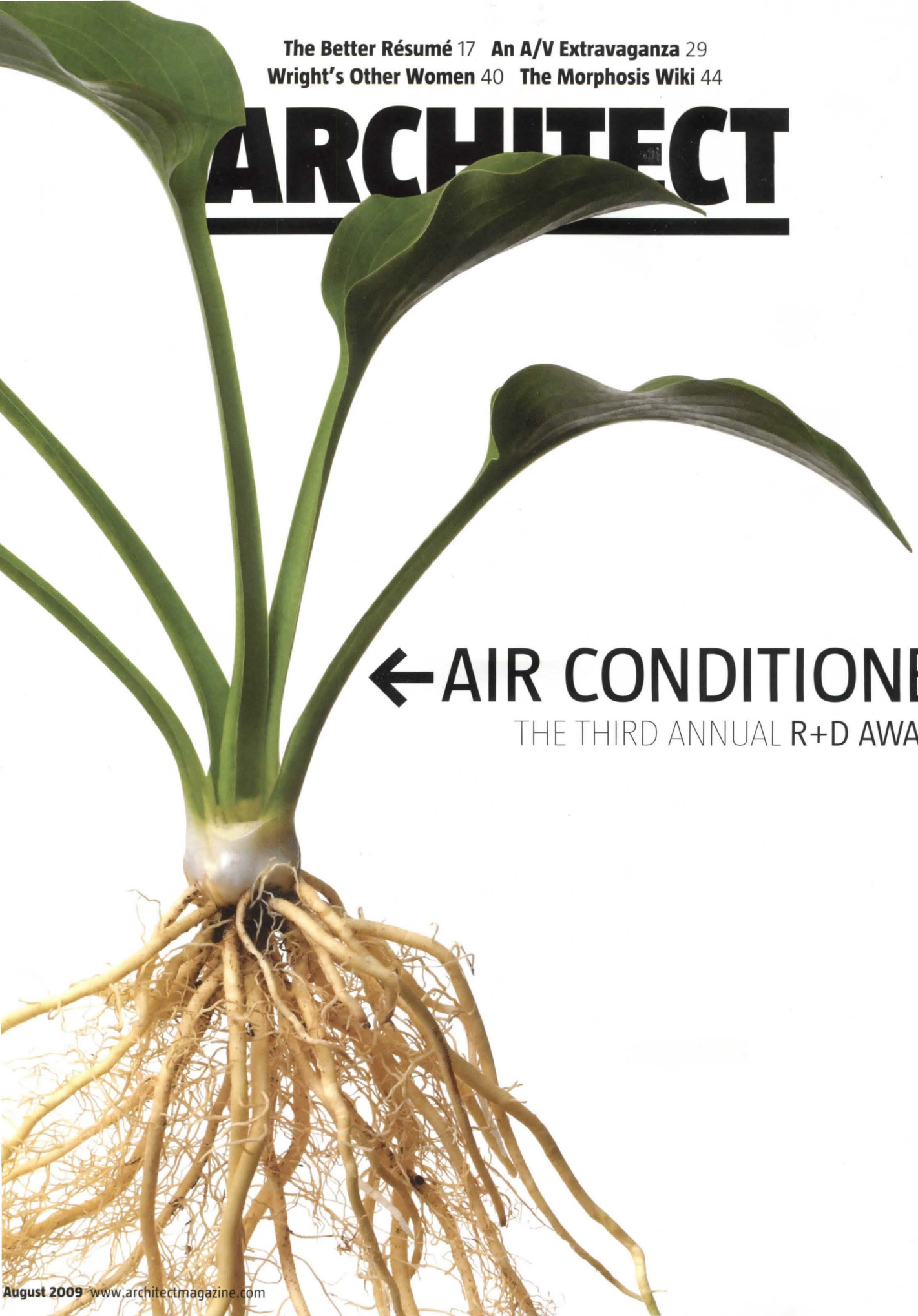
ARCHITECT



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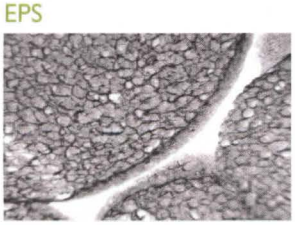
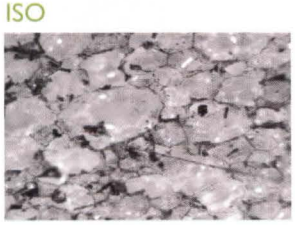
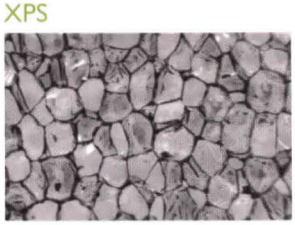


ISO



XPS



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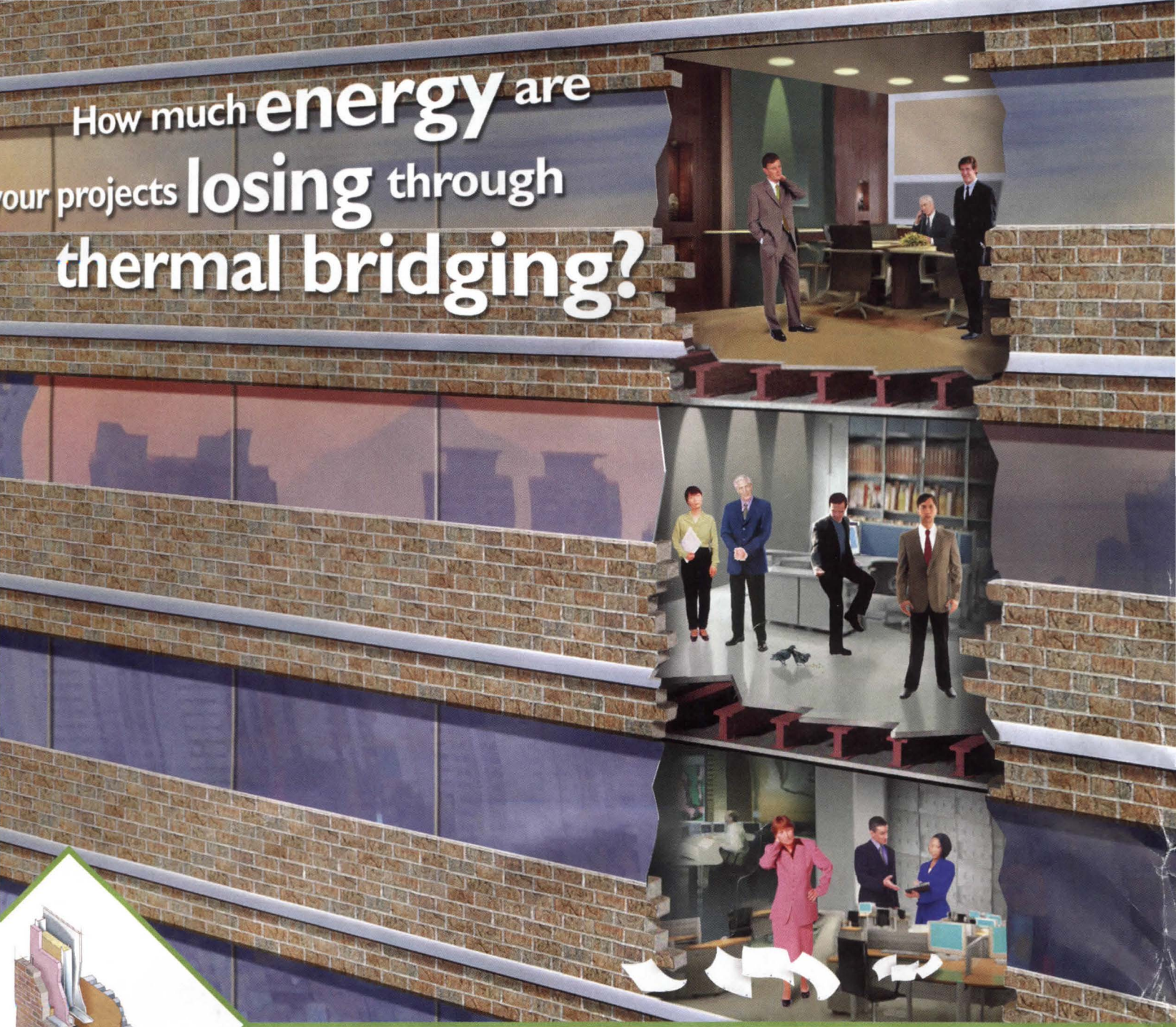

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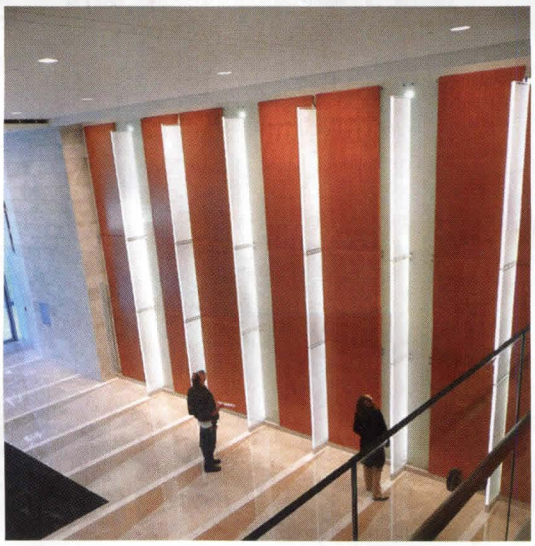
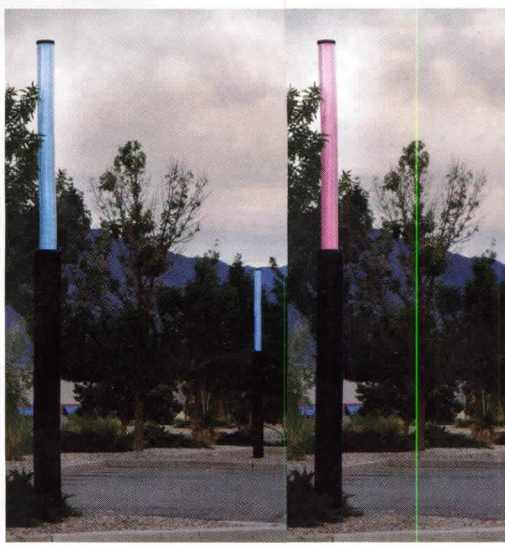


TRE'O™ TC Series
Interior Architectural Lighting



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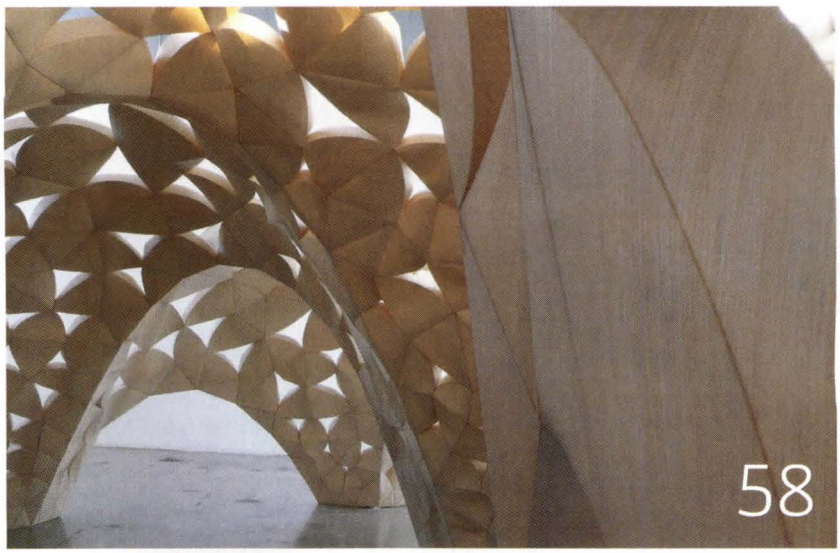
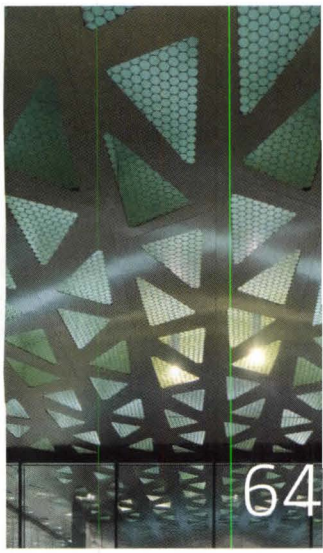


COURTESY IWAMOTOSCOTT ARCHITECTURE



COURTESY BARKOW LEIBINGER ARCHITECTS

FEATURES

"I WOULD MOVE INTO AN OFFICE WITH THAT INSTANTLY."

CRAIG HODGETTS, *R+D Awards juror, reacting to the Active Phytoremediation Wall System.* *For more on this year's award winners, turn to page 46.*

ON THE COVER
A HOSTA, ONE OF THE PLANT TYPES THAT CAN BE USED IN SOM'S R+D AWARD–WINNING ACTIVE PHYTOREMEDIATION WALL SYSTEM. PHOTOGRAPH BY DAVIES + STARR.

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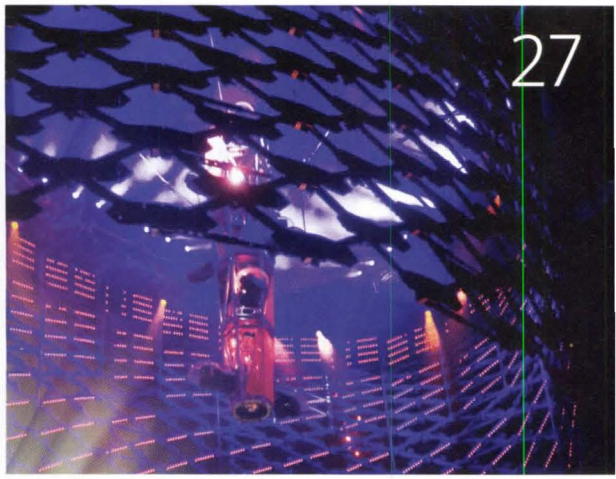

MARK FISHER

Right Images of cities real and imagined populate *The BLDGBLOG Book*.

Far Right The intricate set from U2's new tour.

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THE KING IS DEAD

WE LOST AN IMPORTANT VOICE recently, and no, I'm not talking about Michael Jackson. My mourning is reserved for another fabled Angeleno, photographer Julius Shulman, who died on July 15 at the remarkably ripe age of 98. Shulman was one of the last representatives of a great moment in architectural history: the postwar era of California Dreamin', when progress made perfect sense and technology was the answer to every problem under the sun.

Two vintage Shulman prints hang in the boardroom here at Hanley Wood, including one of his most famous pictures, a nighttime view of the Pierre Koenig–designed Case Study House #22, its glass-walled living room cantilevered dizzyingly over the Hollywood Hills. Shulman populated the scene with two leggy models, perched on leggy modern furniture and seemingly indifferent to the spectacle of the city below. During long meetings, Shulman's photo gives me the perfect kickoff for a daydream.

The photographer struggled with architect-clients like Richard Neutra, who wanted his projects to be shot empty, even of furniture, so nothing could compete with the architecture. Shulman preferred to animate buildings with signs of habitation. Never mind that the people and objects in Shulman's pictures were often models and props, with no real-world relationship to their surroundings. The effect was everything.

Just days before Shulman's death, his business partner Juergen Nogai shared a charming and illuminating story with *The Wall Street Journal*:

> *One technique Shulman taught him, he said, was to place people in "artificial positions" in the photographs. It gives the pictures "a strange feel and makes them very interesting," he said. In one house, Mr. Nogai noted, Shulman placed a woman in the kitchen in high heels, dressed as if she were going to a party, standing at the counter cutting a fruit. "I was looking closely at this photo and I said, 'Wait a minute, Julius. She doesn't have a knife in her hand.'*

LETTERS →

"The Silent Partner" and "Have You Seen Me?," July 2009

You highlight, first, architects of record, firms that actually prepare the construction documents and perform construction-phase services for design firms, and second, the education of current (unemployed architectural graduate) students through CAD, LEED, and theoretical/technological skills.

In the former, you answer the questions of the latter.

Is it any wonder graduates are experiencing difficulty finding employment, and are drifting towards graphic and tech trades? That's all they were taught: creative thinking without application.

And while I embrace LEED, it is predominantly an engineering- and specification-driven approach to building design. LEED does not teach you how to build. The point-intensive aspects of LEED are site, mechanical, electrical, and plumbing related—components that will ultimately be determined by engineers. Material selections for sustainability are already standardized by spec writers. LEED is becoming a marketing tool.

In our cut-and-paste CAD world, no one has to actually develop, let alone comprehend, construction details. And frankly, I don't believe the title of architect belongs to anyone so limited that they can't design, comprehend the manner in which a building is to be constructed, detail such requirements, and follow it up with reasonable construction administration services.

The true talent gap is with all of us older, experienced architects, who have been discarded in this recession in favor of cheap student labor.

Eric D. Kuritzky
Orlando, Fla.

"Battle Royal in U.K. Over Chelsea Barracks," July 2009

As an American architect who has followed the Chelsea Barracks affair closely over the last few months, it was apparent to me that your small article gave a very incomplete view of what has become a complicated spat over the future of the Chelsea Barracks site.

Your article suggested that, were it not for Prince Charles' meddling, all would be fine and well with the project, since it was really just a "run-of-the-mill fight between fans and foes of contemporary design." From what I can tell, this is at least incomplete, and perhaps inaccurate.

Apparently, local opinion on the Richard Rogers project for Chelsea has been overwhelmingly negative. Rogers, a member of Parliament himself, produced a plan for the site that disregarded Westminster's planning brief, which stipulated no more than six stories, in conformity to building heights in the neighborhood, and banned glass, steel, and plastic exterior surfaces in favor of brick, stone, and slate. The brief also stated that it should reflect the scale and style of adjacent Chelsea and Pimlico.

Rogers' design was for a nine-story block with glass and steel cladding. He initially was able to influence Westminster's planning officers and won their tentative approval at a steering committee last September. But by the time the design was approaching the full planning committee, a barrage of local opposition alerted officials to the variations from the brief and made rejection almost certain. It was most likely the local opposition to a scheme that ignored the planning brief, rather than Prince Charles' opinion, which changed the mind of the developers. To characterize this as a case of Charles simply saying "I don't like it," and to describe this as simply a stylistic quarrel, is misleading.

I realize that Charles is the focus of ire for many modernist architects, but he cares deeply about London and argues passionately for an urbanism that is less about individualistic objects and more about humanistic place-making. I'm grateful for his voice.

Erik Evens
Los Angeles

"Have You Seen Me?," July 2009

Though I am incapable of giving an unbiased opinion, I'd say the July 2009 cover looks great. I'm pretty psyched to be the poster child of unemployed recent architecture grads. I like what Mimi Zeiger said about social consciousness becoming more prevalent with young people in our field, though overall the article didn't give much hope for a magical stockpile of jobs to open up. But we're creative people, so I'm sure we'll all figure something out somehow.

Theresa D Franzese
Gettysburg, Pa.

"The Architect 50," May 2009

Due to a reporting error, the revenue range of Zimmer Gunsul Frasca was misstated in our Architect 50 ranking. The revenue range was stated as $25–$29.9 million; in fact, the firm's 2008 gross revenue was between $100 and $199.9 million.

MIKE MORGAN

He looked at me and smiled and said, 'And?' 'She has a bottle opener in her hand.' He said it doesn't matter—nobody would see that. She's doing something. For him it was the action. Everything does not have to be real. It's just the action, the illusion that we're creating."

Thanks to his penchant for visual narrative, Shulman's pictures capture the spirit of high-modern, postwar optimism even better, perhaps, than the buildings he photographed—better than just about any other creative outpouring of the day. And what a day it was: Case Study houses under construction, the Eameses in action ... only Hollywood's collective celluloid output rivaled Shulman's singular vision of paradise. And yes, California circa 1960 was indubitably a paradise, but at what price? Alas, there's not enough oil in Araby or gold in Fort Knox for us to carry on that carefree, freeway-bound existence.

Think I'm exaggerating? The state of California faces an $8 billion budget deficit next year, and the federal government estimates a 2010 deficit of $1.26 trillion. America continues to milk the dream long after it soured.

In our moment of fiscal and spiritual crisis, it's tempting to wax nostalgic or moralize about the age of Shulman. One could waver endlessly between conflicting impulses to return to that ostensibly simpler age or condemn its putative superficiality. Ultimately, it's better to learn from our history—to recognize that we can't ever go back, but that we can't move forward, either, without a dream.

Politicians like to say that the American way of life is non-negotiable. But how you define our way of life is really the issue. I'd like to think that the American Dream amounts to more than the material benefits of cheap energy. I think our way of life is rooted in ingenuity and hard work. Such was the substance behind Shulman's gorgeous illusions.

Neil Crane

SHULMAN'S PICTURES CAPTURE THE SPIRIT OF HIGH-MODERN, POSTWAR OPTIMISM EVEN BETTER, PERHAPS, THAN THE BUILDINGS HE PHOTOGRAPHED.

EDITED BY BRAULIO AGNESE

Top Stories → For these stories and more, see architectmagazine.com.

Ed Mazria of Architecture 2030 won the first **Hanley Award for Vision and Leadership in Sustainable Housing**. He will receive a $50,000 prize.

The **University of Utah** named **Prescott Muir** as director of the School of Architecture. Muir is the founder of Prescott Muir Architects and has taught at Utah since 1993.

Casey Jones of consulting firm *jones|kroloff* will be the next director of the **GSA's Design Excellence Program**.

Julius Shulman Dies at 98

JULIUS SHULMAN, whose compelling photographs of iconic Southern California residences defined an aesthetic that still seems contemporary, died on July 15 at the age of 98. "He knew how to make architect's photographs," says Wim de Wit, head of the Department of Architecture and Design at the Getty Research Institute, "but he also took images he could sell to the book and magazine publishers that he knew." This business sense helped promote Shulman's career while widely disseminating his clients' work and the Southern California lifestyle.

Buildings by Richard Neutra, John Lautner, and Pierre Koenig were among those that Shulman helped to make famous. Shulman also documented the seminal Case Study houses—a project he did without compensation from the designers.

De Wit knew Shulman well and has worked with the archive of 260,000 prints, negatives, and transparencies—Shulman's total output between 1936 and 1996—since it was donated to the Getty in 2005. "He used very particular angles, including the ceiling in the space," says de Wit. "There's always light from the next space that gives you a sense of the entire layout."

A retrospective at the Getty curated by de Wit and Christopher J. Alexander, "Julius Shulman, Modernity and the Metropolis," marked the photographer's 95th birthday. It featured iconic images and traveled to the Art Institute of Chicago and to Washington, D.C.'s National Building Museum. It was followed by the Getty's 2007 show "Julius Shulman's Los Angeles," which will open in Guadalajara, Mexico, later this year. The more recent exhibit includes Shulman's photographs of L.A. locales beyond his architectural jobs. "It shows his love affair with the city," says de Wit.

Shulman generally worked alone, in contrast to larger organizations established by his peers—Bill and Ken Hedrich of Hedrich Blessing and Ezra Stoller of Esto. This triumvirate established the profession of architectural photography. Shulman's passing marks the end of that generation. EDWARD KEEGAN

DWA WINS BURNHAM DESIGN COMPETITION

David Woodhouse Architects has won first place in a design competition for a permanent memorial in Chicago to Daniel Burnham, co-author of the 1909 Plan of Chicago. The program—formally known as the Burnham Memorial Design Competition—was sponsored by the AIA Chicago Foundation and funded by the Richard H. Driehaus Charitable Lead Trust. The memorial site is located at the southeast corner of Grant Park. If fundraising is successful, the memorial could be built as early as 2011. JOHN SCAPPINI

JUNE 2009 ARCHITECTURE BILLINGS INDEX

37.7

- ↓ 39.5 commercial
- ↓ 37.0 institutional
- ↓ 43.5 mixed practice
- ↓ 42.7 multifamily residential

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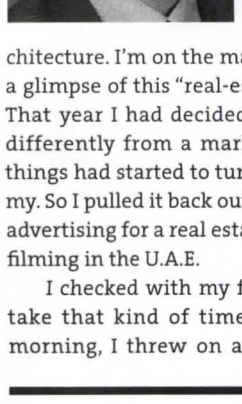
U.S. Architect Wins Reality TV Show—and $1 Million

A CONVERSATION WITH RICHARD BEST, THE CALIFORNIA ARCHITECT WHO WON *THE HYDRA EXECUTIVES*, AN *APPRENTICE*-STYLE REALITY SHOW FILMED IN ABU DHABI.



How did an architect from California end up competing in *The Hydra Executives*, a reality show in Abu Dhabi?

It's truly a bizarre situation, isn't it? It came to me as an e-mail from the UCLA School of Architecture. I'm on the mailing list, and I caught a glimpse of this "real-estate audition" phrase. That year I had decided to try and do things differently from a marketing perspective, as things had started to turn sour with the economy. So I pulled it back out and read it, and it was advertising for a real estate–oriented [TV show] filming in the U.A.E.

I checked with my family to see if I could take that kind of time away, and Saturday morning, I threw on a sports jacket, took a tiny business plan, and started auditioning. By Sunday I had signed the contract. Truly bizarre.

How exactly did you win it? Did you have any strategies going in?

Reality shows are very, very trying. You have to decide between yourself and others, and the challenge, really, is to be a team player and also [to] be selfish. It really comes down to knowing when to do these two separate things. People tend to follow me when I'm in group situations. I just have a natural leadership tendency, probably because I [am] older.

Do you think your architectural background helped you in the competition?

Hugely. We had tasks to perform on a weekly or biweekly basis, and they were all real estate- or design-oriented in some way. Designing buildings, starting a business, landscape design, interior design—I'd done all these things in my past. Maybe that's why I was chosen in the end.

You've donated some of your winnings to charity. Do you have any other plans for the prize money?

I was introduced to the [United Nations'] Intergovernmental Institution for the Use of Micro-Algae Spirulina Against Malnutrition by Dr. [Sulaiman Al] Fahim, the host of *The Hydra Executives*. I feel their efforts on malnutrition across the globe will be impactful. The rest of the money I will use to set up a firm, Eco Design, in the U.A.E. Dr. Fahim is my partner in that, and he has many contacts in the real estate world and with developers, so we fit together well.

***The Hydra Executives* has been billed as the U.A.E.'s version of *The Apprentice*. Can you say "You're fired" in Arabic?**

[Laughs] No, it was all filmed in English.

INTERVIEW BY JOHN SCAPPINI

For more information on the show, go to hydraexecutives.com.

Chair Affair in D.C.

WINNING ENTRIES from The Chair Affair 2009 student design competition were showcased at the National Building Museum in Washington, D.C., in late July. Jessica Leung, a student at Cuesta College in California, won first place for her design "Hole on Hole" (pictured).

Co-sponsored by the International Corrugated Packaging Foundation and the American Institute of Architecture Students, The Chair Affair challenges students to use corrugated board to build a comfortable, aesthetically pleasing chair. Students from 49 colleges and universities entered this year, vying for a top prize of $1,500. J.S.

COURTESY RICHARD BEST (TOP); COURTESY AIAS (BOTTOM)

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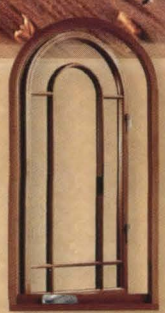

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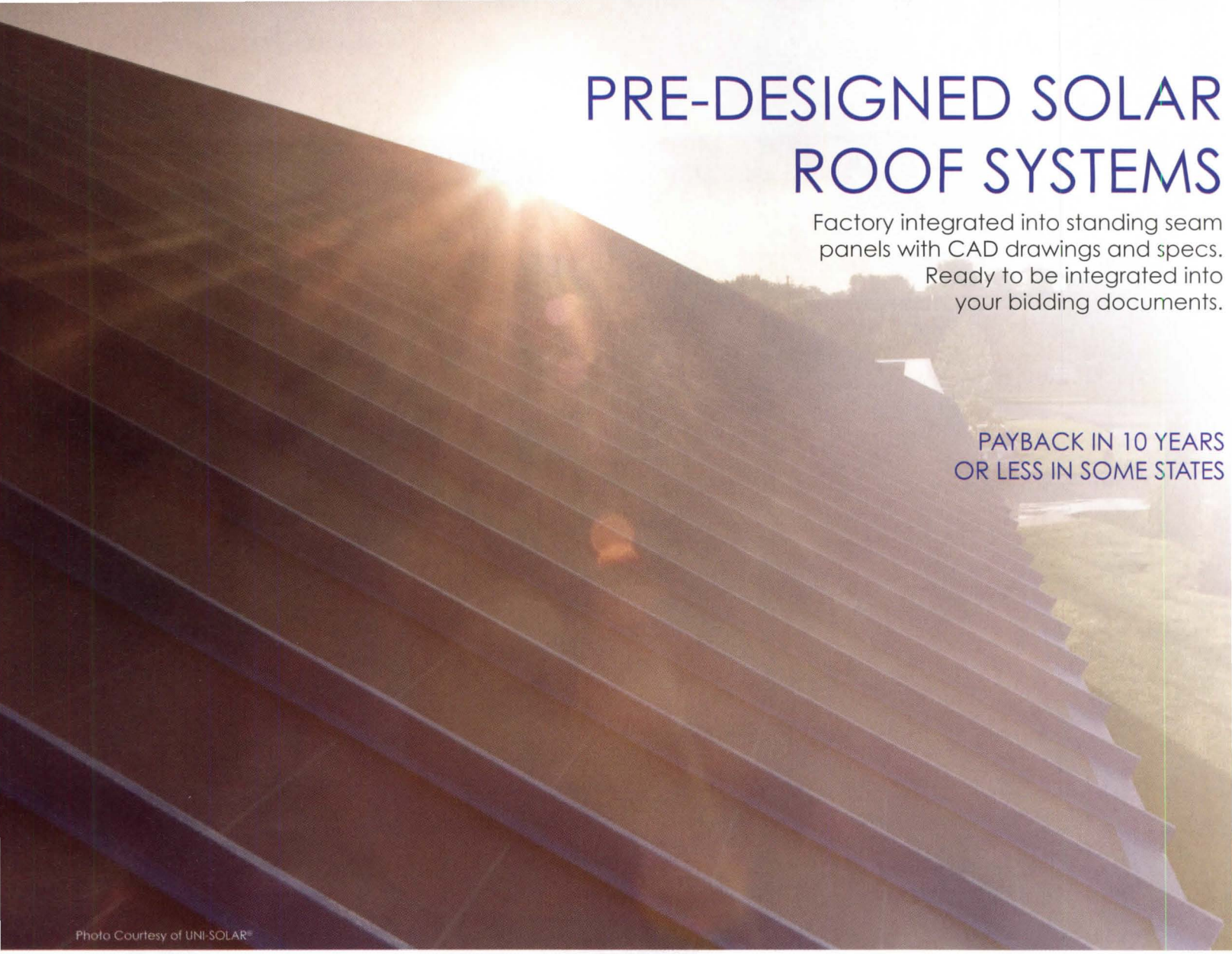

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SYSTEM SIZE	BEFORE INCENTIVES	MINIMUM AREA REQUIRED
3 KW	$23,400 $7.80/W	600 SQ.FT. $39.00/SQ.FT.
5 KW	$38,000 $7.60/W	1,000 SQ.FT. $38.00/SQ.FT.
10 KW	$76,000 $7.60/W	2,000 SQ.FT. $38.00/SQ.FT.
15 KW	$109,500 $7.30/W	3,000 SQ.FT. $36.50/SQ.FT.
30 KW	$219,000 $7.30/W	6,000 SQ.FT. $36.50/SQ.FT.
60 KW	$420,000 $7.00/W	12,000 SQ.FT. $35.00/SQ.FT.
120 KW	$840,000 $7.00/W	24,000 SQ.FT. $35.00/SQ.FT.

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BUSINESS

TEXT BY EDWARD KEEGAN
PHOTO BY RICHARD MORGENSTEIN

→BEST PRACTICES

You Are the Brand

FIRST UP IN A THREE-PART SERIES FOR JOB-SEEKERS: **THE RÉSUMÉ**. HOW TO GET YOUR CREDENTIALS CONSIDERED? TARGET THE PITCH, NIX THE HARD COPY, AND MAKE THAT COVER LETTER SING.

"Architects are good at taking complex problems and figuring out innovative solutions," says **Marjanne Pearson**, head of the eponymous design consulting and headhunting business. "Apply that to the résumé process."

THE JOB HUNT starts with a pitch-perfect résumé, and design consultant-slash-headhunter Marjanne Pearson is the ultimate judge. She knows the business from the inside—despite a lack of architectural training, she's been partner in a firm—and her ability to communicate and network are legendary. Pearson's first client when she launched her own consulting practice in 1987 was Frank Gehry. Today, she offers a seemingly uninterrupted feed of news, information, and advice for designers as @NextMoon on Twitter.

Thousands of architects are looking for work right now. What's the best way to go about it?
Get out of the turkey-shoot mindset. That's how people marketed 30 years ago: Go out in the woods, shoot, and hope something falls as a result. The first issue is, who is this [résumé] going to go to? Who do you want to impress, and how do you want to shape perceptions about you? Know about the firm and what they do.

→

→

What's the prospective employer's point of view?
They're trying to predict future behavior. They want someone who is going to help them be more successful.

Are cover letters necessary?
You have to have a cover letter. It's one page. The first 75 words are your sales pitch as to why they should turn the page. Give them enough information so they're prepped as to who you are and why they want you.

What else does the cover letter need?
It has to have five basic parts:
(1) Address it to the right person—and not necessarily the person in the ad. You won't know until you do research.
(2) Have that compelling paragraph of 75 words. It's not, "I am writing you, here is my résumé."
(3) Where do we take it from here? Are you available for interviews? Who can testify about you? If you have an opportunity to name drop, do it here.
(4) Make sure it has all of your contact information.
(5) The letter has to be graphically attractive. If you don't have your own personal letterhead, design one. It's an opportunity to show that you're a creative person, you take this seriously, and you are your own brand.

How long should the résumé be?
It's more flexible than we used to think. Twenty years ago we said everybody should have a two-page résumé. But if you lack experience, you don't have two pages. And if you have a lot of experience, two pages aren't sufficient.

What needs to be included?
Construct a résumé that's going to make you the most compelling prospective employee. It's up to you to make the employer want to interview you. There are three things: your experience; the presentation, both content and graphics; and your relevance to the firm.

How do you structure the résumé?
It's the *People* magazine attention span. We go to the cover and look at the headlines that are most interesting. It's only if the headline really gets our attention that we'll flip through to page nine.

Should résumés be sent as hard copies or digital files?
I don't know any firms that welcome printed materials. It's easier for them to share electronic documents. But never send a Word document—you *must* send a PDF! You don't want to jeopardize the format by sending it to someone who may not have the same font.

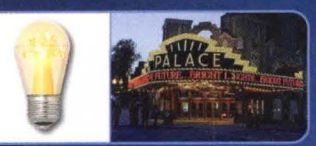
What's the future?
I think résumés are very 20th century. If you send an e-mail with your 75 words and say, "I've prepared a website," 90 percent are going to click through. They're curious. If it's a compelling package, it's probably the best way you're going to demonstrate who you are and what you do. Architects should have websites. It's the most effective way to submit your credentials. □

URN LIGHTING ON ITS HEAD!

THINK

INSTALLATIONS

LED BULBS



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→

ONE DESIGNER PUT AN ACOUSTIC CEILING TILE ON A WALL JUST TO CAPTURE A PATTERN.

project manuals a year, but an architect will do only one project a year," he says. This rapid pace provides Wilson with an understanding of trends many peers won't notice for years.

Tools of the Trade

Not surprisingly, the biggest changes Vitale has seen involve the computer, whether the issue is design (CAD programs, especially BIM) or data (the Internet). Google, not the catalogs in RTKL's library, is Vitale's more likely tool for research. But the information he utilizes today is just a form of word processing. "BIM can link the information in the drawings with a massive database," he says, and though RTKL uses Revit for most projects, the firm is still waiting for the specification functionality that BIM promises. Vitale sees BIM as a potential timesaver but says no program will replace the experience a good spec writer can provide.

Wilson doesn't discount BIM, but says the technology is too undeveloped: "We're probably at version 1.0. We need to be at 3.0." The current "obsession" with BIM is symptomatic of larger issues within the profession, he adds. "Architects are looking for a magic bullet. Not everything has a technological solution, and collaboration is one [such thing]."

BSD's Dean says interoperability—the ability for architects, engineers, contractors, etc., to use the same digital information about a building project—is the essential feature needed to make BIM work as promised. This is something a Construction Standards Institute could help establish, but it's also the selling point of a suite of tools BSD expects to release later this year. BIM's potential is great, but the fact is that architects often use such programs for graphical purposes only. Dean mentions one designer who put an acoustic ceiling tile on a wall in order to capture a particular pattern. In BIM, though, that pattern is more than just a pattern, and somebody has to be on the lookout for such errors.

Wilson knows from his jobsite experience that teamwork is messy, so he's finding better ways to work, because "there's too much investment in Revit and not enough in collaboration tools." He uses social media to reach his team, his clients, and anybody else who's interested. He's regularly on Twitter and Facebook; lists his most-visited sites at StumbleUpon; and uses the "Collection" feature on Designer Pages to inform clients and potential clients of his preferred products.

It is impossible to say where specs will be in 10 years, but it's clear that although the field is changing rapidly, real-world experience remains essential to defining the material qualities necessary for turning designs into well-built structures. Tools change and trade groups evolve, but spec writers' knowledge and their connection to the larger team shouldn't be discounted so quickly. □

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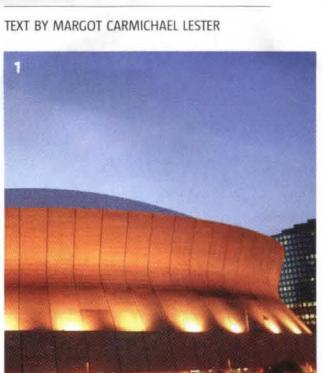
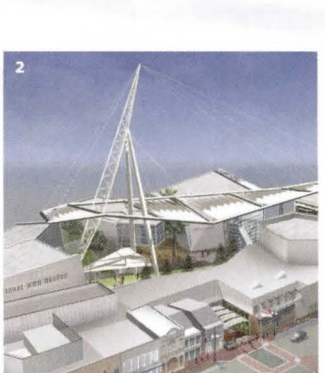
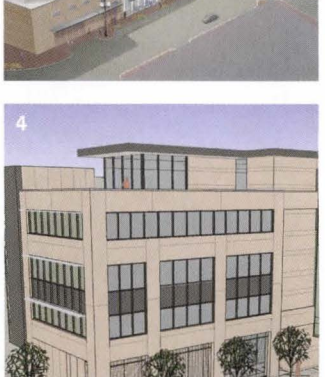
→LOCAL MARKET

New Orleans

TEXT BY MARGOT CARMICHAEL LESTER







THE BIRTHPLACE OF JAZZ ain't swingin' again just yet. Four years after Hurricane Katrina and the nation's most catastrophic engineering failure ravaged it, New Orleans is slowly battling back. Much of the rebuilding is funded by federal dollars. The Federal Emergency Management Agency funneled billions for debris removal and general infrastructure repairs, plus $8.4 billion for levee repairs. And billions in disaster community development block grants have helped homeowners rebuild or repair their homes.

Commercial development has been fueled by special federal Gulf Opportunity (GO-) Zone tax credits, some of which apply to low-income housing, and some to "other projects, many of which have had a hard time getting started," says Allison Plyler, deputy director of the Greater New Orleans Community Data Center. The hiccups come mainly from zoning issues and ongoing challenges related to blighted properties, as well as a whole lot of wrangling between redevelopment authorities, city hall, and state government.

"Many have criticized the pace of recovery. ... [T]here have been challenges," says Matthew Schwartz, principal of Domain Cos., one of the first developers to make use of GO-Zone financing. It now has $113 million in mixed-income and mixed-use projects under way. "Most critics discounted the planning that needed to be accomplished before improvements could be made." But Schwartz says the Big Easy is on the right track with slow, sustainable growth: "It's progressing in a way that will make New Orleans a better city." □

1. Louisiana Superdome
ARCHITECTS: Louisiana Superdome Renovation Joint Venture Team—Ellerbe Becket (consultant), with New Orleans firms Trahan Architects, Sizeler Thompson Brown Architects, and Billes Architecture. **COMPLETION:** 2007. **BRIEF:** $185 million renovation of sports landmark partially funded by $118 million from FEMA and $15 million from the NFL.

2. National World War II Museum
ARCHITECTS: Voorsanger Architects, New York; Mathes Brierre Architects, New Orleans. **COMPLETION:** 2009. **BRIEF:** $300 million expansion of downtown attraction.

3. The Preserve
ARCHITECT: Humphreys & Partners Architects, New Orleans. **COMPLETION:** 2009. **BRIEF:** $45 million mixed-income building received $1.56 million in GO-Zone tax credits, $15.95 million block grant.

4. Second Line Stages
ARCHITECT: John C. Williams Architects, New Orleans. **COMPLETION:** 2010. **BRIEF:** $34 million film studio, part new construction, part restoration of brownfield warehouse.

POPULATION/EMPLOYMENT
273,600 residents, 60% of the pre-Katrina population. April 2009 unemployment: 5.3%.

OFFICE MARKET
Class A office vacancy: 8.78%; average asking rate: $17.99/s.f.

RESIDENTIAL MARKET
Median home sale price, 1Q 2009: $320,900.

MARKET STRENGTHS
- Vibrant culture, rich history
- Fifth largest U.S. port
- Widespread support of green building practices

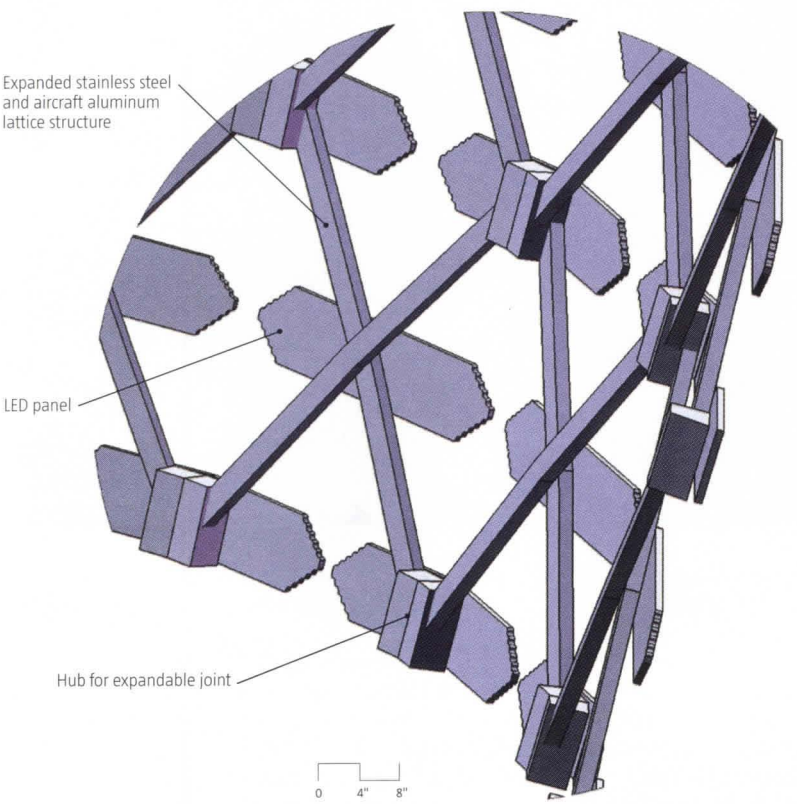
MARKET CONCERNS
- Poor housing affordability
- Infrastructure challenges
- Poorly performing schools

FORECAST
Equity Office leasing director Bruce Sossaman hopes the city keeps growing. "One of the big challenges ... is attracting new business [and] young professionals to move here," he says. "This will take a combined effort ... to improve the infrastructure in the area."

BUILDINGS (1–4): ELLERBE BECKET; VOORSANGER MATHES; JACKSON HILL; JOHN C. WILLIAMS ARCHITECTS

TECHNOLOGY

Expanded Screen Detail



Closed Screen Section

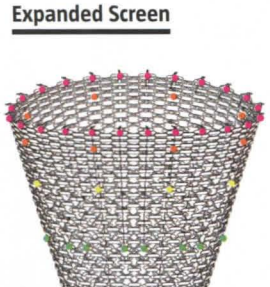
→DETAIL

Expanding Video Screen

Architect: Innovative Designs, Hoberman Associates (screen design); Barco, Innovative Designs (screen production)
Location: A U2 concert in a city near you.

TEXT BY ANNE GUINEY

Expanded Screen



When collapsed, the 3,800-square-foot screen's 888 LED panels form a near-continuous surface to show videos of the band (top). To expand the screen, 40 chain hoists (attached to pick points marked above) control the rate and amount of expansion.

AFTER 33 YEARS and 145 million albums sold, the Irish rock band U2 has an ardent fan base, but as of this summer, they can count on adding architects and engineers to that group: The centerpiece of their 360° world tour is a massive kinetic video screen-in-the-round that envelops the performers and is an integral part of the spectacle. With roughly half a million LEDs on an expandable ellipse suspended over the stage from a 90-ton steel claw, the staging makes this "by far the largest and most complex tour in history," says Matt Davis, vice president of engineering at Hoberman Associates, the firm that developed the screen with Belgium-based Innovative Designs, U2's show designer/director Willie Williams, and production architect and designer Mark Fisher. When it expands, "the screen provides a magic moment that is totally unique and elevates the crowd," Davis says. "It extends the scenery into the air and activates the space between the band and the audience."

The screen concept was developed by Williams, Fisher, Innovative Designs' Frederic Opsomer, and Hoberman Associates' Chuck Hoberman. Opsomer has been a pioneer in large-format video screens, Davis explains, but the scale of this project was larger than any of them had worked on. The challenge was to create a moving screen that was truly visible from all parts of the stadiums booked for the tour, while providing high-resolution visuals for the thousands of concertgoers who, after all, are there to see the band.

The team came up with a conical ellipse with a 3-to-4 ratio and a length of 79 feet that, when closed, is 23 feet tall, and when fully expanded grows to 66 feet (approximately seven stories tall). Its framework is based on Hoberman's expanding Iris structure, which was used for the unfolding arch at the 2002 Winter Olympics in Salt Lake City. "We know that geometry very well," Davis says. That familiarity made it easier to create an optimized screen that could also be broken down within approximately 8 hours and packed into shipping containers. (The steel claw takes much longer to assemble, so there are three identical structures that are leapfrogging from venue to venue.) Controllable LEDs are set in 888 panels that are in turn mounted to aluminum struts on scissor-like joints. The water-sealed LEDs (FLX modules from Innovative Designs' parent company Barco) are individually mounted in the panels, so that in case of breakage they can be easily replaced. Together, the LED panels create a 3,800-square-foot screen surface. Eight winches in the claw raise and lower the screen over the stage. Forty chain hoists, connected to pick points on the latticelike screen frame, expand and support the 120,000-pound screen.

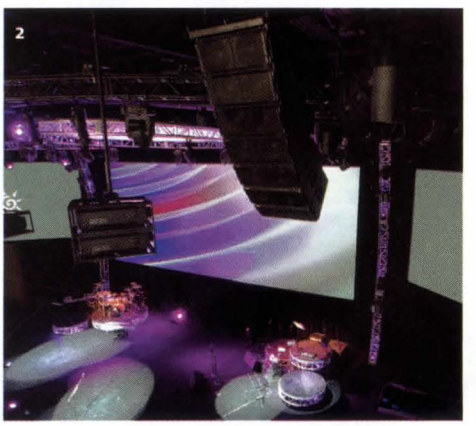
The screen is the largest and most complex of its kind in the world, but the technology itself is not strange: "Our philosophy is to use mature technologies and standard components with known histories, but to combine them in a different way," Davis says. "There are enough other things to invent along the way." □

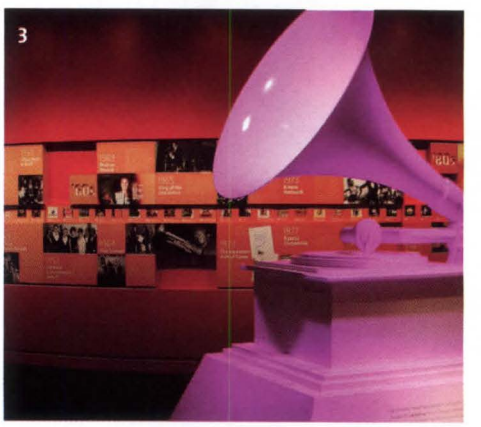
→A/V

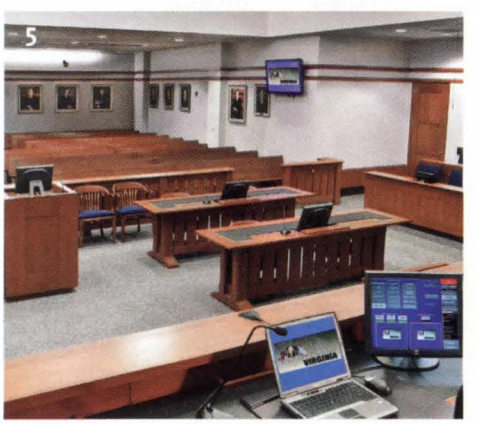
Pro AV Spotlight Awards

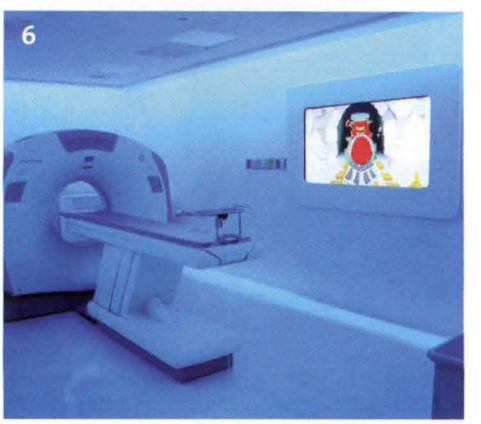
FIFTEEN WINNING A/V PROJECTS, LARGE-SCALE AND SMALL, FROM AROUND THE U.S.

TEXT BY KIMBERLY R. GRIFFIN









HOUSE OF WORSHIP (UNDER $250K)

1. Cathedral of Christ the Light, Oakland, Calif.
AV CONSULTANT: Shen Milsom & Wilke, San Francisco
AV INTEGRATOR: Pro Media Ultrasound, Hercules, Calif.
DESIGN ARCHITECT: Skidmore, Owings & Merrill, San Francisco
EXECUTIVE ARCHITECT: Kendall Heaton, Houston

HOUSE OF WORSHIP

2. Eastlake Community Church, Chula Vista, Calif.
AV INTEGRATOR: Southern California Sound Image, Escondido, Calif.
ARCHITECT: Manuel Oncina Architects, La Jolla, Calif.

ENTERTAINMENT/ARTS

3. The Grammy Museum at L.A. Live, Los Angeles
AV INTEGRATOR: Design and Production, Lorton, Va.
ARCHITECT: Gallagher & Associates, San Francisco

GOVERNMENT (FEDERAL)

4. Pentagon Press Briefing Room, Washington, D.C.
AV INTEGRATOR: Audio Video Systems, Chantilly, Va.
AV CONSULTANT: JGB Engineering, Middleburg, Va.

GOVERNMENT (STATE & LOCAL)

5. Fairfax County Courthouse, Fairfax, Va.
AV INTEGRATOR: Professional Products, Gaithersburg, Md.
ARCHITECT: Miller, Beam & Paganelli, Reston, Va.

HEALTH CARE

6. Baptist Country Walk MRI/CT Center, Miami
AV INTEGRATOR: Southern Business Communications, Norcross, Ga.
ARCHITECT: Naya Associates, Miami

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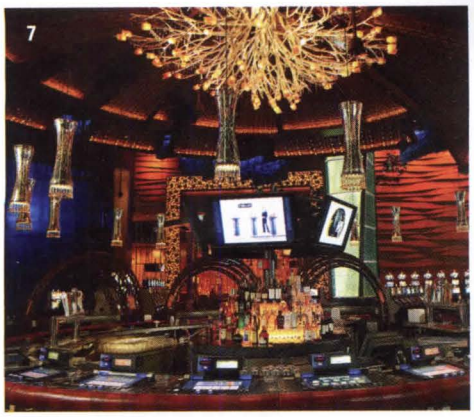

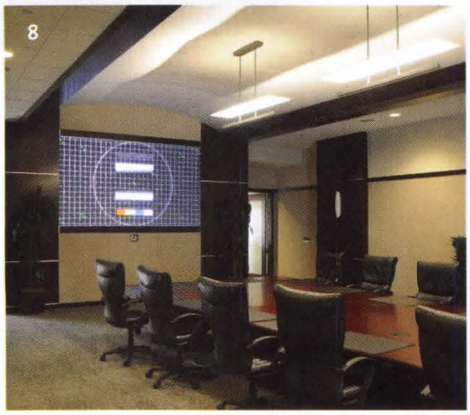

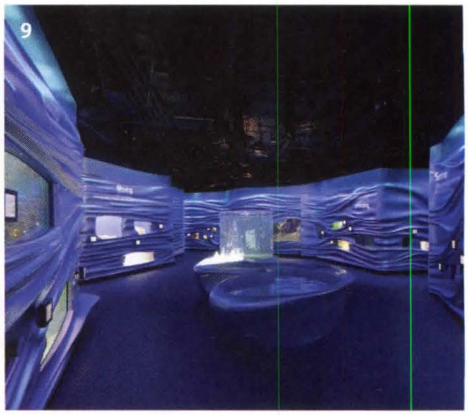

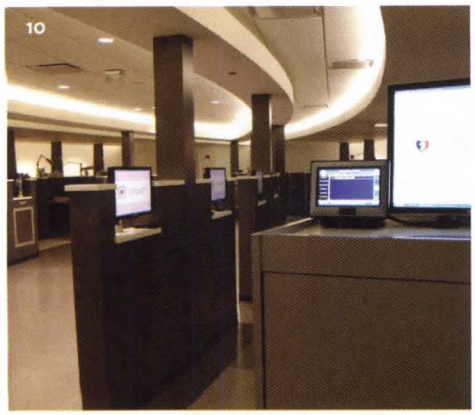

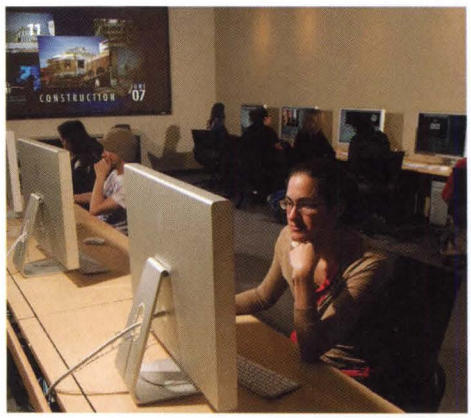

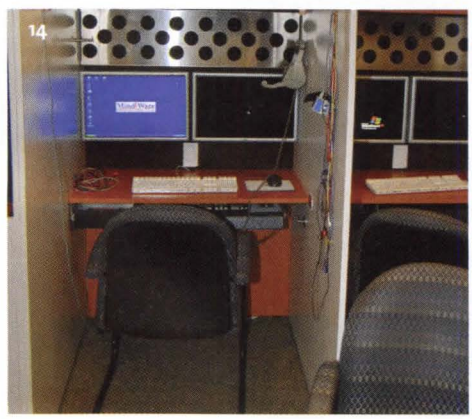

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HOSPITALITY/RESTAURANT/ CASINO

7. Mohegan Sun Casino of the Wind, Uncasville, Conn.
AV CONSULTANT: Veneklasen Associates, Santa Monica, Calif.
AV INTEGRATOR: HB Communications, North Haven, Conn.
AV INTEGRATOR: Marshall Industries, Salt Lake City
ARCHITECT: WATG, Irvine, Calif.

CORPORATE

8. ITC Holdings Headquarters & Control Room, Novi, Mich.
AV INTEGRATOR: IGI, Commerce, Mich.
ARCHITECT: *Gillett Associates*, Farmington Hills, Mich.

MUSEUM

9. California Academy of Sciences, San Francisco
AV CONSULTANT: Visual Acuity Limited, Brighton, U.K.
AV INTEGRATOR: Sky-Skan, Nashua, N.H.
ARCHITECT: Renzo Piano Building Workshop, Genova, Italy, in association with Stantec, San Francisco
DESIGN CONSULTANT: Thinc Design, New York

EDUCATION (Under $250K)

10. Illinois College of Optometry, Third Floor Eye Labs, Chicago
AV INTEGRATOR: United Visual, Itasca, Ill.
ARCHITECT: Jensen & Halstead, Chicago

EDUCATION (tie)

11. University of Nevada, Reno Mathewson-IGT Knowledge Center
AV CONSULTANT: Wrightson, Johnson, Haddon & Williams, Dallas
AV INTEGRATOR: General Communications, Draper, Utah
ARCHITECT: Hershenow + Klippenstein Architects, Reno, Nev.
ASSOCIATE ARCHITECT: Dekker/Perich/ Sabatini, Albuquerque, N.M.

12. Temple University Fox School of Business, Alter Hall, Philadelphia
AV CONSULTANT: Acentech, Cambridge, Mass.
AV INTEGRATOR: Total Video Products, Mickleton, N.J.
ARCHITECT: Michael Graves & Associates, New York with Burt Hill, Philadelphia

JUDGES' AWARDS

13. The Comcast Experience, Philadelphia
AV INTEGRATOR AND DESIGNER: Niles Creative Group, New York
ARCHITECT: Robert A. M. Stern Architects, New York

14. Harvard Decision Science Laboratory, Cambridge, Mass.
AV INTEGRATOR: Premier Network Solutions, Cincinnati
ARCHITECT: Baker Design Group, Boston

15. College Basketball Experience, Kansas City, Mo.
AV INTEGRATOR: Design and Production, Lorton, Va.
ARCHITECT: ESI Design, New York

The Museum at Bethel Woods, Bethel, NY
AT-3 Frame curved with masking panels: 19' 1¼" x 35' 11¼"
GrayMatte LS Cinema Perforated material curved to a 17' 7¼" radius
Systems Integrator: McCann Systems, LLC.
A/V Consultant: RomeAntics
Exhibit Fabricator: Hadley Exhibits Inc.
Exhibit Designer: Gallagher & Associates

Flashback

Creating exciting, engaging, and interactive displays that bring back memories of the 60's

s one might imagine, media played a critical role in the development f The Museum at Bethel Woods, the site of the original Woodstock estival in upstate New York. Creating the exciting, engaging and inter- ctive displays that brought back memories of the 60's for the museum's sitors required nothing less than state-of-the-art technology.

nly Stewart Filmscreen had the right solutions with a 35-foot curved rojection screen that captured the festival experience, a magical bus indshield that transports viewers back in time, a large touch screen abletop providing fun and educational interactivity plus a 23-foot screen ith images of the world's most famous rock festival.

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Museum at Bethel Woods
CENTER FOR THE ARTS

Stewart FILMSCREEN | COMMERCIAL

→ECO

Earth Attacks!

CINEMATIC VISIONS OF URBAN ENVIRO-DISASTER DON'T HAVE TO BE OUR FUTURE.

TEXT BY LANCE HOSEY
ILLUSTRATION BY PETER ARKLE

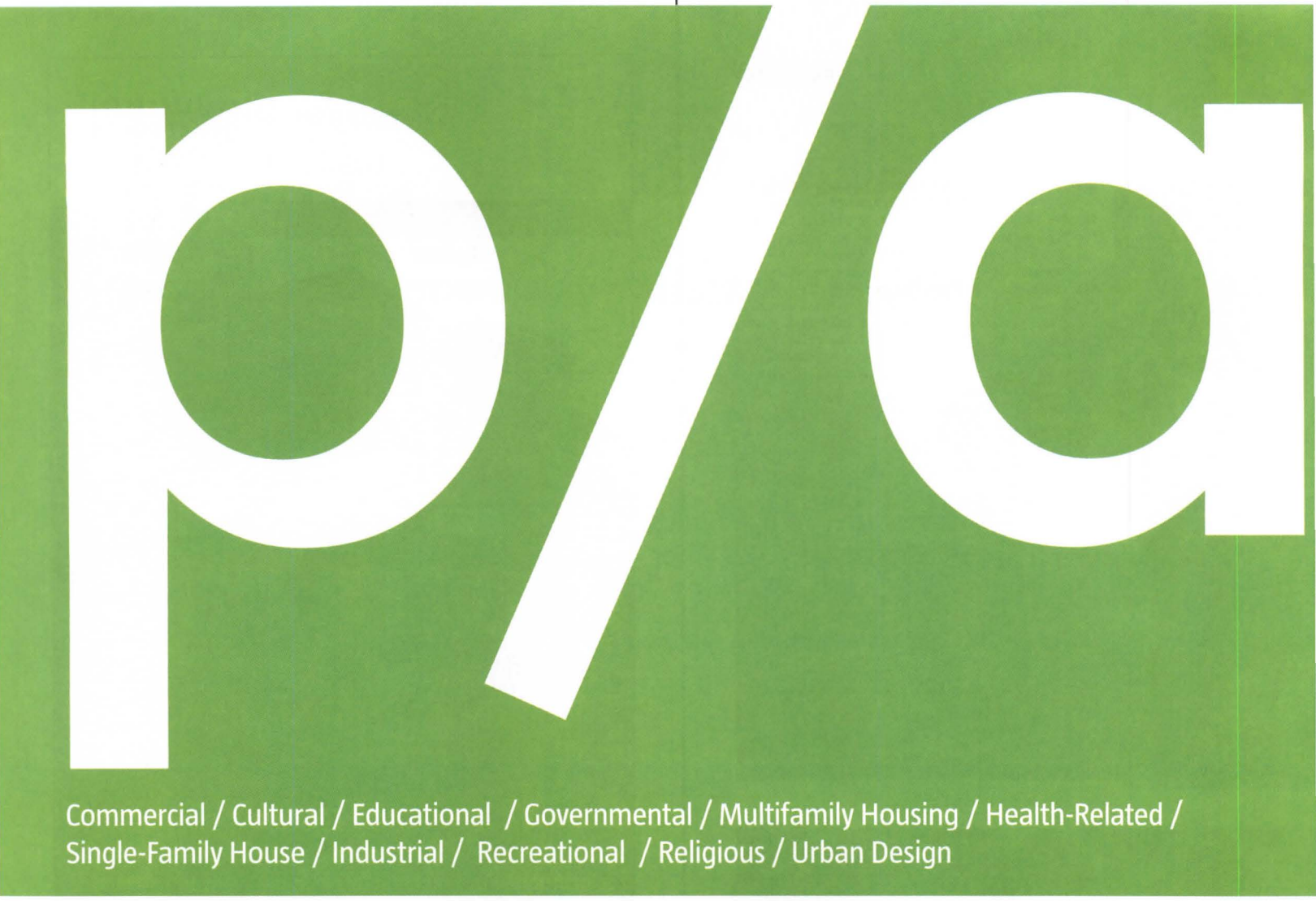
CAPITALIZING ON PUBLIC FEARS and fantasies about global warming, Hollywood has resurrected an old genre, the disaster film, with a new variation: the environmental disaster film. In *The Day After Tomorrow*, Roland Emmerich's climate-change action-epic, the Statue of Liberty drowns while Manhattan gets pummeled by tsunamis, tornadoes, and titanic snowdrifts—all at once. The second most profitable film of 2004, Emmerich's Sturm-und-Drang escapade illustrates a not-so-hidden secret about the environmental crisis: We debate about harming nature, but in truth we have a deeper dread—nature retaliating.

In the 2008 remake of *The Day the Earth Stood Still*, an alien, played by Keanu Reeves, sums up humanity's fate: "If the Earth dies, you die. If you die, the Earth survives." Following this cold, extraterrestrial logic, the alien unleashes a swarm of mechanical nanobugs to devour everything manmade, a neat little trick that manages to erase the built world while leaving the rest of the environment intact.

What would happen if we did vanish? In his book *The World Without Us*, a fascinating portrait of a post-human future, Alan Weisman chronicles how nature would reclaim the built environment, eroding its foundations, toppling its walls, disintegrating every brick until, eventually, few traces of humanity would remain. "On the day after humans disappear," he writes, "nature takes over and immediately begins cleaning house—or houses, that is. Cleans them right off the face of the Earth."

Absent us, cities are fated to be consumed by nature, which needs no help from otherworldly mechanisms. The 2007 post-apocalyptic action flick *I Am Legend* features Will Smith as the (apparently) last man alive after a pandemic triggered by genetic engineering. In an eerily empty Manhattan, young forests take over parks and plazas, and lions from the zoo claim the streets as hunting grounds. After only a handful of years, the asphalt jungle has become an actual jungle.

The very nature of cities has been to resist nature; we battle the elements by robbing the earth of its elements, expending vast amounts of energy to keep the wilderness out. Exploiting this fact, environmental disaster films present cities as sources of ecological shame whose destruction is merely karmic payback. Yet while Hollywood sells tickets by portraying the future as a dark nightmare, designers can envision a brighter dream in which cities become an integral part of nature, gracefully interacting with every other living system. But we won't realize this dream if architects stand still. □



Call for Entries

The P/A Awards recognize unbuilt projects that demonstrate overall design excellence and innovation.

57th Annual P/A Awards

Judging will take place in October 2009. Winning entries will be notified in November 2009, published in the January 2010 issue of ARCHITECT, and honored at a ceremony in New York in February 2010.

Jury

Stan Allen, Stan Allen Architect, Brooklyn, N.Y.
Sarah Dunn, UrbanLab, Chicago
Diane Hoskins, Gensler, Washington, D.C.
John Peterson, Public Architecture, San Francisco
James Richärd, Richärd+Bauer, Phoenix

Eligibility

Architects and other design professionals practicing in the United States, Canada, or Mexico may enter one or more submissions. All entries must have been commissioned by paying clients for execution. Proposals may be for any location, but work must have been directed—and substantially executed—in offices in any one of those three countries. Projects may not have been featured in other national design publications. All entries must have been commissioned for compensation by clients with the contractual intention and the authority to carry out the submitted proposal. Projects must have a completion date after January 1, 2010.

Fees

First Entry: $195
Subsequent Entry: $150
Late Fee: $50

Deadlines

Regular: September 28, 2009 (registration and postmark deadline)
Late: October 5, 2009 (registration and postmark deadline, *additional $50 fee per entry*)

Register at paawards.com

For more information, e-mail
paawards@architectmagazine.com

CULTURE

MICHAEL UBBESEN JAKOBSEN

→**OBJECT**

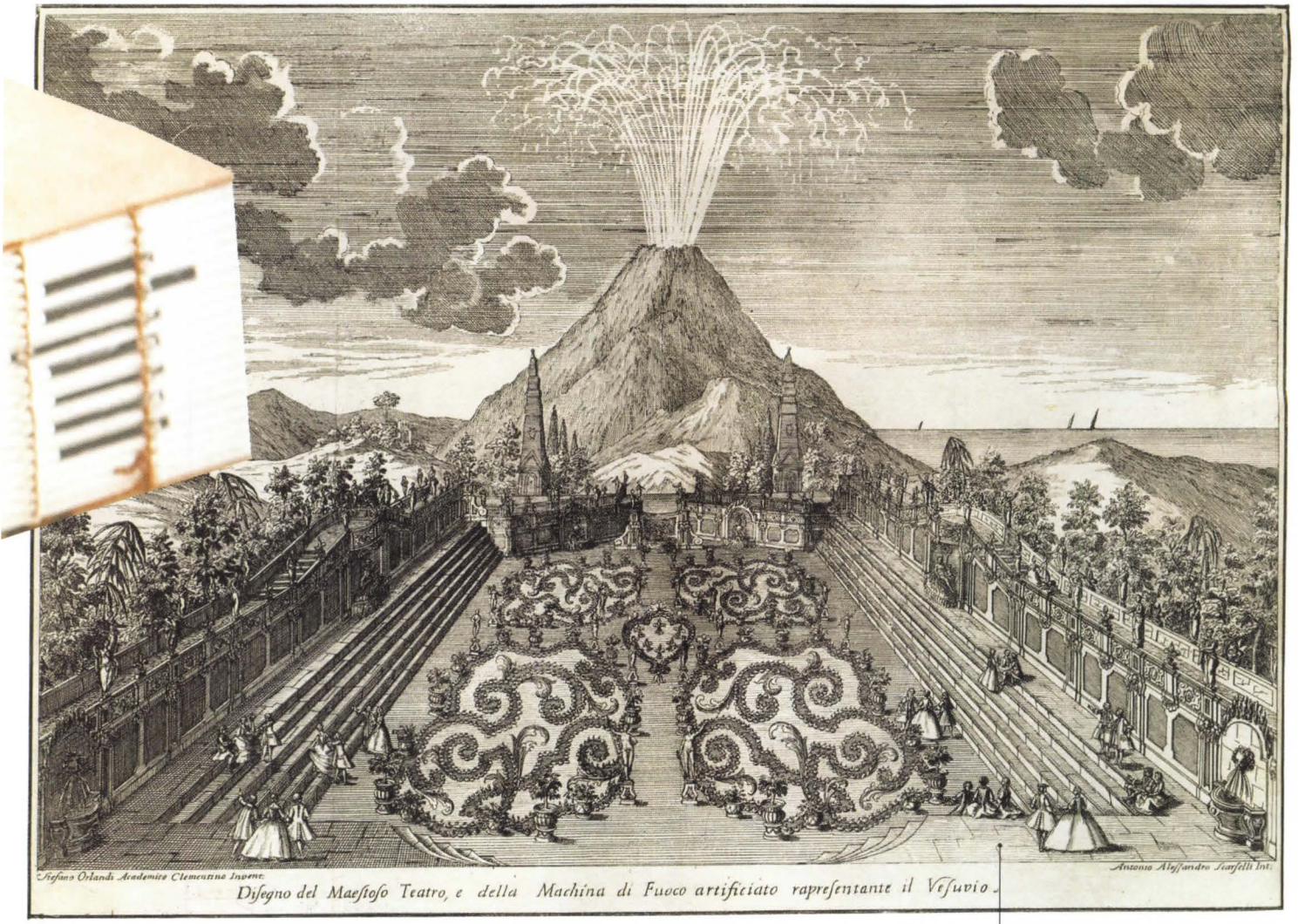
The **BauBike**, designed by Denmark's **Michael Ubbesen Jakobsen**, doesn't offer much in terms of aerodynamics, but it more than compensates with aesthetics—assuming that you find the golden section and Bauhaus sexy. The bike's design follows a strict geometry of 60 and 90 degree angles, yet it is customizable; you can add an extra seat or luggage carrier. Price on request. *baubike.dk*

→**BOOK**

What exactly is a camp? A dictionary will tell you that it's a temporary residence erected for shelter, but in **Camps: A Guide to 21st-Century Space**, author Charlie Hailey, who teaches architecture at the University of Florida, looks beyond that simple definition to "understand how traditional forms of strategy, tenure, and lifestyle are called into question through built environments." From FEMA City to research stations on Arctic ice floes, as well as summer and boot camps, Hailey explores the paradoxes of areas that are neither temporary nor permanent. $29.95; MIT Press

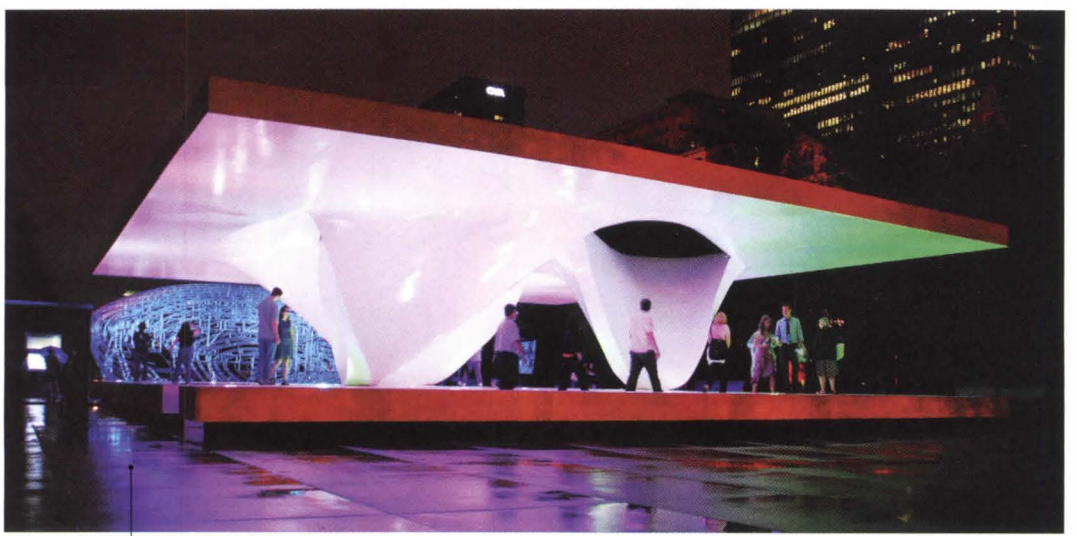
→**BOOK**

Architects are used to clients huffing and puffing over their projects—but what about a wolf? This re-imagining of the classic children's tale **The Three Little Pigs** by illustrator Steven Guarnaccia has the pigs recast as Frank Gehry, Le Corbusier, and Frank Lloyd Wright, and features some of the architects' most famous buildings. Available in Italian and English. $29; Corraini



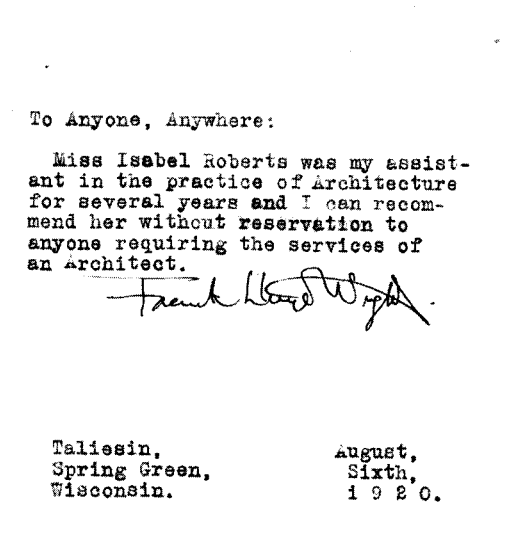
→OBJECT

In the summer of 1738, the city of Bologna pulled out all the stops to celebrate the wedding of Charles VII, King of Naples and Sicily, to Maria Amalia of Saxony. A commemorative volume—one of 472 lots belonging to **"Splendid Ceremonies: the Paul and Marianne Gourary Collection of Illustrated Fête Books,"** auctioned by **Christie's** in June—has text of the musical serenade performed in the couple's honor, as well as sonnets dedicated to them. The plate shown here offers a panoramic view of the stage built for the wedding, with a spectacular faux Mount Vesuvius shooting fireworks in the background. Sold for $7,500; *christies.com*



→EXHIBIT

To mark the centennial of Daniel Burnham's Plan of Chicago, **Ben van Berkel** of UN Studio and **Zaha Hadid** have designed temporary pavilions in the city's **Millennium Park**. The boldly sculptural pavilions echo the make-no-little-plans ambition of their namesake: Both architects took inspiration from the diagonal boulevards that Burnham introduced into Chicago's street grid. The pavilions (Hadid's was not finished as of press time; van Berkel's is shown above) are free and open to the public. Through Oct. 31. *burnhamplan100.uchicago.edu* • JOHN SCAPPINI



To Anyone, Anywhere:

Miss Isabel Roberts was my assistant in the practice of Architecture for several years and I can recommend her without reservation to anyone requiring the services of an Architect.

Frank Lloyd Wright

Taliesin,
Spring Green,
Wisconsin.

August,
Sixth,
1920.

ED OBMA/COURTESY OF THE FLW ARCHIVES (STUDIO); THE AMERICAN INSTITUTE OF ARCHITECTS ARCHIVES (NOTE)

At a time when women had few options in architecture, Frank Lloyd Wright provided one, as a circa 1962 photo from Taliesin West (above left) attests. And though the records on the 100-plus women who worked for Wright may be scarce, research by Beverly Willis is changing what we know. It's already corrected one "fact": Some books refer to Isabel Roberts, an early employee, as a bookkeeper, but a note signed by Wright (above right) discovered by Willis shows that Roberts served as a designer.

TEXT BY HANNAH MCCANN

→HISTORY

Leading Ladies

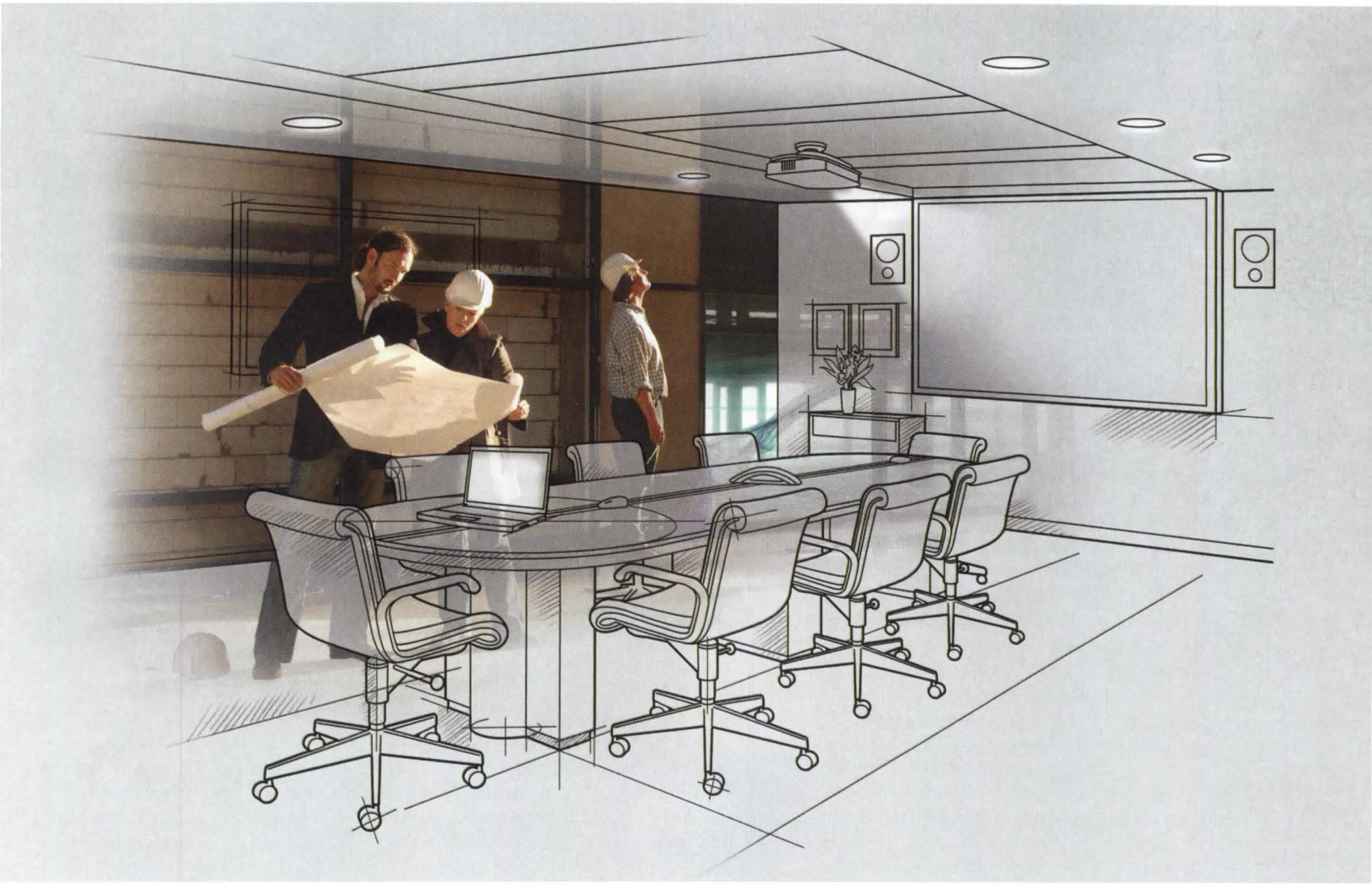
THE SCORES OF WOMEN DESIGNERS WHO WORKED WITH FRANK LLOYD WRIGHT HAVE ALL BUT DISAPPEARED FROM HISTORY. A NEW DOCUMENTARY IS THE FIRST STEP IN GIVING THEM PROPER RECOGNITION.

PHOTOGRAPHS FROM Frank Lloyd Wright's Wisconsin- and Arizona-based Taliesin studios show women working next to men in the drafting room and out in the field, carrying stone and pouring concrete. In an era when few women studied architecture and even fewer practiced, who were these pioneers?

That's what officials at the Guggenheim Museum asked Beverly Willis in 2007. They hoped Willis—a now-retired architect who runs an eponymous foundation dedicated to collecting and promoting the stories of women architects—could organize a program as part of this year's festivities surrounding the 50th anniversary of the museum's landmark Wright building in New York City.

Willis was stymied. "Typically, we find scholars on a topic we want to discuss. But there is no scholarship on women professionals" in Wright's office, she says. That didn't deter the 81-year-old women's advocate. "The fact that there's nothing out there doesn't mean to me that there's nothing out there. A woman's

INNOVATE.
INTEGRATE.
CONNECT.



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designs are similar to chalk on a blackboard. You can write all of your accomplishments, but there's an eraser following behind. I knew that there was a lot of information that had been lost."

Willis started reading the fine print in the hundreds of books on Wright's history, tracking references to women in footnotes and endnotes. "I realized that if I picked up these little bits or phrases, I'd put together a narrative," she says. Over the next year and a half, Willis collected enough material to piece together a 15-minute documentary, *"A Girl Is a Fellow Here": 100 Women Architects in the Studio of Frank Lloyd Wright*. (The quote in the title comes from the master himself.) The film premiered in June at the Guggenheim as part of a panel discussion that included Willis; *New Republic* architecture critic Sarah Williams Goldhagen; psychologist and New York University professor Carol Gilligan; and Columbia University architecture professor Gwendolyn Wright. An honored guest was Lois Davidson Gottlieb, one of the scores of women who worked with Wright.

Willis' documentary reveals that the architect's first employee and lead designer was a woman, Marion Mahoney. Another early employee, Isabel Roberts, is referred to as Wright's bookkeeper in some history books. Willis found a letter from Wright recommending Roberts' services as an architect. "This is big," Willis notes. "It's completely rewriting the historical statement." The letter was found in the course of another Beverly Willis Architecture Foundation project: a hand count of the women in AIA records from the organization's beginning until 1980. Roberts had applied to become an AIA member; she was denied, but the institute kept her application materials.

Roberts, Mahoney, and four other women who worked in Wright's studio—Gottlieb, Jane Duncombe, Eleanore Pettersen, and Read Weber—are the primary focus of Willis' documentary. She chose her subjects because of the quality of their work, and because she could find examples of their work. "I'm not a researcher," Willis insists. In fact, she hopes to give all of the information and images she has compiled to someone who will dig deeper into the story of the women in Wright's studios.

"I have worked through almost half of the 20th century," says Willis, who opened her first architecture office in 1958 and established her foundation in 2002. "I have seen lauded women's work vanish as if it never existed. This must stop." Thanks to *"A Girl Is a Fellow Here"*, the women employed by Wright—and their work—have become a little more visible. □

"A Girl Is a Fellow Here" *will be distributed to architecture schools and can be purchased at museum stores, historic Wright sites, and the Beverly Willis Architecture Foundation website (bwaf.org).*

→CRIT

Fantasy Lands

"Untitled, Bay Bridge," a photograph by Alexis Tjian from *The BLDGBLOG Book*.

TEXT BY MIMI ZEIGER

GEOFF MANAUGH, who founded the popular website BLDGBLOG in 2004, and myself, a fellow architecture blogger, share a number of enthusiasms. Among them: novelist Don DeLillo, 18th century architect Sir John Soane, and '60s pranksters Archigram. These cult figures populate the pages of *The BLDGBLOG Book*, released this past summer by Chronicle Books. For an architect whose taste skews wider than the modernist canon, finding them referenced in each chapter is like running across a favorite eccentric uncle.

On his website (bldgblog.blogspot.com) and in this volume, Manaugh's vision is fueled by the gothic and the sublime: crumbling monuments, vintage warfare, musical icebergs. And he is not shy about showing off his romantic tastes. "BLDGBLOG is fundamentally about following, and not being ashamed by, your own enthusiasms, whether or not they are rigorous and appropriate for the academic mores of the day, or even interesting for your family and friends," he has written in defense of his outlier subjects.

I was eager to see how Manaugh would translate his verbose and eclectic website into print. "I wanted to use the book *as a book*," he writes. As such, he's created material "exclusively" for the volume. The new essays and interviews, including a conversation with Archigram's Peter Cook, make up the bulk of each chapter—bonus tracks for hardcore BLDGBLOG fans. Still, it's the dozens of reprinted blog posts that make for livelier reading, especially, for example, Manaugh's talk with British novelist Patrick McGrath, in which McGrath explores

the writing process and the dark imagination it takes to develop "gothic landscapes" with words.

It's hard to say if the new texts make the book any more book-like: It still feels very bloggy, minus the hyperlinks and comments. (Actually, links would help. In just a few pages I chalked up references to works by Umberto Eco, Neil Gaiman, Francis Ford Coppola, and Orson Welles. The extensive name-checking borders on *High Fidelity*'s record-store-clerk insiderness.)

In each short essay, Manaugh lets his consciousness expand. For instance, in a piece titled "The Weather Bowl," he proposes manipulating the climate to create public events and fun spectacles. Letting his narrative get frothy, he writes, "Weather control is the future of urban design. Engineering the climate is how we'll make our cities interesting again." Like how Katrina made New Orleans interesting again? Is Manaugh critiquing the political gap between climate change and urban infrastructure with a sly parody? We'll never know—he finishes the essay imagining a new Pritzker Prize for best weather effects.

A flooded city does appear in the essay "Wreck-diving London." Here, London slowly sinks as the tide rises. Manaugh takes the opportunity to feature drawings of Retreating Village, a project by architects Mark Smout and Laura Allen that puts houses on rails to adapt to a changing coastline. (It was previously published in their 2007 book *Pamphlet Architecture 28: Augmented Landscapes*.) He also quotes extensively from *The Drowned World*, J. G. Ballard's 1962 novel, relishing the descriptions of polluted lagoons and submerged arcades. Manaugh wears his Ballardian love on his sleeve. He's clearly a fanboy: There's even a section at the back of the book to collect autographs—Ballard, check; David Byrne, check; Brad Pitt, check ...

The BLDGBLOG Book is filled with beautiful photography that captures the sublime and tantalizingly dystopian moments in the contemporary built environment: a pavilion-like checkpoint constructed by the Northern Alliance in Afghanistan, photographed by Simon Norfolk; David Maisel's aerial shots of the toxic Owens Lake in California. The images tell the narratives that seem to elude Manaugh. Evidence of manmade destruction, they do the heavy lifting for his fantasy-prone texts.

"Architecture is, in many ways, a very specific type of science fiction; it is its own genre of speculative thought," writes Manaugh. He's convinced that architecture needs to be more exciting, and that liberal poaching from other, more imaginative genres will shake things up. But as the interviews and photographs attest—and as sci-fi aficionados already know—science fiction is at its most chilling when it expands on conditions already at hand. □

Mimi Zeiger, a contributing editor for ARCHITECT, is a writer in Brooklyn, N.Y., and the founder of the zine loudpaper (loudpaper.typepad.com). She has contributed to publications including *The New York Times* and *Metropolis*, and her most recent book is *Tiny Houses* (Rizzoli).

→SCREEN GRAB

morphopedia.com

AN ARCHITECTURE FIRM KNOWN FOR RADICAL DESIGN EMBRACES A DECEPTIVELY SIMPLE APPROACH TO ITS WEBSITE.

TEXT BY BRAULIO AGNESE AND NED CRAMER
PHOTO BY MICHAEL DARTER

In building out a wiki-style website for Morphosis, Marty Doscher, director of information technology, and Anne Marie Burke, director of business development and communications, decided to make public as much information as possible. "All the interns who've ever worked here are listed," Burke says.

ARCHITECTS' WEBSITES often are exercises in design bravado and informational opacity. For years, at the top of that maddening heap sat morphosis.net, the firm website of Pritzker Prize–winner Thom Mayne, with its tricky Flash interface, undownloadable images, and meager bits of project data. As Morphosis rapidly grew during the early 2000s, the firm was getting overwhelmingly negative feedback about the site. "We wanted a site that was more accessible," says Anne Marie Burke, director of business development and communications. "We're in a different place, and we have a broader, more general interest in our firm."

Enter Los Angeles interactive and branding firm Use All Five, which offered an unusual solution: Don't just build a new site, build two of them. The first, morphosis.com, is a somewhat downplayed version of the original morphosis.net, using Flash technology and looking much like a conventional online firm portfolio. The other site is morphopedia.com. A riff on the user-generated Wikipedia model, it will eventually offer deep information on all of the firm's projects, and each entry features big, downloadable images, including not just final photography, but construction and model photos, detail drawings, and renderings as well.

The two sites link to the same database, but by design, morphopedia.com is structurally transparent and simple to navigate. It adheres to a "more is more," seemingly free-for-all content strategy that upsets the typical PR conventions of strict control. The site includes a lightbox feature that allows visitors to curate their own Morphosis experience. "Are we hurting ourselves by giving people access?" asks Marty Doscher, director of information technology. "I don't think that's the case. We're not competing with the average firm." Not every firm will want to install a live office cam on their homepage, as Morphosis has, but morphopedia.com makes transparency look awfully appealing. □

LINKS

vegitecture.blogspot.com
Fresh lingo for your design lexicon: "vegitecture"—or, as this blog by Portland, Ore.–based landscape architect Jason King prefers it, "veg.itecture"—a blanket term for the application of vegetable life to manmade structures: green roofs, vertical farms, and so on. Etymologists should note that there's another version of the word in circulation as well: "vegetecture" (see: bit.ly/23WwWm).

eikongraphia.com
For the third consecutive year, Michiel van Raaij of Eikongraphia has crunched the numbers to determine the 25 most popular English-language, single-author blogs on architecture. Little on the list has changed in three years: Geoff Manaugh—whose recently published *The BLDGBLOG Book* is the subject of this month's Crit ("Fantasy Lands," page 42)—takes the top slot for the third time, and yet again there are no women to be found. We're in no way complaining about the quality of current architecture blogs, but c'mon. • *bit.ly/14NkLD*

sixtysymbols.com
The science professors at the University of Nottingham responsible for 118 videos about the periodic table, one for each element (periodicvideos.com), have returned with a site devoted to 60 important symbols in physics and astronomy. Some *topics—the speed of* light, the solar system, electrons—will be familiar, even if you dozed your way through high school science, while others are decidedly more esoteric (fine structure constant, anyone?). But all are explained simply and effectively, and with a contagious brio that makes us wish these folks had been our instructors back in the day.

discovermagazine.com
How do urban sounds affect the human brain? *Discover* magazine's Jennifer Barone spends a day in Manhattan pairing the decibel levels she encounters with medical knowledge of their effects on us. During her sojourn, she visits the recently refurbished Alice Tully Hall at Lincoln Center, which proves quieter than even the New York Public Library's main reading room. From the July/August issue. • *bit.ly/Eegjn*

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THE WINNERS OF THE **THIRD ANNUAL R+D AWARDS** SHOW THAT EVEN WHILE THE ECONOMY IS DOWN, TECHNOLOGY IS FLOURISHING.

R+D

RESEARCH AND DEVELOPMENT may seem like luxuries right now, what with the global economy struggling to right itself. But if the third annual R+D Awards are any indication, the bust is motivating a major boom in architectural technology. Certainly, this year's jurors—Lauren Crahan, Craig Hodgetts, and John Ronan, profiled on page 73—proved acutely aware that limited resources are inspiring a new trajectory in the building sciences. They spent two days paging through 110 entry binders, selecting 13 winning projects and products that do more with less.

Skidmore, Owings & Merrill (SOM) won four awards and was involved in a fifth; the firm's well-documented and innovative projects proved so disparate that the jury saw no connection during the blind judging. (Before the ARCHITECT staff revealed the winners' identities, the jury extensively praised one SOM entry, the Sustainable Form-Inclusion System, for its indie, "noncorporate" approach.) Manufacturers, too, earned major recognition this year. A recyclable broadloom carpet backing, a new method for installing roofing membranes, and an aluminum joist system for decks all exhibited a level of practicality that was too ingenious to be ignored.

Turn the page, and judge for yourselves.

TEXT BY KATIE GERFEN AND AMANDA KOLSON HURLEY
PHOTO BY DAVIES + STARR
STYLIST: THOM DRIVER FOR HALLEY RESOURCES

→ CENTER FOR ARCHITECTURE SCIENCE AND ECOLOGY

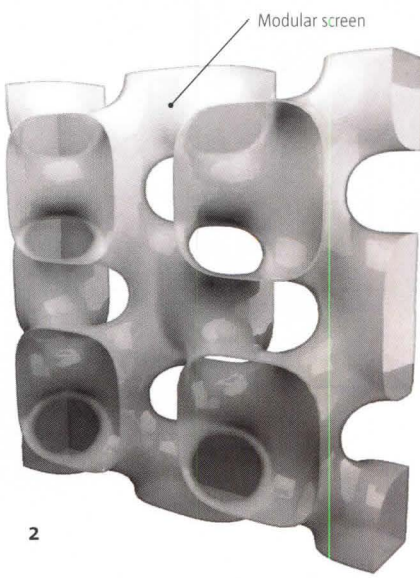
ACTIVE PHYTOREMEDIATION WALL SYSTEM

GREEN WALLS HAVE BEEN touted as a balm for cubicle-weary office workers for years, but the Center for Architecture Science and Ecology—a collaboration between Rensselaer Polytechnic Institute and Skidmore, Owings & Merrill—has created a new prototype that would work with a building's existing HVAC system to reduce energy loads and improve indoor air quality. The Active Phytoremediation Wall System is a modular wall system of pods housing hydroponic plants. Because the plants' roots are exposed, instead of being buried in soil, the plants' air-cleaning capacity increases by 200 to 300 percent.

Air moves through a perforated air intake duct—a series of mini-jets are being developed to encourage airflow—and directly over the root system. This allows the rhizomes on the roots to essentially digest airborne toxins—VOCs, particulate matter, and other biological and chemical pollutants—without the plant itself becoming toxic (which is what happens when the toxins are taken in solely through the leaves). The cleaned air then flows out of each pod through a series of clean air ducts and is reintroduced to the environment.

The pods themselves are made from vacuum-formed plastic, and the form allows the maximum amount of air to reach the root rhizomes while using the minimum amount of material. On top of that, it creates a beautiful base for the plants. "I would move into an office with that instantly," juror Craig Hodgetts said.

The wall system can be installed in large commercial interiors, but works equally well in small settings—a four-module system in an apartment would have the impact of 800 to 1200 house plants. The first test-bed site will be PSAC II, an emergency response center in New York designed by the local office of SOM, where it will be the aesthetic centerpiece of the lobby. "Usually, remediation is either technically believable or aesthetically pleasing, but not both," said John Ronan. "This one's both." **K.G.**



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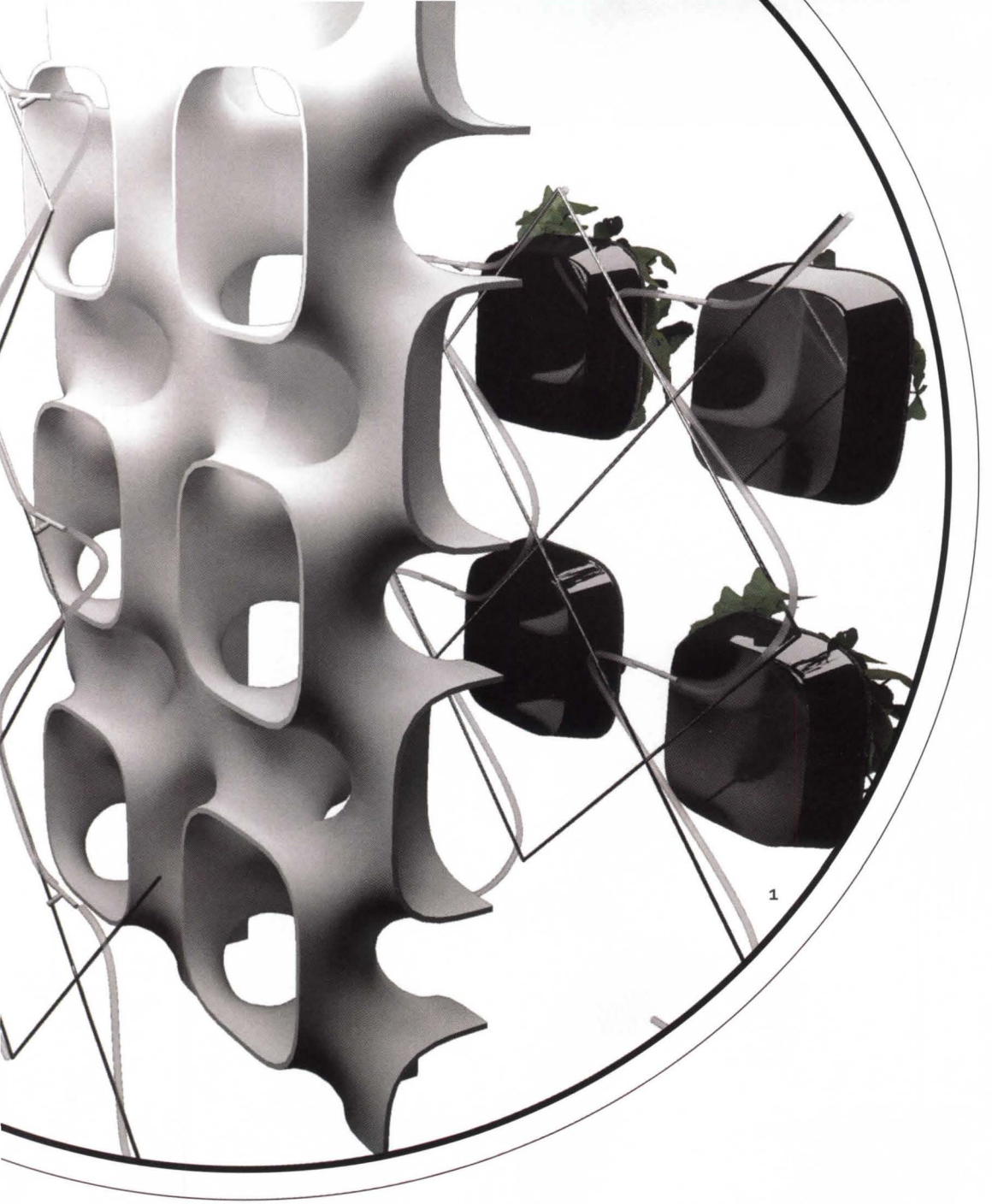


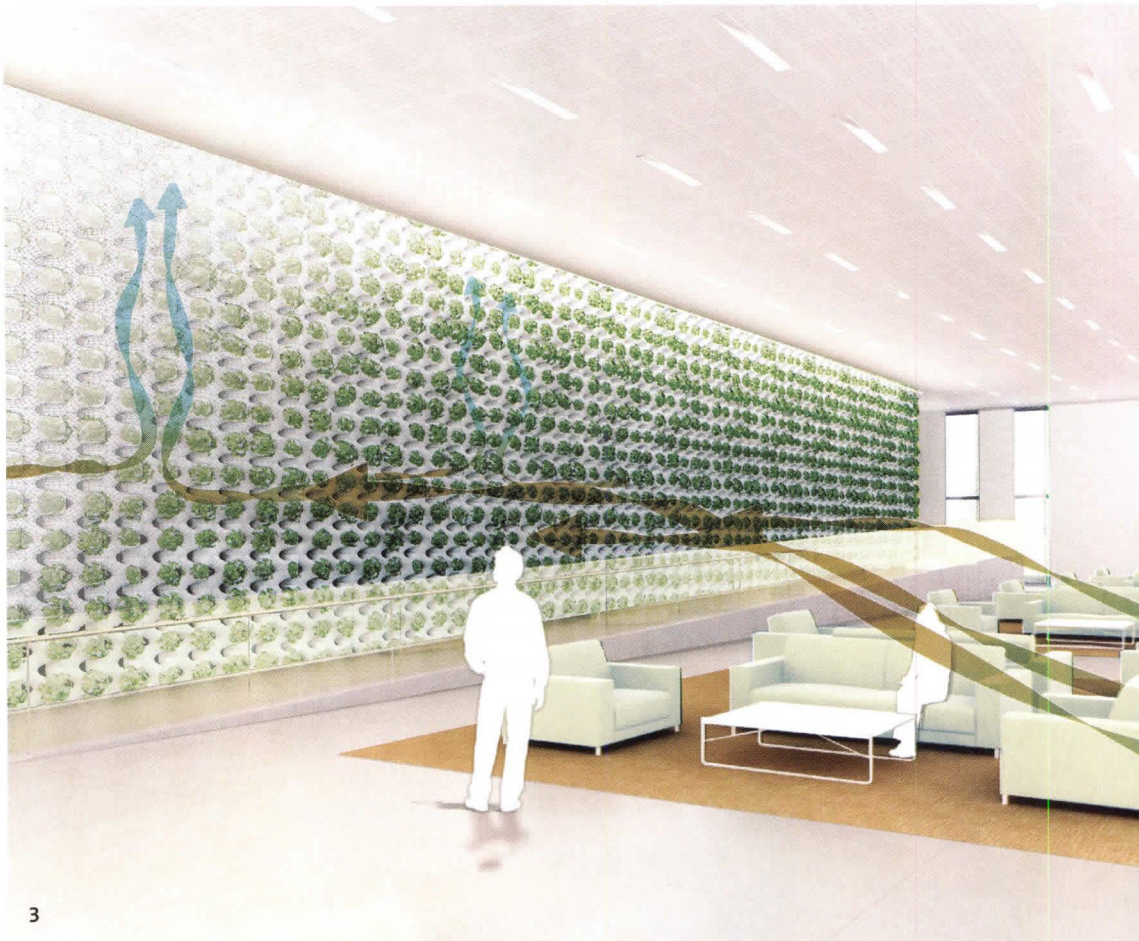
1. The Active Phytoremediation Wall System consists of hydroponic plants in bio- and phyto-filtration pods. The pods are installed in a modular screen which serves as a plenum and as ductwork for air movement. A support frame holds the pods in place and a drip irrigation system supplies fresh water to each plant. The roots are exposed to the air and receive water through absorbent wicks that are filled by reservoirs supplied by the drip system.

2. The system can be populated with foliage plants like ferns, or with crawling plants such as ivy or moss.

→ ACTIVE PHYTOREMEDIATION WALL SYSTEM (CONT.)

3. The air purification process works as follows: Ventilated outside air is brought into a building by the HVAC system. Oxygen is used up and toxins are added as the air is affected by people, finishes, and other contributors to poor indoor air quality. As the polluted air moves through the phytoremediation wall—largely by natural air circulation flows—the root rhizomes digest the toxins and replenish the oxygen. Clean air is then returned to the interior environment.

4-6. The wall is currently undergoing a rigorous testing process. Test pods are vacuum-formed (4) and assembled, as are pieces of the modular duct framework which manage airflow through the system. Plants are installed, and the system is assembled (5) and then placed in a testing chamber (6) to measure the air-cleaning power of different plant species and the overall effectiveness of the system.



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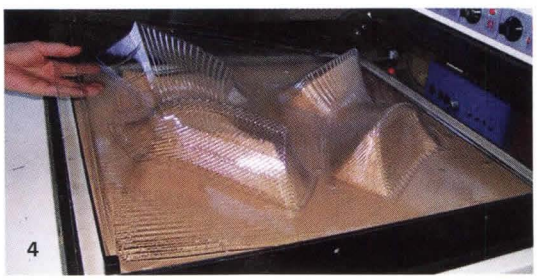

4

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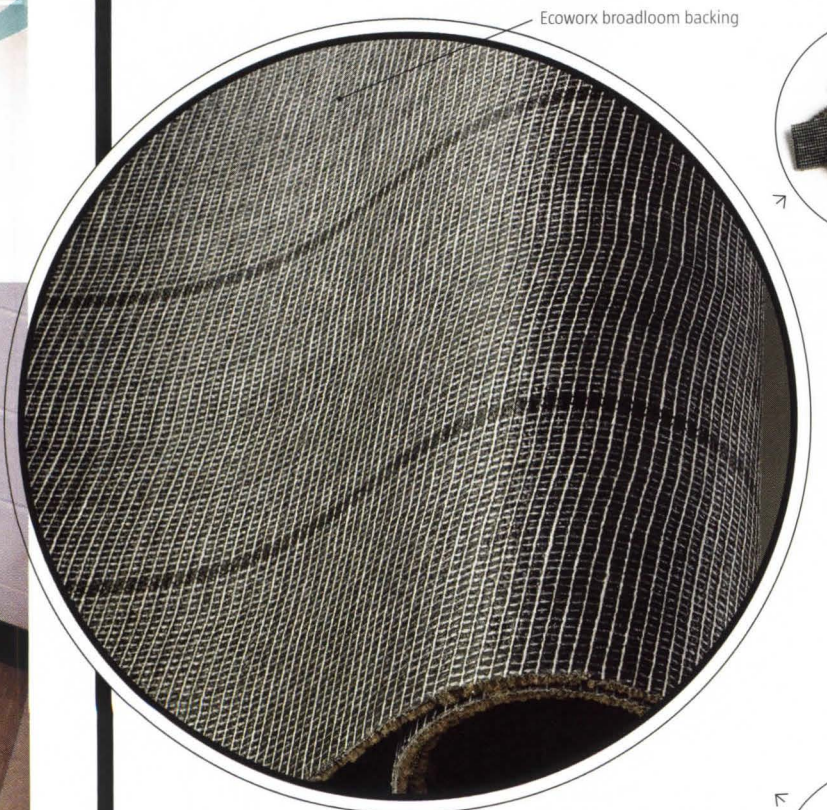
6

ECOWORX BACKING FOR BROADLOOM CARPET

SHAW INDUSTRIES MADE A COMMITMENT to cradle-to-cradle principles when it released its Ecoworx backing for modular carpet tile, a product that could be split from the nylon face fiber at a tile's end of life and recycled into new backing. But when the company tried to apply the same technology to its broadloom carpets, it realized that the system simply did not translate. So the company's materials engineers set to work creating a new system, one that dissolves the carpet into its original components.

The process involves shredding the carpet and immersing the pieces in a bio-based solution. The nylon face fibers detach and can be turned into caprolactum, which is the base for new nylon fibers. The solution-covered backing pieces are then heated; the solution evaporates and is reconstituted elsewhere, ready to be used again in the dissolution of more carpet. The backing pieces are then ready to be used to create new Ecoworx backing for new broadloom carpet. The ingenuity of the process intrigued the jury—"I was really impressed that they had the whole system worked out," Craig Hodgetts said. "They have the chemistry going for them."

The final element that had to be engineered was the carpet's durability. The face fiber is made from fleece, which wears out quickly, so the engineers created a woven outer reinforcing layer and a special adhesive to extend the carpet's life. Even so, John Ronan pointed out, "Carpet is a very limited life material. So, I think it makes it more important that you recycle it and how you recycle it." But recycling only works if the carpet is returned to Shaw, and it is up to architects and contractors to do that. **K.G.**



Ecoworx backing for broadloom carpet was engineered as a cradle-to-cradle product, which can be reclaimed at the end of the product's life cycle, broken down into its component pieces, and completely recycled into new commercial-grade carpet.

→ DEAN/WOLF ARCHITECTS

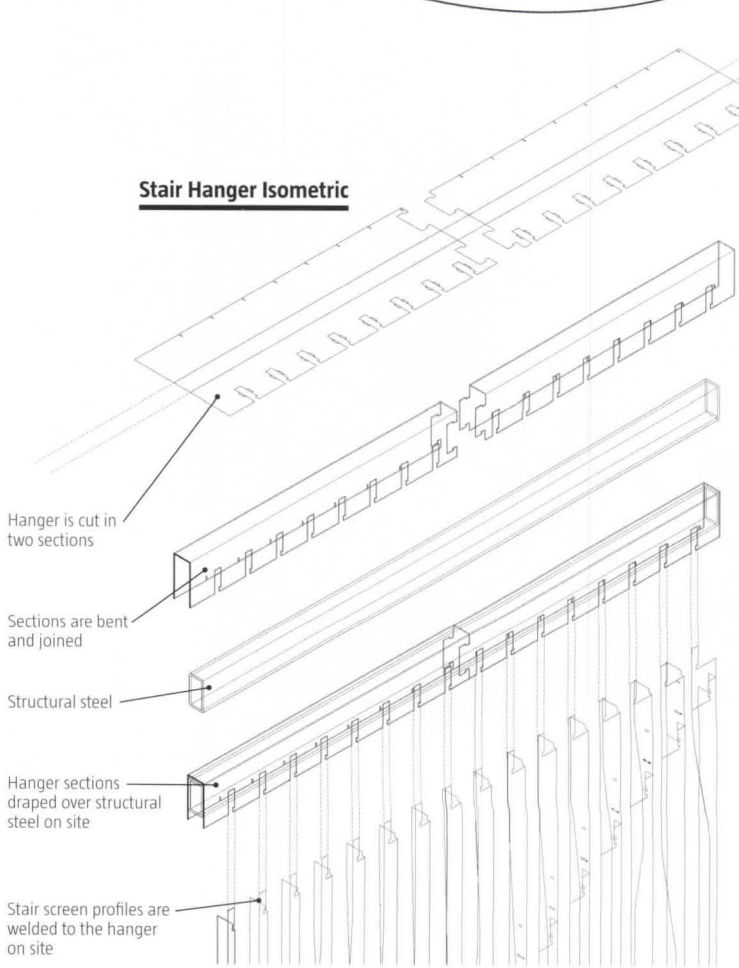
DYNAMIC DESCENT

WHEN TASKED WITH DESIGNING a staircase for a Manhattan townhouse, New York firm Dean/Wolf Architects eschewed typical wood and drywall for laser-cut and bent stainless steel. The design was limited by the available materials—stainless comes standard in 4-foot-by-12-foot sheets, and the brake press needed to bend the steel could only accommodate a 12-foot-wide piece of material. The solution was to limit the height of the structural members—which had to support two flights of stairs—to no more than 24 feet, or two of the 12-foot pieces, thereby limiting the number of joints.

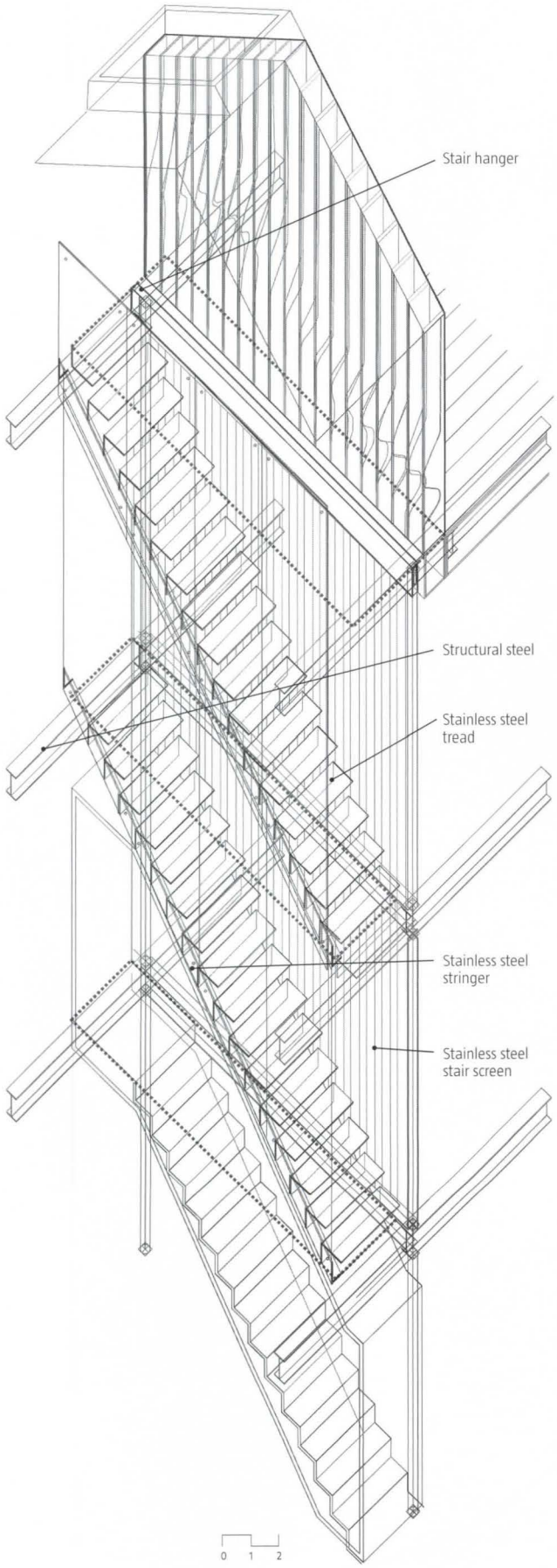
Each piece—whether vertical support or horizontal tread—was first cut on a CNC laser-cutting machine to achieve a custom profile. The pieces were then bent on a brake press and joined for a zero-tolerance fitting in the fabrication shop. A custom joint was fabricated to extend the height of the vertical structure members, and Dean/Wolf spaced the joints so that each is located just below a tread on the upper flight of stairs, to impart a certain logic to the disruption. The vertical members were hung from the top-floor ceiling, under a skylight, and the treads were slipped into pre-cut notches in the vertical members and then fastened into place.

The jury reviewed numerous folded-metal assemblies and decided to award one "best-in-show" prize to represent that technology. In describing Dynamic Descent, juror Lauren Crahan said: "I think it's a very successful project, and it's documented really well." Craig Hodgetts agreed, and remarked: "It takes the tension stair that one extra step, and transforms it." **K.G.**

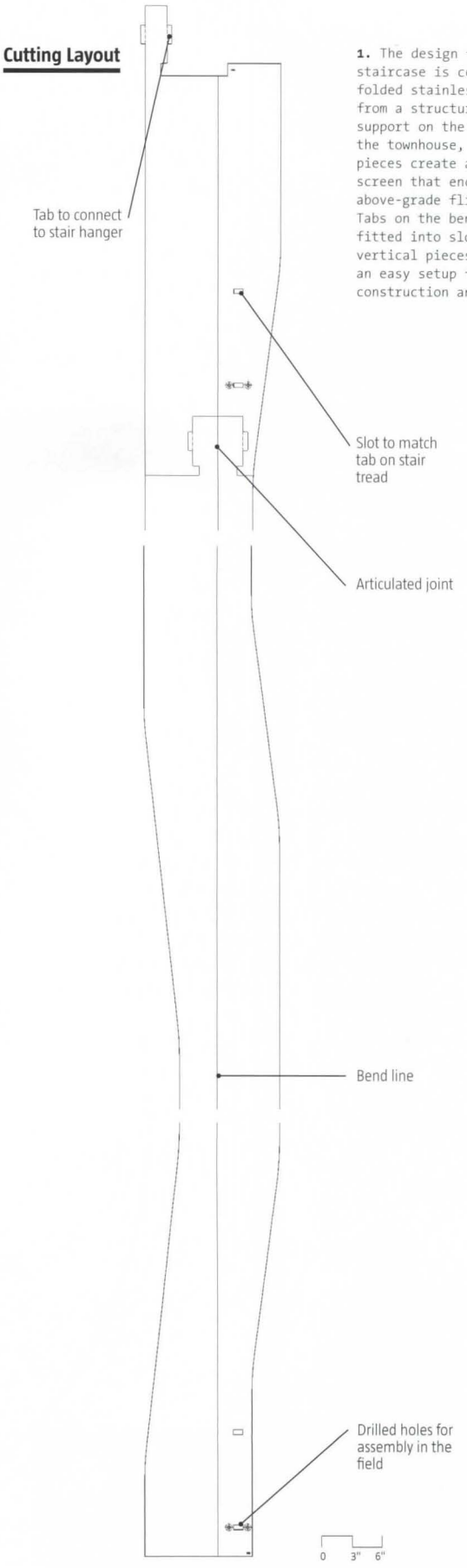
Stair Hanger Isometric



Stair Assembly Diagram



Cutting Layout



1. The design for the staircase is centered on folded stainless steel. Hung from a structural steel support on the top level of the townhouse, vertical folded pieces create a continuous screen that encloses the two above-grade flights of stairs. Tabs on the bent risers are fitted into slots on the vertical pieces, which created an easy setup for on-site construction and spot-welding.

1-2. Twenty-four tension cables connect the top of the tower to the ground to provide stabilization in the face of high winds (1) or earthquakes (2) that could stress the tall, thin structure.

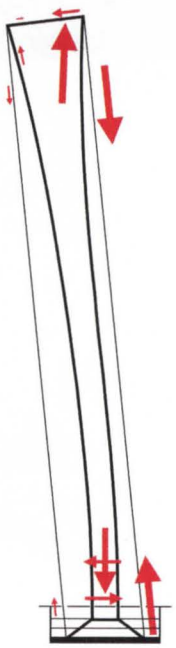
3. The tower is coated in 10,000 evacuated solar tubes. Superheated water from those tubes will be able to power a 360-kilowatt steam turbine (bottom middle), which will provide energy for the tower's systems, including a 22-kilowatt desalination plant that will convert nearly 9,000 gallons of seawater to fresh water daily (bottom left) for irrigation and to refill the solar tubes. The turbine will also power a chiller (bottom right) to provide cool air for the tower's interior spaces.

4. Solar tube density varies on the different faces of the tower. The highest concentration is on the south façade, in an effort to harness the maximum amount of solar energy to convert to steam power.

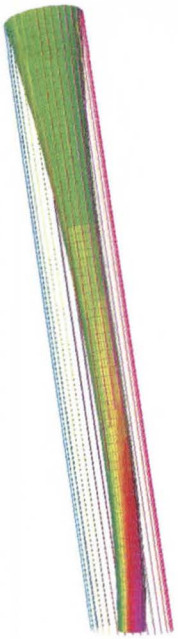
5. Slices through the tower show the various uses of interior space, including an atmospheric research laboratory and an observation level.

1

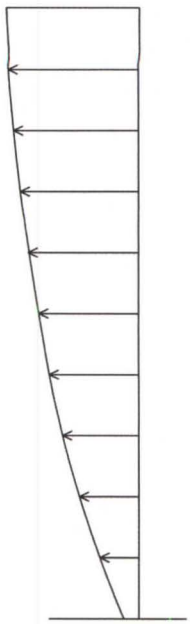
Load Path — Transient Condition



Load path diagram

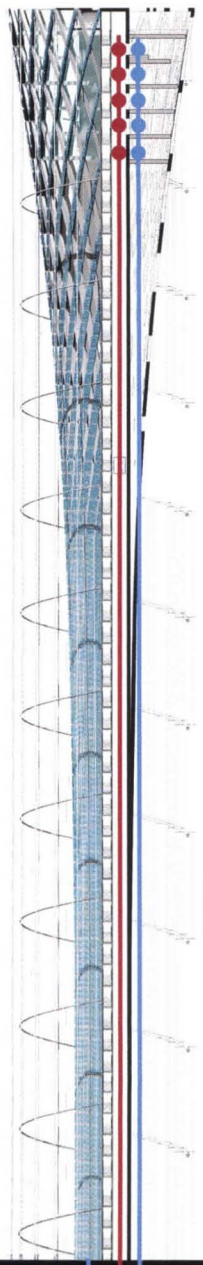


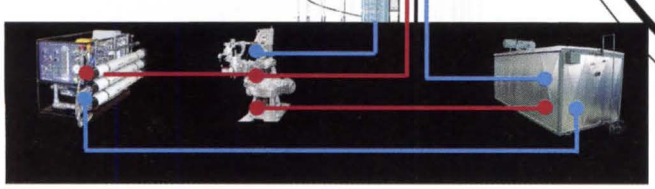
Resulting element stresses



Design wind pressure

3





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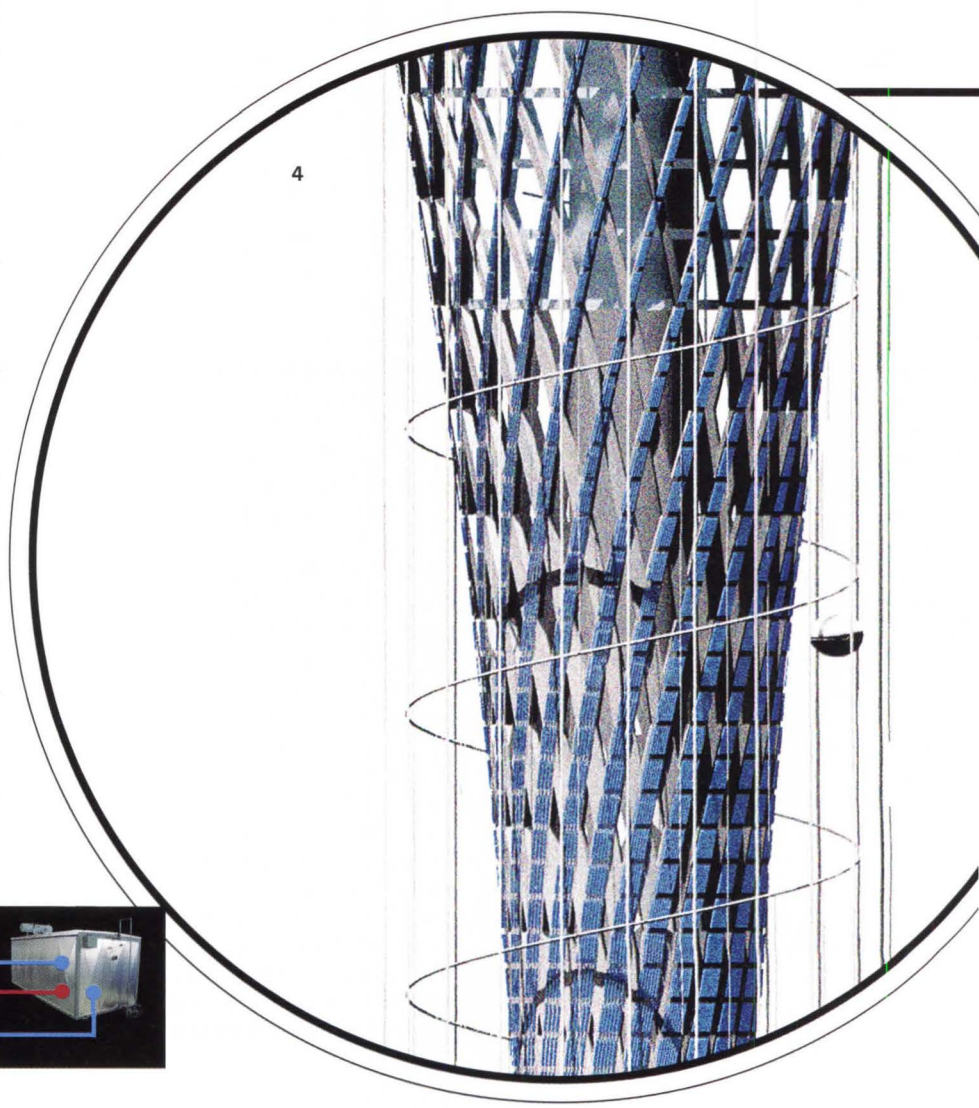
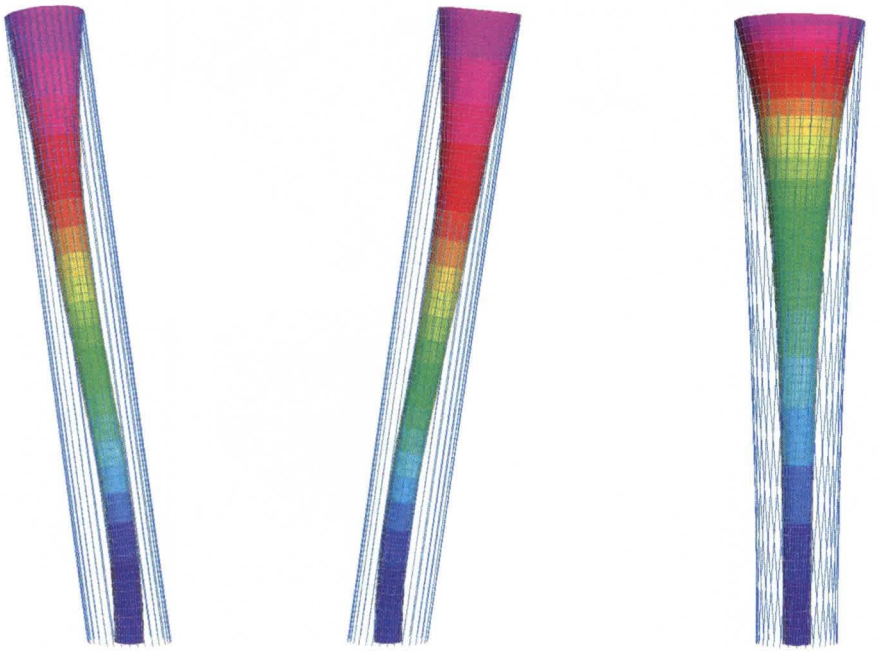


2

Dynamic Analysis Results



Mode 1
Translation

Mode 2
Translation

Mode 3
Torsion

→ SKIDMORE, OWINGS & MERRILL, CHICAGO

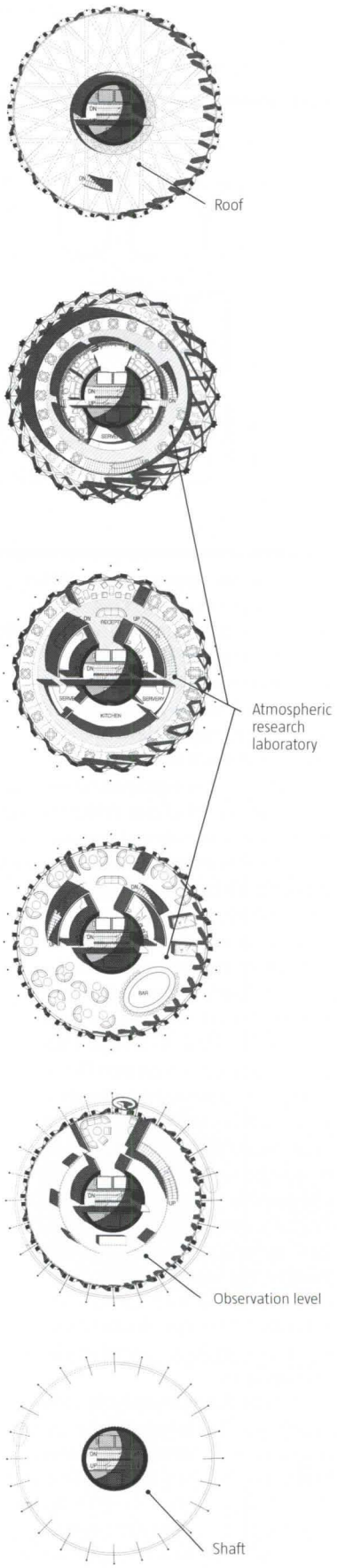
OASIS GENERATOR

THE OASIS GENERATOR was developed by the Chicago office of Skidmore, Owings & Merrill at the request of the United Arab Emirates, which hopes to become less dependent on oil revenue by increasing its urban infrastructure. Since much of the landscape in the United Arab Emirates is unwelcoming, at best, the design team created a tower that would house a desalinization plant—as well as an atmospheric research laboratory and an observatory—to help irrigate the coastline, creating a more habitable ecology that can be built up for post-oil industry.

SOM designed the tower using a genetic algorithm, in which principles from nature and natural selection identify the ideal form for a function in a specific landscape. The result is a 30-foot-diameter structural concrete core, enclosed in a climbing concrete latticework. For the lower two-thirds of the 600-foot-tall tower, the lattice remains flush against the core. The lattice of concrete then expands outward into a lamellar structure at the top. Twenty-four perimeter strand cables accommodate wind and seismic loads, and some 10,000 evacuated solar tubes heat water for a steam engine that powers all of the tower's systems. Included in those systems is a 22-kilowatt desalination unit that converts nearly 9,000 gallons of seawater into fresh water daily.

The power generation aspect of the tower alone was enough to intrigue the jury. "This is the kind of thing that General Electric can build and put out there and just make huge forests of," Craig Hodgetts said. "Relative to solar farms, which are long, horizontal structures, this is a good approach. And the engineering is pretty advanced, technically." What was less clear to the jury was how the tower would help mitigate the desert environment around it. "I was looking for more about the irrigation, since it was saying that it would spawn an oasis," Lauren Crahan said. John Ronan agreed: "They didn't really explain how installing one of these towers gets you this lush environment." **K.G.**

5



1

→ IWAMOTOSCOTT ARCHITECTURE WITH BURO HAPPOLD ENGINEERS

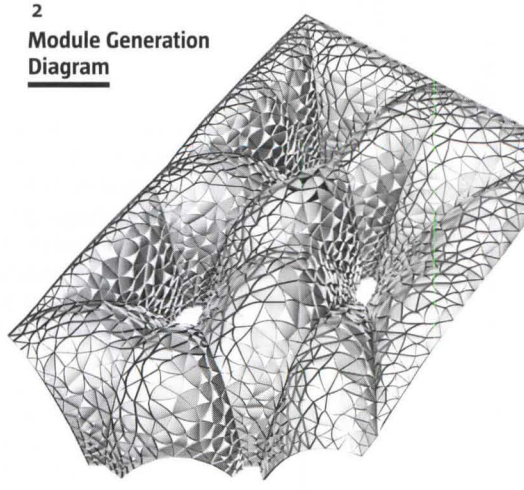
VOUSSOIR CLOUD

THE GOAL OF THE INSTALLATIONS at the Southern California Institute of Architecture's gallery in Los Angeles is to redefine received notions of space using cutting-edge technologies and to involve students in the construction process. IwamotoScott Architecture of San Francisco endeavored to comply with this mission in its installation at the gallery, the Voussoir Cloud, while taking inspiration from some past masters.

The basic premise behind the Voussoir Cloud is a compression structure made from lightweight petals of thin wood laminate and modeled after voussoirs—the wedge-shaped bricks or stones used to form compression arches. To design the structure, the team used computational hanging chain models (the same method, minus the computer, that Eero Saarinen used for the St. Louis Gateway Arch). Form-finding programs and custom computer scripts helped the architects determine the profile lines and the vault shapes. The jury enthused about the deceptively simple results of the complex process. "It's minimal in use of materials, it's spatial, it's structural—it's everything architects should be concerning themselves with," John Ronan said.

The structure uses four types of vaguely triangular petals—those with zero, one, two, or three curved edges, the remaining edges on each petal being flat. Each petal incorporates a series of flanges that fold back to achieve a bowl-like shape. Smaller petals form the structural columns and the petals grow larger toward the top of the vaults. IwamotoScott designed the vaults with gaps between petals, an antithetical approach that admits light from the gallery's clerestory windows. **K.G.**

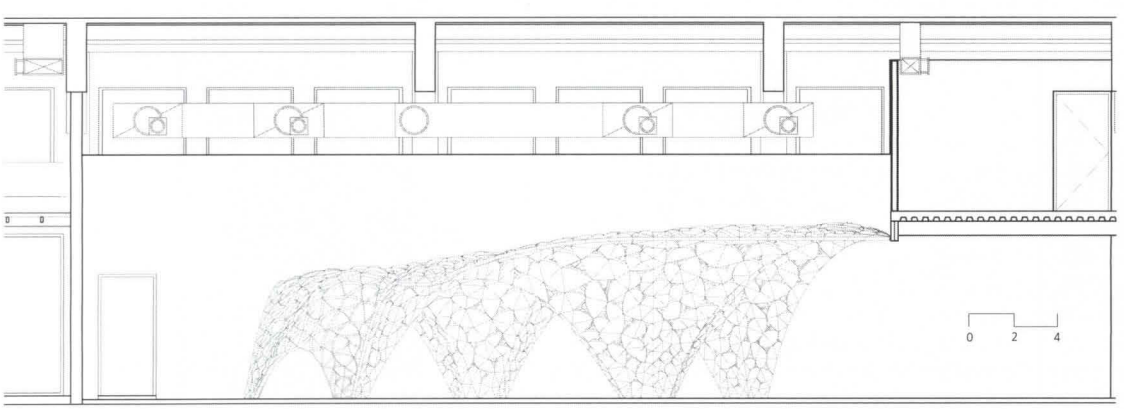
2
Module Generation Diagram



1. In the Voussoir Cloud, a series of wood laminate petals were used to create compression arches and vaults in a study of structure and porosity. Teams of students were involved in folding the laser-cut petals and in assembling those petals to construct the installation.

2. This model showcases the development of petal types needed to form a proper compressive vault system. The model was developed using Delaunay tessellation patterns, derived from nature.

Section



→ VOUSSOIR CLOUD (CONT.)

3. The petals were constructed by laser-cutting the base shape, scoring the seams, and folding and securing the flaps to make a 3D module.

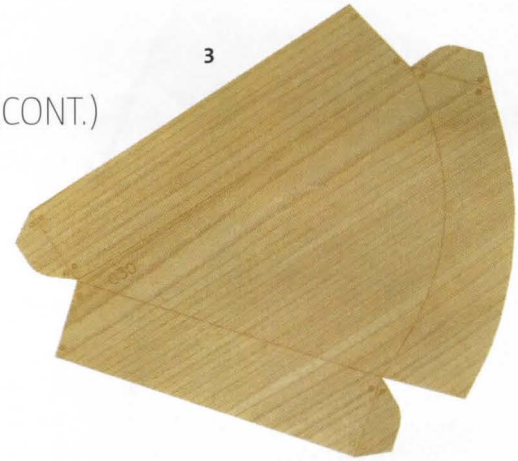
4. Four types of petals were used in construction—those with zero, one, two, or three curved edges. These petals were then placed and secured in a pattern that allows compression vaults to be formed.

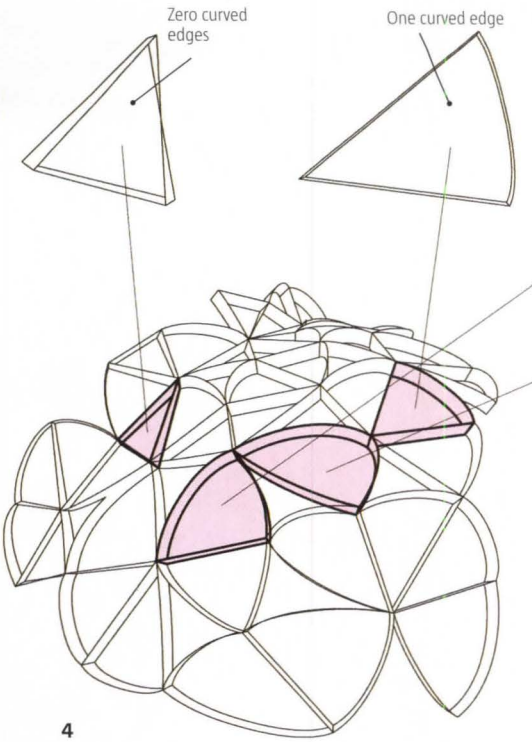
5. Each petal was designed using a computer script written by the design team. The virtual petals could then be digitally unfolded to create a template from which the actual petals could be laser-cut.

6. This installation had to be constructed in a very specific order, with each phase represented by a different color in this diagram. The column feet (in pink) had to be constructed first, followed by the ribs of the vaults (brown), the perimeter (green), and the infill spaces on top of the vaults (yellow).

7. Students helped to construct the individual petals and then the actual structure. A team of students is seen working to install some of the perimeter petal sections.

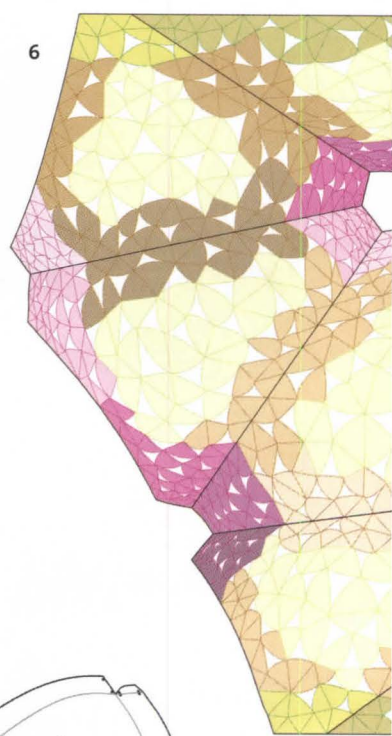
3



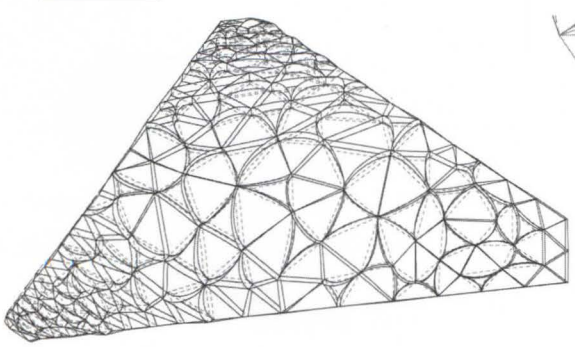


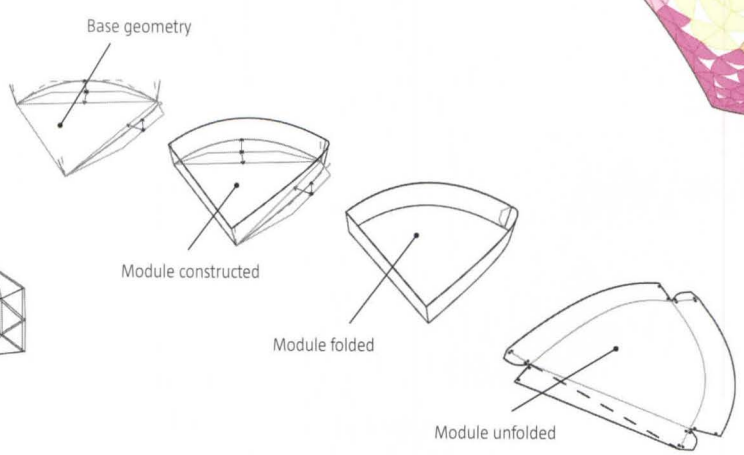
4
Petal Types

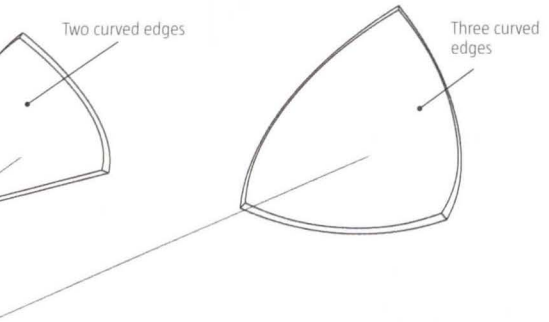
6

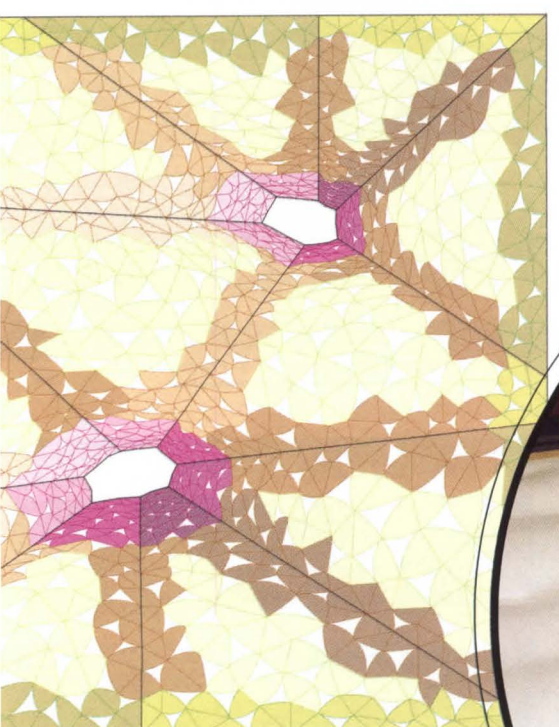


5
Petal Folding







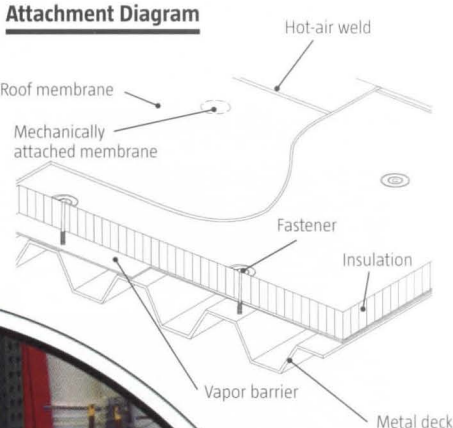


→ SIKA SARNAFIL

RHINOBOND

AN ANSWER TO FLUTTERING ROOFS EVERYWHERE, Rhinobond is a mechanical attachment system for thermoplastic roof membranes that allows the roofing material to be spot-welded without penetrating the membrane. At the center of the system is an induction welding technology called Sinch that heats a PVC-coated plate through the membrane. The Sinch process generates enough heat to seal between the plate and the underside of the thermoplastic roof without using direct heat, which would create a hole. (Magnetic cooling weights are placed on the site of the weld until the material has bonded.) The plates are laid out in a grid and fastened to the roof surface using the same clamps that hold the insulation in place. Remembering horror stories from their own projects, the jury was immediately on board with the concept. "This is just an idea whose time has come," juror John Ronan said. "We have this problem when we use thermoplastic roofs. They start bubbling up and it is always a fight." Factory test results for standard applications show that a 1-120 uplift rating can be achieved with welds laid out in a 2-foot-by-2-foot grid. **K.G.**

Attachment Diagram



Rigorously tested during the engineering and development phase, Rhinobond was placed under simulated heavy wind loads to verify the durability of the welds.

→ BARKOW LEIBINGER ARCHITECTS

TRUMPF CAMPUS GATEHOUSE

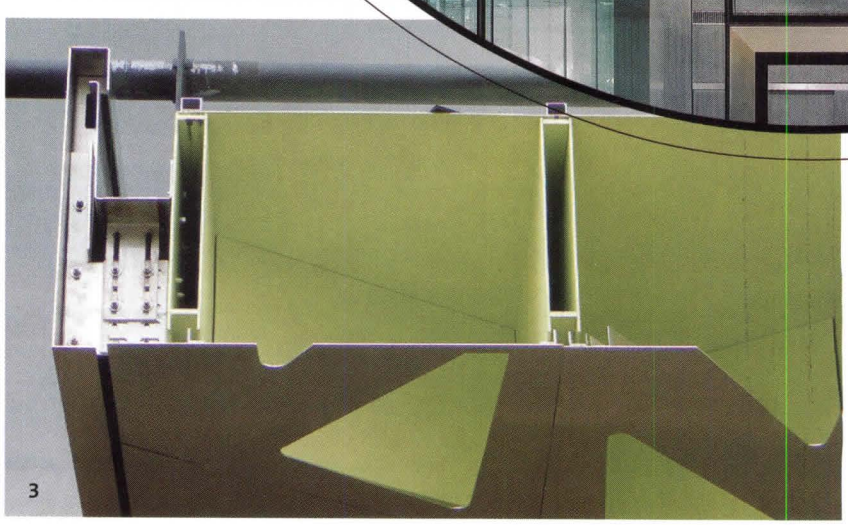

1

THE 2D AND 3D CUTTING and casting experiments that Barkow Leibinger Architects has undertaken arose from Frank Barkow and Regine Leibinger's interest in emerging technologies and their firm conviction that, as they say, "Tools shape materials that make forms, not the other way around."

The Berlin-based architects count themselves fortunate to have the machine-tool company Trumpf as a repeat client. Working with über-engineer Werner Sobek, Barkow Leibinger used Trumpf's own technology to build a new gatehouse of laser-cut and welded sheet metal on the company's campus in Ditzingen, Germany. The gatehouse consists of a small functional core topped by a honeycombed steel roof that cantilevers an astonishing 20 meters (66 feet) across the street in front of it. Jury member Craig Hodgetts described the cantilever as "just awe-inspiring." In their submission, the architects say they wouldn't have been able to pull it off five years ago.

Barkow Leibinger submitted a portfolio of several cutting/casting projects, including a complex façade of 3D and 2D polygonal, mirrored glass panels for an office building in Seoul, Korea, and a restaurant ceiling infilled with glulam wood cells. But it was the gatehouse and its roof that wowed the jury. "That extruded cut and [fold] actually became a structural roof, and it has a good span," enthused juror Lauren Crahan. Hodgetts agreed wholeheartedly: "That was a killer—when the thing goes, like, all the way out there ... *Kabam!*" **A.K.H.**


2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01 ❑ Architectural or Architectural/Engineering Practice
02 ❑ Design Firm (including Interior Design, Landscape Designer, or others)
03 ❑ Consulting Engineering
04 ❑ Contractor or Builder
05 ❑ Commercial/Institutional/Industrial/Government
06 ❑ School or University, Trade Association,Library
99 ❑ Other (please specify) _____

2. Including yourself, what is the total number of people employed by your firm at all locations?
01 ❑ 1 07 ❑ 3-10 04 ❑ 51-100 99 ❑ None
06 ❑ 2 03 ❑ 11-50 05 ❑ 101 or more

3. Are you a registered architect? ❑ Yes ❑ No

4. Are you a LEED Accredited Professional? ❑ Yes ❑ No

5. Which of the following best describes your job title?
01 ❑ Owner, Principal, Partner, Corporate Executive, General Manager
02 ❑ Staff Architect
03 ❑ Designer, Technical Staff, Draftperson
04 ❑ Manager/Marketing Personnel
99 ❑ Other (please specify) _____

6. Which of the following types of projects has your firm been involved in? (check all the apply)
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03 ❑ Hotel
04 ❑ Education
05 ❑ Healthcare
06 ❑ Industrial
07 ❑ Government
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26	56	86	116	146	176	206	236	266	296	326	356	386	416	446	476	506	536	566	596
27	57	87	117	147	177	207	237	267	297	327	357	387	417	447	477	507	537	567	597
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29	59	89	119	149	179	209	239	269	299	329	359	389	419	449	479	509	539	569	599
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7. Which of the following products and services do you personally specify or buy for clients, projects, and/or your own firm's use?
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02 ❑ Curtain Wall Systems
03 ❑ Structural Systems & Components
04 ❑ Paints and Coatings
05 ❑ Stucco Systems
06 ❑ Furnishings
07 ❑ Plumbing Fixtures and Faucets
08 ❑ HVAC Systems
09 ❑ Electrical Systems/Components
10 ❑ CAD & other Computer Software Systems
11 ❑ Building Insulation
12 ❑ Moisture Protection
13 ❑ Roofing Systems
14 ❑ Flooring
15 ❑ Elevators/Escalators
16 ❑ Electronic Security Systems
99 ❑ None of the above

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06 ❑ Glass
07 ❑ Windows, Skylights,Curtainwall, Solar Control
08 ❑ Ceilings & Ceiling Systems
09 ❑ Flooring & Floor Coverings
10 ❑ Exterior Panels, Cladding & Wall Material
11 ❑ Concrete/Masonry Products
12 ❑ interior Wall Surfaces/Coverings/Paints & Stains
13 ❑ Contract Furniture, Case Goods & Storage
14 ❑ Site Furnishings/Landscape/Exterior Lighting
15 ❑ Lighting/Interior
16 ❑ Structural/Foundation Systems
17 ❑ Restroom Accessories, Fixtures & Fittings
18 ❑ Electrical Systems/Controls/Wiring/Security
19 ❑ Signage & Wayfinding
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1. What is the primary business of your firm?
01 ❑ Architectural or Architectural/Engineering Practice
02 ❑ Design Firm (including Interior Design, Landscape Designer, or others)
03 ❑ Consulting Engineering
04 ❑ Contractor or Builder
05 ❑ Commercial/Institutional/Industrial/Government
06 ❑ School or University, Trade Association,Library
99 ❑ Other (please specify) _____

2. Including yourself, what is the total number of people employed by your firm at all locations?
01 ❑ 1 07 ❑ 3-10 04 ❑ 51-100 99 ❑ None
06 ❑ 2 03 ❑ 11-50 05 ❑ 101 or more

3. Are you a registered architect? ❑ Yes ❑ No

4. Are you a LEED Accredited Professional? ❑ Yes ❑ No

5. Which of the following best describes your job title?
01 ❑ Owner, Principal, Partner, Corporate Executive, General Manager
02 ❑ Staff Architect
03 ❑ Designer, Technical Staff, Draftperson
04 ❑ Manager/Marketing Personnel
99 ❑ Other (please specify) _____

6. Which of the following types of projects has your firm been involved in? (check all the apply)
01 ❑ Office/Commercial
02 ❑ Retail/Foodservice
03 ❑ Hotel
04 ❑ Education
05 ❑ Healthcare
06 ❑ Industrial
07 ❑ Government
08 ❑ Community/Cultural
09 ❑ Recreational
10 ❑ Religious
11 ❑ Multifamily Residential
12 ❑ Single Family Residential
13 ❑ Interior Design
99 ❑ Other (please specify) _____

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8	38	68	98	128	158	188	218	248	278	308	338	368	398	428	458	488	518	548	578
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16	46	76	106	136	166	196	226	256	286	316	346	376	406	436	466	496	526	556	586
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18	48	78	108	138	168	198	228	258	288	318	348	378	408	438	468	498	528	558	588
19	49	79	109	139	169	199	229	259	289	319	349	379	409	439	469	499	529	559	589
20	50	80	110	140	170	200	230	260	290	320	350	380	410	440	470	500	530	560	590
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25	55	85	115	145	175	205	235	265	295	325	355	385	415	445	475	505	535	565	595
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27	57	87	117	147	177	207	237	267	297	327	357	387	417	447	477	507	537	567	597
28	58	88	118	148	178	208	238	268	298	328	358	388	418	448	478	508	538	568	598
29	59	89	119	149	179	209	239	269	299	329	359	389	419	449	479	509	539	569	599
30	60	90	120	150	180	210	240	270	300	330	360	390	420	450	480	510	540	570	600

7. Which of the following products and services do you personally specify or buy for clients, projects, and/or your own firm's use?
01 ❑ Windows and Doors
02 ❑ Curtain Wall Systems
03 ❑ Structural Systems & Components
04 ❑ Paints and Coatings
05 ❑ Stucco Systems
06 ❑ Furnishings
07 ❑ Plumbing Fixtures and Faucets
08 ❑ HVAC Systems
09 ❑ Electrical Systems/Components
10 ❑ CAD & other Computer Software Systems
11 ❑ Building Insulation
12 ❑ Moisture Protection
13 ❑ Roofing Systems
14 ❑ Flooring
15 ❑ Elevators/Escalators
16 ❑ Electronic Security Systems
99 ❑ None of the above

8. For more information by product category, check the corresponding boxes below:
01 ❑ Surfacing Materials
02 ❑ Roofing
03 ❑ Thermal Insulation & Moisture Control
04 ❑ Doors/Frames/Hardware
05 ❑ Ventilating/Heating/AC
06 ❑ Glass
07 ❑ Windows, Skylights,Curtainwall, Solar Control
08 ❑ Ceilings & Ceiling Systems
09 ❑ Flooring & Floor Coverings
10 ❑ Exterior Panels, Cladding & Wall Material
11 ❑ Concrete/Masonry Products
12 ❑ Interior Wall Surfaces/Coverings/Paints & Stains
13 ❑ Contract Furniture, Case Goods & Storage
14 ❑ Site Furnishings/Landscape/Exterior Lighting
15 ❑ Lighting/Interior
16 ❑ Structural/Foundation Systems
17 ❑ Restroom Accessories, Fixtures & Fittings
18 ❑ Electrical Systems/Controls/Wiring/Security
19 ❑ Signage & Wayfinding
20 ❑ Software & Hardware
21 ❑ Railing/Cable Systems
22 ❑ Elevators & Conveyance
23 ❑ AV

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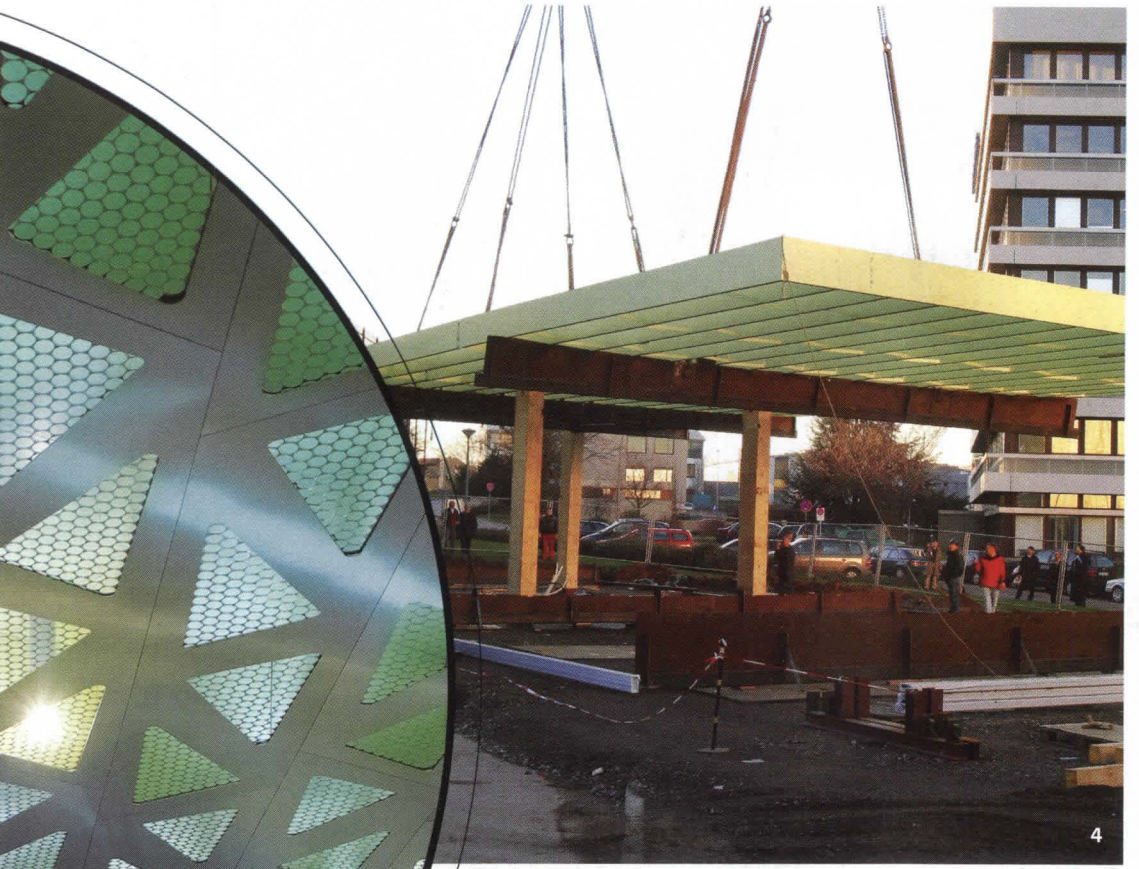


1. With the new gatehouse, the architects and their client realized a longstanding shared ambition: to use Trumpf's own technology to construct a building entirely of laser-cut and welded sheet metal. Above the gatehouse's functional core, which is enclosed in a glass pavilion, a honeycombed stainless steel roof cantilevers more than 60 feet.

2. To see the logic of the structural loading, the architects built a series of 1:50 scale roof models based on different geometric patterns. After they made their choice—based on performance and aesthetics—they had the tricky job of scaling it up. The roof varies in density and material thickness in order to meet the changing static requirements: It's compact over the columns, light at the extent of the cantilever.

3. Laser-cutting, welding, bolting, and pre-cambering produced a mass customized steel roof that is 50 cm (nearly 20 inches) deep.

4. The roof arrived on site in prefab strips, which were bolted together. Then the whole thing was hoisted onto the column pins. When the crane belts were removed, the roof bounced a meter (more than 3 feet) before rocking into place.

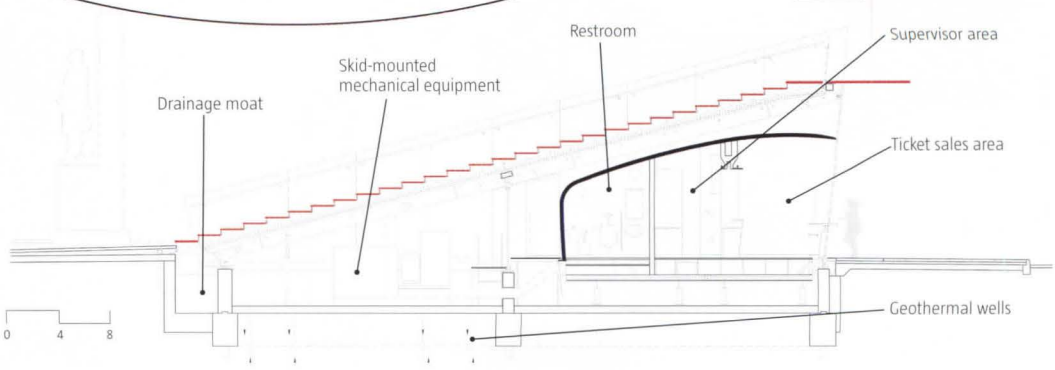
5. The gatehouse is the first building in a new master plan for the Trumpf campus. The glass pavilion around the core is composed of two layers of float glass that sandwich stacked tube sections of acrylic glass. This renders the core visible as a blurred, soft shape on the façade.

COURTESY CHRISTIAN RICHTERS

Glass stringer beams rely on the support of load-bearing glass walls to hold the weight of the booth's glowing red staircase and the tourists lounging upon it. The glass pieces are connected with stainless steel brackets and pins, but there is no load-bearing metal in the structure.

PHOTOS COURTESY PAÚL RIVERA

Section



→ PERKINS EASTMAN

TKTS BOOTH

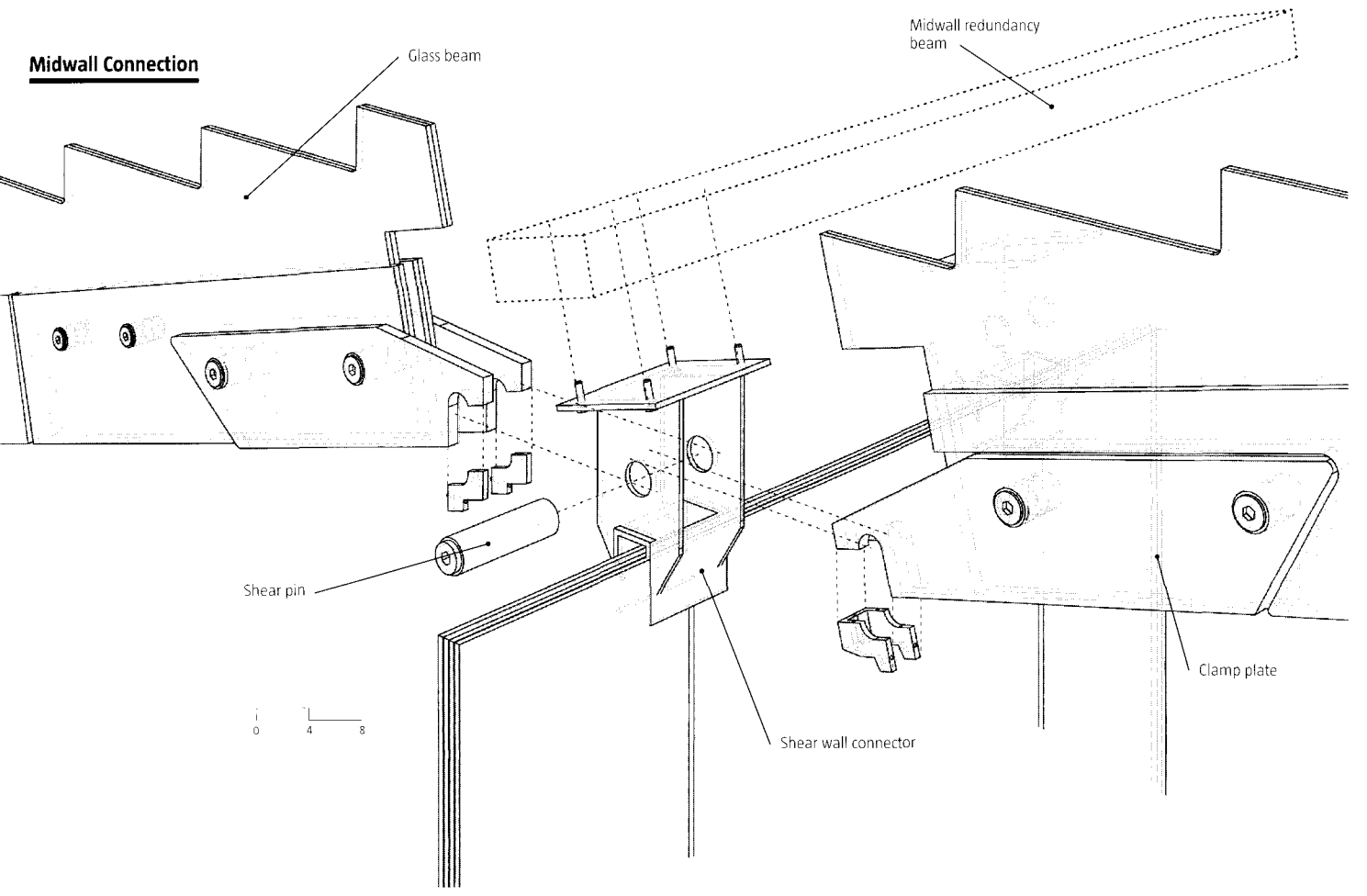
FOR YEARS, VISITORS to Times Square's discount theater ticket booth braved lines that coiled around a temporary structure which, while innovative at the time of its construction in 1973, had stuck around far past its sell-by date. New York–based Perkins Eastman changed that when it unveiled a glowing glass structure—inspired by an unbuilt 1999 competition-winning scheme by Australian architect Choi Ropiha—that is as much of a spectacle as the Broadway shows themselves.

The new structure offers much to be smitten with, from a glass cantilevered canopy to geothermal wells, but what the jury really loved were the glass stringer beams that support the structure's glowing red staircase-cum-roof; it's a place for visitors to sit, relax, and enjoy the street theater of Times Square. In the words of juror Craig Hodgetts, "I saw that and I just about lost it. I can't believe they actually hold all those people up on those glass beams and walls."

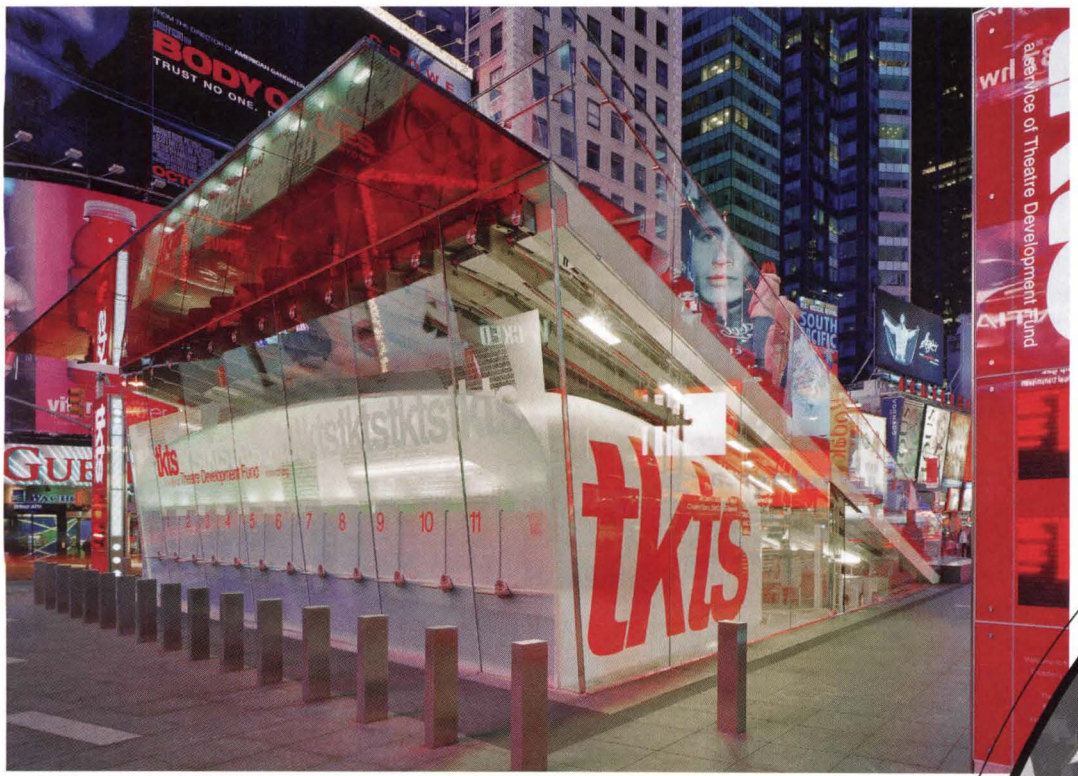
Spanning 28 feet, the beams are made from six layers of glass, laminated in pairs, and then spliced together to increase strength and durability. Since precision was key, the beams were held to a 2-mm tolerance over the course of the entire span. A central saw-toothed section accommodates the red glass treads of the staircase—27 steps in all. Helping to support the weight of the treads are 7-foot-wide, 17-foot-tall glass bearing walls—at the midpoint of the trusses—that weigh nearly 3,000 pounds apiece. "The technology of the glass is really just great," said juror Lauren Crahan.

The outermost stringer beams are attached to the perimeter glass panels with pins, and the beams connect at the top of the staircase to load-bearing glass walls at the ticket window and at the midpoint with bracketed joints—the stainless steel plate and hardware of which constitute the majority of the metal in the assembly. **K.G.**

Midwall Connection

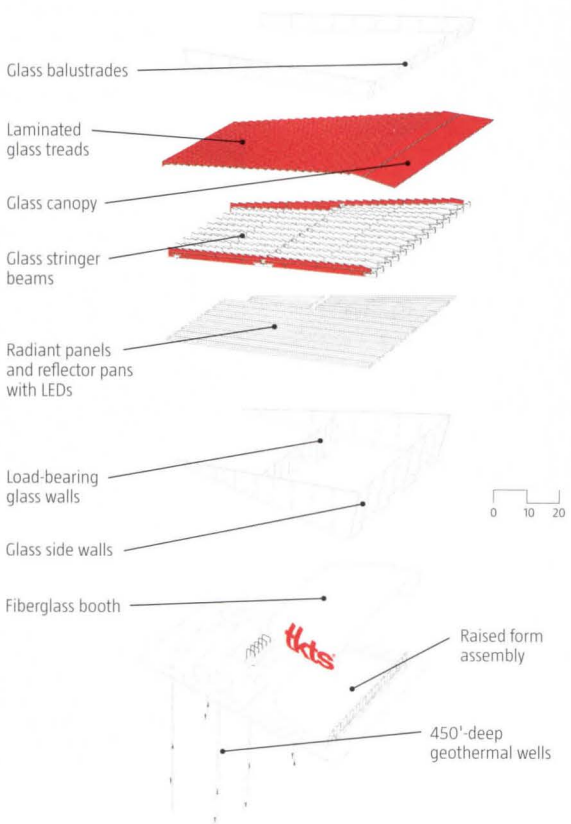


→ TKTS BOOTH (CONT.)



Impressive glass engineering continues at the front of the ticket booth, where the glass stringer beams connect to a cantilevered glass canopy, made from the same red-tinted glass as the staircase.

Axonometric



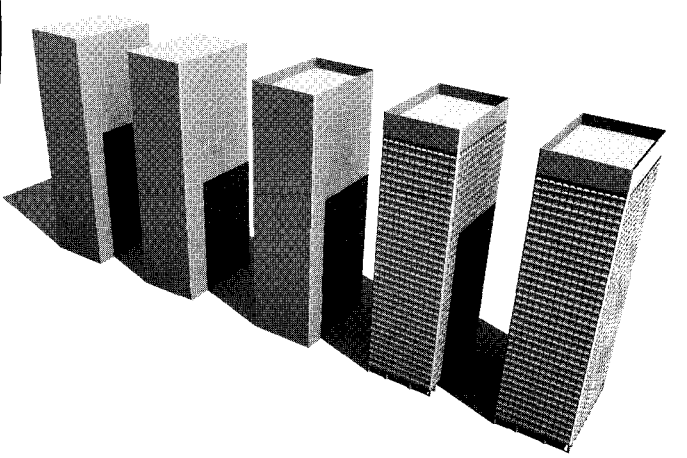
→ SKIDMORE, OWINGS & MERRILL, SAN FRANCISCO

SAN FRANCISCO DIGITAL CONTEXT ANALYSIS MODEL

MOVE OVER MERCATOR. When Google Earth debuted in 2005, it was deemed *the* map of the 21st century. But the San Francisco office of Skidmore, Owings & Merrill was not content with an aerial photographic map, and has independently spent two years developing its own 3D digital model of the city by the Bay, complete with embedded metadata. "This is not just a dumb model," said Craig Hodgetts. "It really is a tool."

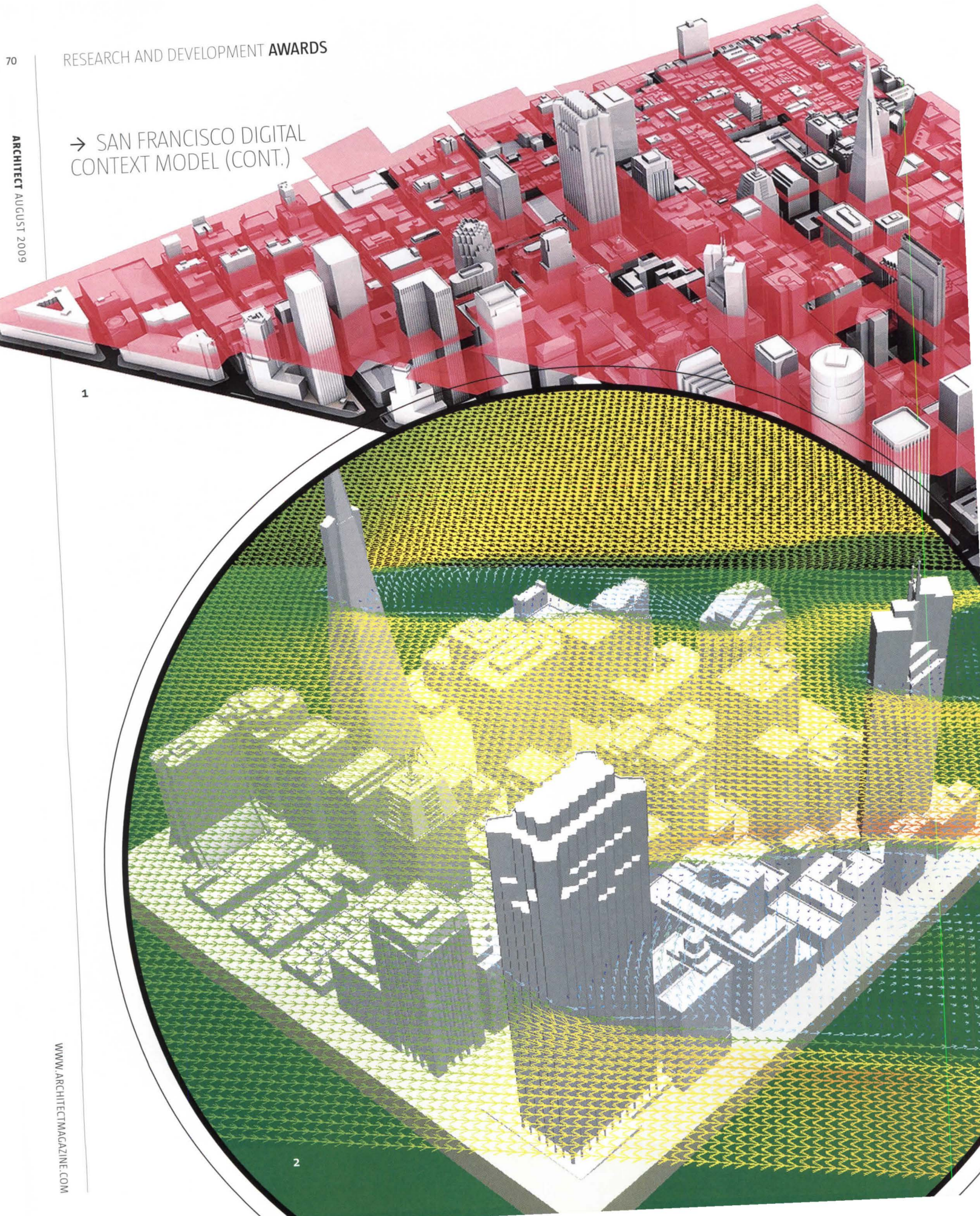
The model records lot numbers, zoning restrictions, and other variables that SOM can use to create specific views to analyze issues like environmental conditions and their effect on existing and potential infrastructure. What would happen if sea levels were to rise? And do shadows on a site prevent it from being used as a public space as defined by San Francisco city code?

The metadata is periodically checked for accuracy by two individuals in SOM's Digital Design Group and linked to outside resources such as the city assessor's office. The model is being used by the city planning department to visualize potential zoning changes and development proposals. "It seems like this is the future of all cities," said John Ronan. "It forces architects to think about their work on different levels, rather than just model form or energy." Other SOM offices have created partial city models, but for now, this remains the most comprehensive. **K.G.**



Because reliable models of most of the buildings in the city do not exist, SOM created its model using a combination of aerial photographs, public information, archival drawings, and, where needed, estimation. The accuracy and detail of the digital model for each building is tracked, and models are switched out for more detailed versions where necessary.

→ SAN FRANCISCO DIGITAL CONTEXT MODEL (CONT.)



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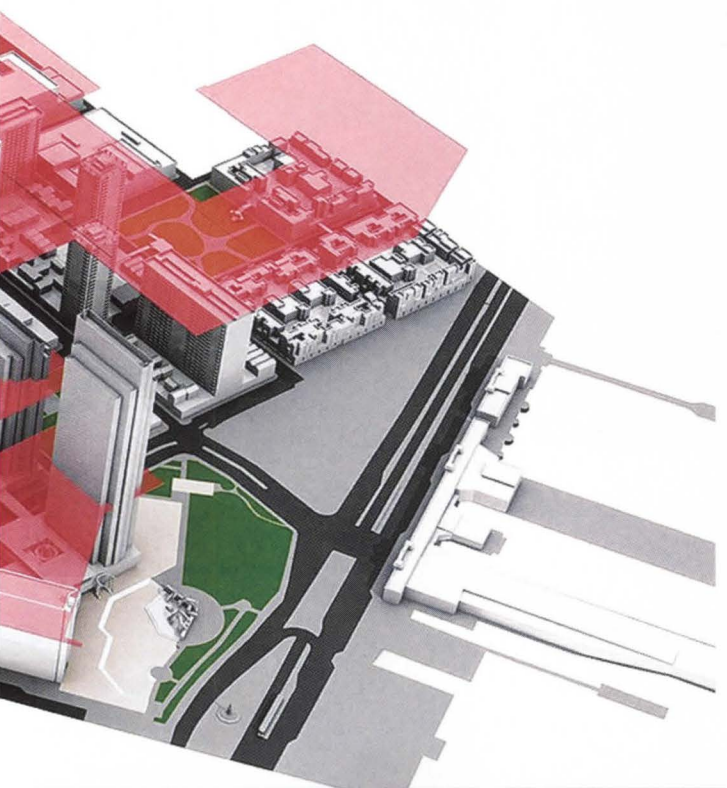

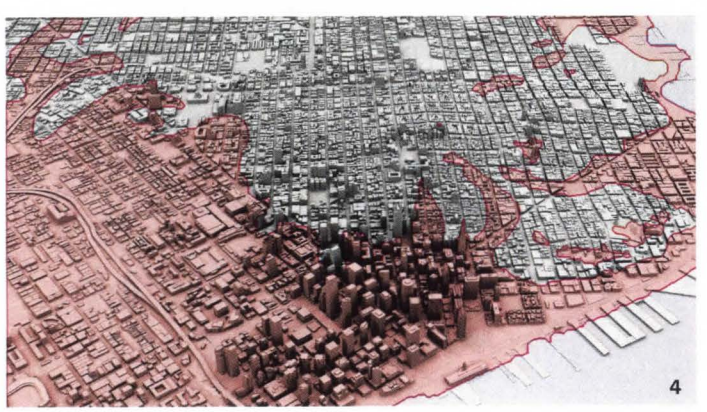

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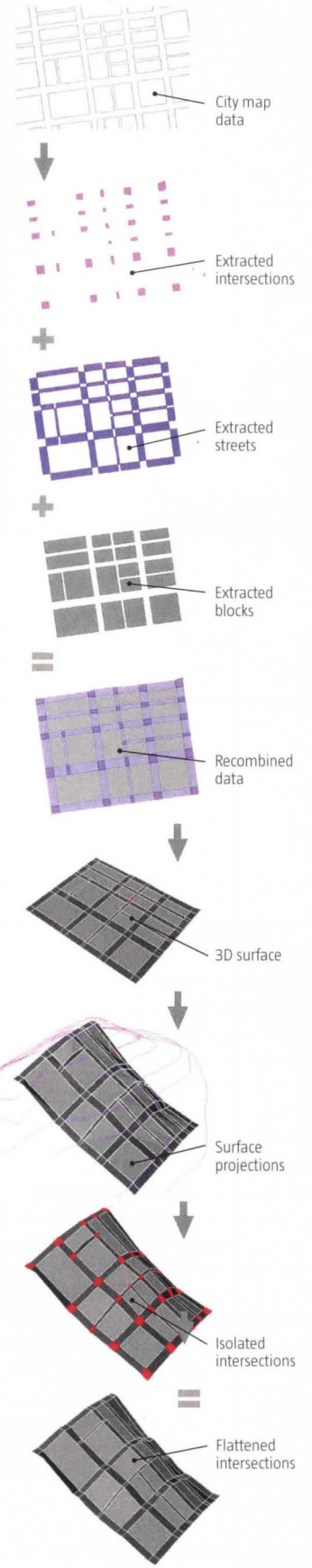


1. The model allowed the architects to create a series of visualizations that can help them consider the limitations on certain projects. This diagram shows the city's current height limits, and highlights both the number of buildings built before current limits were passed and the potential for other sites to increase vertical density.

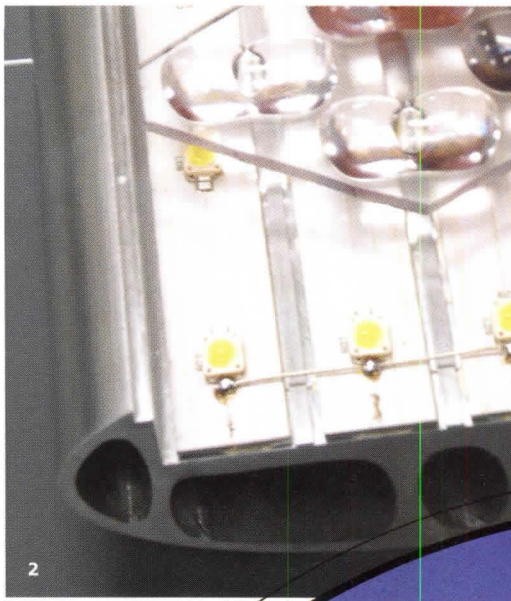
2. Any city with tall buildings suffers from wind tunnels. This diagram shows high wind velocity over the financial district and can be refined to show wind speeds at specific sites and intersections. This can help influence the construction of new buildings and public spaces.

3. The embedded metadata includes zoning and building typology information, which can be used by the firm or the planning department to generate models such as this one, which shades buildings according to their recorded land use.

4. San Francisco's vulnerability to seismic events impacts structural needs and planning. This map of the known liquefaction zones (shaded in red) highlights the city's most vulnerable areas and can be used to determine best practices for new structural projects.

5. The first thing that had to be modeled was the topography, which in San Francisco is a varied thing. Discrete orthogonal street and intersection data was overlaid onto a 3D model built from the available contour lines of the city to create the 3D street surface.

1



2

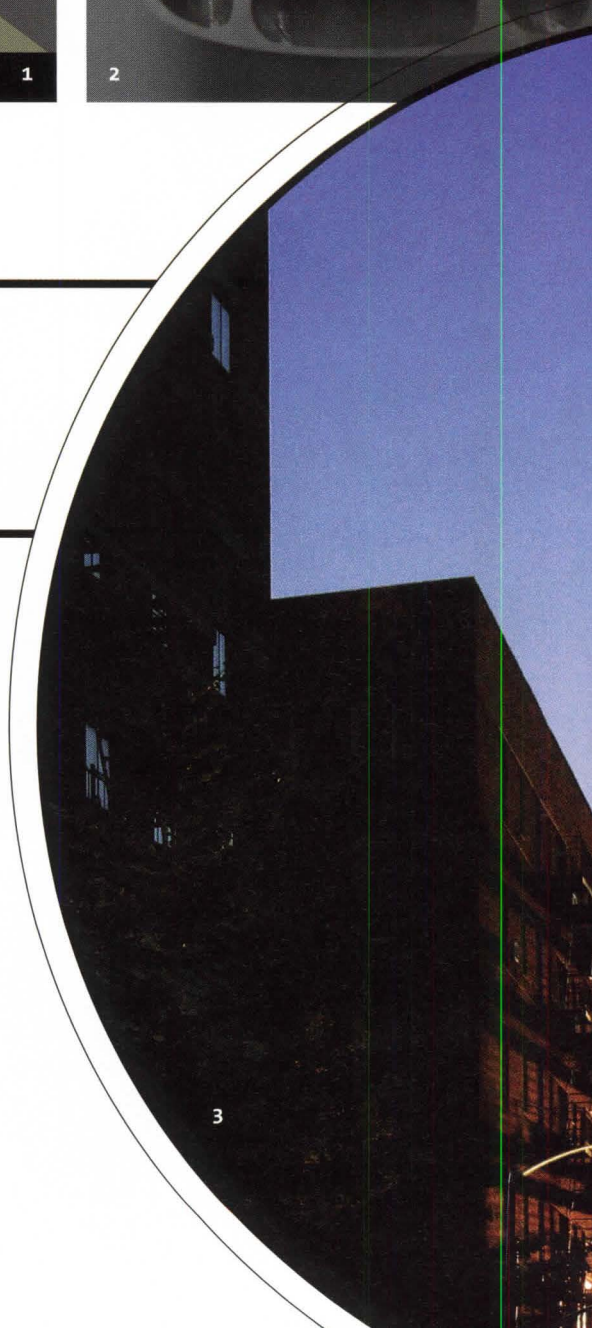
→ OFFICE FOR VISUAL INTERACTION AND WERNER SOBEK, WITH THOMAS PHIFER AND PARTNERS

LED STREETLIGHT

THE EAR-NUMBING WHINE of ready-to-die high-pressure sodium streetlights will be a thing of the past in Manhattan when the Office for Visual Interaction (OVI) and engineer Werner Sobek roll out their LED streetlight prototype. The light source is a single line of high-flux LEDs, amplified and directed by custom-molded lenses. Because high-flux LEDs were new to the market when the prototype was designed, OVI conducted extensive testing to ensure that the light levels would meet New York City code. The prototype uses 50 percent less energy than the existing streetlights, and because LED technology changes so rapidly, the modular design of the housing allows for the installation of new and improved LEDs.

The prototype is the result of the second of two competitions held by New York City. The streetlight's form emerged in the first competition, won by a team that included OVI and Sobek, and was led by New York–based architect Thomas Phifer and Partners. For the second competition, to develop a prototype, OVI and Sobek were the only entrants. Phifer is contracted separately to oversee aesthetic changes during the prototyping phase. Despite this slightly tangled project history, the jury focused its praise on the harmony between design and engineering: "The form seemed purposeful," John Ronan said, "a nice integration of form and technology."

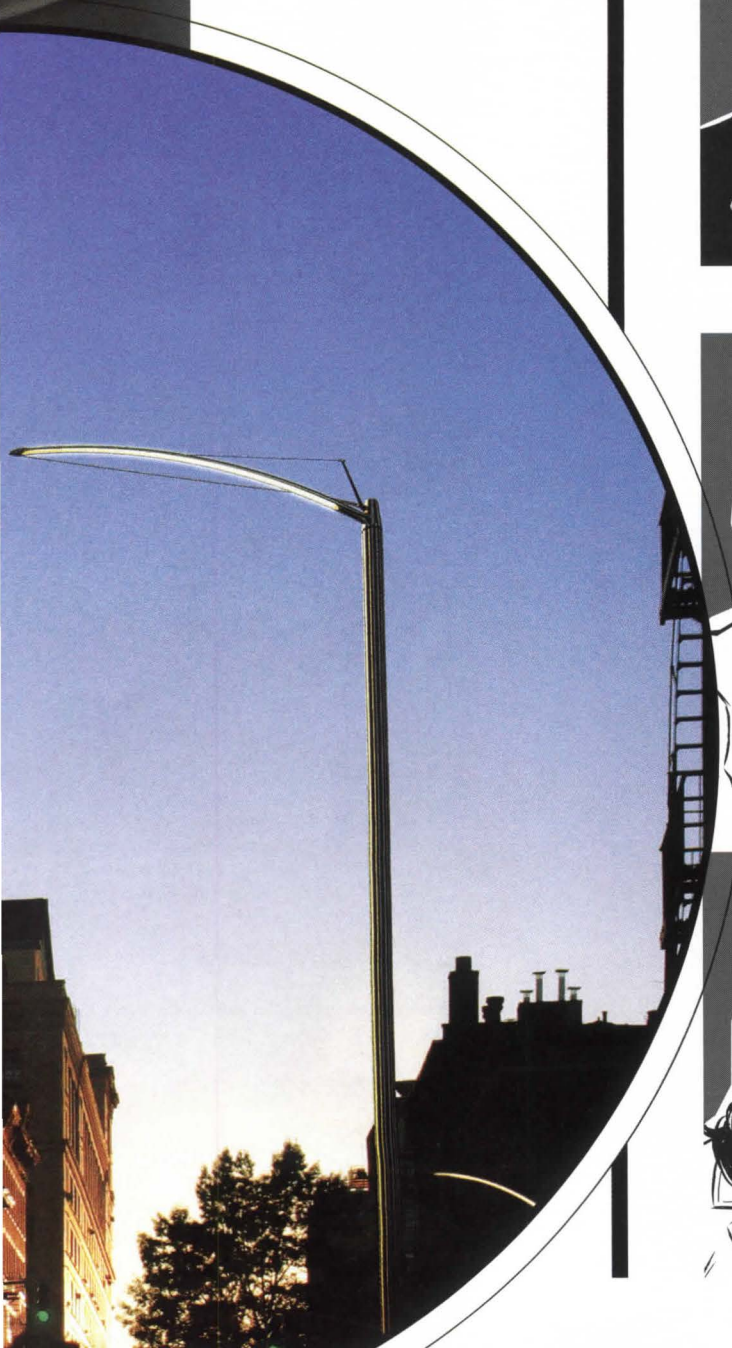
The arced luminaire housing stands in sharp contrast to the squat, bulbous forms of standard high-pressure sodium streetlights. The pole can be locked into place with bolts already embedded in the sidewalks for existing streetlights, and its fluted profile allows signs to be slid into metal guides and locked into place at any orientation on the surface. "That's going to clean up the cityscape right there," Craig Hodgetts said. The testing and engineering is done, and the project is just waiting for the green light from the city. **K.G.**



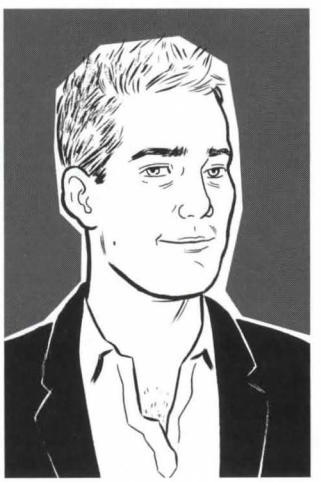
3

1-2. Specially molded lenses focus and direct the light emitted by high-flux LEDs in order to cast ample light on the streets at night. The modular design of the LED array allows the diodes to be switched out easily as technology changes and becomes more efficient.

3. Light is also directed by the curved shape of the fixture's housing, one of the object's distinctive aesthetic features. Signage and streetlights can be clipped into the streetlight's fluted pole to allow easy reconfiguration.



THE JURY



→ JOHN RONAN

John Ronan is the founder of John Ronan Architects, a Chicago firm whose award-winning projects include the Gary Comer Youth Center and the Akiba Schechter Jewish Day School. Ronan has an M.Arch from Harvard University's Graduate School of Design and a B.S. from the University of Michigan, and he teaches at the Illinois Institute of Technology.

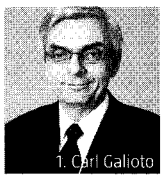
→ CRAIG HODGETTS

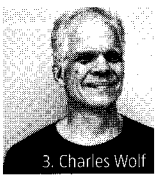
Craig Hodgetts is the co-founder of Hodgetts + Fung Design and Architecture in Los Angeles. Known for its synthesis of architecture, arts, and technology, the firm has worked on projects ranging from exhibitions and master plans to a new bandshell at the Hollywood Bowl. Hodgetts was a founding dean of the California Institute of the Arts and currently teaches at the University of California, Los Angeles.

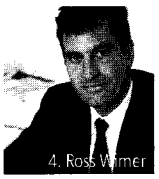
→ LAUREN CRAHAN

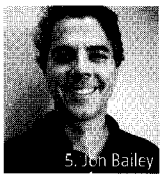
Lauren Crahan is a partner at Freecell, a design and fabrication practice in Brooklyn, N.Y., that specializes in small-scale commissions. She received her B.Arch and BFA degrees from the Rhode Island School of Design, and has taught at RISD as well as at the New Jersey Institute of Technology, Cornell University, and the University of Pennsylvania.

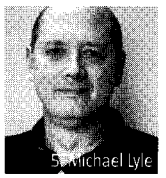
CREDITS

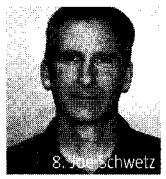


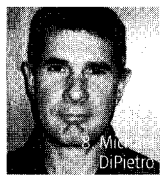


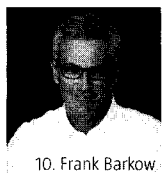


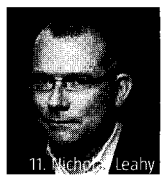













1. ACTIVE PHYTOREMEDIATION WALL SYSTEM (PG 48)
Principal Investigators Center for Architecture Science and Ecology (a collaboration between Rensselaer Polytechnic Institute (RPI) and Skidmore, Owings & Merrill)—Anna Dyson (CASE director, director of the Built Ecologies graduate program at RPI); Jason Vollen (associate professor, RPI, CASE); Ted Ngai (assistant professor, RPI, CASE); Lupita Montoya (assistant professor of mechanical engineering, RPI); Paul Mankiewicz (biologist/plant scientist, director, Gaia Institute)
Researchers EmilyRae Brayton, Ahu Aydogan
Testbed Site Public Safety Answering Center II, Bronx, N.Y.
Architect Skidmore, Owings & Merrill, New York—Carl Galioto (technical partner); Gary Haney (design partner); Peter Magill (managing partner); Rob Rothblatt (senior designer); Joseph Sacco (project manager); Carl Brown (technical coordinator); Julie Hiromoto (project team)

2. ECOWORX BACKING FOR BROADLOOM CARPET (PG 51)
Manufacturer Shaw Industries, Dalton, Ga.—Jeff Wright (senior chemist, technical development); Rick Farrar, Joey Davis, Scott Urquhart (technicians, technical development); Kellie Ballew (sustainable development engineer); Zach Breedlove (backings development engineer); Jeff Segars (technical director)

3. DYNAMIC DESCENT, NEW YORK (PG 52)
Architect Dean/Wolf Architects, New York—Kathryn Dean, Charles Wolf (principals); Stephen Mueller (project architect)
Contractor SASA Renovations
Steel Fabricator Maloya Laser
Structural Engineering Consultant Hage Engineering
M/E/P Engineering Consultant M.A. Rubiano

4. OASIS GENERATOR, DUBAI, UNITED ARAB EMIRATES (PG 54)
Architect Skidmore, Owings & Merrill, Chicago—Ross Wimer (design partner); Colin Franzen, Daria Minosyants, Dan Nowell (architecture team); Aaron Mazeika, Lauren Stromberg (structures team); Keith Besserud, Heechan Shin, Wei Wang (blackbox team); Arvidner Dang, Shweta Manchanda, Michael Smith (M/E/P team)

5. DRY JOIST AND DRY JOIST EZ (PG 56)
Manufacturer Wahoo Decks, Gainesville, Ga.—Jon Bailey (vice president); Michael Lyle (vice president, operations & business development)

6. SUSTAINABLE FORM-INCLUSION SYSTEM (PG 57)
Architect Skidmore, Owings & Merrill, San Francisco—Craig Hartman (design partner); Mark Sarkisian (structural engineering director); Eric Long (senior structural engineer)

7. VOUSSOIR CLOUD (PG 58)
Architect IwamotoScott Architecture, San Francisco—Lisa Iwamoto, Craig Scott (designers); Stephanie Lin (design/installation team leader); Manuel Diaz, John Kim, Alan Lu, Tiffany Mok (design/installation team); Chris Chalmers, John Kim (scripting); Andrew Kudless (scripting consultant)
Engineers Buro Happold—Ron Elad, Stephen Lewis, Matthew Melnyk, Tom Reiner
CATIA modelling Sanjay Souki, Daniel Pataki
Installation SCI-Arc, Los Angeles—Oliver Liao, Joanne Angeles (team leaders); David O'Regan, Judson Terry, Yohei Uchino, Zarmine Nigohossian, Tim Francis, Ali Sykes, Jimmy Chan, Channah Levy, Sarah Strauch, Brett Phillips, Marisol Mejia, Liona Avery, Justin Rice, Nicholas Paradowski, Matthew Cavender, Vincent Wu
Materials Lenderink Technologies
Laser Cutting Advanced Laser
Special thanks Greg Otto

8. RHINOBOND ROOF ATTACHMENT SYSTEM (PG 61)
Manufacturer Sika Sarnafil, Canton, Mass.—Michael DiPietro (product development specialist); Joe Schwetz (director of technical services)

9. PIN-FUSE JOINT (PG 62)
Engineers Skidmore, Owings & Merrill, San Francisco—Mark Sarkisian (structural engineering director); Shea Bond, Jean-Pierre Chakar, Rupa Garai, Eric Long, Neville Mathias, Jun Racines (structural team members); Stanford University, Stanford, Calif.—Gregory Deierlein (collaborating team member)

10. TRUMPF CAMPUS GATEHOUSE, DITZINGEN, GERMANY (PG 64)
Client Trumpf, Ditzingen, Germany
Architect Barkow Leibinger Architects, Berlin—Frank Barkow, Regine Leibinger (principals); Carten Krafft (design project architect); Caspar Hoesch (construction project architect), Meredith Atkinson (design team)
Construction Management Gassmann + Grossmann
Structural Engineer Werner Sobek Ingenieure
Landscaping Büro Kiefer
Façades Arup Berlin (concept); Werner Sobek Ingenieure (realization)

11. TKTS BOOTH, NEW YORK (PG 66)
Clients Times Square Alliance; Theatre Development Fund; Coalition for Father Duffy
Architect Perkins Eastman, New York—L. Bradford Perkins, Nicholas Leahy, Charles Williams, Kazuaki Iwamoto, Shang Shuri, Zhanxi Fang, Philip Tidwell, Virginia Shou, Luke Yoo, Amra Kulenovic, Jessica Dorf, Meredith Harmon , Giaa Park (project team)
Concept Architect Choi-Ropiha Architects
Plaza Architect William Fellows Architects
Structural Engineer & Façade Consultant Dewhurst MacFarlane and Partners—Timothy Macfarlane, Michael Ludvik, David Shea, Peter Arbour, Lawrence Dewhurst, Radhi Majmudar
Preservation Architect Bresnan Architects
Construction Manager D. Haller Inc.
M/E/P Engineer Lewis Engineers
Civil & Geotechnical Engineer DMJM Harris
Lighting Consultant Fischer Marantz Stone
Design and Fabrication Engineer Haran Glass, with IG Innovation Glass
Glass Installation David Shildiner; Innovation Glass
Booth Fabrication Merrifield Roberts
Mechanical Subcontractor Trystate Mechanical
Electrical Subcontractor ASR Electrical Contractors
Pylon Fabrication Lettera Signs

12. SAN FRANCISCO DIGITAL CONTEXT MODEL (PG 68)
Architect Skidmore, Owings & Merrill, San Francisco—Craig Hartman, Carrie Byles (leadership); Mark Schwettmann, Will Marvez, Leo Chow (conceptualization/research); Alex Cruz, Mark Schwettmann, Michael Sun, John Farwell, Tsung-Lin Chen, Hyun Joo Choi, Na Young Oark, Soo Jung Park, Juan Rodriguez, David Pekema (construction/drawings)

13. LED STREETLIGHT, NEW YORK (PG 72)
Client City of New York
Prototype Team Office for Visual Interaction, New York—Enrique Peiniger, Jean Sundin; Werner Sobek; Lighting Science Group; Laslo Bodak; Clare Randall-Smith; LED Specialists
Concept Design Thomas Phifer and Partners, New York—Thomas Phifer, Christoph Timm, Joseph Sevene, Jon Benner; Office for Visual Interaction; Werner Sobek

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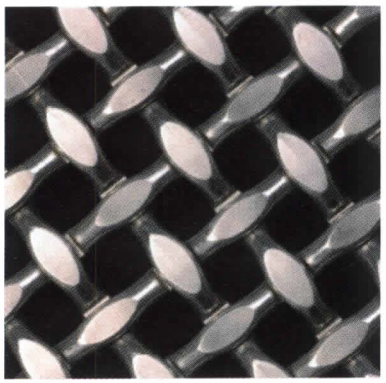

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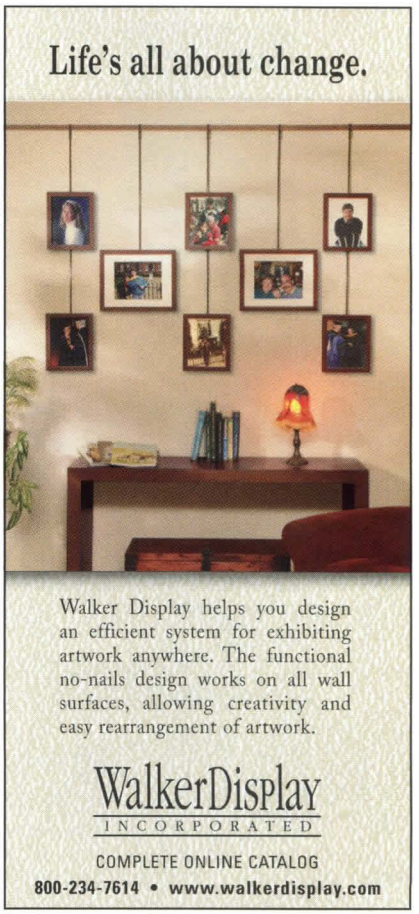

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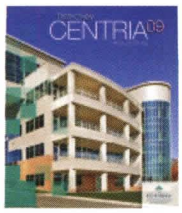

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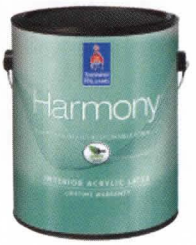

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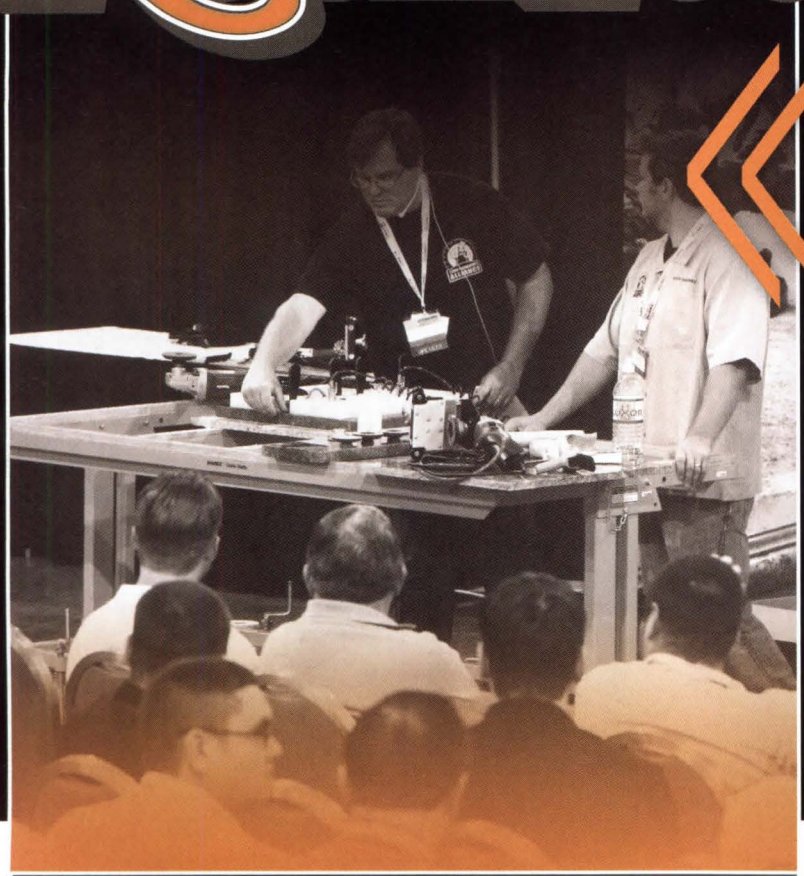

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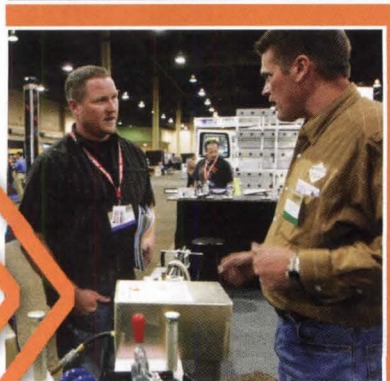

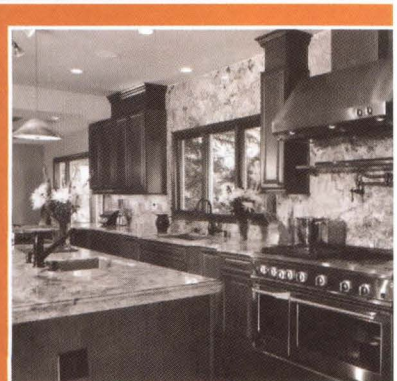

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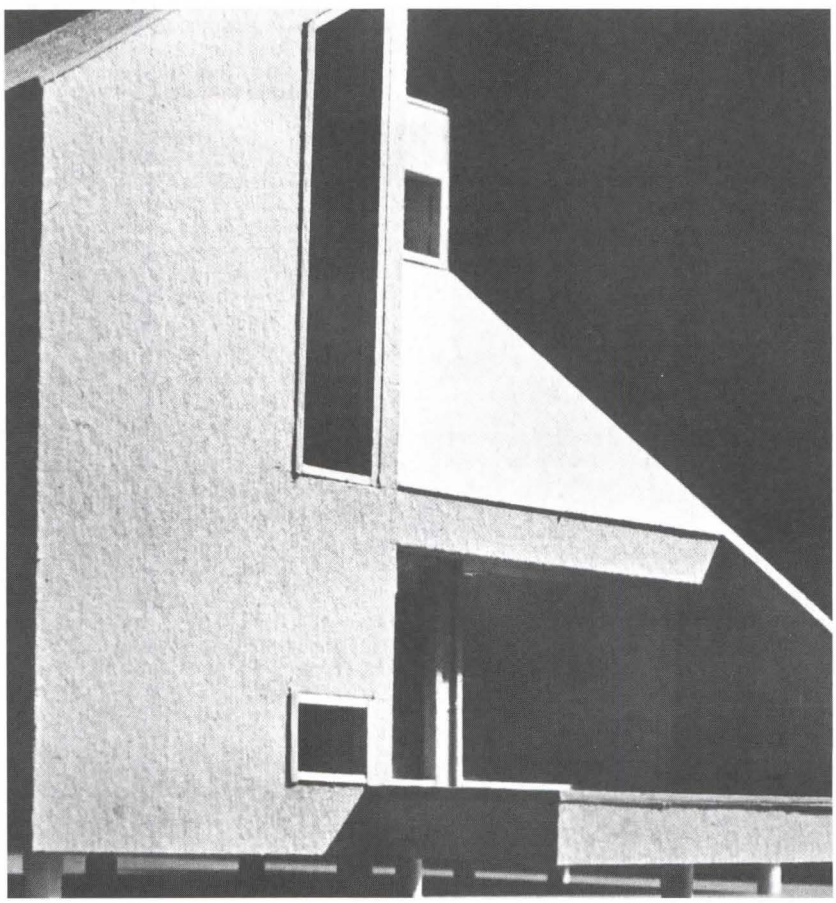
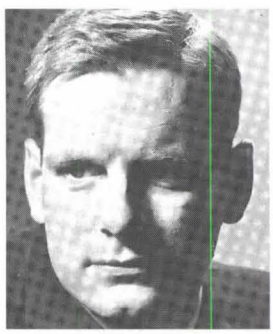
→P/A AWARDS

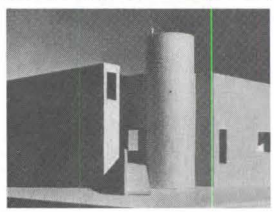
THE BEST BETTS

HOBART BETTS—P/A AWARDS DARLING OF THE 1960S—FADED FROM THE PROGRAM, BUT STILL HAS RELEVANCE TODAY.

TEXT BY THOMAS FISHER







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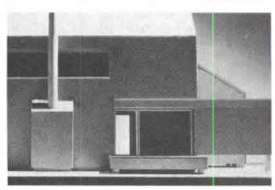


Clockwise from left: Beach cottage, Quogue, Long Island, N.Y. (1966 citation); Betts; Residence for Mr. and Mrs. Frederick H. Robinson, Stafford County, Va. (1968 citation); Beach cottage; Vacation house, Springs, N.Y. (1969 award)

P/A Awards won by Hobart Betts:

Beach cottage, Quogue, Long Island, N.Y.

1966 P/A Awards Jury
William Conklin, Vincent Scully, August Komendant, Kevin Roche, Edward Bassett

Residence for Mr. and Mrs. Frederick H. Robinson, Stafford County, Va.

1968 P/A Awards Jury
Lawrence Anderson, Gunnar Birkerts, Romaldo Giurgola, Richard Dober, Fazlur Khan

Vacation house, Springs, N.Y.

1969 P/A Awards Jury
Roger Montgomery, R.M. Gensert, Henry Cobb, Lewis Davis, Cesar Pelli

Palmedo residence, Long Island, N.Y.

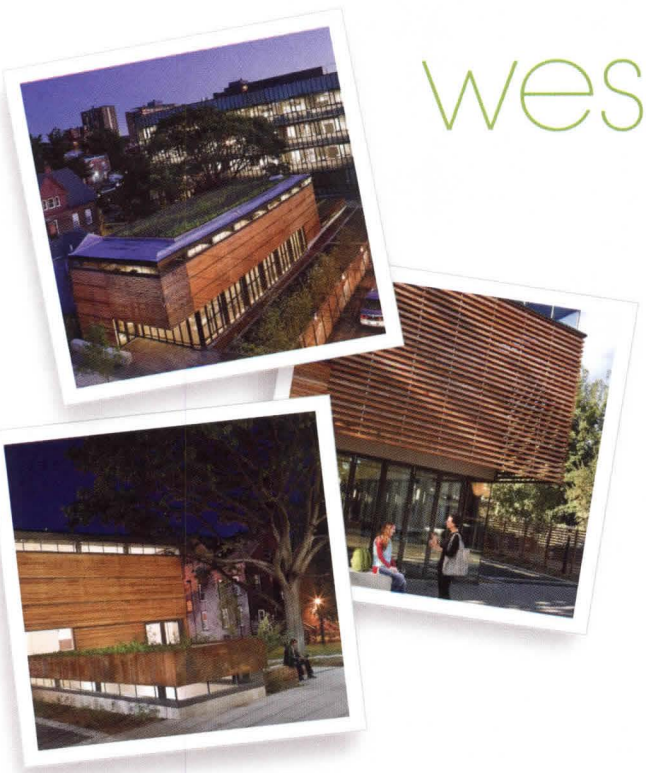
1972 P/A Awards Jury
Louis Sauer, Earl Flansburgh, John Parkin, Moshe Safdie, Richard Bender

SOME ARCHITECTS have had good runs winning P/A design awards. Sometimes these serial winners go on to have long and illustrious careers, with their P/A Awards helping propel them into stardom, but other frequent awardees have been undeservedly forgotten. Clearly, their work appealed to a range of jurors over several years and had qualities that colleagues found compelling at the time. Why, then, do some architects succeed and others, equally talented, recede from view?

Hobart Betts, an architect living in Sag Harbor, N.Y., offers some insight. He won four P/A design awards in a seven-year period, from 1966 through 1972, for a series of compact houses and cottages in New York and Virginia. In each case, the design consisted of geometric forms, asymmetrical windows, and angled clerestories bringing daylight inside. Betts' minimalist designs distilled high Modernism down to its purest expression, and seen in the context of the late 1960s and early '70s, with the rise of countercultural and postmodern architecture, his work now seems refreshingly quiet and calm. By the time Postmodernism caught on in the mid 1970s, however, the elegant compositions of Hobart Betts may no longer have seemed progressive enough—progress is, after all, a subjective term—to win P/A Awards.

Nevertheless, some 40 years later, his work deserves to be rediscovered. Faced with the need to reduce the size of single-family houses and to minimize the footprint of buildings on the land, we would do well to emulate Hobart Betts' example: creating modest, modern structures that meet people's basic needs, beautifully. □

Yale Sculpture Gallery
Architect: Kieran Timberlake, Photos: Peter Aaron/Esto



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