarity:**
  - a. 0.05"
  - b. 1.0"
  - c. 0.0008"
  - d. .08"
7. **Heat soak is a critical test for all glass to be used in structural glazing systems because it virtually eliminates spontaneous in-service breakage due to:**
  - a. nickel sulfide
  - b. excessive soda content
  - c. uneven cooling
  - d. visible mineral particles
8. **Which of the following best describes stainless steel fittings in bolted structural glazing systems:**
  - a. They are all generally similar except for size and can be easily ordered from catalogs for any application.
  - b. The type of stainless steel is not relevant to performance.
  - c. The choice of hardware is related to multiple factors including the specified glass, the design of the support system, the design and function of the building, and the anticipated loads.
  - d. They have been increasing in size over the years.
9. **Bolted structural glazing systems cannot be used in seismically active areas.**
  - a. True
  - b. False
10. **Potential liability risks in structural glazing systems involving many different components, designers, engineers, fabricators, suppliers and others can be controlled by:**
  - a. using a single experienced source for as much of the work as possible so a single warranty can be provided
  - b. distributing the various responsibilities among as many different professionals and suppliers as possible so the risk to each is reduced
  - c. requiring as little testing as possible to preserve deniability
  - d. ordering standard off-the-shelf components from various suppliers to simplify procurement

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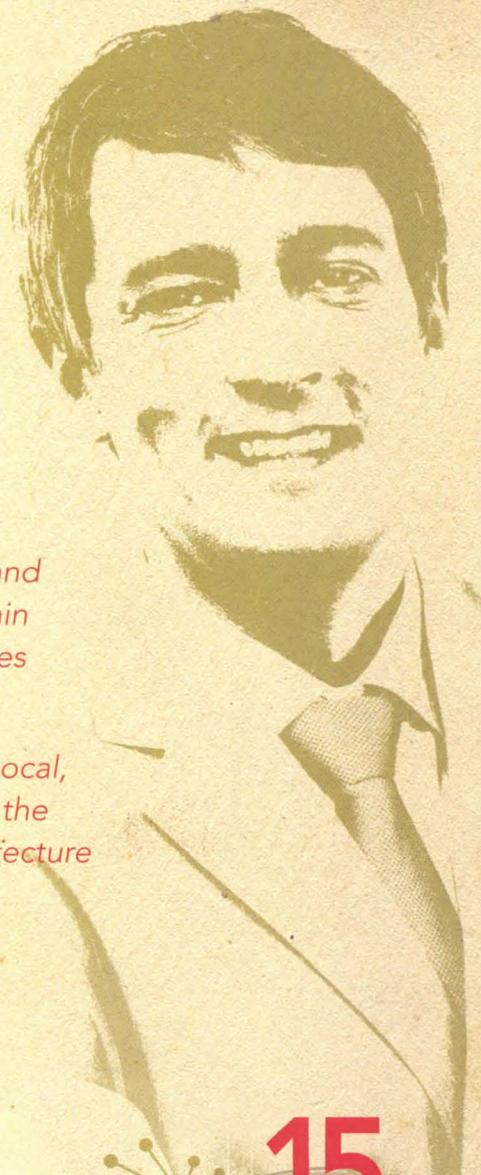
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*Mohamad Farzan, AIA — Member Since 1986*



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*Stacy Bourne, AIA — Member Since 1994*



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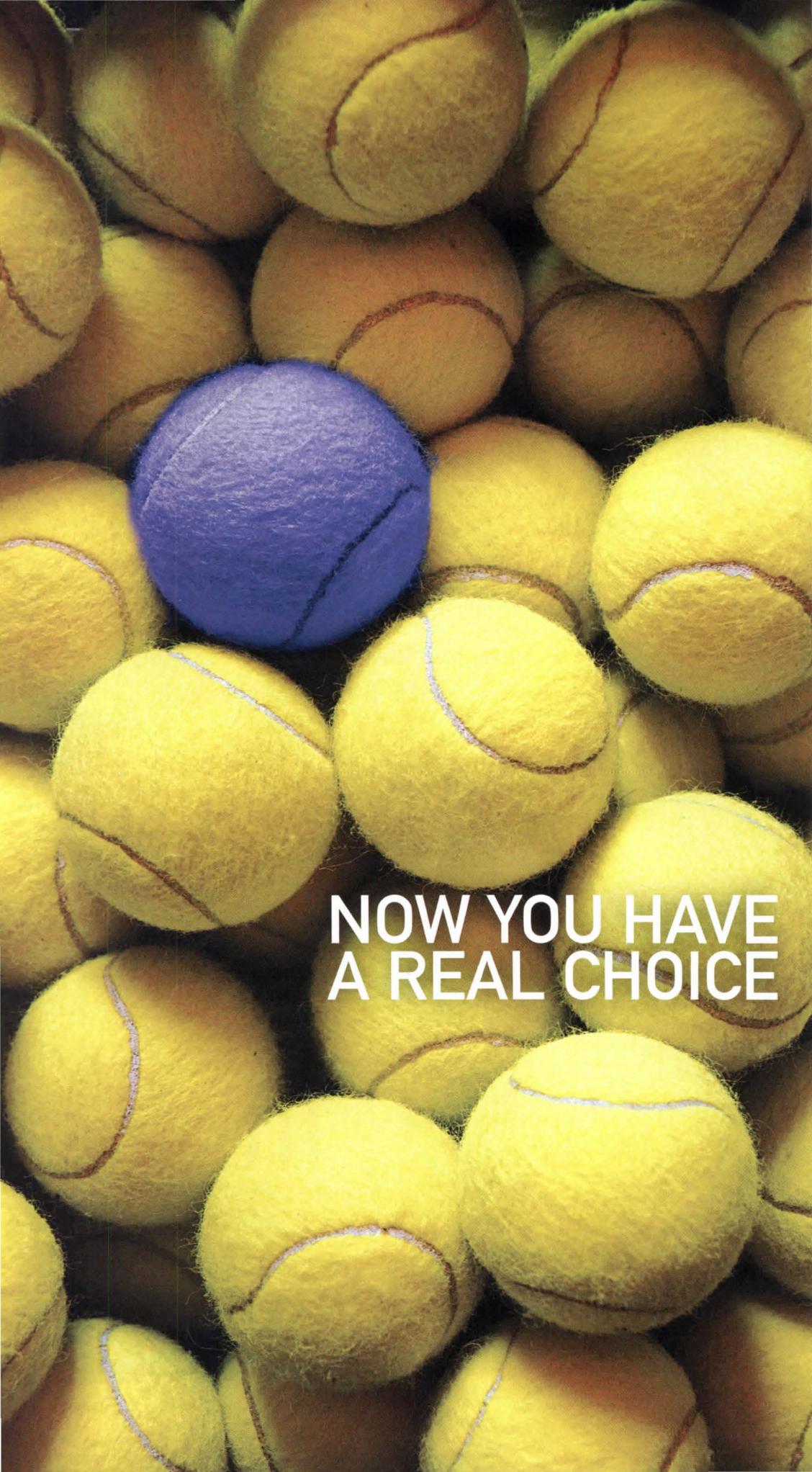
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CIRCLE 69

# Residential

## Making a difference in affordable housing design

**S**ocial housing got a boost this summer when Congress passed and the President signed the Housing and Economic Recovery Act of 2008. The bill's provisions include the establishment of a National Housing Trust Fund, which, according to Sheila Crowley, president of the National Low Income Housing Coalition (NLIHC), represents a victory for low-income housing advocates and "a major breakthrough in the design of federal housing programs, moving them into the realm of mandatory funding." Funds come from annual contributions made by Fannie Mae and Freddie Mac, based on a percentage of each corporation's annual new business (an unknown quantity these days). Ninety-percent of the funding—not subjected to the annual appropriations process—will be used for the creation, preservation, rehabilitation, and operation of rental housing, 75 percent of which will be used for low-income households.

With the slumping housing market, this is good news. It won't solve homelessness; indeed, it barely scratches the surface. Nevertheless, it's the first new federal housing program since the HOME Program was created in 1990 to provide grants to states and local governments for low-income households, and since the Section 8 rental subsidy program was launched by HUD in 1974.

While the federal government may be increasing its financial support, the great majority of low-income housing gets built thanks to the grassroots efforts of developers, local agencies, and nonprofit organizations, whose missions include helping people on the lower rungs of the economic ladder.

While these projects can be meaningful due to their impact on society and the lives of the people involved, they demand special skills in navigating the complicated system of government and private financing and require that architects become political advocates and wizards at solving daunting financial challenges. But overall, the architects featured here feel that the constraints and demands of this building type often push them to be more creative and explore new directions for design solutions.



**Kanner Architects designed the mural on the facade of their 26th Street Housing.**

Like many affluent communities, Santa Monica, California, relies on low-income workers to keep its service industries going. Typically, such gentrified districts displace the urban poor who need the jobs in these areas but cannot afford to live there. Responding to this need, the Community Corporation of Santa Monica engaged Kanner Architects to design 26th Street Housing. Stephen Kanner, FAIA, found that the budgetary limitations inherent in the project compelled him to think differently. The project's "proximity to the ocean allowed for cross ventilation such that it eliminated the need for air-conditioning, reducing the cost of the building and enhancing sustainability," remarked Kanner.

In San Francisco, Parkview Terraces provides affordable housing for senior citizens, treating the residents as sophisticated city

dwellers: "No faux crown moldings and flowered wallpaper," says Sylvia Kwan, FAIA, a partner at Kwan Henmi Architecture/Planning, which designed the project with Fougerson Architecture. But Kwan notes that the "layers of bureaucracy compound the difficulties of finalizing the design solution and agreeing on a final budget."

John van Nostrand, a principal at architectsAlliance, the firm that designed Evangel Hall in Toronto, approached the 84-unit housing project for the formerly homeless as a kind of "architecture degree zero," a simple framework that could adapt to residents' changing needs. "We assumed people will want to move on as soon as they can get more permanent housing. So we try to design [housing] that can adapt as new people move in."

Minneapolis-based Artspace served as the developer of the Mount Rainier Artist Lofts in Maryland to create an apartment building where artists and their families could live and work. Serving as architect, HGA Architects and Engineer's Bill Madden, AIA, found that constraints put on the team, "from unusual site configurations, low construction costs, and specific needs of the users, unleashed their creative energy, surprisingly, and inevitably led to innovative and memorable design solutions."

In an era when the federal government doesn't actually build affordable housing—it just helps finance it—and when local groups must do most of the hard work of putting these projects together themselves, architects can be a powerful contributing force, dignifying such projects through design. *Jane F. Kolleeny*

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# Kanner Architects' 26th Street Housing provides modern comforts to low-income tenants

By Sarah Amelar

**W**e don't have money for fancy materials, but abundant light and air, which can make a huge difference in your living environment, are free," says Joan Ling, executive director of the Community Corporation of Santa Monica (CCSM). Since her organization's founding in 1982, this nonprofit agency has dedicated itself to "preserving social and economic diversity" in Santa Monica, California, by creating high-quality low-income housing. As Ling points out, this very desirable and ever-gentrifying community on Los Angeles's West Side relies on tourism and other service industries (with the low-wage jobs that the sector generates), yet the immediate area has not otherwise provided affordable housing for workers and their families. With 1,400 completed units and 200 more in the works, her nonprofit has successfully become one of Santa Monica's biggest landlords.

Each time the agency converts existing buildings or erects affordable new ones, it makes a point of engaging local, design-oriented architects—including well-known firms such as Frederick Fisher and Partners, Pugh + Scarpa, and Daly Genik—whom "we can count on to deliver thoughtful, sustainable, easy-to-maintain, contextually responsive housing," explains Ling. "The pool of architects in Santa Monica alone is phenomenal, so we have no need to go far afield." For 26th Street Housing, one of the organization's most recent projects [RECORD, May 2008, page 133; July 2008, page 197], CCSM chose Kanner Architects. Though most of Kanner's multifamily work has been market rate, even luxurious, the firm entered the low-income housing realm in 2003 with Metro Hollywood [RECORD, July 2006, page 208], a visually playful, energy-efficient, mixed-use development that caught CCSM's attention. "Whether our single-level units are high-end or low-income," maintains Stephen Kanner, FAIA, president of Kanner Architects, "the spatial design principles are the same."

The site itself, a corner parcel at the intersection of two busy commercial arteries, Santa Monica Boulevard and 26th Street, was purchased by CCSM before Kanner came on board. Economical real estate is a necessity for this agency, which cobbles together its funding from federal tax credits, tax-credit equity investments, state and city soft loans, and bank loans. CCSM favors sites, such as this one, with proximity to mass transit and jobs, introducing, as Ling puts it, "a level of sustainability ... that helps reduce traffic congestion and air pollution."

But housing along noisy, high-traffic bus routes presents architectural and quality-of-life challenges. A requirement imposed by the tax-credit funding determined that the project had to be entirely residential, thus ruling out the obvious solution of retail at street level. Additionally, the city of Santa Monica mandates "pedestrian-friendly design," with a certain

**An alternating rhythm of solids and voids animates the Santa Monica Boulevard elevation (opposite, top). The entry facade along 26th Street (bottom) features a brise-soleil.**

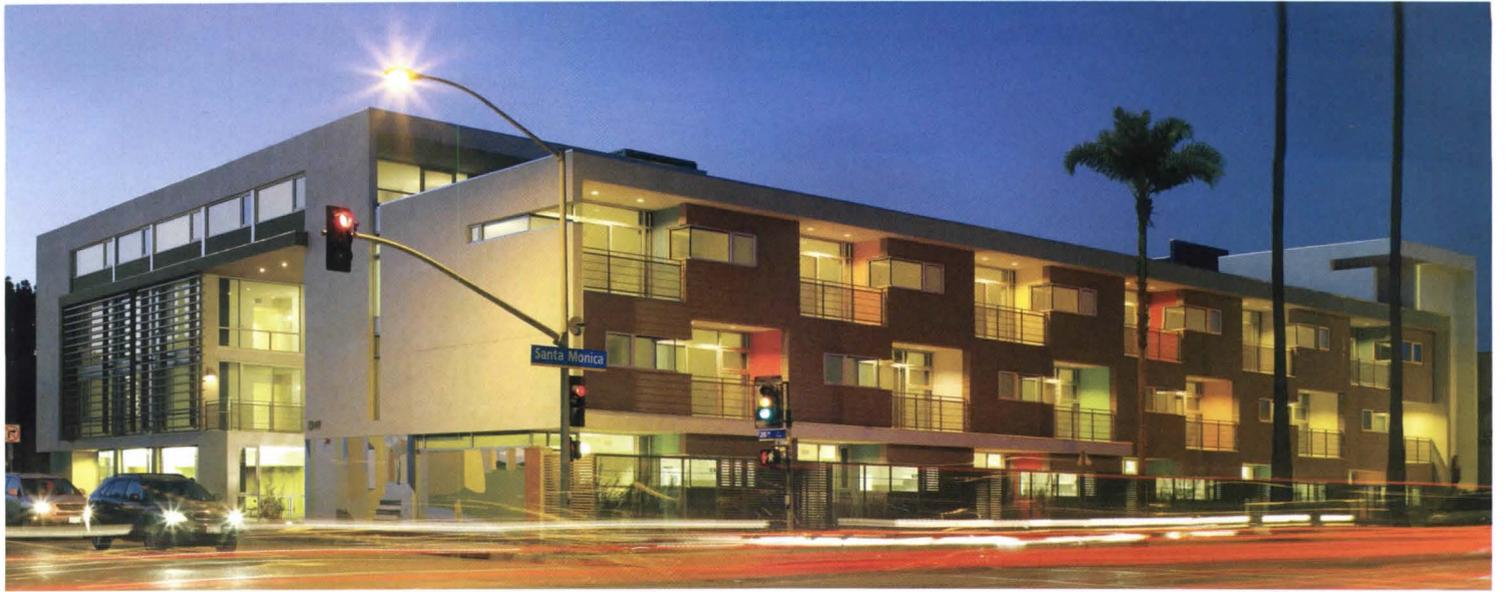
degree of transparency and permeability to passersby. Kanner addressed the dilemma of street-front units at grade by buffering them with their own small outdoor spaces, enclosed by slatted screens and planted bamboo. This solution generated the language for the entire facade.

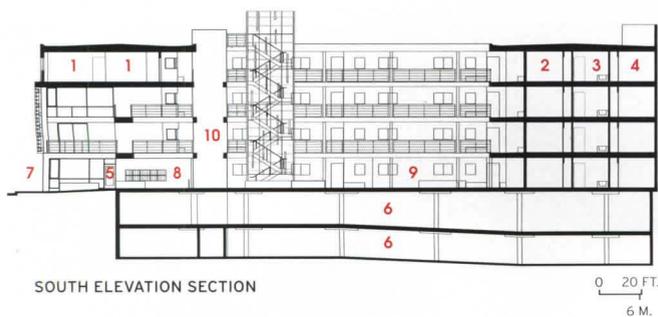
As built, the four-story, 42,000-square-foot building, with 44 units, a central courtyard, a community room, and underground parking, meets the street with a play of solids and lightly screened voids (including balconies on all levels). At the outset, CCSM made several



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Sarah Amelar is a contributing editor at RECORD.

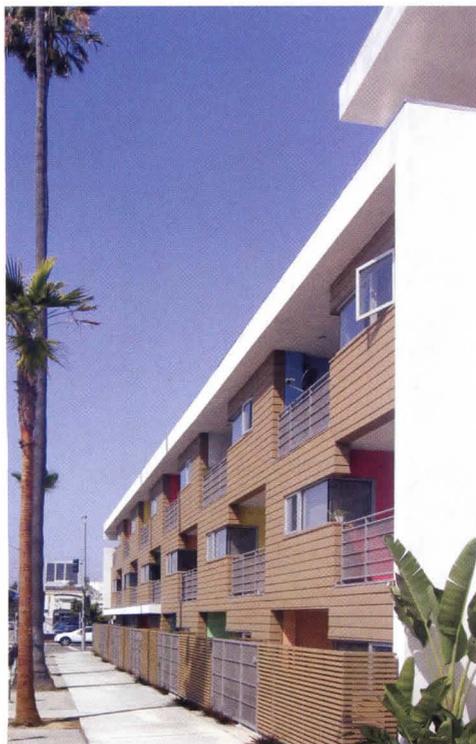




- |                            |                   |
|----------------------------|-------------------|
| 1. Living, dining, kitchen | 6. Parking garage |
| 2. Bedroom                 | 7. Ramp to garage |
| 3. Bath                    | 8. Breezeway      |
| 4. Patio                   | 9. Courtyard      |
| 5. Community room          | 10. Elevator      |



The architects used cost-effective, low-maintenance cement fiber board, painted brown to simulate wood (right). In the courtyard (top right), a steel-grate stair becomes a sculptural element, while accents of vivid color enliven the open corridors.



specific requests, including 2-to-3-bedroom units to accommodate families; as much communal space as possible; maximum air and light on the interior; low-maintenance, environmentally friendly materials; and natural ventilation and shading in place of air-conditioning. Kanner responded with a configuration of single-loaded corridors that wrap the courtyard and invite cross breezes.

Because wood would have exceeded the building's \$8 million budget and required significant upkeep, the architects simulated it with a durable cement fiber board painted brown. Flashes of bright color on balcony return walls animate street facades, finished in off-white plaster with woodlike screens and "clapboard" accents. A large, louvered, aluminum brise-soleil was painted brown and rises two stories on the west facade, a key passive-cooling feature that shades while ushering in breezes from the ocean, located only a couple of miles away.

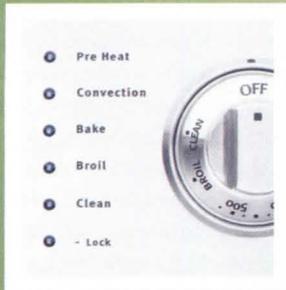
A prime community gathering space, the courtyard provides access to all units. Here, a steel-grate stair, expressed as a sculptural element, ascends to upper-level apartments, all entered along motel-like, open-air public corridors. Inside, the units are sun-filled and environmentally attuned with floor coverings from recycled materials, low-energy lighting, paints free of (or low in) volatile organic compounds, and dual-flush toilets.

For the exterior, Kanner Architects designed a mural representing the passage from ocean to city, inspired by the existence of a wall painting on the site's previous building, a Jewish community center.

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A mural (above), evoking passage from the ocean to the city, recalls the site's previous wall painting. The architects furnished the sunny, airy model

units with low-cost furniture from Ikea (below). The courtyard's open steel stair (above right) is the building's primary vertical circulation.



Ling says she is pleased to recognize the site's history—and perhaps even more important, to “see this project come full circle.” As she explains, the Jewish community center's day-care facility helped raise “some of the people, including lawyers, who made this project happen. They've given back. And now an entirely new generation, 80 or so children, are growing up on the same site, ideally benefiting from it, too.”

She says she measures each project's success “by how well it holds up physically and by tenant feedback.” After 26th Street Housing's first year, the building remains in good condition, and she reports, many tenants have said they like living here. At the building's opening, Kanner recalls, “I was touched—people came over and actually thanked us for creating this place for them.” ■



**Project:** 26th Street Low-Income Housing, Santa Monica, California

**Architect:** Kanner Architects—Stephen Kanner, FAIA, principal; Carol Templeton, AIA, project architect; Ken Vermillion, project manager; John Mebasser, senior architect

**Consultants:** Reiss, Brown, Ekmekji (structural/civil); Storms & Lowe (m/e/p); Alpha Construction (general contractor)

#### SOURCES

**Exterior cladding:** Hardy Panel

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**Glazing:** Factorlite

**Hardware:** Schlage; Hager

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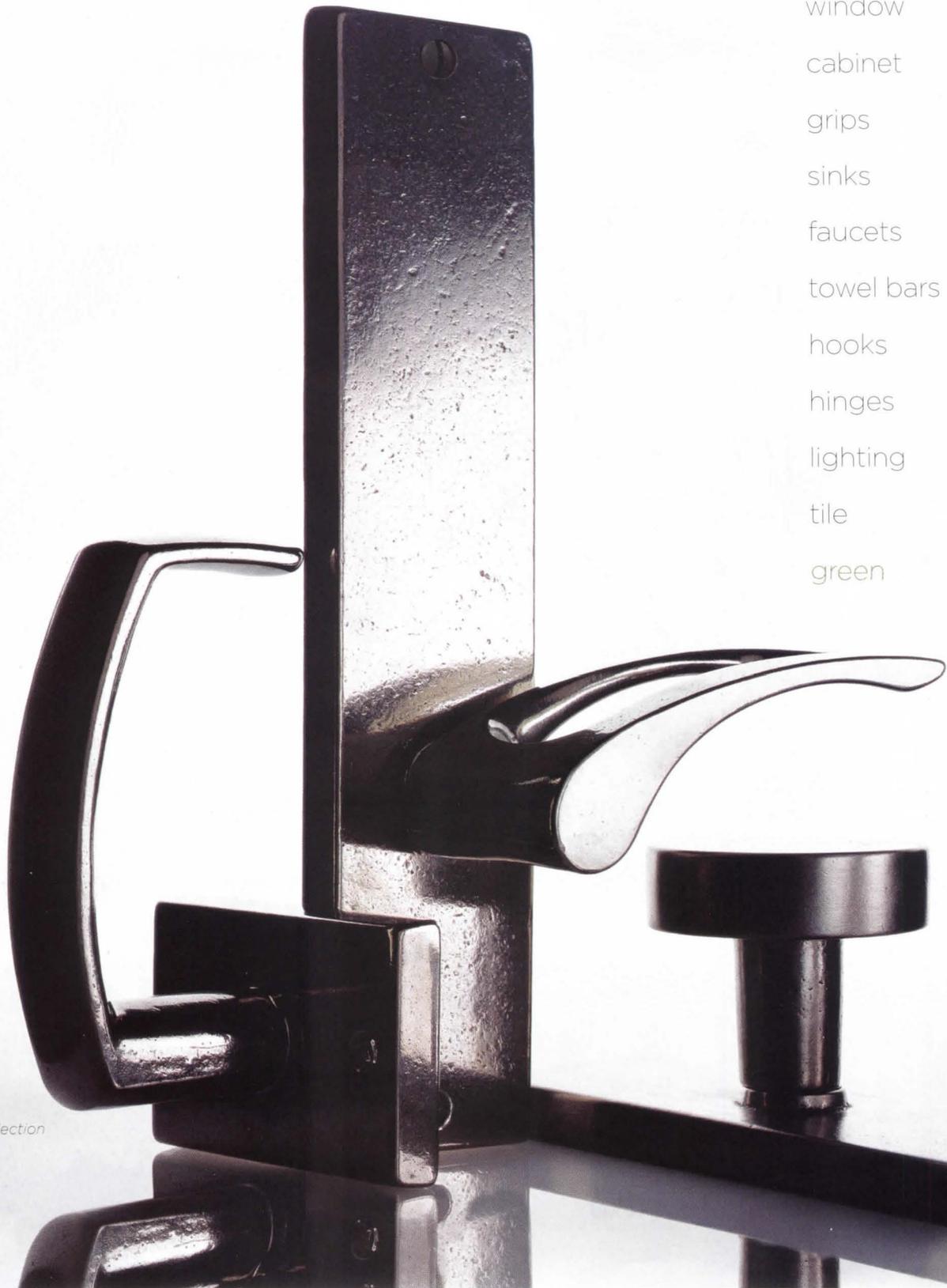
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## Mount Rainier Artist Lofts entices creative people into the role of urban pioneers

By Beth Broome

**A**rtists have long served as conduits for change in marginalized neighborhoods, braving difficult environments in exchange for low rent and often unwittingly paving the way for mainstream inhabitants. In the case of the Mount Rainier Artist Lofts, creative people were lured quite intentionally as pioneers for change in hopes of turning around the fate for Mount Rainier, Maryland, a small, deteriorating street-car suburb just a block from the border with the District of Columbia.

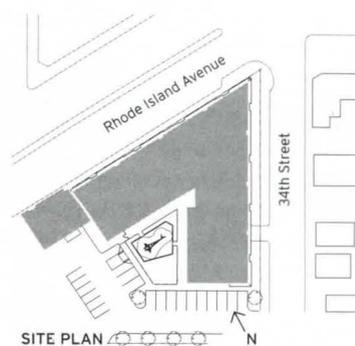
With the goal of reinventing the small, historic residential neighborhood, the Prince Georges County Redevelopment Authority, community activists, and local nonprofit groups combined forces to create the Gateway Arts District and develop a master plan for a 2-mile-long stretch of Rhode Island Avenue Extended, or Route 1, the area's commercial corridor. Artspace, a Minneapolis-based nonprofit developer involved in the project, brought in Minneapolis-based HGA Architects and Engineers to help create, on the former site of three derelict businesses, a mixed-use building that would provide affordable live/work spaces for artists and their families.

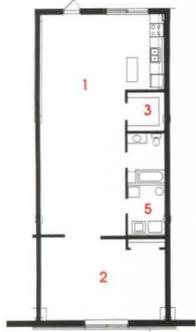
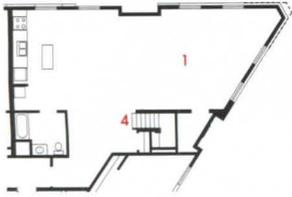
While Mount Rainier is on the National Register of Historic Places, the building would serve a forward-thinking community. "The

artists, on one hand, wanted a funky, contemporary building," says Bill Madden, AIA, project architect and manager, "while the Design Review Board and the Mount Rainier residents requested a more contextual architecture emulating the modestly scaled historic styles of the neighborhood." During initial planning phases, the design team held public forums, garnering community input about the scale, design,

and materials for the project. Responding to the board's requests, the architects incorporated Classical elements in the facade, such as a base and cornice, and used double-hung windows, proportioned to match those of surrounding buildings. However, they took liberal creative license with these features; for example, installing corrugated metal horizontally around windows to mimic louvered shutters and creating a metal-strip cornice.

In the early stages of the project, the size of the site was decreased,



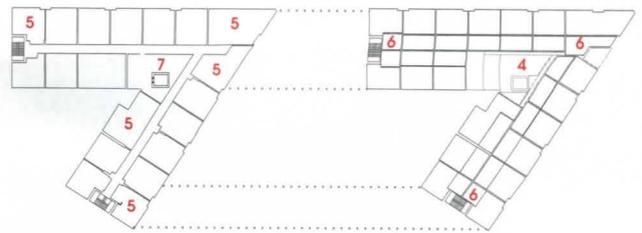
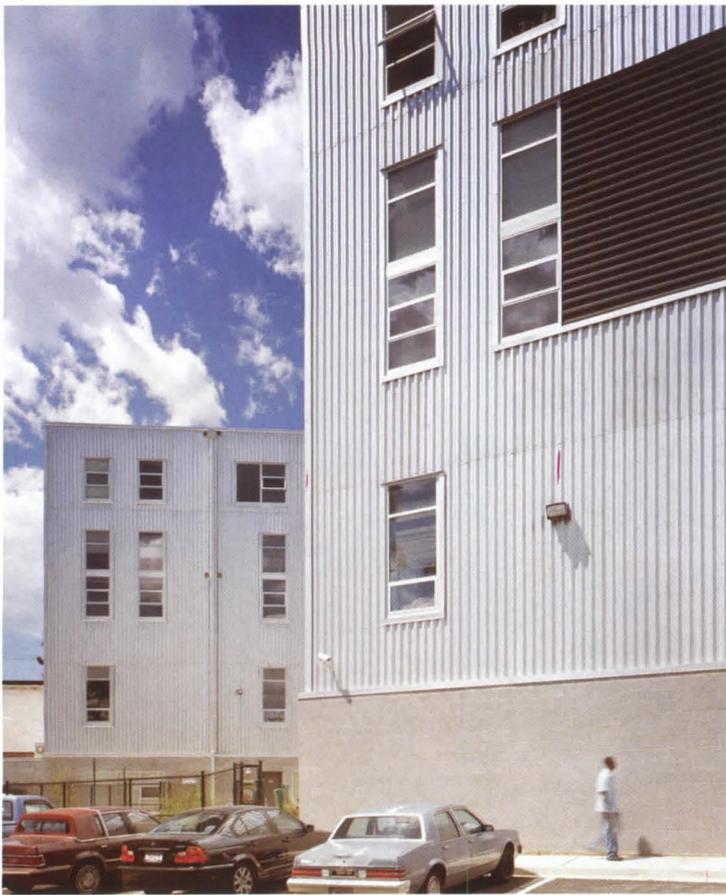


- 1. Living/dining
- 2. Bedroom
- 3. Closet
- 4. Stair to loft
- 5. Laundry



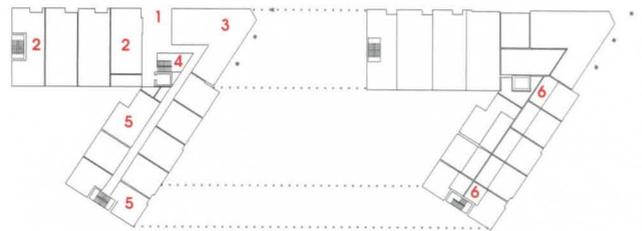
The wedge-like lot led to an arrow-shaped building whose tip points toward a busy traffic circle. The quirky floor plan resulted in a variety of interior spaces (bottom two).





SECOND FLOOR

1. Main entrance
2. Retail
3. Café
4. Open to below
5. Apartment
6. Loft
7. Gallery



FIRST FLOOR

presenting the architects with another challenge: how to keep the scale of the building (whose structure is composed principally of precast concrete) down while maintaining the same number of units on a now smaller footprint. To do so, they set back the top floor and clad it in galvanized-metal siding, giving it the appearance of a line of boxcars, a nod to the main railroad spur that sits behind the site. In response to a tight construction budget (\$8.3 million—about \$110 a square foot for the 73,000-square-foot building), the architects concentrated their efforts on the exterior, leaving the residents to fit out the interiors. The discovery that quilting had been a regional tradition piqued the interest of one of the designers, a quilter herself, who created imagery that morphed into a patchwork look for the facades, incorporating a variety of brick and corrugated-metal-siding colors, including clear galvanized, red, orange, and gray.

The wedgelike site led to an arrow-shaped building, which lends itself to a collection of unique units, with 18 different configurations for the 44 apartments. Interiors are simple to an extreme, boasting a preponderance of drywall, red vinyl flooring in the public halls, and exposed pipes and ducts and plywood-decked lofts in the double-height apartments. Ornamentation and personalization has been left up to the residents, who have adorned public spaces with their sculptures and collages, and inside the units have painted murals, applied large photographs to stair risers, or even installed soundproof recording studios.

HGA's other projects for the Arts District—including residential buildings and a museum and cultural center—are currently on hold, and the area still has the feel of being in the early stages of emergence. However, on a smaller scale, at least, Mount Rainier Artist Lofts (which is almost always fully occupied) is fostering change as it has evolved into a tight-knit nexus for creative individuals who, enjoying subsidized rents as low as \$555 for a studio apartment, are able to pursue their art. ■



Heavy use of concrete block and single-colored metal siding on the building's back saved on material costs (above). Interior public spaces, such as the central stair (left), are spare to an extreme.

**Project:** Mount Rainier Artist Lofts, Mount Rainier, Maryland

**Architect:** HGA Architects and Engineers—Dan Avchen, FAIA, principal in charge; Bill Madden, AIA, project architect and manager; Tim Carl, AIA, project lead designer

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NAHB 604.1(2) Recycled Content  
Specifies products with recycled content used in major areas like walls and floors, etc.

CIRCLE 73



ARCAT

EIMA EIFS INDUSTRY MEMBERS ASSOCIATION

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The residence is located on a narrow, deep building site. The ground floor houses a drop-in center and offices for counseling, medical aid, and employment, creating a sense of community for Evangel residents and non-resident clients alike.



## architectsAlliance's **Evangel Hall** establishes a new model for supportive living in Toronto

By Alex Bozikovic

**F**rom the street, the seven-story building by Toronto's architectsAlliance is difficult to figure out. A set of three volumes wrapped in curtain wall and dark gray brick, it could be offices or apartments. According to partner-in-charge John van Nostrand, this smooth, contemporary wrapper contains something quite familiar. "Essentially," he says, "it's an old-time hotel."

In fact, Evangel Hall consists of a thoughtful hybrid of a single-room-occupancy (SRO) residence and social-service hub, but designed with plenty of care and the graciousness of a Victorian hotel. Located in a mixed-use neighborhood in downtown Toronto, Evangel Hall, an inner-city mission of the Presbyterian Church of Canada, includes 84 units of transitional housing. It also serves as home to a church drop-in center that caters to the city's homeless with a cafeteria and an array of social services.

In development for more than a decade, Evangel Hall's new 57,000-square-foot building speaks decisively to the debate in low-income housing between congregate living, in which people share apartments, and hotel-style facilities with self-contained residences. For van Nostrand, a strong moral dimension underlies this debate. Having designed low-income housing projects over the past 25 years, and studied their Modernist predecessors—from work by Le Corbusier and Mart Stam through New York's

*Toronto-based, Alex Bozikovic is an editor at The Globe and Mail. He also writes for Azure, Frame, and Metropolis.*

Common Ground SROs and Arthur Erikson's Portland Hotel in Vancouver—he concluded that congregate housing "pits architectural theory about what we think people want against the facts—that people want to have their own space."

Van Nostrand and his team, including project architect Paul Kulig, recommended the hotel model to their clients, despite the fact that it has been out of favor, especially in Canada. "It was a huge missing block in the housing spectrum," he says. The client, Evangel Hall Mission, which had previously operated a downtown soup kitchen and a drop-in center but never a residence, was convinced that an SRO was the best solution because of the density that could be achieved. So architectsAlliance designed a scheme with mostly 225-square-foot studio apartments. Such small units, while accepted in the U.S., were controversial in Canada and illegal under existing building codes. After an extensive study of the issue, including focus groups with possible residents, van Nostrand and his team succeeded in lobbying the government to change the rules.





- |                   |                       |                      |
|-------------------|-----------------------|----------------------|
| 1. Vestibule      | 7. Clinic             | 13. Parking          |
| 2. Offices        | 8. Drop-in center     | 14. Bachelor unit    |
| 3. Clothing store | 9. Servery            | 15. One-bedroom unit |
| 4. Utility        | 10. Interview rooms   | 16. Two-bedroom unit |
| 5. Elevator lobby | 11. Multipurpose room | 17. Teaching kitchen |
| 6. Bath           | 12. Kitchen           | 18. Roof deck        |



SIXTH FLOOR



TYPICAL FLOOR



The architects designed a long, narrow building on a compressed site within the city's 19th-century industrial precinct (left). Studio, one-, and two-bedroom units provide flexible living spaces for residents (below).



To serve both the residents and the client, the architects made flexibility an important theme in their design. They created a building that looks like (and can work as) two attached facilities: a long, six-story block, wrapped in a curtain wall that combines transparent and opaque glass in a lively checkerboard pattern, and a smaller, seven-story structure clad in gray brick. A lobby near the middle of the long block serves the drop-in center, with its cafeteria, thrift shop, and a range of other social services located on the main floor and in the basement. A second lobby, in a narrow glass wedge extending from the south end of the building, provides access to elevators taking residents to the apartments upstairs. This arrangement allows the residents access to the public facilities downstairs while giving them privacy from visitors to the drop-in center. Yet only a door separates the two sections. If the building were reconfigured, the two wings could be easily combined. Likewise, the architects deliberately made the public areas on the first floor and in the basement generic in character, so they could evolve and serve different functions over time. "The idea was to create large spaces with niches and character that can be transformed," van Nostrand said. In fact, a street-front space that opened as a thrift shop later became home to Evangel Hall's youth drop-in center. The thrift shop, meanwhile, moved to the basement.

Since the building's poured-concrete structure has few columns, the residences have flexible floor plans. Knockout panels built into partitions between apartments can be easily removed, so neighboring units can

be combined. Two of the basic 225-square-foot studios with a shower can be combined to create a one-bedroom apartment, or three of them can create a two-bedroom unit. Van Nostrand compares the openings between rooms to suite doors in a hotel, but notes that the apartments in their current state are truly separate, letting residents remain self-sufficient.

When it came to the facade, "The idea was to make it look like a market-rate building," van Nostrand says. So the exterior brick and the curtain wall, with its syncopated design of colored spandrels, look similar to what the architect has used on high-end condominium and university projects. The checkerboard elevation camouflages the socioeconomic conditions of the people living inside, giving them the same consideration as people living in more expensive housing. And it sends a message: that quality design can be made available to everybody. ■

#### Project: *Evangel Hall, Toronto*

**Architect:** *architectsAlliance—John van Nostrand, partner in charge; Rudy Wallman, collaborating partner; Paul Kulig, Jon van Oostveen, project architects*  
**Consultants:** *Blackwell Engineering (structural); G&M Technical Services (m/e/p); Dineen Construction (general contractor)*

#### SOURCES

**Windows and curtain wall:** *Amsterdam Windows*  
**Roofing:** *Permaquik*  
**Lighting:** *Peerless Lighting; Seagull Lighting; Sistemalux; Kenall*  
**Paints and stains:** *Pittsburgh Paints*  
**Floor and wall tile:** *Daytile*  
**Floors:** *Armstrong*

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Projecting floor slabs and windows animate the entry facade on Turk Street (this page). The 98,000-square-foot building sits at a busy corner (opposite, right) and has a double-height community space (opposite, left).

PARKVIEW TERRACES

LEFT LANE MUST TURN LEFT

2 HOUR PARKING



## Kwan Henmi and Anne Fougeron give senior housing a hip new look at **Parkview Terraces**

By Clifford A. Pearson

**R**ather than assume that senior citizens want their housing gussied up in wood shingles and faux Victoriana, the architects of Parkview Terraces in San Francisco treated the project's residents as people looking to the future rather than the past. "We've moved beyond the time when seniors all wanted to live in places that look traditional," states Sylvia Kwan, FAIA, a partner at Kwan Henmi Architecture/Planning, which designed the 101-unit affordable senior housing project in collaboration with Fougerson Architecture. "We didn't want to turn this into an old-people's home," explains Anne Fougerson, AIA, principal of Fougerson Architecture. "It's a pretty sophisticated group living here, so we felt we could be quite modern," adds Fougerson.

Set in the city's Cathedral Heights neighborhood (where Pier Luigi Nervi and Pietro Belluschi's sculptural concrete St. Mary's Cathedral stands aloof from the urban fray), Parkview Terraces looks onto a block-long park to the northwest and a matching playground due west. The architects organized the building to take advantage of views to that direction and capture daylight from the south. Doing this, they placed a nine-story housing block along Turk Street on the north and a three-story wing on the southwest corner of the site. In the process, they created a pair of light-filled terraces: one on the entry level, the other on top of the three-story wing. (An earlier plan had a third terrace, but this was cut for budgetary reasons.) Parking for 22 cars is tucked underneath the entry-level terrace.

Affordable housing is a tricky numbers game—first involving financing, then requiring architects to squeeze housing units within the many constraints set by that financing. For Parkview Terraces, money came from a number of sources, including \$16.6 million from a tax-credit investor, the National Equity Fund; a \$13.3 million loan from the San

Francisco Redevelopment Agency; a \$500,000 below-market-rate loan from the Federal Home Loan Bank; and a \$2.1 million market-rate mortgage from Union Bank of California. To make the numbers work, the project's two developers, A.F. Evans (a for-profit company) and the Chinatown Community Development Center (a nonprofit organization), needed to build at least 100 apartments. But they couldn't afford to build higher than nine stories, because 10-story buildings are considered high-rises and require extra life-safety features that would bust the budget. To add to the challenge, the developers decided to devote the entire first floor to social services such as counseling and health screening, and common spaces such as a community room, a recreation space, and a hair salon.

For the architects, making the numbers work meant squeezing the floor-to-ceiling height to 8 feet 1 inch (8 feet 10 inches floor-to-floor) and getting up to 18 units on lower floors and 12 on a typical upper floor. The apartments, which are either studios or one-bedroom units, range in size from 400 to 690 square feet. To save precious vertical space, the architects threaded pipes and wiring overhead in places such as apartment entries, closets, and bathrooms, where ceiling heights drop to 7 feet 6 inches or 7 feet 1 inch. But generous glazing and big views make the apartments feel more spacious than you might think. And although each residential floor has a double-loaded corridor, the architects used glass at either end of the dog-legged hallway to bring in daylight.

The building's structure and fenestration also help meet the architectural challenge. Posttensioned concrete floor slabs just 8 inches thick save space and project beyond the building envelope on the front and back at four different levels to give depth to these elevations. The projecting slabs also slice the main facades into a series of multistory and



Facing south, the rear of the building overlooks a sunny lower terrace and an upper one on top of the three-story wing (left). Floor-to-ceiling glazing makes the units look bigger than they are (top and above).



1. Volunteer services
2. Beauty salon
3. Lobby
4. Manager's office
5. Community room
6. Catering kitchen
7. Terrace
8. Rehabilitation
9. Fitness
10. Social services
11. One-bedroom unit
12. Studio apartment
13. Community library

single-story bands, breaking down any sense of the building being a stack of tightly packed floors. Projecting chevron fenestration—a modern interpretation of the bay windows found throughout San Francisco—add even more depth and animation to the exteriors while offering residents different angled views. The tight, \$27 million budget wouldn't allow the architects to use curtain wall for the main facades, so they specified a storefront system with floor-to-ceiling glazing. Although this cost more than standard windows, its ease of installation saved on labor costs.

Forty-seven of the 101 apartments are wheelchair-accessible, and all can be converted for use by wheelchair-bound residents. Depending on residents' incomes, they pay either \$810 or \$725 per month in rent for one-bedroom units and either \$598 or \$561 for studios. The federal government's Shelter + Care program and the city's Department of Public Health's Direct Access to Housing program provide rent subsidies.

Both Kwan and Fougeron agree that San Francisco's Redevelopment Agency played a key role in supporting good design at Parkview Terraces. Edmund Ong, who was the chief architect at the agency for 30 years and was involved in Parkview, explains, "There needs to be the political will to make affordable housing happen." In San Francisco, that will has enabled dedicated architects to create affordable housing that looks better than many nearby market-rate projects. ■



**Project:** Parkview Terraces, San Francisco

**Architect** Kwan Henmi Architecture/  
**Planning**—Sylvia Kwan, FAIA,  
 Robert Jansen, AIA, Ana Paula,  
 Janet MacKinnon, project team

**Consulting architect:** Fougeron

**Architecture**—Anne Fougeron, AIA,  
 Bassel Samaha, AIA, Todd Aranaz,  
 Toby Stewart, project team

**SOURCES**

**Storefront system:** Arcadia  
**Windows:** Torrance Aluminum



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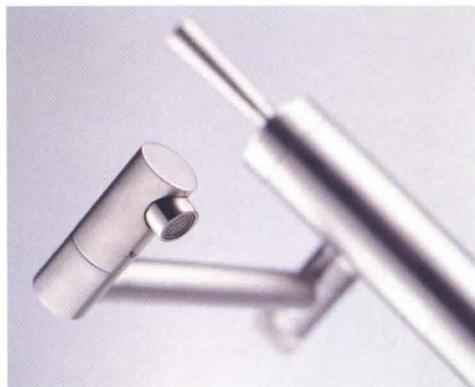


### ▲ Australian flavor

Sydney-based designer Charles Wilson, in collaboration with Michigan-based manufacturer Genesis Seating, is producing a line of contemporary Australian designs in the States. An organic reinterpretation of a Victorian lounge chair, Heron (above) is made using a co-molding process where two materials (structural polyurethane and soft foam) are used in the same mold. Living Edge, Los Angeles. [www.livingedgeinc.com](http://www.livingedgeinc.com) CIRCLE 212

### ▼ Extra hand in the kitchen

Xylem's Dual Art faucet was conceived to be an easily adaptable solution for common sink styles, including drop-in with rim, undermount, and vessel. Dual Art is distinguished by an arm that pivots from the faucet body to vary the angle, and thereby the height, of the water stream, and can be fixed via a hand-tightened, knurled setscrew. Once the water stream is set, the angle of the stream is adjustable via the aerator cylinder at the end of the spout. Xylem, Cumming, Ga. [www.xylem.biz](http://www.xylem.biz) CIRCLE 213



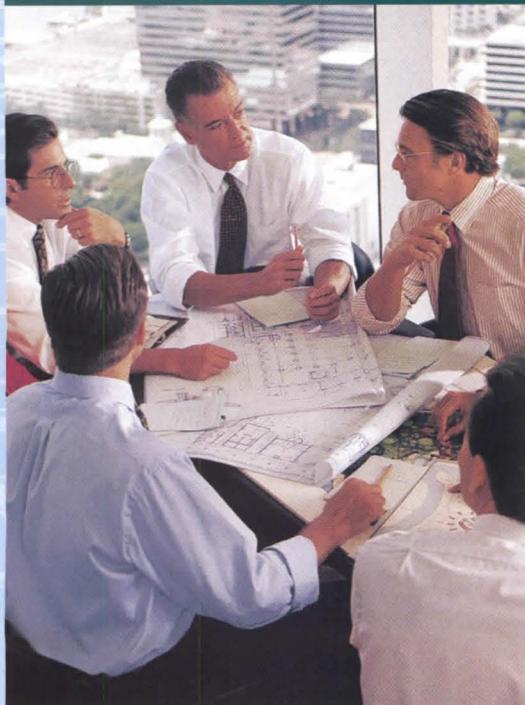
### ▲ Step it up

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▲ **That's hot**

With a clean-cut Scandinavian appearance, the Rais Topas wood burning stove stands out as a piece of Modern furniture. The stove is modeled after the standard Rais design, characterized by a large glass door and firewood holder. Constructed of high-strength steel, the stove weighs nearly 400 pounds and measures 19½" x 19½" x 63". The top-vented Rais Topas requires a 5" clearance to the back wall and a 7" clearance to the side; the connector pipe needs to be 14" from the side and 11" from the back. Rais, Portland, Tenn. [www.rais.com](http://www.rais.com) **CIRCLE 215**

▼ **Glass mirage in the desert**

Conceived by artist Leslie Rankin, Glassic Art is the term for an original technique that colors glass without using heat. Rankin applies the process to create decorative glass doors, windows, staircase railings, countertops, and more. When a client wanted a waterfall for a Las Vegas residence, Rankin suggested a mirage waterfall instead. Landscape lighting is used to flood through the clear center of the panels, to give the illusion of running water. Each "waterfall" is 30' x 4' and is made of two 1"-standard plate-glass pieces laminated together. Glassic Art, Las Vegas. [www.glassicart.com](http://www.glassicart.com) **CIRCLE 216**



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▲ **Show and tell, hide as well**

The Flat.C wall system, designed by Antonio Citterio for B&B Italia, is a new approach to storage for living room, dining room, or home-office applications. The first wall unit for B&B Italia, Flat.C creatively displays media, books, and home accessories as art, while sliding doors and enclosed storage containers can conceal anything not as visually appealing. The customizable system includes horizontal and vertical pieces in a range of sizes, colors, and finishes, including satin lacquer in chalk white, desert, anthracite, yellow, orange, and green. B&B Italia, New York City. [www.bebitalia.it](http://www.bebitalia.it) **CIRCLE 217**



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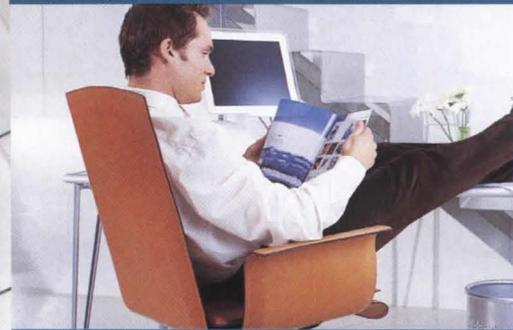
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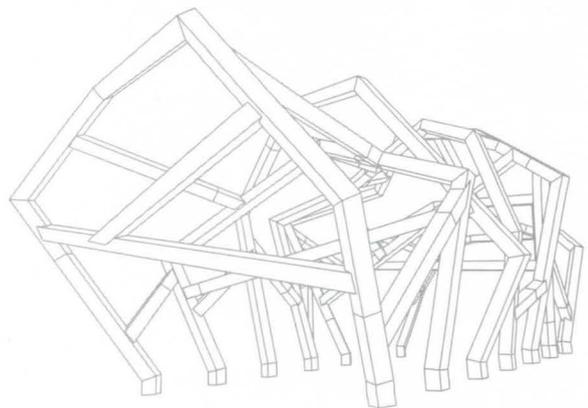
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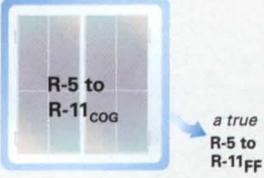


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# Product Focus Windows

These window products have savings in mind. For some, it is about saving time, money, labor, and maintenance, as with a reassembled unitized-curtain-wall system. Others are concerned with saving energy, the environment, or even lives. *Rita Catinella Orrell*

**ThermaProof**



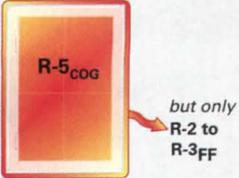
Maintains its high R-values across the entire glass and frame, to maximize energy savings





An illustration (far left) demonstrates the difference between Center-of-the-Glass (COG) and Full Frame (FF) R-values. A cross section (near left) of the window breaks down its components. An installation of the window (above).

**Other High-R Windows**



The R-value is measured only at center of glass. The window as a whole, including frame, leaks energy and is less efficient.

**KEY**  
COG = Center of glass  
FF = Full frame

## New super-insulating windows said to offer highest full-frame R-values in the world

Serious Materials, the Sunnyvale, California-based developer and manufacturer of sustainable green building materials, has introduced ThermaProof, a new line of windows the firm claims will offer the highest full-frame R-values in the world.

According to Serious Materials' C.E.O. Kevin Surace, for years window companies have not spoken about the R-values of their products because, simply, they were nothing to brag about. Some high-rise windows, he explains, are as low as a R-1 or R-1.4, offering not much more insulation than no window at all. In May, the company announced its acquisition of Alpen Windows, a recognized leader in high-performance, energy-efficient windows and

glass that was awarded a 2007 Top 10 Building Product award by BuildingGreen. While the acquisition brought Alpen's high R-value center-of-glass technology on board, Serious Materials was already working separately on ThermaProof's design, says Surace.

ThermaProof is a complete family of windows for residential and commercial construction that offer R-values at R-8, R-11, or R-14 across the entire glass and insulated frame rather than just at the center of the glass. This helps reduce a typical building's heating and cooling energy use by 20 to 40 percent, resulting in an 8 to 16 percent energy savings. Most building owners will see a return on investment in anywhere from one to five

years; while some might see a return in as little as nine months. "This is a true breakthrough in window technology," says Surace. "There is nothing else at this level that can save this much energy."

To drive up the R-value of the window, the manufacturer includes one, two, or three layers of mylar to reduce the amount of convection and air flow in the window cavity. In addition, a brand-new spacer technology holds the glass panes apart from each other to create a large insulating gap. A wet seal is used to place the glass in the frame, rather than a dry seal, so there is no heat or cooling loss. Unlike aluminum frames, a new framing system — foamed PVC for residential and insulated fiberglass for commercial —

insulates the frames as well as the glass. Finally, "Triple fin" weatherstripping seals everything tightly.

Styles available include double-hung, single-hung, slider, casement, sliding doors, French doors, and storefront. Curtain-wall framing is not currently available, but it will be in the future. Also in development from the company is EcoRock, a completely new type of drywall that will use virtually zero embodied energy in the manufacturing of its core. Serious Materials, Sunnyvale, Calif. [www.seriousmaterials.com/Windows](http://www.seriousmaterials.com/Windows) **CIRCLE 220**

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# Products Windows



## ◀ A chore no more

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## ◀ Unitized-curtain-wall system

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## ▶ English windows pass the test

The Corporate 2000 range of steel windows from U.K.-based Crittall Windows has undergone and passed hurricane testing in the United States, meeting Missile Level D and Wind Zone 3 requirements. The rigorous testing took place at the Facility of Architectural Testing in York, Pennsylvania. Three units from each window type were tested: fixed lights, side-hung open out, and folding-out door. Crittall, Essex, England. [www.crittall-windows.co.uk/us](http://www.crittall-windows.co.uk/us) **CIRCLE 223**



## ▶ Decorative glass for less

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## ▲ SFI-certified products added to line

Jeld-Wen now offers Sustainable Forestry Initiative (SFI)-certified products as part of its Custom Wood window line. The company has achieved chain-of-custody plant certification from SFI, based on third-party independent audits that ensure facilities meet SFI's high standards of forest products stewardship. The certified products, which include Ponderosa pine custom windows, patio doors, and trim components, cost 10 percent more. Jeld-Wen, Klamath Falls, Ore. [www.jeld-wen.com](http://www.jeld-wen.com) **CIRCLE 225**



## ◀ That's a wrap

New wood-wrapped screens from Weather Shield can be specified with several screen mesh options, including fiberglass, glare-resistant aluminum, and the new No-See-Um screen mesh. Screens for a range of window styles can be wrapped in one of six natural wood species: pine, cherry, maple, mahogany, oak, or alder. The No-See-Um screen is made from tightly woven fibrous strands that allow for improved light transmittance, air flow, and bug protection. Weather Shield Windows & Doors, Medford, Wis. [www.weathershield.com](http://www.weathershield.com) **CIRCLE 226**

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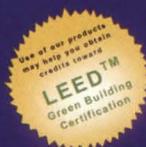


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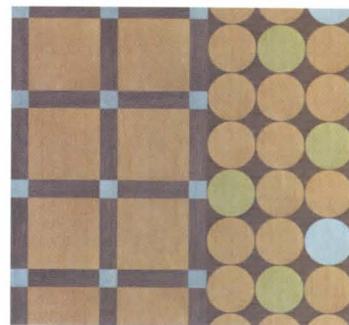
**TOTALFLASH™**  
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# Product Briefs



## ◀ The writing's on the wall

IdeaPaint is a commercial-grade, single-coat, roller-applied paint that transforms any smooth surface into a dry-erase writing surface. The award-winning product provides a low-cost, durable replacement for old and worn-out dry-erase boards and chalkboards. The paint works with industry standard dry-erase products and can transform hallways, meeting-room walls, and other areas into dry-erase surfaces without seams, borders, or restrictions to size and placement. IdeaPaint, Boston. [www.ideapaint.com](http://www.ideapaint.com) **CIRCLE 227**



## ▲ Mix-and-match flooring

Tom Polucci and Natalie Banaszak of HOK Chicago have converted LVT to the status of mosaic tiles with the Create Collection from Mannington Commercial. Create's cutout shapes include a 10 $\frac{1}{2}$ " round that neatly fits into the arc of its companion diamond link, along with a basic 24" square, a smaller 6" square, and connector 12" x 24" rectangle. The surface texture of the tile has a subtle linear design. Mannington Commercial, Calhoun, Ga. [www.mannington.com](http://www.mannington.com) **CIRCLE 229**

## ► Not your everyday wallflower

Trove launched its debut line of decorative wallpapers at the 2006 International Contemporary Furniture Fair. This year, the firm introduced several new patterns to its line of UV-resistant, Type 1 commercial-grade paper wall coverings, including Alcyone (near right), a floral inspired by water lilies, and Azha (far right), a pattern that appears to feature butterflies but actually explores the unconventional beauty of moths. Suitable for commercial or residential projects, the 12'-high, large-scale patterns repeat in either 3'-wide or 6'-wide dimensions. All orders are printed to the specific height requirement for each wall and are available on either smooth or linen-textured paper. Trove, New York City. [www.troveline.com](http://www.troveline.com) **CIRCLE 228**



## ▼ A clear view

Ideal for paramount views, the new Pro Series glass-and-aluminum railing system features  $\frac{1}{4}$ " tempered safety glass and provides continuous top rails without protruding posts for up to 24'. Suitable for both interior and exterior applications, the system is compatible with wood, composite, and concrete surfaces and is third-party tested. Additionally, the durable powder-coated finish is available in a variety of standard colors, as well as custom hues, and is treated with corrosion and colorfast protection. Deck Images, Hastings, Minn. [www.deckimages.com/nrl](http://www.deckimages.com/nrl) **CIRCLE 231**



## ◀ Display system on display

Hollaender Manufacturing was chosen to provide a retro-inspired wall-racking system to be used for merchandise display in Marc by Marc Jacobs retail outlets. Working with Stephan Jaklitsch Design, Hollaender developed a system made up of brushed-stainless-steel piping in horizontal and vertical planes. A new fitting was developed to allow each store to easily reconfigure shelving as needed. Hollaender Manufacturing, Cincinnati. [www.hollaender.com](http://www.hollaender.com) **CIRCLE 230**

## ► Storing knowledge

The SmartLink collection of K-12 classroom furnishings is designed to organize and manage the classroom with a single product line. SmartLink includes four key components: teacher station, modular storage, student desks, and wall rail system. The storage tower (right) features multisize trays and shelves for differently shaped items and equipment; locking or open storage; and an exterior toolbar on the side panel that holds files, magazines, or books. HON, Muscatine, Iowa. [www.hon.com](http://www.hon.com) **CIRCLE 232**



For more information, circle item numbers on Reader Service Card or go to [architecturalrecord.com/products/](http://architecturalrecord.com/products/).

# Product Resources On the Web



## www.kohler.com/pro

Kohler has launched a password-protected Web site to serve the needs of several trade groups including plumbers, contractors, architect/designers, builders, remodelers, and countertop installers. Users from each trade group receive customized information from Kohler based on their indicated areas of interest. Visitors can search for product info, create folders to keep projects organized, and store it all for future access.



## www.ilevel.com/performanceconnection

The iLevel Performance Connection Tool is a simple interface for professionals looking for information on structural framing products suitable to the requirements of their geographic area. Visitors enter their zip code, and the tool provides a listing of appropriate products based on four key environmental conditions: seismic design category, maximum wind speed, snow load, and average annual precipitation.

## www.restorationglass.com

S.A. Bendheim has launched a new site featuring extensive information about Restoration Glass, a line of mouth-blown window glass the company exclusively imports. Online visitors will find enhanced navigation, images, and a QuickTime video demonstrating the centuries-old traditions employed to produce the glass. The Web site also includes "How to Measure" guidelines and an online shop.



## www.buildinggreen.com/calc/fuel\_cost.cfm

To help consumers and professionals objectively compare fuel costs, BuildingGreen (which collaborates on McGraw-Hill's *GreenSource* magazine) has launched a free online fuel-cost-comparison calculator. The calculator helps simplify the process by considering the heat content of each fuel, the efficiency of combustion by the heating equipment, and the efficiency of distribution.



## Woven Wire Fabric

Projects include multi-story wire mesh draperies for hotels, auditoriums, and casinos; curved dividers for visual merchandising; window treatments for private homes; safety screening for industrial settings; sculptural forms for urban gardens; decorative interior/exterior wall coverings for buildings and parking garages; aviary round weave screening for animal habitats, and see-through appealing barriers for commercial security. Whatever the application, let us help you realize your creative vision.

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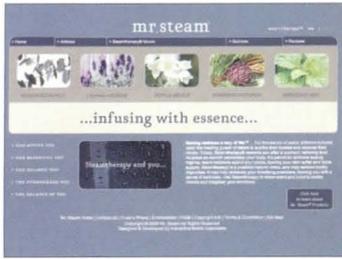
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**www.mrsteam.com**

Focused on teaching visitors about the concept of steam therapy and its many beauty and health benefits, the Mr. Steam site is intended more for consumers than professionals. However, in addition to featuring a quiz section, recipes, and a video featuring the product, the site does offer a comprehensive product section for its line of commercial and residential steam baths, including full pricing and spec information.



**www.americanstandard-us.com/waterefficiency**

American Standard has launched two online tools that promote water conservation. The Water Savings Calculator is an interactive tool that allows users to estimate how many gallons of water, and how many dollars, they can save by converting to various water-efficient fixtures and faucets. The Rebate Locator provides a current listing of water conservation rebates available.

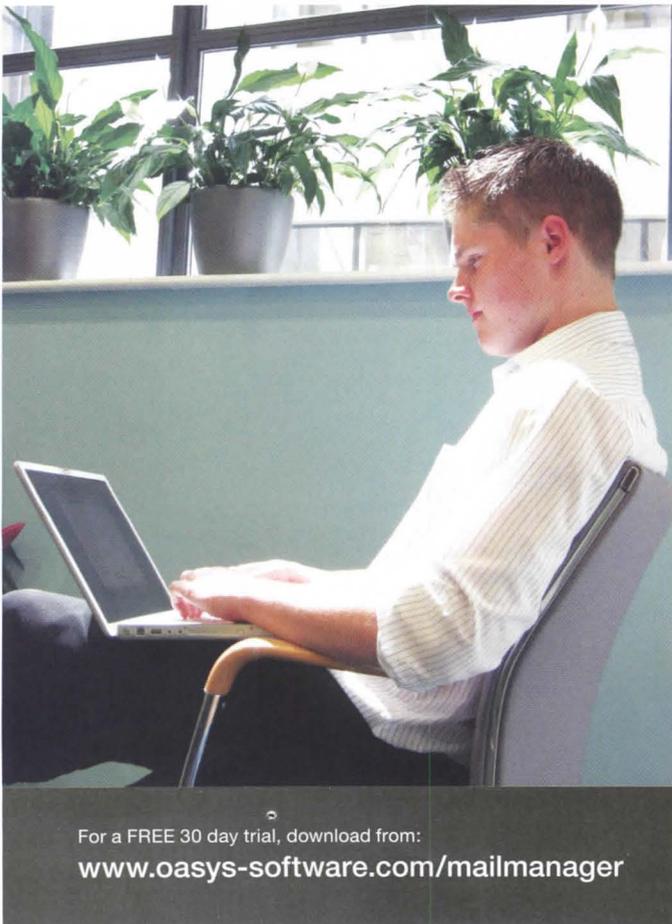
**www.readyandsecure.com**

In a time of war, it's no surprise that Spacesaver's newest Web site is dedicated to showcasing how its products can help military personnel save time and space and deliver more organized and secured storage environments. The site features descriptions of Spacesaver's full line of military storage solutions as well as real-world examples of how those products are being applied.

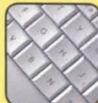


**www.ppgideascape.com/energy**

PPG Industries has introduced an online tool that enables architects, specifiers, and building owners to compare the relative energy and environmental performance of common architectural glazings on prototypical buildings. The tool features calculations made according to the U.S. Department of Energy's most sophisticated energy-modeling programs. Users can select from 12 North American cities.



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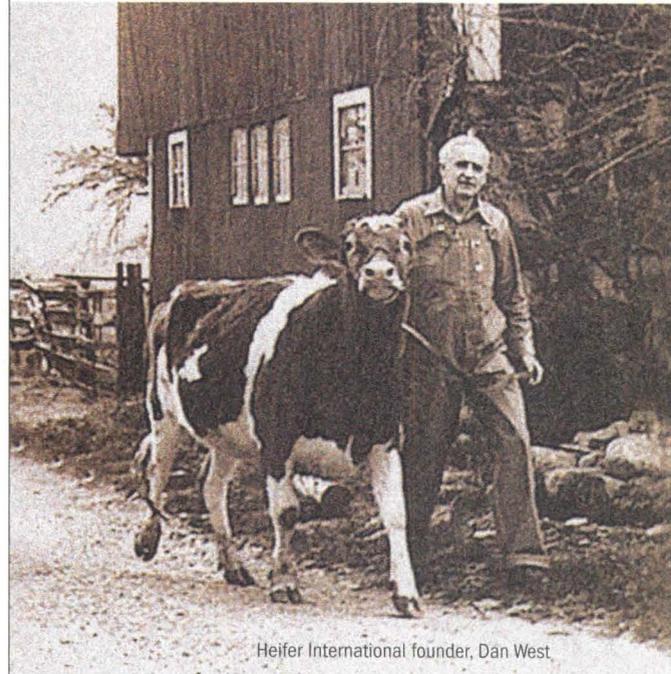
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# Dates & Events

## New and Upcoming Exhibitions

### **Oyler Wu Collaborative** **Los Angeles**

*October 24-December 14, 2008*

Motivated by the desire to occupy the SCI-Arc gallery in a way that exploits the spatial potential of the existing venue, this Oyler Wu Collaborative installation is intentionally situated in the territory between tectonic expression and functional performance. At SCI-Arc gallery. Call 213/613-2200 or visit [www.sciarc.edu](http://www.sciarc.edu).

### **Architects Fired** **Washington, D.C.**

*October 17-November 28, 2008*

A group of celebrated D.C. architects turn their sensibilities to the medium of clay. The architects demonstrate their three-dimensional ideas in earthenware, without the normal constraints of budgets and building codes. At Cross Mackenzie Gallery. Call 202/333-7970 or visit [www.crossmackenzie.com](http://www.crossmackenzie.com).

## Ongoing Exhibitions

### **Home Delivery: Fabricating the Modern Dwelling** **New York City**

*Through October 20, 2008*

Comprising a survey of the past, present, and future of the prefabricated home, this exhibition places equal emphasis on the process of architectural design and production and its actual end result. In the 54th Street lot adjacent to the Museum of Modern Art, visitors can explore five prefabricated homes specially commissioned for the exhibition and assembled on-site. At the Museum of Modern Art. Call 212/708-9400 or visit [www.moma.org](http://www.moma.org).

### **Estudio Teddy Cruz Practice of Encroachment: From the global border to the border neighborhood** **New York City**

*Through October 25, 2008*

Teddy Cruz's architectural studio collaborates with community-based nonprofit organizations for using the neighborhood as a site of experimentation in order to research new forms of affordable housing and social density. The

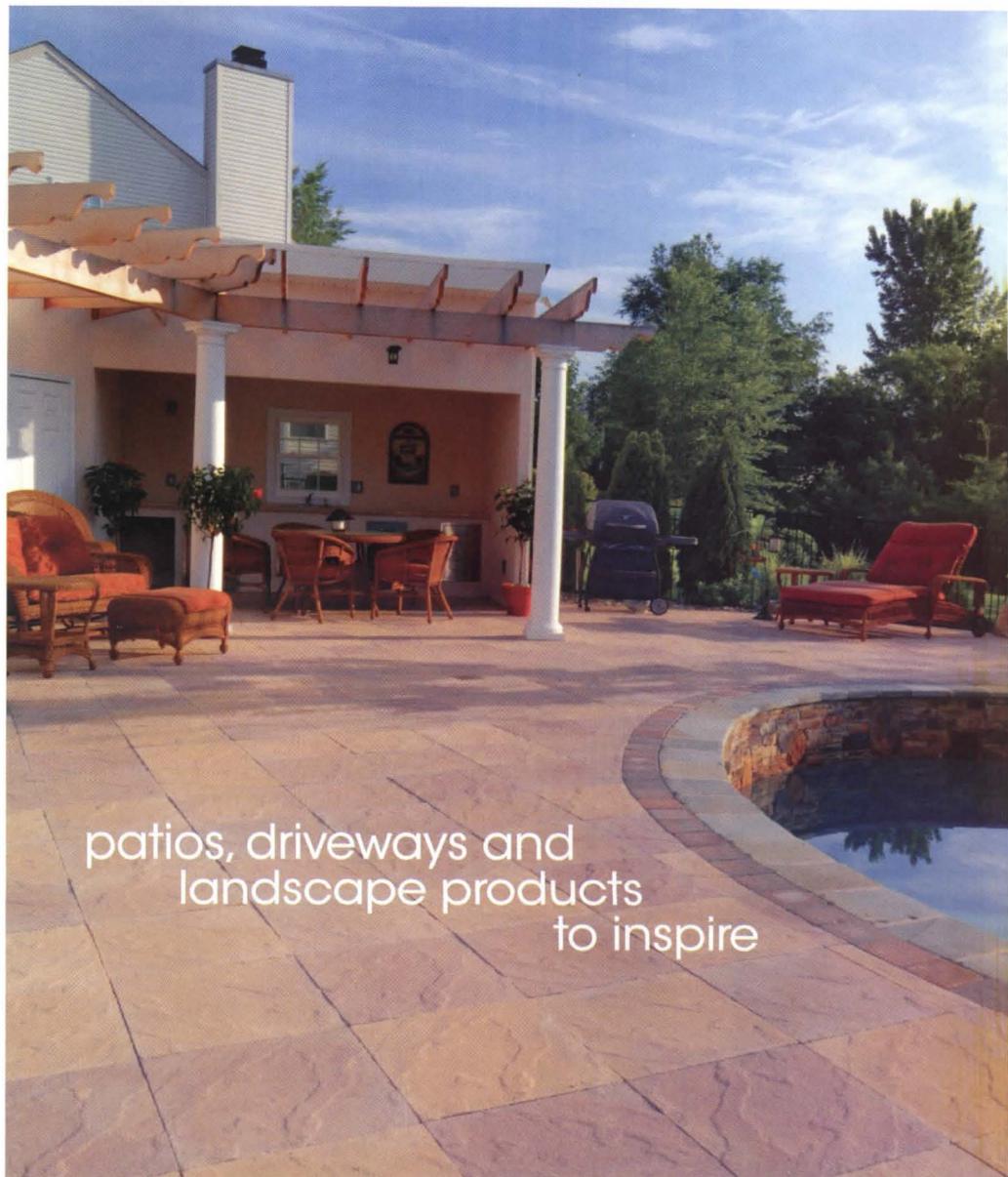
exhibition will elaborate on the realization that no advances in socially and environmentally sustainable building design can occur without reorganizing the existing political structures, economic resources, and social capital that can produce alternative systems for habitation. At PARC Foundation Gallery. For more information, you can call 212/254-5445 or visit [www.theparcfoundation.org](http://www.theparcfoundation.org).

## Lectures, Conferences, and Symposia

### **The Net-Zero Energy Buildings Conference** **New York**

*October 7-8, 2008*

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## Dates & Events

of net-zero energy buildings, including several compelling case studies. MIT professor Daniel Nocera is the keynote speaker, and Christoph Ingenhoven is the special guest lecturer. At the McGraw-Hill Auditorium. Call 866-727-3820 or visit [construction.com/event/innovation08/](http://construction.com/event/innovation08/).

### Leveraging Your Resources: Doing More With Less

#### Chicago

October 14-17, 2008

The 2008 AIA Practice Management conference will provide tangible resources and take-home tools, using actual spreadsheets, databases, and management skills created through hands-on sessions and workshops. For more information, visit [www.aia.org](http://www.aia.org).

## Competitions

### GSA Design Awards 2008

Deadline: October 15, 2008

The U.S. General Services Administration's 2008 Design Excellence and Construction Excellence Awards invites entries from individuals and firms that have worked on GSA-sponsored projects during the past five-and-a-half years. Awards will be presented in March 2009. For more information, call 202/219-1086 or visit [www.gsa.gov](http://www.gsa.gov).

### 2008 National Student Design Competition

Deadline: November 3, 2008

The competition is open to all students of architecture and design in North America. Participants will be required to research, respond to, and highlight the unique aspects of designing a library for the 21st century that serves the selected site and community and is as energy efficient as possible, using the U.S. Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) building standards. Visit [www.ias.org](http://www.ias.org) or [www.kawneer.com](http://www.kawneer.com).

### The Alma Schapiro Prize

Deadline: November 3, 2008

The Alma Schapiro Prize is aimed at advancing the career of an American artist recipient and fostering the continuity of knowledge of the Classical tradition as a vital aspect of contemporary culture around the globe. The centerpiece of the prize is a three-month affiliated fellowship at the American Academy in Rome. Visit [www.classicist.org](http://www.classicist.org).

### 2009 Palladio Awards

Deadline: November 14, 2008

The eighth annual competition recognizes outstanding work in traditional design for commercial, institutional, public, and residential projects. Visit [www.palladioawards.com](http://www.palladioawards.com).

### Discarded Dreams: Used Mattress Design Competition

Deadline: December 5, 2008

Architecture for Humanity and Rubicon National Social Innovations invite entrants to create innovative ways of converting used mattresses into useful products. The competition aims to encourage entrants to form groups capable of creating a consumer product, and a plan for production on a larger scale. For more information about the competition, visit [www.openarchitecturenetwork.org/mattress](http://www.openarchitecturenetwork.org/mattress).

### IDEX: AWARD 2009

Deadline: December 8, 2008

This internationally recognized design award acknowledges designs that contribute to improving life for people. The award accepts nominations from all design disciplines, including industrial design, service design, architecture, and graphic design. The nominated design must be dated later than 2004. Visit [www.indexaward.dk](http://www.indexaward.dk).

### From the Ground Up: Innovative Green Homes

Deadline: December 15, 2008

The goals of the competition are to foster the most advanced thinking about design, sustainability, and cost-effective building practices for the single-family house, and to elicit proposals that can be built based on the \$150,000 construction budget. Call 315/443-2256 or visit [www.soa.syr.edu/competition](http://www.soa.syr.edu/competition).

### Design for the Children Competition: Pediatric Health Clinic

Deadline: January 15, 2009

Open to students and professionals, this international design competition asks participants to explore the potential of future pediatric and prenatal clinics for East Africa. Entry is free, and our goal is to use the winning design as the basis for a pediatric and prenatal health center in Rwanda. For more information, visit [www.designforthechildren.org](http://www.designforthechildren.org).

E-mail information two months in advance to [elisabeth\\_broome@mcgraw-hill.com](mailto:elisabeth_broome@mcgraw-hill.com).

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For more information please visit: [www.aia.org/latrobe\\_prize](http://www.aia.org/latrobe_prize) or email Pauline Porter at: [pporter@aia.org](mailto:pporter@aia.org)



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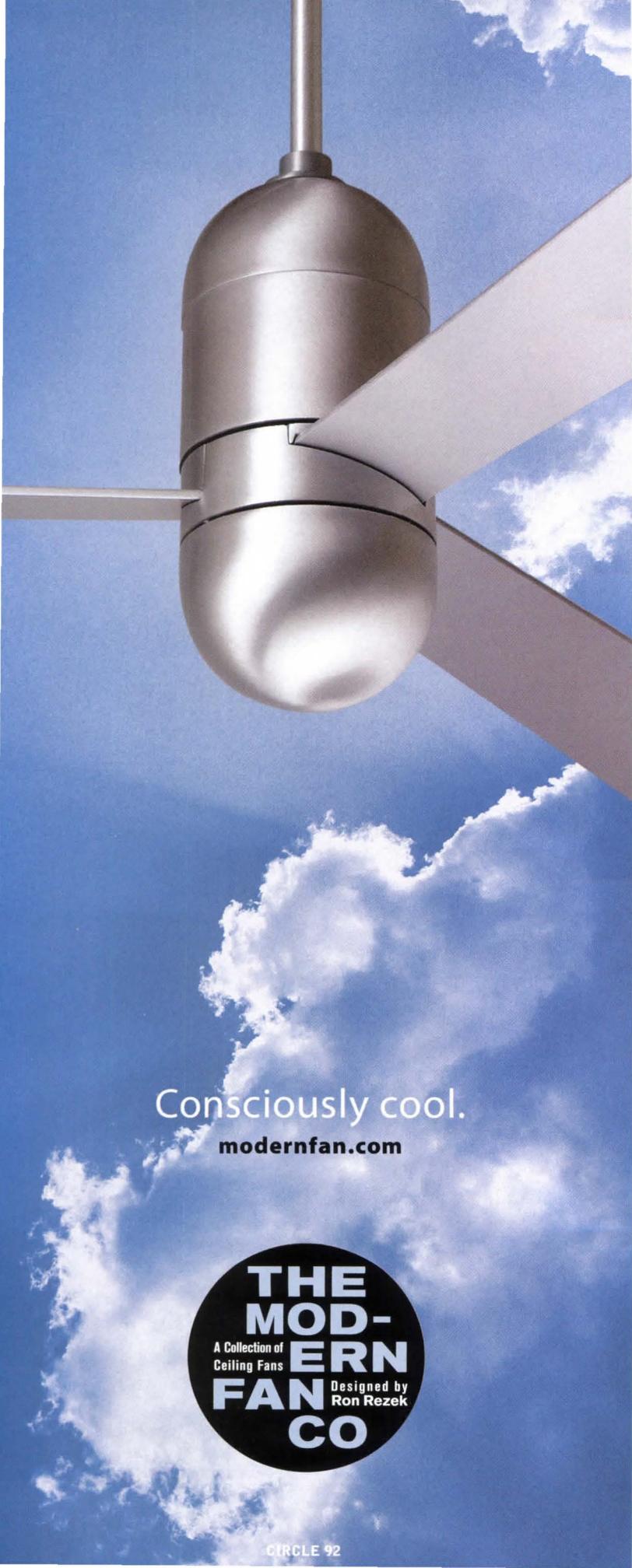
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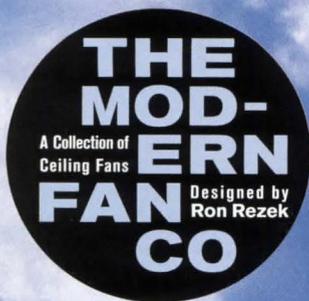
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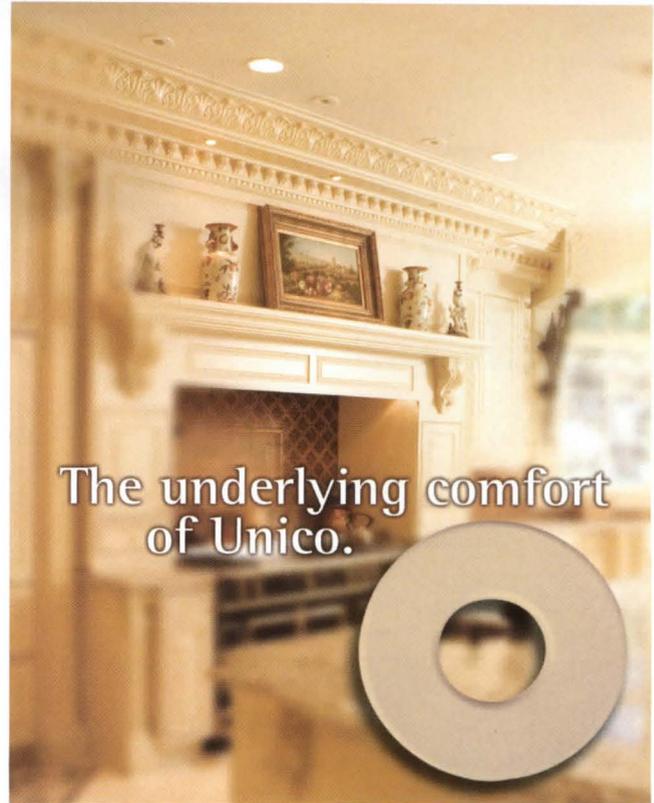
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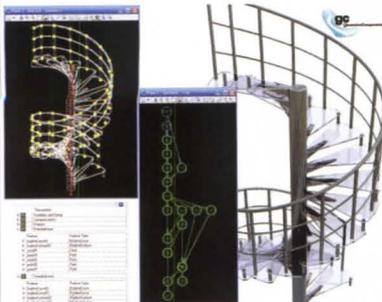
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## Design Software

### Bentley Systems, Incorporated

GenerativeComponents is unique design software that allows architects and engineers to pursue designs and achieve results that were virtually unthinkable before. Direct your creativity to deliver inspired sustainable buildings that are freer in form and use innovative materials and assemblies. Discover GC today at special pricing for a limited time. 800-BENTLEY [www.GenerativeComponents.com](http://www.GenerativeComponents.com)



| Circle 150

## Style Meets Technology

### Lutron Electronics, Co. Inc.

Add color, texture and pattern with Lutron shading solutions. Lutron's precision electronically controlled roller shades have expanded to include designer fabric options that brighten any space. Elegant transitions of daylight transform a room, all at the touch of a button. 800-446-1503 [www.lutron.com/fabrics](http://www.lutron.com/fabrics)

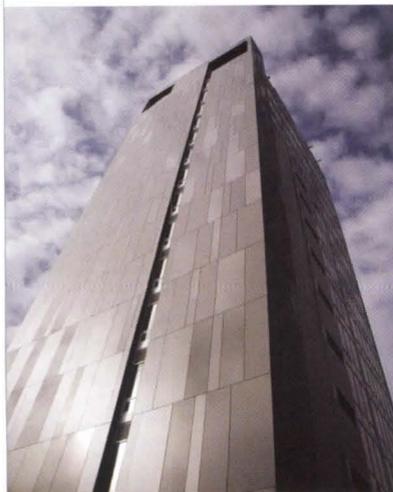


| Circle 153

## Rain Screen Cladding

### Trespa North America Ltd.

Trespa Meteon is a flat panel based on thermosetting resins, homogenously reinforced with cellulose fibers and manufactured under high pressure and temperature. The resultant properties make the product particularly suitable for rain screen cladding applications. What makes Trespa Meteon so unique? Resistance to weather, high color stability, impact resistance, excellent fire behavior, ease of machinability and low maintenance costs. 800-487-3772 [www.trespa.com](http://www.trespa.com)



| Circle 151

## Two-Way Internet Communication

### MechoShade Systems, Inc.

The innovative IQ/485™-IPI (Internet Protocol Interface) saves time and money when commissioning or rescheduling the operation of shading systems. The system permits easy two-way communication through the Internet, enabling integration with other manufacturers' systems, off-site commissioning, systems troubleshooting, and browser-based Ethernet control extensible to Wi-Fi. Contact them at their email address for more information. 718-729-2020 Email [marketing@mechoshade.com](mailto:marketing@mechoshade.com) [www.mechoshade.com](http://www.mechoshade.com)



| Circle 154

## Reflective, Color-Enriched Glass

### PPG Industries

The Vistacool™ family of color-enriched glasses includes Vistacool Caribia®, Vistacool Solargray® and Vistacool Azuria®, offering high levels of visible light transmittance with a soft, reflective appearance. To order a sample kit, visit their web site. 888-PPG-IDEA [www.ppgideascesapes.com/vistacool](http://www.ppgideascesapes.com/vistacool)



| Circle 152

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RECORD  
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INNOVATION  
conference

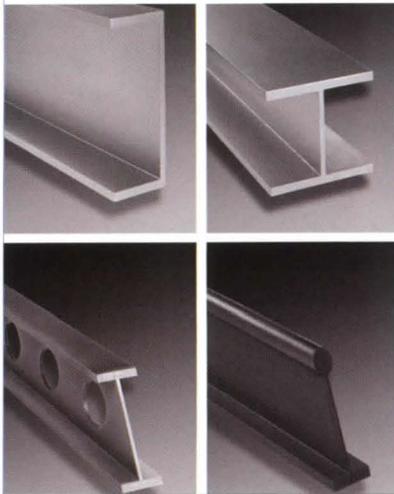


Innovation 2008  
THE NET-ZERO ENERGY BUILDINGS CONFERENCE



New York City  
October 7-8, 2008

**Superior Strength of Steel**



**Technical Glass Products (TCP)**

Utilizing the superior strength of steel, SteelBuilt Curtainwall™ Systems allow designs with larger areas of glass, smaller frame profiles and wider free-spans than is possible with aluminum framing. SteelBuilt Curtainwall Infinity™ takes design flexibility even further by offering back mullions of virtually any profile, including I-, T-, U- and L-shapes, and can use as a back mullion almost any type of framing member, from stainless steel to glulam beams. 800-426-0279 www.tgpamerica.com

| Circle 155

**Gas & Moisture Migration Control**

Announcing.....  
our newest addition for the next step of protection:



**Raven Industries, Inc.**

VaporBlock® Plus™ is a highly resilient, multi-layer underslab barrier that restricts naturally occurring gases such as radon and/or methane from migrating from the ground and through concrete slabs. Provides from 50 to 200 times more protection against methane and other VOC's than other premium polyethylene barriers. Meets all requirements of ASTM E-1745, Class A, B & C and produced under the strict guidelines of their ISO 9001:2000 certified management system. Available in 6 mil (12-ft. x 200-ft.) and 20 mil (10-ft. x 150-ft.) rolls with VaporBond Plus seaming tape and pipe boot kits for a total enclosed installation system. 800-635-3456 www.vaporblock.com



| Circle 158

**Columns, Balustrades & Cornices**



**Architectural Columns & Balustrades by Melton Classics**

Architectural Columns & Balustrades by Melton Classics provides the design professional with the most comprehensive selection of quality architectural products including architectural columns, balustrades, mouldings, cornices, and a wide array of architectural elements. Architectural columns are available plain or fluted, load-bearing or column covers, round or square in fiberglass, fiberglass/marble composite, synthetic stone, cast stone, GFRG, and wood for paint or stain. Architectural Columns & Balustrades by Melton Classics offers a maintenance free balustrade product ideal for any application. 800-963-3060 www.meltonclassics.com

| Circle 156

**Wall Tile Collection**



**Viva Ceramica Slate**

"It's the result of the collaboration with Patrizia Moroso, who knows what dreams are about and Massimo Gardone, the photographer with the magical eye who can make black explode into a thousand colours. Two people I really like to work with because they share my passion for the unexplored territory of new applications where a super thin, super light, 100x100 indestructible tile can become a bathroom, a building decoration or a work of art, depending on what the designers feel like. Thanks Patrizia, thanks Massimo for teaching all of us that we can see better with our eyes closed." -Fabrizio Zanfi www.cerviva.it

| Circle 159

**Exterior Building Panels With Digital Print**



**ABET**

Applied as a Rainscreen panel system, ABET LAMINATI's Exterior Building Panels are: graffiti and vandal resistant, fire resistant, environmentally friendly and will not delaminate. Compact, self-supporting, high pressure laminate panels are available in a wide range of solid colors, woodgrains, metallics and concrete. High resolution digital images of logos, photos etc. can be printed right on the panels. Colorfastness is guaranteed for 10 years and panel integrity for 20 years. Notable applications in the US include the Brooklyn Library and North Fork Banks. For samples call toll free or visit their web site. 800-228-2238 www.abetlaminati.com

| Circle 157

**Fire-Rated Aluminum Products**



**Aluflam North America**

Imagine being able to specify a fire-rated system that looks so good you wouldn't know it's fire-rated. Imagine the clean, rich lines of clear glass. With ALUFLAM storefront and curtainwall systems, this is reality. Contact them for further information. 714-899-3990 www.aluflam-usa.com

| Circle 160

**Interior & Exterior Window & Door Trims**



**Architectural Products by Outwater**

Outwater offers and stocks a complete selection of architecturally accurate, high-density polyurethane Interior & Exterior Window & Door Trims. Designed to minimize the high material and labor costs usually associated in accenting with wood millwork, Outwater's UV stabilized, factory primed Interior & Exterior Window & Door Trims not only ensure consistent quality that is resistant to splitting, weather damage, decay and insects, they are lightweight, extremely durable and easy to install. Free 1,000+ Page Master Catalog. 800-835-4400 [www.Outwater.com](http://www.Outwater.com)

| Circle 161

**Versatile, Energy-Saving Daylighting**

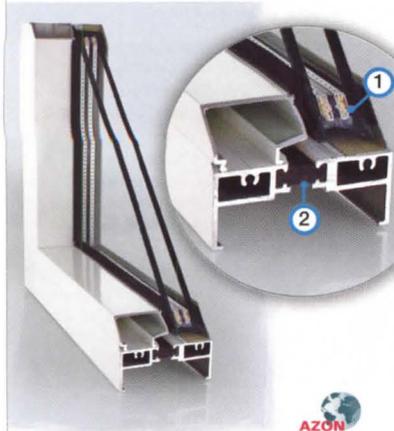


**Major Industries, Inc.**

Save on energy costs with cost-effective Guardian 275® Translucent Daylighting Panels. Guardian 275® skylight and curtain-wall systems allow controlled natural light to illuminate interiors while eliminating unwanted glare and hot-spots. Guardian 275® systems also offer LEED® credit opportunities, integral water management systems and industry-leading warranties. 888-759-2678 [www.majorskylights.com](http://www.majorskylights.com)

| Circle 164

**Extreme Fenestration Performance**



**AZON USA INC.**

Conserving energy, while reducing greenhouse gases, is possible when manufacturers of fenestration products use the Azon thermal barrier method for aluminum windows and Warm-Light® warm-edge spacer for insulating glass. Modern daylighting systems produced with both Azon structural thermal barrier technologies will yield a fenestration system capable of upholding the highest efficiency and sustainability standards. Contact them to learn about the role of Azon thermal barriers in energy conservation. 800-788-5942 [www.azonintl.com](http://www.azonintl.com)

- 1 WARM-LIGHT® By Azon
- 2 Universal No-Tape™ 304 structural thermal barrier polymer

| Circle 162

**Motorized Screens**



**Phantom Screens®**

Executive motorized screens by Phantom® provide comprehensive screening solutions for both commercial and residential renovation and design projects. Perfect for both surface and recessed installations, Phantom's screens provide full ventilation, shading from the sun, protection from insects, and enhanced privacy. The screens can be connected to the building's centralized automation system, and stay out-of-sight until needed. More info is available at their web site. 888-PHANTOM (742-6866) Fax number 604-855-7834 Email [phantom@phantomscreens.com](mailto:phantom@phantomscreens.com) [www.phantomscreens.com](http://www.phantomscreens.com)

| Circle 165

**Automated Parking Garage**



**Boomerang Systems**

Boomerang's reliable automated parking systems use 50% less space than ramp garages by storing cars 2 to 20 levels high on a small footprint. Systems can be wrapped in any façade and configured to fit almost any project. Best of all, the total cost per space is less than structured parking decks. Proudly made in the U.S.A. 888-606-9395 Email [info@boomerangsystems.com](mailto:info@boomerangsystems.com) [www.boomerangsystems.com](http://www.boomerangsystems.com)

- Retrieve any car at the push of a button
- Install above or below grade
- Use less space, time, and money

| Circle 163

**Pre-Engineered Canopies & Walkways**

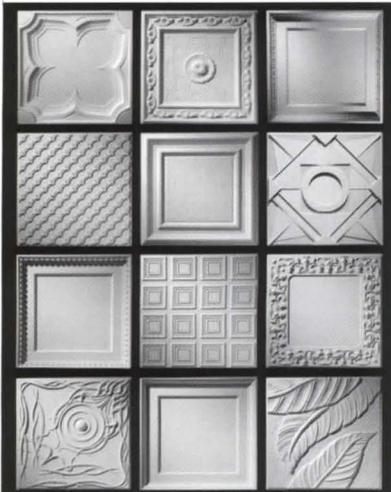


**Structures Unlimited, Inc.**

The ultimate technology of a unique single-source system comprised of structural aluminum box beams combined with Kalwall® translucent sandwich panels to form a lightweight composite system. The result is a durable, long-lasting structure that stands up to hurricane-force winds, high snow loads, hail, and the most demanding code requirements, while delivering diffuse, natural daylight for glare-free, shadowless illumination to the area below. Virtually maintenance free. Snow guards, gutter systems and downspouts are available. 800-225-3895 [www.structuresunlimitedinc.com](http://www.structuresunlimitedinc.com)

| Circle 166

**Ornamental Plaster Ceiling Tiles**



**Above View Mfg., By Tiles, Inc.**  
 Above View ornamental plaster ceiling tiles are fabricated from a non-toxic, non-combustible, proprietary composition. They drop into any standard 15/16-in. T-Bar grid system. There are more than 50 standard designs, custom design work, and 1,300 custom colors and faux finishes available upon request. 414-744-7118 www.aboveview.com

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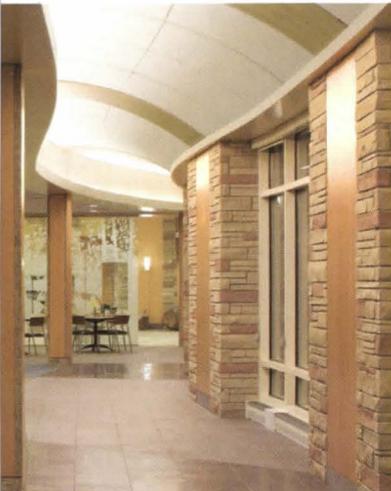
**Energy-Efficient Wall Panel**



**ACCELERATED Building Technologies, LLC**  
 The accel-E™ Steel Thermal Efficient Panel (S.T.E.P.) from ACCELERATED Building Technologies is a thermally resistant, high performance building panel that's strong, lightweight and energy efficient. Combining the strength and performance of cold-formed steel framing with the superior insulation properties of expanded polystyrene, the accel-E™ STEP wall system simplifies framing, insulation and sheathing to just one installation process. 888-9-accelE (888-922-2353) www.accel-E.com

| Circle 170

**Custom Aluminum Suspension System**



**Decoustics Limited**  
 Ceilencio is an integrated, concealed suspension ceiling system that comprises both the grid and the acoustic panels. The grid is manufactured from extruded aluminum, and panels release downward because of a torsion spring mechanism allowing easy access to the plenum. www.decoustics.com

| Circle 168

**One-Way Mirrors**

**Glas Trösch AC**  
 Unlimited design options for SPYMIRROR in interior and exterior applications, i.e. coverage of information displays, TV's etc. SPYMIRROR is a one-way mirror which allows for observations without being seen under a distinct lighting ratio. There are 3 options with increased clarity (LT): 1%, 12%, 20% available in 3mm to 12mm, in laminated 6mm to 12mm. Email hytechglass@glastroesch.ch www.luxar.ch

Display is turned off: There is only a mirror to see

Display is on: Clear view

SPYMIRROR 1% SPYMIRROR 12% SPYMIRROR 20%

| Circle 171

**Acoustic Plaster System**



**Pyrok, Inc.**  
 Pyrok StarSilent is a smooth, seamless sound absorbing plaster system. This unique system, consisting of a rigid sound board made of 96% post consumer recycled crushed glass, combines the look of monolithic gypsum board with high acoustical performance. 914-777-7070 Email info@starsilent.com www.starsilent.com

| Circle 169

**Copper Chimney Pots**



**Jack Arnold — European Copper**  
 Eliminate rooftop clutter with recyclable, innovative UL-listed copper chimney pots. From Jack Arnold, AIA, European Copper chimney pots are the only UL-listed pots for both masonry and metal flues. Withstands all types of climate conditions, building code compliant. Available in three unique styles and seven sizes, easy to install. Patented. 800-391-0014 europeanopperchimney.com

| Circle 172

**Counter Support Brackets**



**Rangine Corporation / Rakks**

Rangine Corporation's counter support brackets provide an easy-to-install alternative to full-height laminated panels. Available in a range of sizes to support counters up to 30-in.-deep, brackets install easily into studs or blocking and can support loads up to 450-lb. Less expensive than laminated supports, they increase open space while improving handicapped access and ergonomics. Brackets can be ordered in either surface or flush mounted configurations to provide heavy-duty unobtrusive support. Manufactured of extruded structural aluminum. 800-826-6006 [www.rakks.com](http://www.rakks.com)

| Circle 173

**Museum Collections**



**Peter Findlay Gallery**

"Guy Dill is one of our contemporary sculptors who has consistently over the past 20 years been able to achieve what might be called meaningful monumentality — sculpture that proclaims itself as needing to be made in monumental proportions," Steven Nash, Ex-director, Nasher Sculpture Center, Dallas. Fabricated bronze sculptures created by nationally known artist Guy Dill available for public and private commissions. Dill's work is included in 20 Museum collections and over 60 public and corporate collections: Qualcomm-Mitsubishi-Transamerica-Sony. Left: Close Hauled, 2005, Fabricated Bronze, 32-ft. high, Regent Bal Harbour Hotel, Miami. [www.findlay.com](http://www.findlay.com)

| Circle 176

**Art Presentation System**



**Walker Display Incorporated**

Life's all about change and so is Walker Display when it comes to art presentation. The Walker system frees you to explore all your options. No-More-Holes lets you rearrange your artwork with ease and speed. Embrace change. Email or call them with your ideas and visions for the art spaces in your life. They can help you in the creation of beautiful displays and exhibits. 800-234-7614 [www.walkerdisplay.com](http://www.walkerdisplay.com)

| Circle 174

**Architectural Ceiling Fans & Lighting**



**G Squared Art**

Enjoy art. The Cirque ceiling fan, a high performance dynamic sculpture, GOOD DESIGN Award winner. Whisper quiet, powerful, reliable and beautifully made. View mahogany and multicolored blade versions on their web site. Includes 50W light and touch control system, remote control available. Suitable for sloped ceilings up to 30 degrees and up to 45 degrees with optional adapter. Lifetime warranty. Air conditioning can increase your electricity bill by a third or more. A fan uses one tenth of the energy. To buy high-design architectural fans and lighting please visit their web site or call. 877-858-5333 [www.g2art.com](http://www.g2art.com)



| Circle 177

**Commercial Grade Outdoor Furniture**



**Modern Outdoor**

Commercial grade construction + residential aesthetics, made in the U.S.A., short lead times, and environmentally conscious materials. These qualities are at the core of Modern Outdoor—fine outdoor furniture for those interested in the clean simple lines of the modern aesthetic. They offer four complete lines that encompass all of your outdoor needs—chairs, tables, benches, settees, club chairs, sofas, ottomans, daybeds, chaise lounges, planters, bar-height products, tea carts, and many accent pieces as well. 818-785-0171 [www.modernoutdoor.com](http://www.modernoutdoor.com)

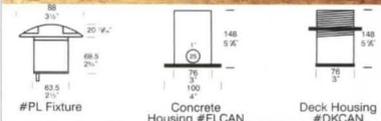
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**Low Profile Path Lighting**



**Hunza Lighting USA**

The Hunza Path Lite is machined from solid copper or 316 stainless steel, providing a horizontal lighting effect across pathways or decks with a low trim profile of less than 1-in. in height. There is a choice of 4 light beam patterns, from half to full circle, according to the number of facets specified. The Path Lite uses a low-voltage 20W MR16 lamp and is easily installed into concrete or wooden decks using one of 4 optional housings. 310-560-7310 [www.hunzausa.com](http://www.hunzausa.com)



| Circle 178

**Perfect for Gated Communities**



**FAAC International, Inc.**

FAAC is the world's largest specialized manufacturer of operators for swing, slide and barrier gate systems. The Model 400 heavy-duty hydraulic swing gate operator is UL 325 compliant and designed for applications needing maximum versatility, such as subdivisions and apartments. Its power and reliability also make it ideal for large, ornate gates. 800-221-8278 [www.faacusa.com](http://www.faacusa.com)

| Circle 179

**Interactive Liquid Filled Products**

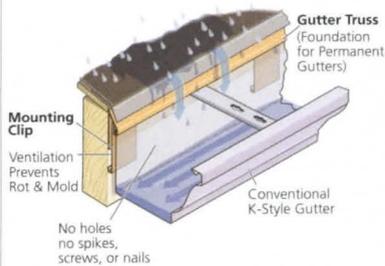


**Jockimo Inc.**

Living Surfaces™ Liquid Lava™ products are exciting liquid filled modular floor tiles, table tops and counter tops. They are resilient and when pressure is applied the liquid moves and swirls around one's feet or hands. Suitable for any application including: nightclubs, restaurants, children's themed projects, dance floors and more. 949-251-1560 [www.jockimo.com](http://www.jockimo.com)

| Circle 182

**Cutter Installation System**



**Truss Building Products, LLC**

Truss Building Products, LLC is proud to introduce a Revolutionary Gutter Installation System called the SnapLock Gutter System. SnapLock works with 5, 6 & 7-in. conventional OG gutters and is "free floating" allowing for expansion and contraction which is critical when installing gutters. This puncture-free gutter system is produced out of aluminum and prevents sagging, buckling, and wood rot associated with standard typical gutter installations. Stop recommending outdated spikes and screws and visit them today at their web site. 888-RAINDAY [www.snaplockgutters.com](http://www.snaplockgutters.com)

| Circle 180

**Exterior Bifold Door Systems**



**La Cantina Doors, Inc.**

New all-aluminum exterior bifold door system. Featuring a sleek design profile and concealed multi-point locks throughout. Manufactured in the USA, lead times start at just four weeks. Clear or Bronze Anodized finishes are standard with custom color options available. Systems up to 52-ft. wide and 10-ft. tall are available. 866.414.8933 [www.lacantinadoors.com](http://www.lacantinadoors.com)

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**Plant Vitamins & Hormones**

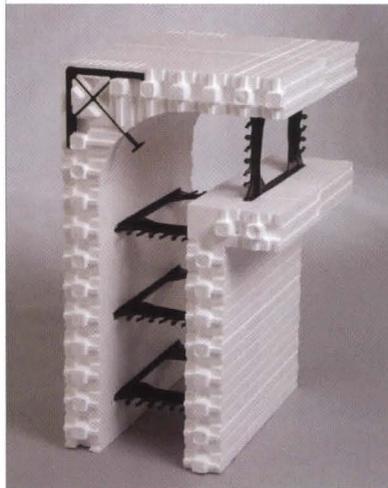


**Vitamin Institute**

The Vitamin Institute offers any U.S. established business or public agency its money back after making an average of 4,200 gallons from its first gallon, if it regretted its purchase. Also \$5,000 worldwide to the first product to beat it at activating, reviving, transplanting, growing, and perfecting. Long since, SUPERthrive has helped five U.S. departments to win World War II. Over 500 park systems chiefs have written that SUPERthrive works best. SUPERthrive's record includes repeatedly averted bankruptcies, quickly reversing whole great lost plantings to beautiful winners. 800-441-8482 [www.vitamininstitute.com](http://www.vitamininstitute.com)

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**Insulated Concrete Forms**



**Amvic Building System**

Amvic ICF's are hollow, lightweight; "stay in place" concrete forms made of 2 panels of Expanded Polystyrene (EPS) that are connected by 100% recycled polypropylene webs. Amvic ICF's provide a comprehensive 5 in 1 building solution, structural strength, insulation, vapour barrier, sound barrier, surface for installing drywall and exterior finishes they are energy efficient and a Green building product. 877-470-9991 [www.amvicsystem.com](http://www.amvicsystem.com)

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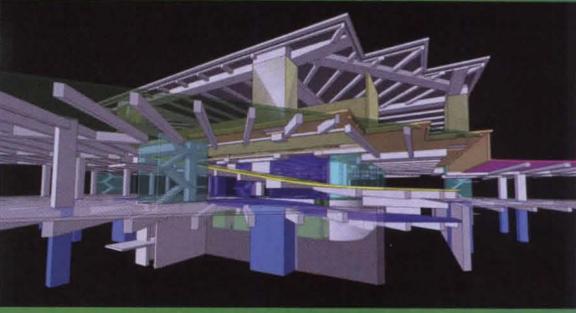
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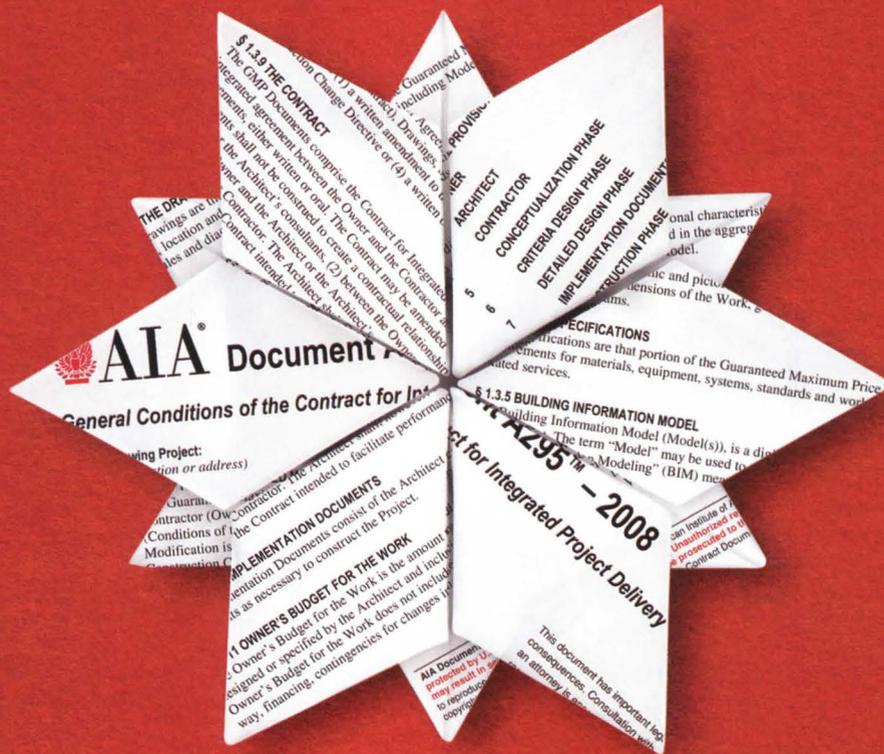
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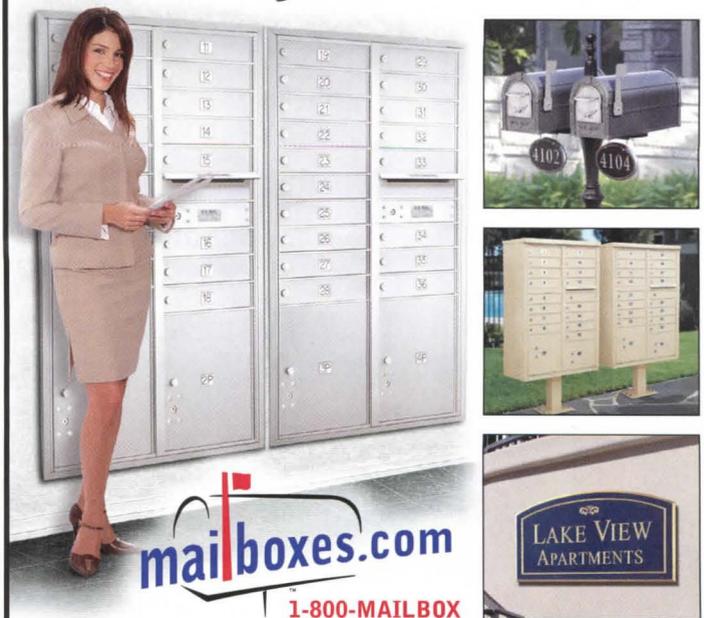


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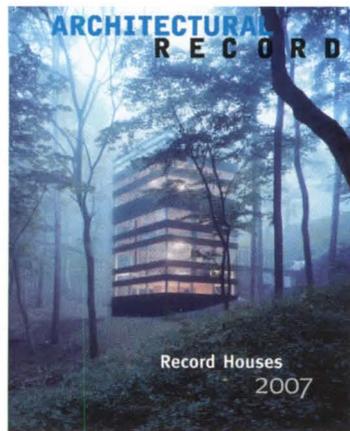
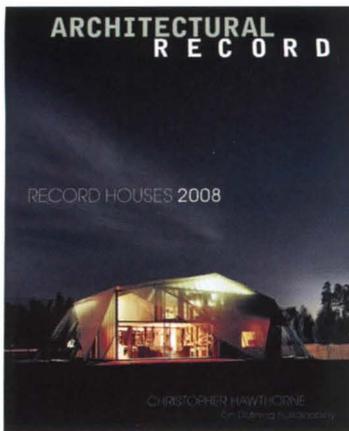
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The editors of **ARCHITECTURAL RECORD** announce the **2009 Record Houses awards program**. Entry is open to any architect registered in the U.S. or abroad. Sustainability remains a significant criterion in evaluating Record Houses. Also of particular interest are projects that incorporate innovation in program, building technology, materials, and form. Projects must be built and inhabited. They may be single-family dwellings or multi-family housing complexes, totally new construction or renovated and

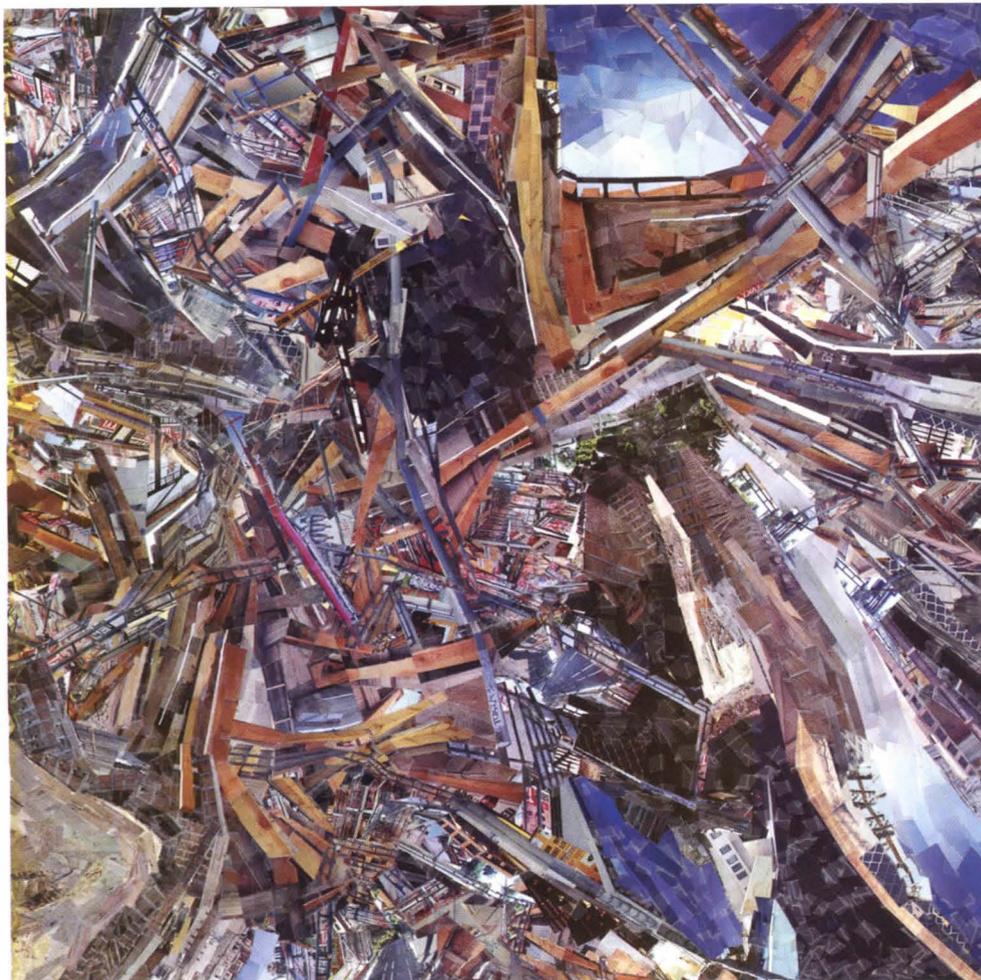
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Submission deadline:  
October 31, 2008

# The Architect's Hand



Teddy Cruz with Ana Aleman, *Border Postcard: The Tijuana Workshop, LA-SD-TJ* (above), photoconstruction, 48 by 48 inches, 2000. Teddy Cruz, *Radicalizing the Local: 60 Miles of Transborder Urban*

*Conflict, San Diego/Tijuana* (below), digital print on vinyl translucent scrim, 15 by 90 feet, for the U.S. Pavilion of the 11th International Architecture Exhibition, Venice Biennale, 2008.

from Los Angeles to San Diego to Tijuana. "The images are a tool for researching the changing boundaries of the transborder urban flows that define the region," Cruz explains. "They are emblematic of the recycling energies where leftover pieces of the Southern California infrastructure migrate to Tijuana to be reassembled as housing." These visual artifacts help communicate Cruz's intent to promote an urbanism emphasizing adaptation and reorganization of resources.

At the U.S. Pavilion of the 11th International Architecture Exhibition of the Venice Biennale, 2008, Cruz created a photoconstruction of a border wall between San Diego and Tijuana, which includes photos of indigenous architecture appended to a fence. Called *Radicalizing the Local: 60 Miles of Transborder Urban Conflict*, the image was reproduced as a translucent vinyl scrim, 15 feet high and 90 feet long, to extend across the pavilion's facade. Sliced into strips, it functioned as a threshold to the exhibition *Into the Open, Positioning Practice*. ■

➤ Read an extended interview with Teddy Cruz at [architecturalrecord.com](http://architecturalrecord.com).



## Photocollages make a graphic activist point

Suzanne Stephens

It is fitting that the last page of this issue about designing with conscience should focus on Estudio Teddy Cruz, in San Diego. Since 1993, architect Teddy Cruz has been spearheading the design of socially responsive architecture for immigrant populations around the Southern California/Mexico border. The fact that his work appears on a page usually devoted to architects' sketches and watercolors, however, doesn't sit well with Cruz. "Even though I love drawing, at this moment of emergency, we need to reposition our practices in the context of rampant socioeconomic inequality," he says. "What is interesting is a plan of action – not the gestural hand of the architect."

But as shown in Cruz's photoconstructions, a strong graphic image does catch the attention of the public. Since 2000, he has been creating *Border Postcards*, photographic fragments literally stitched together with adhesive tape. These images are taken of infrastructure, residual landscapes, and leftover spaces stretching

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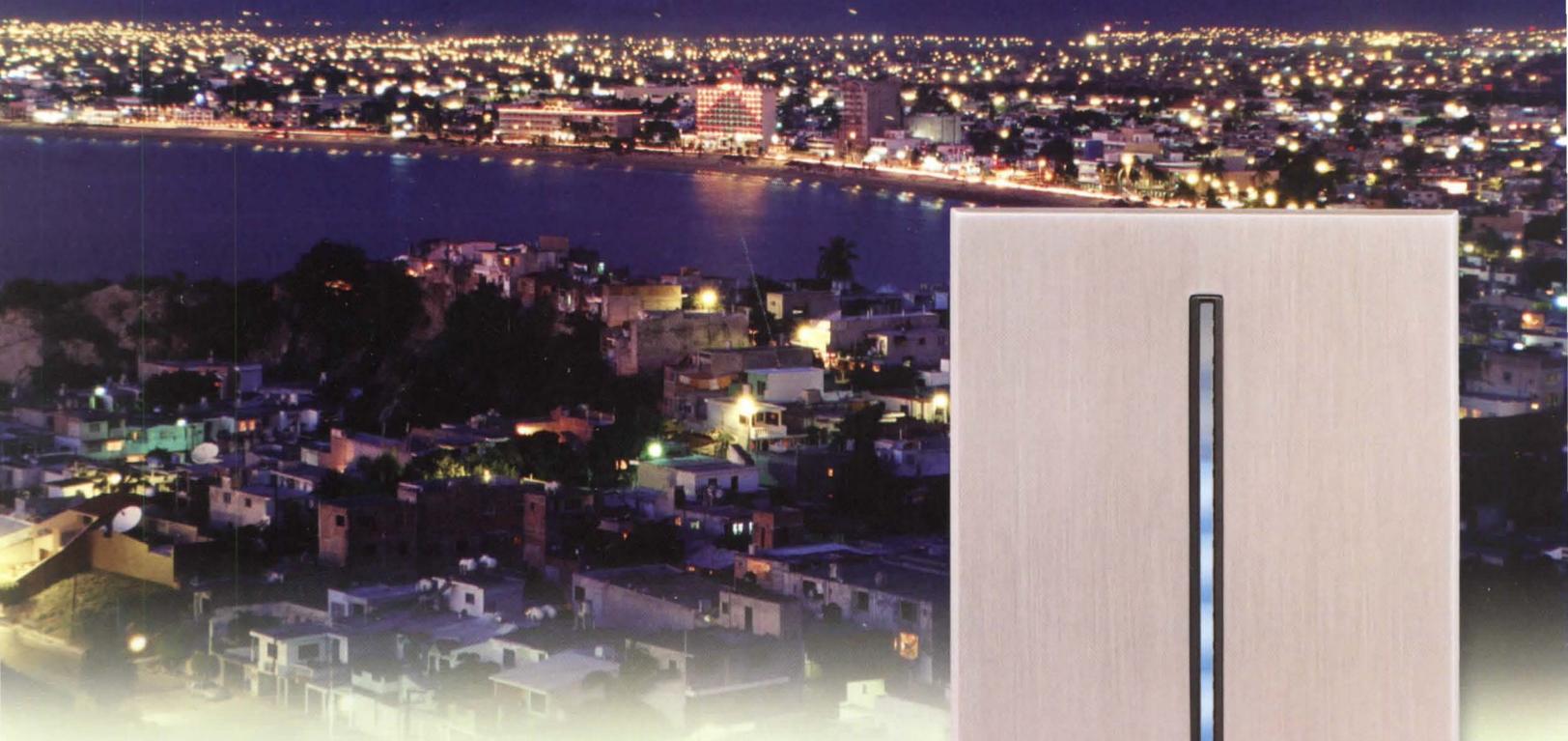
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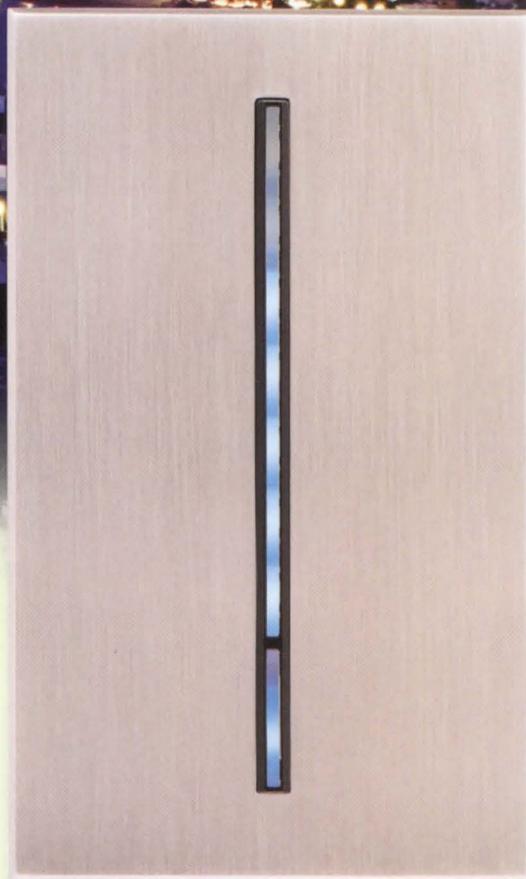
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