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# ARCHITECT

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2008 R+D AWARDS

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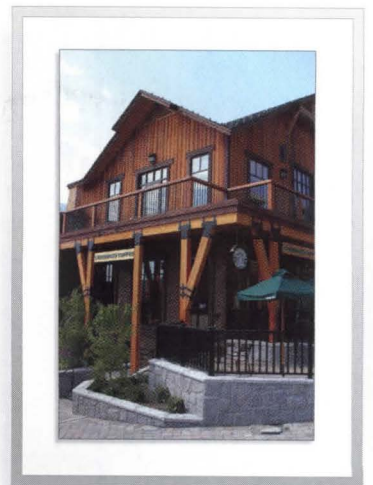
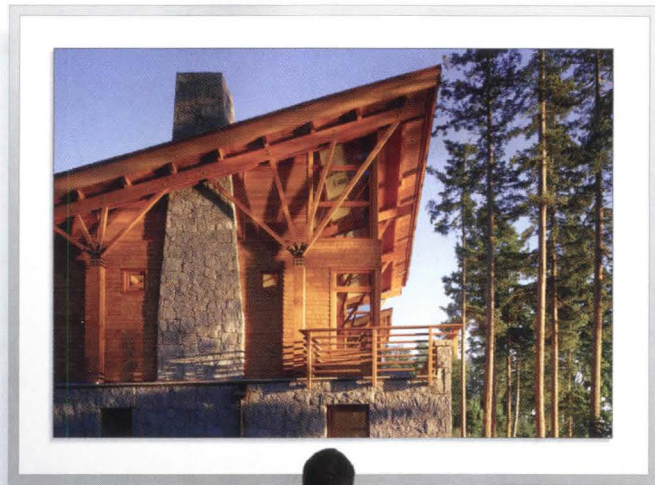
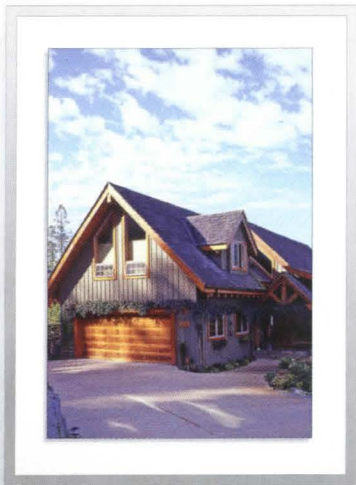
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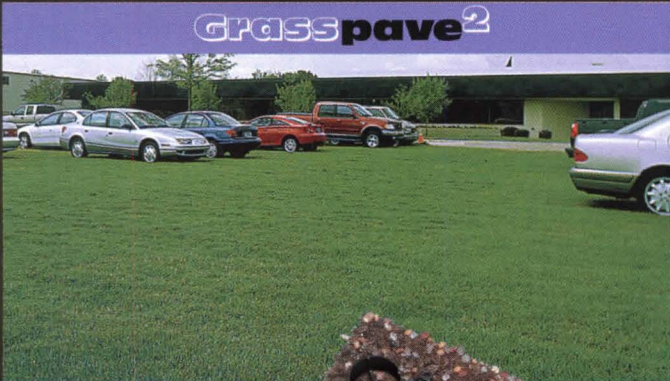
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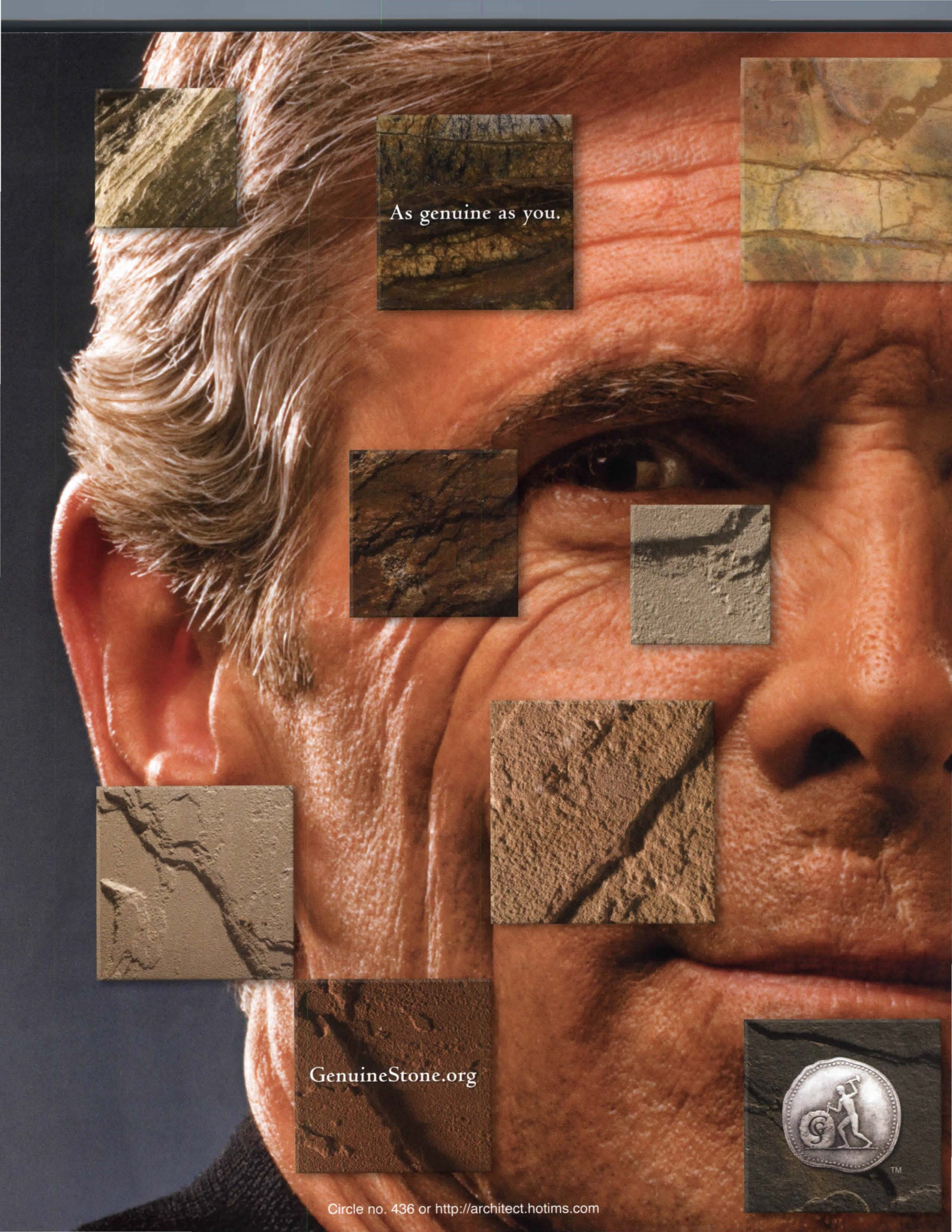
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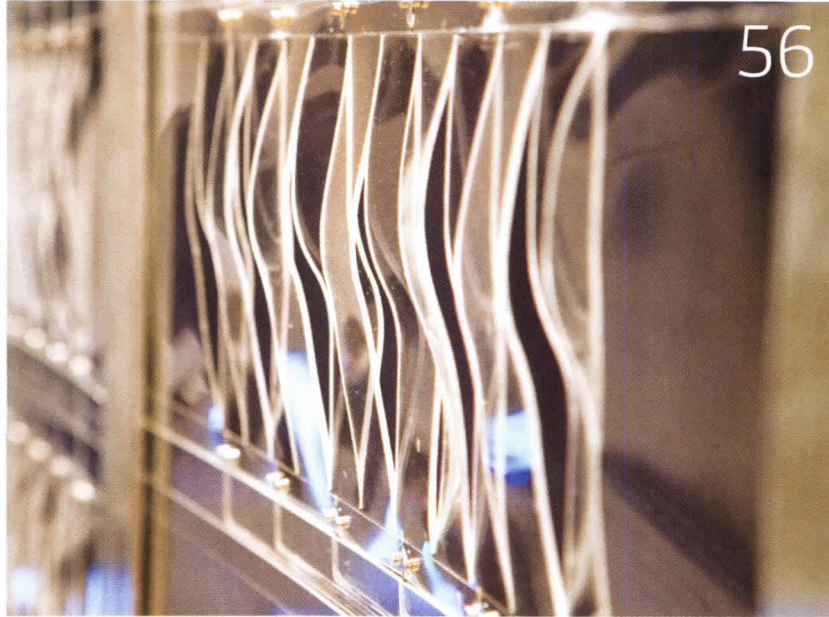


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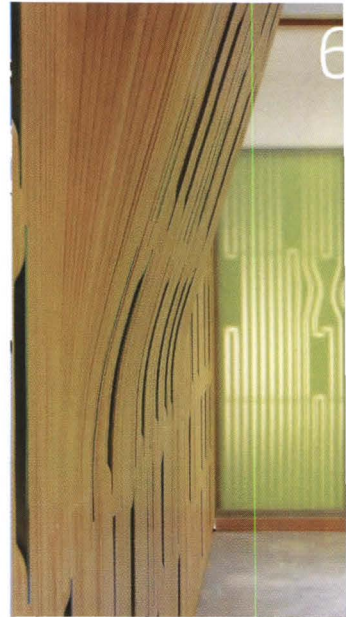
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## FEATURES

### Second Annual R+D Awards KATIE GERFEN

ARCHITECT celebrates the architectural, technological, and design imagination of five award- and four citation-winning projects.

#### 42 Drape Wall/Cloak Wall, award

HouMinn Practice develops two systems from the same basic modular concept as alternatives to traditional stick-frame construction.

#### 48 A Surface of Points, award

By using glass tubes as structural truss members, Eric Owen Moss Architects invert the idea of roof construction, transforming fragile glass components into load-bearing parts.

#### 52 Artificial Leaf, award

Cloud 9 plans to sheath the as-yet-unbuilt Hotel Forest in Barcelona with a draping system that will emulate a tree within a forest, with LEDs as its leaves.

#### 56 Living City, award

The Living create a building façade that breathes using gills, can sense the levels of pollution in the air, and responds accordingly to protect the people inside.

#### 58 Hover, award

For New Orleans's DesCours festival, Höweler + Yoon Architecture create an off-the-grid luminous and scalable canopy made from fabric, solar cells, and strings of LEDs.

#### 60 Inland Steel Restoration, citation

Skidmore, Owings & Merrill update a landmark, keeping its mid-century aesthetic intact.

#### 64 Slide Library, Columbia University, citation

Marble Fairbanks's facility to house projection slides is a result of effective group design.

#### 68 Carbon Fiber Grid Reinforced Precast Concrete, citation

AltusGroup and Chromarat offer a simple solution to the problem of corrosion in precast concrete: Replace the steel rebar with a carbon fiber grid.

#### 70 Denver Filter, citation

Studio HT's plan to filter and transport recycling waste mimics human digestion.

I LIKE THE IDEA OF BUILDINGS THAT COMMUNICATE WITH EACH OTHER. THIS IS A STREAM OF DATA, AND NOW THESE STRUCTURES ARE STARTING TO TALK.

*Juror Andres Lepik, on the Living City project, from "Second Annual R+D Awards," page 40.*



#### ON THE COVER

R+D Award winners Marc Swackhamer and Blair Satterfield of HouMinn Practice. Photograph by Noah Kalina.



A curved building under construction, featuring Simpson Strong-Tie Steel Strong-Wall shearwalls. The structure is built with wood framing and oriented strand board (OSB) sheathing. The shearwalls are made of galvanized steel and are installed in narrow sections, allowing for larger windows and doors. The building is set on a concrete foundation. The sky is blue with some clouds.

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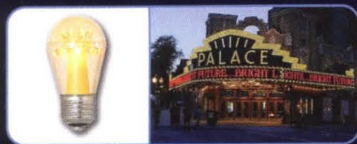


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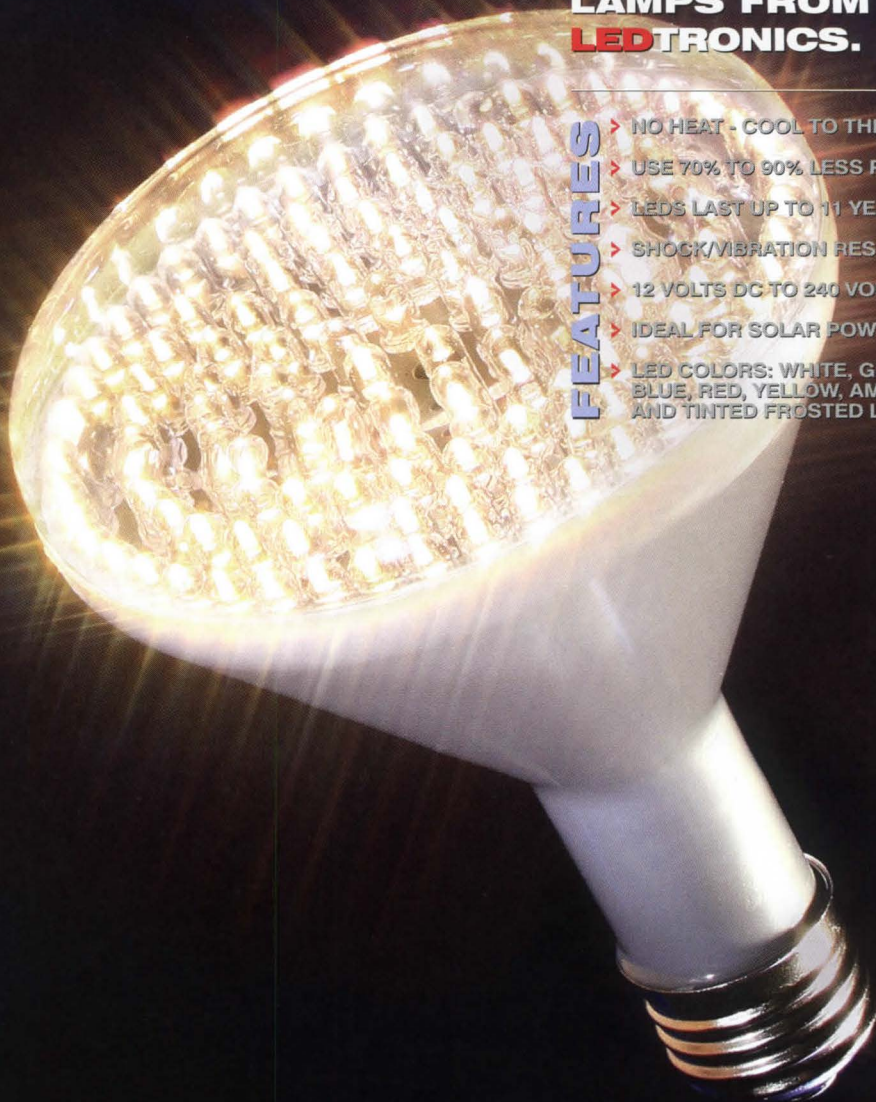


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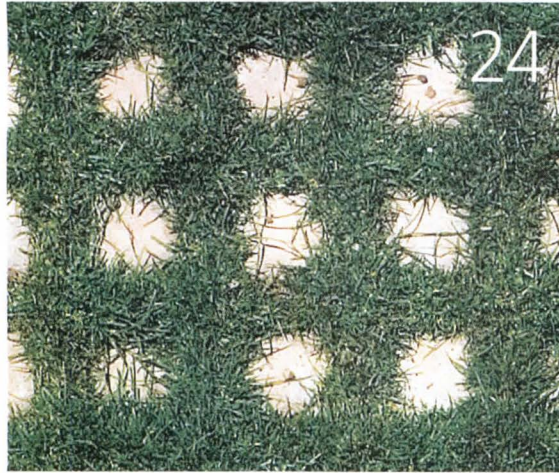
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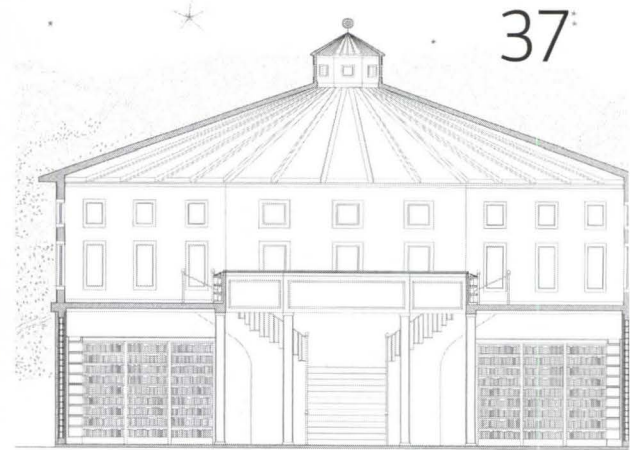
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**RIGHT** Drivable grass gives a place for both plants to grow and vehicles to roam.

**FAR RIGHT** A section of the proposed library at the future American College of Building Arts campus, on South Carolina's McLeod Plantation.



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Renderings of the American College of the Building Arts's McLeod Plantation campus.





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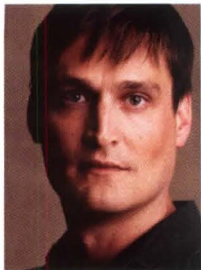
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**THINK \$4.30 A GALLON IS TOO MUCH** to pay for gasoline? Try \$9.04 a gallon, the going rate in the United Kingdom, or \$10.15, the price in the Netherlands. Why the difference? Europeans pay far higher fuel taxes than Americans, and not strictly out of necessity. Norway, for instance, is one of the world's largest oil exporters, yet it levies one of the world's highest gas taxes. Sounds awful, but it takes just one trip to Western Europe to see the colossal upside—better transit; denser, more walkable cities; and inherently green architecture.

In the U.S., the fuel tax varies by state, with a national average of 49.4 cents per gallon as of July 1, according to the American Petroleum Institute. That's next to nothing, and if the automobile industry got its way, which it's pretty good at, we'd pay even less.

I think we should pay even more. Europe learned its lesson following the energy crises of the 1970s, raising taxes on gasoline to change consumer habits and reduce reliance on foreign providers. Meanwhile, the U.S. effectively returned to business as usual. We didn't just keep fuel taxes low, we allowed Detroit to drag its feet on fuel efficiency, Congress to starve Amtrak and public transportation, developers to build outward instead of upward, and OPEC member nations like Saudi Arabia and Iran to gain the upper hand. For the most part, we voted in favor of these strategies, both at the polls and with our pocketbooks.

Those days are over. Suddenly, thankfully, Americans are paying attention to the cost of energy, and we're changing our habits. Better yet, we're breaking some very bad habits. For starters, car sales are at a 10-year low. The Big Three automakers are awakening from their SUV-induced stupors and scrambling to meet the leaping demand for leaner, more fuel-efficient alternatives. The Hummer Mini, perhaps?

For suburbanites, already rocked by the housing crisis, rising gas prices feel like a disaster. The daily commute costs more and more, which is especially frightening for low-income families who can't afford to trade in older gas-guzzlers for newer, more fuel-efficient vehicles. Even public transit fares are climbing (though buses and trains remain the cheaper, greener alternative). The trickle-down effect just doesn't stop, reaching right down to the cost of a pound of rice.

As difficult as the current situation may seem, rising fuel prices do come with a bright side. They're reinforcing significant trends such as a growing preference for urban living and, in suburban areas, for higher-density development and pro-density zoning reform. Transit ridership is up, despite the fare hikes. The United States transformed itself into a suburban, automobile-based society in the decade or so following World War II, and we can just as easily undo the damage. A higher fuel tax is one way of reinforcing these positive trends, and in turn it could subsidize the expansion of our nation's railroads and public transportation systems and help to jump-start the economy.

Where transportation goes, development follows. And development means architecture. Much of this construction will take the form of renovation (a good thing), as formerly industrial urban areas continue to be converted into homes and offices and as suburban structures like malls and big-box stores take on new lives. And consumers and developers alike are paying heed to the economic benefits of sustainability. Saving the planet is wonderful, but saving money is what really motivates change.

Change is more than possible. It's just months away. As the 2008 presidential election approaches, pay particularly close attention to the candidates' energy platforms. Look for positive signs like increased investment in alternative fuels, higher corporate taxes for oil companies, and, yes, higher gas taxes. Look, listen, then vote wisely.

*Ned Cramer*

## Cruel and Unusual

"The Future of Incarceration" [June 2008] failed to delve into the design and social justice issues inherent in the proposed reopening and expansion of the Brooklyn House of Detention, which will put back into commission more than 750 cells that were designed and built in the 1950s as isolated cages. Today the [New York City] commissioner of corrections considers these cells to be crucial because they are "the city's most secure" and, under new federal regulations, can no longer be replicated in this manner. I cringe at the thought of housing human beings, most of whom have not yet been convicted, and many of whom are mentally ill, in these outdated facilities.

**Abby Hamlin**

Hamlin Ventures LLC  
New York

## Not Here, Not Now

An interpretive center for the Vietnam Veterans Memorial "just west of Maya Lin's famous black granite wall" should be reconsidered ["Speak (Louder), Memory," July 2008]. The country lost a war, 58,195 of its young people, and the sense that we were the good guys in the world. Lin's design effectively expresses those losses. It is enough by itself. Perhaps schools today avoid discussing Vietnam, since it was our country's first lost war, or because those who teach feel as betrayed by that war as I do. If so, then it is possible that an interpretive center for the memorial is needed, but, I would argue, it should be somewhere else—not on the Mall.

**James T. Biehle**

Ballwin, Mo.  
[biehlej@sbcglobal.net](mailto:biehlej@sbcglobal.net)

## Bad Boys

Shame on you. While the building is lovely ["On the Links," July 2008], its "old boys" mentality isn't. In this day and age, perpetuating this kind of sexism is unfathomable.

**Alan W. Mack**

Proteus Group, LLC  
Chicago  
[amack@proteusgroup.net](mailto:amack@proteusgroup.net)

## Restricted Architecture

Imagine the population increasing 400,000 to 700,000 in little old Buckeye ["Buckeye: Next 6 Exits," June 2008]. As spectacular as the report reads, the term planning is hardly deserved for this example of greed and land grabbing. If only every person in Buckeye could do without a car and had the health to walk to a mass transit center in 120 degrees F heat, you might barely scratch what's missing in the "design guidelines."

**Tony Schnarsky**

Tucson, Ariz.  
[schnarsky@theriver.com](mailto:schnarsky@theriver.com)





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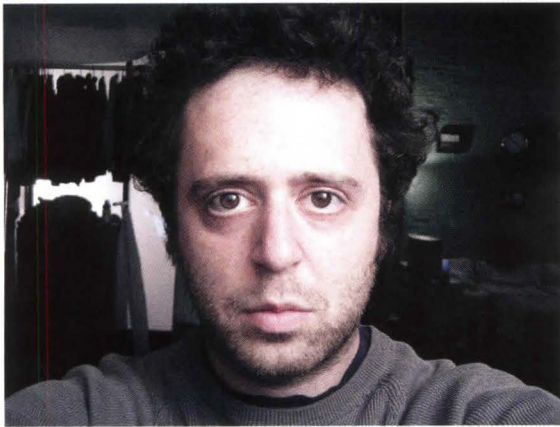
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# Contributors



**Noah Kalina**

Noah Kalina Photography,  
New York

**NOAH KALINA** spent a day in Minneapolis with R+D Award winners Blair Satterfield and Marc Swackhamer, photographing the architects at locations around the city. Kalina, a Long Island native, had never been to Minnesota before, so he and his assistant Zachary found time to visit the Walker Art Museum and the Mall of America: "We mixed a little art and commerce," he says.

Currently a resident of Brooklyn, N.Y., Kalina has been a freelance photographer since graduating from the School of Visual Arts in 2003. Among his favorite projects so far is a recent series for the science magazine *SEED*, "Labs at Night," for which Kalina photographed labs, including California's Salk Institute and the Stanford Linear Accelerator Center, after hours. Among the many

musicians and bands he's photographed are French Kicks, Animal Collective, Pete Wentz, Saul Williams, and Air.

Kalina is best known for his viral video "Everyday," a quick montage of self-portraits that he took daily over a period of six years. "Everyday" has been viewed nearly 10 million times on YouTube since it was posted in 2006 and has been parodied on "The Simpsons." VH1 ranked Kalina number 14 on its list of internet superstars.

Kalina hasn't released a follow-up, but he continues to take a picture of himself every day. "It's a lifelong project," he says. "I'm not planning on stopping."



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Economics

# AIA Predicts Decline in Nonresidential Architecture for '08, '09

**TWICE EACH YEAR**, the American Institute of Architects' Consensus Forecast Panel projects what the next couple of years might hold for the U.S. building industry. The outlook for nonresidential construction at mid-year 2008: gloomy. Whereas last December the panel predicted modest growth in spending for 2008, followed by a slight decline in 2009, in July the expectation was for a 1.2 percent decrease in spending this year, with a sharper 6.7 percent decline next year. The six members of the panel are FMI, Global Insight, McGraw-Hill Construction, Moody's Economy.com, the Portland Cement Association, and Reed Business Information. To see the specific mid-year forecast from each panel member, go to [aia.org/aiarchitect/two080711.cfm](http://aia.org/aiarchitect/two080711.cfm). BRAULIO AGNESE

## AIA Nonresidential Consensus Construction Forecast, Mid-year 2008 →

SOURCE: AIA

	2008	2009
<b>INSTITUTIONAL</b>		
HEALTHCARE	0.2%	1.1%
EDUCATION	2.7%	-1.1%
RELIGIOUS	-11.7%	-1.2%
PUBLIC SAFETY	5.9%	-1.9%
RECREATION	3.6%	-8.5%
<b>TOTAL</b>	<b>1.5%</b>	<b>-0.2%</b>

	2008	2009
<b>COMMERCIAL</b>		
OFFICE	-3.7%	-12.3%
RETAIL/OTHER	-8.3%	-9.9%
HOTEL	6.6%	-9.9%
<b>TOTAL</b>	<b>-4.5%</b>	<b>-11.1%</b>
	2008	2009
<b>INDUSTRIAL</b>	<b>4.6%</b>	<b>-5.5%</b>



Federal Law

# Americans With Disabilities Act Gets Major Overhaul

Updated regulations extend the ADA's reach and are more comprehensive in scope.

**THE AMERICANS WITH DISABILITIES ACT (ADA)** is about to be recodified, the result of an arduous four-year effort—led by the disabled community, builders, architects, and developers—that will extend the law's reach. Miniature golf courses,

of Justice adopts the revised rules, which are now open for public comment.

Since the law took effect in 1992, the world of the disabled has changed significantly: Not only has the Iraq war produced a new generation of

Even as the business world complains about the costs, some architects applaud the rewrite, saying it provides better details about specific building elements and more guidance about when the new regulations must be applied. "Basically, the whole mishmash of the ADA is much clearer than it was the first time around," says Dave Collins, president of Cincinnati-based architectural consulting firm The Preview Group. "This is a better set of regs than we had before—more comprehensive, more detailed, clearer, and easier to understand."

The new proposals would also make it easier to know when an ADA upgrade is necessary. "The language in the proposed rule allows you to use the last published guidelines as a safe harbor," says R.K. Stewart of the San Francisco office of Perkins+Will. "If you met them, there's some certainty that you'd be interpreted as having met the guidelines. They finally recognized grandfathering," he says. "This is a major step."

The period for public comments on the revised guidelines began on June 17 and will last for 60 days, ending in mid-August. The new guidelines will have the force of law once they are formally adopted by the Department of Justice sometime after that. T.R. GOLDMAN

**"The language in the proposed rule allows you to use the last published guidelines as a safe harbor ... If you met them, there's some certainty that you'd be interpreted as having met the guidelines. They finally recognized grandfathering."** —R.K. Stewart, Perkins+Will

for example, will now have to be ADA compliant, as will many other types of spaces. The new rules also clarify the ADA's often unrealistic construction formulations, such as the centerline distance of water closets to walls, which will henceforth have some latitude: 17 inches to 19 inches, rather than a strict 18 inches. These are just two of the myriad changes expected once the Department

severely disabled veterans, but the U.S. Census Bureau estimates that more than 50 million Americans, almost 20 percent of the population, have some type of disability. Meeting the updated regulations will cost an estimated \$25 billion, although the new rules will also "save" \$54 billion under a complex formula that determines the value of public benefits to the disabled.



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Copyright

# 1st Circuit Appeals Court Salvages Boston Firm's Infringement Suit

ON JUNE 20, the U.S. Court of Appeals for the 1st Circuit overturned a lower court's ruling that had dismissed a Boston architecture firm's copyright infringement suit on the basis of timeliness. And although *Warren Freedendfeld Associates v. McTigue* doesn't involve front-page names or iconic design, the decision is notable for its reading of the law.

By law, a copyright holder has three years from the date "the claim accrued" to sue for infringement. When it comes to architecture, this generally means the date an allegedly infringing building opens. In the particulars of the case, WFA was hired by a veterinarian in 1998 to design an animal hospital, but the relationship soured

and the agreement was mutually terminated. The veterinarian hired another architect, and the hospital opened in 2000. WFA (now Rauhaus Freedendfeld & Associates) didn't file a copyright infringement suit until July 2005, eight months after seeing a floor plan of the facility, credited to the second architect, in an international veterinary medicine trade publication.

The U.S. District Court for the District of Massachusetts dismissed WFA's lawsuit, saying the firm should have had reason to know about the illegal use of its designs no later than when the hospital opened in 2000, thus making its 2005 suit untimely. The appeals court, however, decided in favor of the firm, saying that WFA's infringement claim accrued when the firm actually discovered the illegal use of its plans. "Architects have no general, freestanding duty to comb through public records or to visit project sites in order to police their copyrights," wrote the court.

Jeffrey Brown, a Minneapolis-based patent attorney, says the court's action is probably a good one. "Using the standard of 'a reason to know' requires the copyright owner to aggressively police their work. With some things it makes more sense, such as books and movies—things that are more widely disseminated," he says. But because buildings are by and large single-edition items, "in the context of architectural copyright, it's kind of difficult" to be so vigilant. But Brown also notes that *WFA v. McTigue* is "just a decision of the facts that were before the court, and I think this case could have gone either way." B.A.

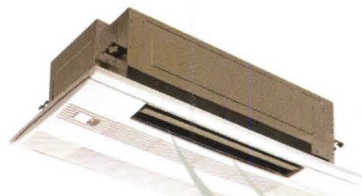
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Interns

## IDP Changes Ahead

The National Council of Architectural Registration Boards (NCARB) made several adjustments to the Intern Development Program at its annual conference in June.

*The complete changes are listed at [NCARB.org](http://NCARB.org), along with details on the new online reporting system.*

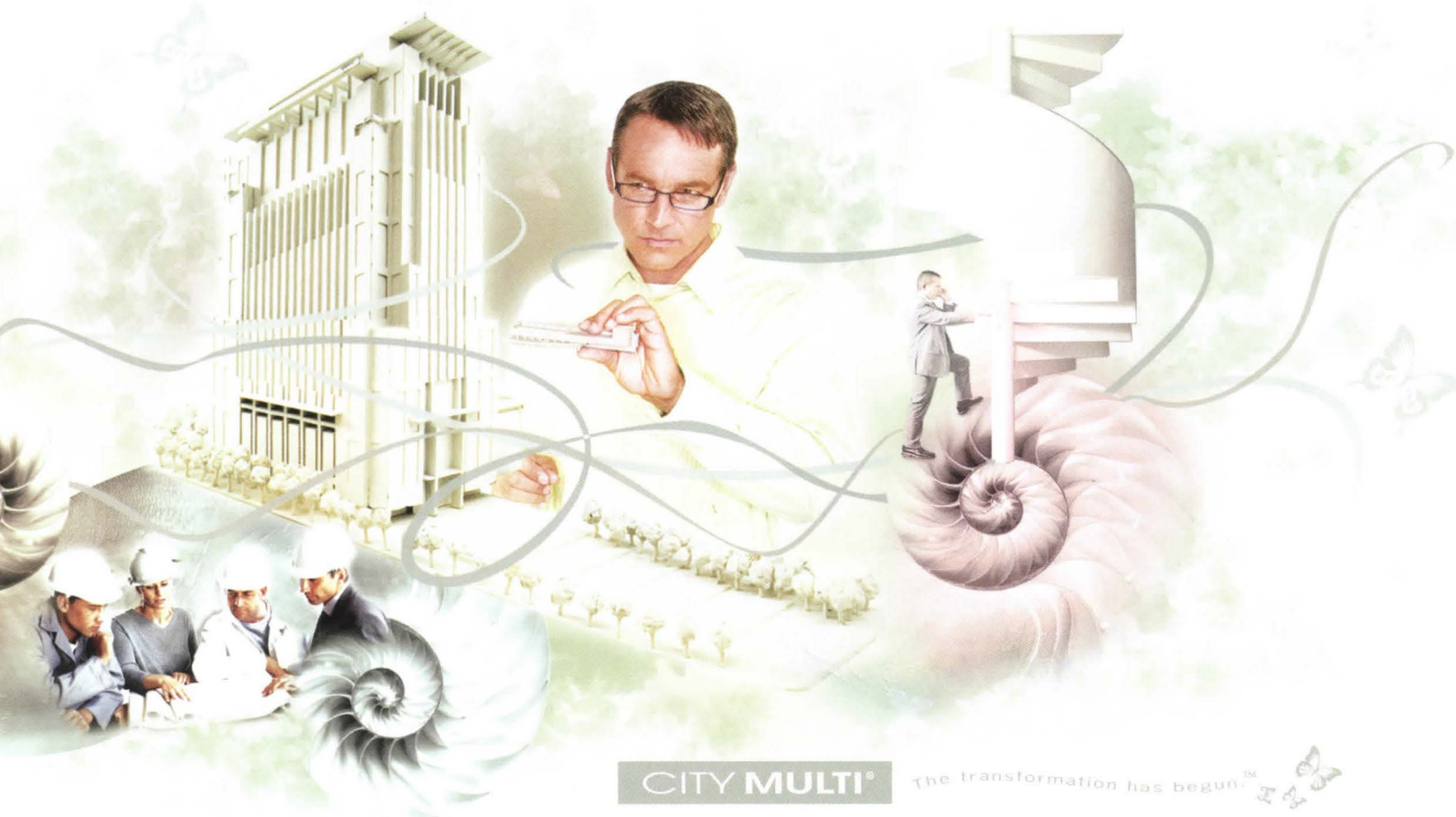
- Interns will now submit updates on their Training Units in six-month intervals, each of which will be followed by a two-month period for them to complete the forms and submit them to NCARB under a new, online system. Interns registering after July 1, 2009, will start this process immediately; all others start July 1, 2010.
- The number of hours an intern must work has been changed to 32 hours for at least eight consecutive weeks; in a part-time position, the intern must work 15 hours per week for six or more consecutive weeks. The limit of 235 Training Units has also been stricken for part-time work. Research and teaching positions may now earn Training Units only with a full-time position.
- The five-year period for completing the IDP can be extended by six months if the intern is the parent of a new-born or adopted child; interns may also apply for extensions of their six-month updates for the same reason, as well as for military service or illness.
- Sustainable design was added to the list of subjects that the health, safety, and welfare section covers.
- Under the Model Regulations and Rules of Conduct, NCARB has changed the standard it deems an architect must meet. The new section reads "shall apply the knowledge and skill," striking "technical knowledge."

ANDREW SLOCOMB WEST

# 32

hours is the new  
minimum for a  
full-time intern's  
workweek.

SOURCE: NCARB



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In Memoriam

# Wendell Campbell, First President of NOMA, Dies at 81

**WENDELL CAMPBELL**, the prominent Chicago-based architect, died of natural causes at his home on July 9. He was 81.

Some of Campbell's notable projects include the DuSable Museum of African American History, the New Bronzeville Military Academy, and the Metcalf Federal Building, all in Chicago. He also developed urban planning strategies for Chicago, New Orleans, Detroit, and Milwaukee.

Campbell graduated from the Illinois Institute of Technology in 1957 and founded Wendell Campbell Associates in 1966. The firm was later renamed Campbell and Mascall, then Campbell Tiu Campbell. He was named a fellow of the American Institute of Architects in 1979.

Campbell was a founder of the National Organization of Minority Architects (NOMA) in 1971 and served as the group's first president,

becoming a leading voice in advocating diversity in architecture. He was a devoted mentor to many younger architects and an active community leader, serving on the boards of NOMA, Mercy Hospital and Medical Center, the Black Ensemble Theatre, AIA Chicago, the Chicago Architectural Assistance Center, and the South Side YMCA, where he would regularly swim.  
JOHN GENDALL

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Sustainability

# Real Estate Investor Acquires Green Globes Developer

Green Building Initiative retains U.S. development and distribution right of sustainability-measurement system.

**AT A TIME WHEN** some are worried that sustainable development will decline as developers and builders look to control costs, one industry heavyweight has made its position on the environment clear. On July 9, international real estate financial and professional services firm Jones Lang LaSalle (JLL) announced that it had acquired ECD Energy and Environment Canada, best known stateside as the developer of the technology underlying the Green Globes rating system for the Green Building Initiative (GBI).

The transaction "enhances Jones Lang LaSalle's role as the leading integrated financial and professional services firm specializing in real estate," said Ed McMahon, Charles Fraser Senior Resident Fellow for Sustainable Development at the Urban Land Institute, in a voicemail response to a request for comment. McMahon pointed out that JLL was one of nine winners of this year's Global Sustainable Cities Award, co-sponsored by the institute and the *Financial Times*. The purchase of ECD Energy "is another feather in their cap," McMahon said.

Under the terms of the acquisition—the details of which were not disclosed—Green Globes will be kept independent from JLL, and it will continue to be operated by the GBI in the United States and by the

Building Owners and Managers Association in Canada, where it is known as Go Green.

The business transaction is the latest in a series of JLL actions that solidify its commitment to being environmentally friendly. Late in 2007, JLL acquired Upstream, a leading U.K. sustainability consultancy. The firm has also formalized the industry's first Sustainability University, designed to train employees in sustainable standards and practices. JLL plans to have 500 sustainability-accredited professionals by the end of 2009.

Ward Hubbell, president of the GBI, says the group is pleased with the purchase of ECD Energy. "We've had many productive conversations with JLL, and they're well-intentioned in what they want to do. We have a good rapport," says Hubbell, adding that JLL's action is a "validation" of Green Globes and means "the potential we'll have to grow and enhance the system is better."

Since 2005, the GBI has been working to establish Green Globes as a commercial building standard approved by the American National Standards Institute (ANSI). The group recently completed an ANSI-required public comment period for the proposed standard, which is expected to be published in its final form by year's end. B.A.

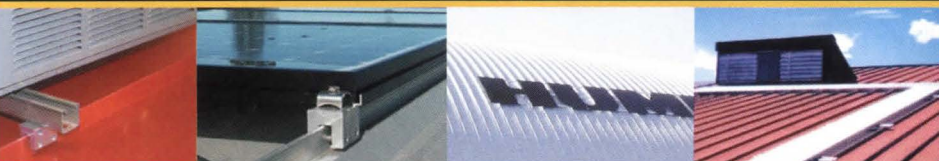
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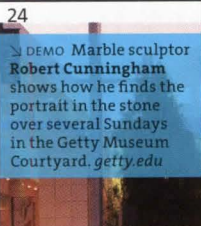
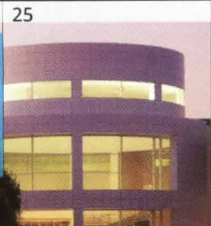
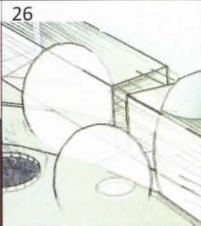
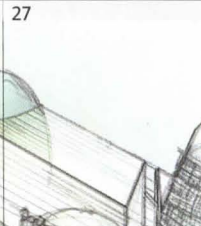
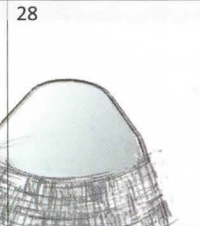






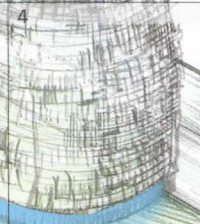



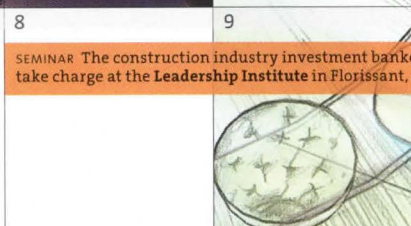

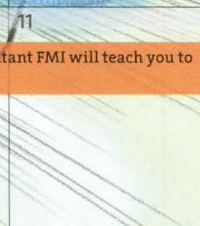




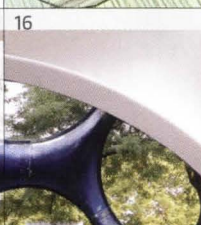



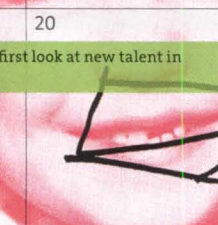



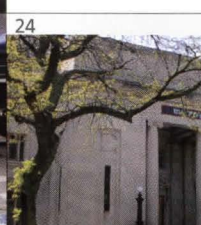

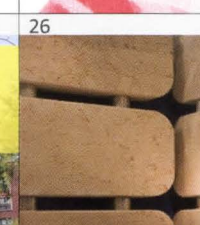
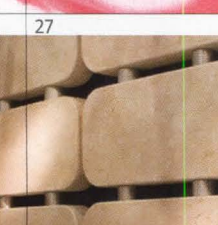

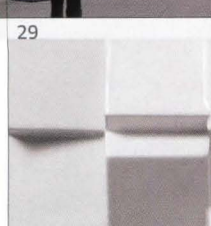

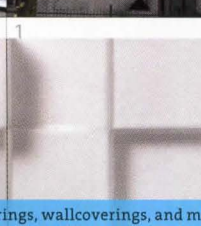
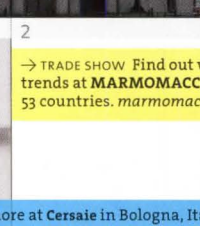






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Edited by Andrew Slocomb West

# CALENDAR

AUGUST, SEPTEMBER, OCTOBER

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
24  <p>↳ DEMO Marble sculptor <b>Robert Cunningham</b> shows how he finds the portrait in the stone over several Sundays in the Getty Museum Courtyard. <a href="http://getty.edu">getty.edu</a></p>	25 	26 	27 	28 	29  <p>← DEADLINE <b>Line of Sight</b> kick-starts a dialogue by asking you to rethink sustainable transportation in <b>City Transportation Interchange</b>. <a href="http://lineofsite.info">lineofsite.info</a></p>	30  <p>↓ DEADLINE The theme for the <b>2008 Birdhouse Competition</b> is the Earth Is Our Nest—and why not? <a href="http://birdhouse.gr.jp">birdhouse.gr.jp</a></p>
31  <p>DEADLINE Compete to re-imagine <b>Golf's Tower</b>, an apartment building in Lima, Peru. <a href="http://arquitectum.com">arquitectum.com</a></p>		2 	3 	4 	5 	6  <p>SEMINAR Figure out how architects design buildings and make money, all at the same time, with <b>The Design Build Architect</b> in Boston. <a href="http://thedesignbuildarchitect.com">thedesignbuildarchitect.com</a></p>
7 	8  <p>SEMINAR The construction industry investment banker and management consultant <b>FMI</b> will teach you to take charge at the <b>Leadership Institute</b> in Florissant, Colo. <a href="http://fminet.com">fminet.com</a></p>		10 	11 	12 	13 
14  <p>↳ CLOSING Get to LaGuardia Park in New York before Buckminster Fuller's <b>Fly's Eye Dome</b> comes down. <a href="http://aiany.org">aiany.org</a></p>	15  <p>DEADLINE The <b>iF product design awards</b> are your chance to prove you've got some I.D. in you. <a href="http://ifdesign.de">ifdesign.de</a></p>	16 	17 	18  <p>FESTIVAL Head to London for <b>100% Design</b> and get a first look at new talent in the U.K. <a href="http://londondesignfestival.com">londondesignfestival.com</a></p>	19 	20 
21 	22 	23 	24 	25  <p>↳ TOUR See the <b>Roots of Reform</b> in this bus tour of the architecture in Chicago's South Side. <a href="http://architecture.org">architecture.org</a></p>	26 	27 
28 	29 	30 	1 	2  <p>→ TRADE SHOW Find out what's latest and greatest in stone technologies and trends at <b>MARMOMACC</b> in Verona, Italy, with more than 1,530 exhibitors from 53 countries. <a href="http://marmomacc.com">marmomacc.com</a></p>	3 	4 
		 <p>↳ TRADE SHOW Floor coverings, wallcoverings, and more at <b>Cersaie</b> in Bologna, Italy. <a href="http://cersaie.it">cersaie.it</a></p>				
<h2>Looking Ahead:</h2>		<p>CONFERENCE  <b>IES Street and Area Lighting Conference</b>; Denver; Oct. 12–15; <a href="http://www.ies.org">www.ies.org</a></p>	<p>DEADLINE  <b>The Arnold W. Brunner Grant</b>; Oct. 24; <a href="http://cfafoundation.org">cfafoundation.org</a></p>	<p>SYMPOSIUM  <b>The Symposium on Building Envelope Technology</b>; Atlanta; Oct. 27–28; <a href="http://www.rci-online.org">www.rci-online.org</a></p>	<p>STUDENT COMPETITION  <b>Prisoned 2009</b>; Nov. 21; <a href="http://sociodesignfoundation.com">sociodesignfoundation.com</a></p>	



# THE DESIGN BUILD ARCHITECT



The DESIGN BUILD Architect conference was established by professionals who have achieved significant success by incorporating DESIGN BUILD services into their existing practices. By adding BUILD services into their firms' standard deliverables, these architects have bettered the quality of their finished product and changed the future of their profession.

Hosted by Domenic DiGiorgio of DiGiorgio Associates Inc. in Boston and E. Thomas Fernandez and John Rademacher of SFA Architects in Cincinnati, along with insurance and construction contract law professionals, conference participants will learn specific information and practical tools about how to develop successful DESIGN BUILD services within their own firm.

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\$500/ General Attendance before 8/15  
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For more information or to register for a conference please go to

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Circle no. 77 or <http://architect.hotims.com>

## CONFERENCE DATES

09.06.08

Boston, MA  
Harvard University

10.11.08

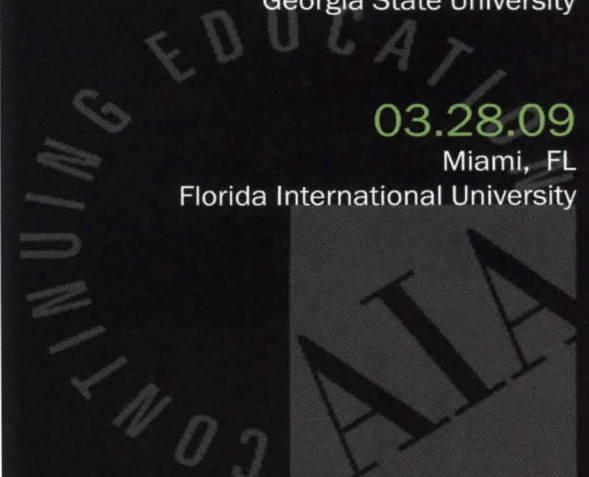
Chicago, IL  
Northwestern University

01.17.09

Atlanta, GA  
Georgia State University

03.28.09

Miami, FL  
Florida International University





Text Andrew Slocomb West

# PRODUCTS

## LANDSCAPING



### Q-Set Luminaire Power Supply Center

Q-Tran • [q-tran.com](http://q-tran.com) • Transformer has three UL listings: landscape lighting, pool and spa lighting, and low-voltage luminaire power supply • Nine halogen wattage options and two LED wattages in dimmable or switched models • Shaped for easy changes indoors or outside and above- or in-ground • Q-Vault gives out-of-the-box waterproofing and easy in-ground access • Q-Wall encloses wiring in a wall mount • Q-Wire and Q-Two connectors ensure waterproof wire runs • Circle 100



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\*Price available at [hp.com](http://hp.com) and subject to change without notice. Reseller price may vary. Certain Windows Vista product features require advanced or additional hardware. See [www.microsoft.com/windowsvista/getready/hardwarereqs.mspx](http://www.microsoft.com/windowsvista/getready/hardwarereqs.mspx) and [www.microsoft.com/windowsvista/getready/capable.mspx](http://www.microsoft.com/windowsvista/getready/capable.mspx) for details. Windows Vista Upgrade Advisor can help you determine which features of Windows Vista will run on your computer. To download the tool, visit [www.windowsvista.com/upgradeadvisor](http://www.windowsvista.com/upgradeadvisor). © Copyright 2008 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice. Simulated images. WAM-V® is a U.S. registered trademark of Marine Advanced Research, Inc. Microsoft and Windows are U.S. registered trademarks of Microsoft Corporation. Windows Vista is either a registered trademark or trademark of Microsoft Corporation in the United States and/or other countries.



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## Products



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### 2. Ratio Bench

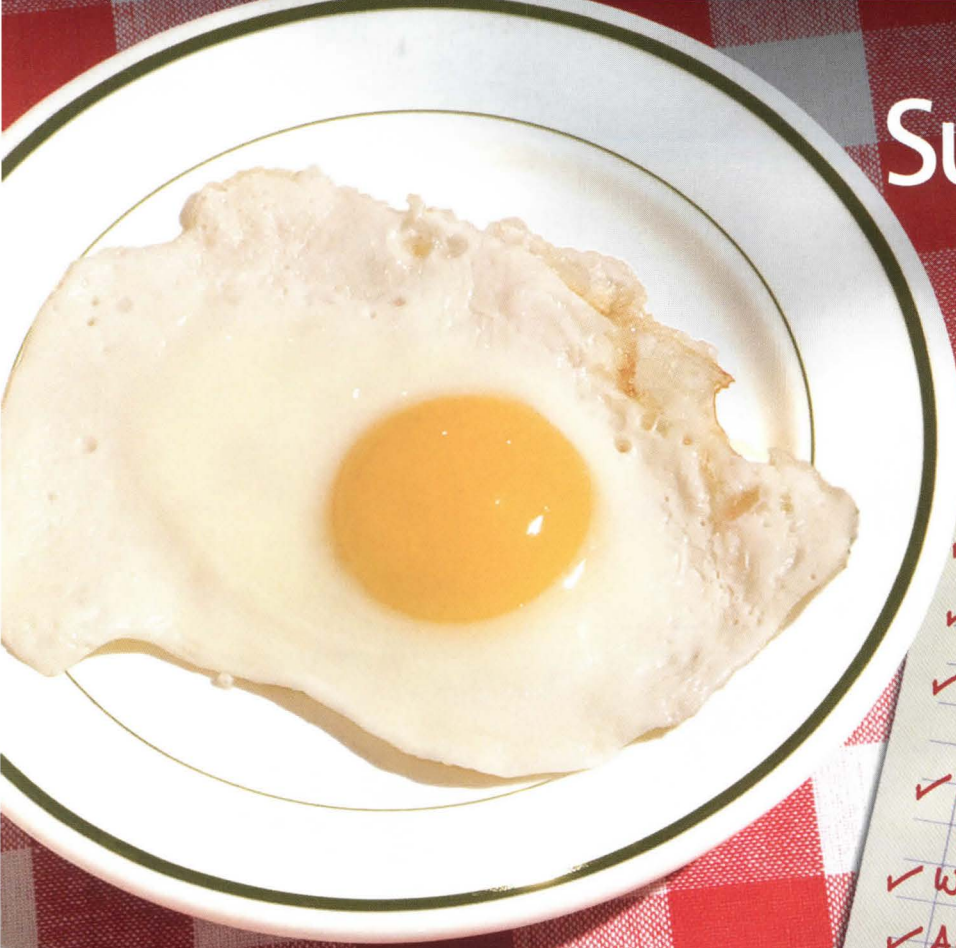
Forms + Surfaces • [forms-surfaces.com](http://forms-surfaces.com) • Cast-aluminum frame with corrosion-resistant stainless steel seat • Backed or backless options in 6-foot nominal lengths • Pill-shaped perforations are applied in an offset pattern • Can be freestanding or mounted to floor surface • Low- or no-VOC finishes • Completely recyclable • Circle 102

### 3. LP Hint Post Top

Louis Poulsen • [louispoulsen.com](http://louispoulsen.com) • Three models: Hint Basic and Hint Dome are dark sky, full-cutoff fixtures and Hint Opal has a directional fixture for streets or paths • Powder-coated aluminum • Acrylic top diffuser with aluminum reflector • Mounts to aluminum pole • Three light source options in 120V-227V and with T3 or T3S sockets • Circle 103



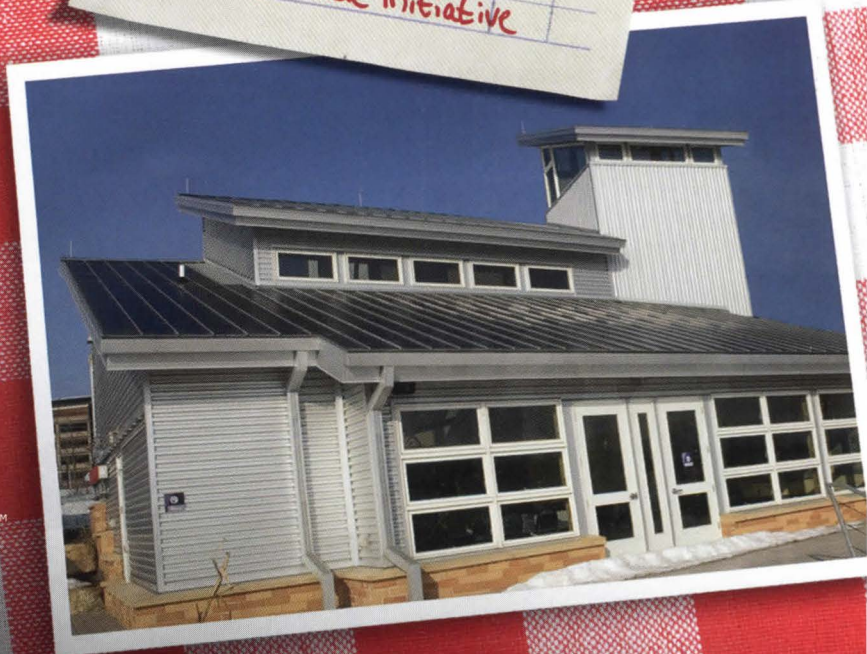
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Text Kate Herman

# NUMBERS

## Deadly Work

**WHEN WORD CAME** in late May of a construction crane collapse in Manhattan, the reaction was a wrenching “Not again.” It was the city’s second fatal crane accident in 10 weeks. But the awful news is not unique to the Big Apple: In June, a Las Vegas construction crew walked off the City-Center jobsite to protest terrible safety conditions; six workers had been killed on the site over the previous 18 months, as had five other workers at other projects on the Strip. Building officials nationwide scrambled in the wake of the New York accident to evaluate the safety standards on their own sites. In Washington, D.C., emergency inspections were ordered on each of the city’s 40 licensed cranes in operation, and three cranes were removed from operation in Washington state after inspectors found electrical flaws. But crane accidents aren’t the only dangers facing construction workers; falls, fires, chemical exposures, and other risks confront these crews every day. All told, in 2006 construction was the top U.S. industry for on-the-job fatalities, according to the Bureau of Labor Statistics.

# 1,226

The total number of fatal construction-work injuries in 2006. Falls are the top cause of construction-related deaths.

# 82

The average number of annual crane-related deaths from 1997 to 2006.

# 7 tons

The weight of a section of crane that fell 30 stories in Miami earlier this year. The accident killed two workers and injured five others.

# 1971

The last year OSHA updated its crane-safety rules. New standards were to take effect this month, but on June 1, the agency announced its decision not to publish the new rules except under “extraordinary” circumstances.

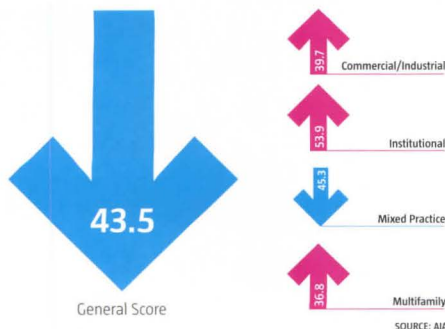
# 60%

The amount of 1997–2006 crane deaths that were the result of a worker being electrocuted or struck by a moving load.

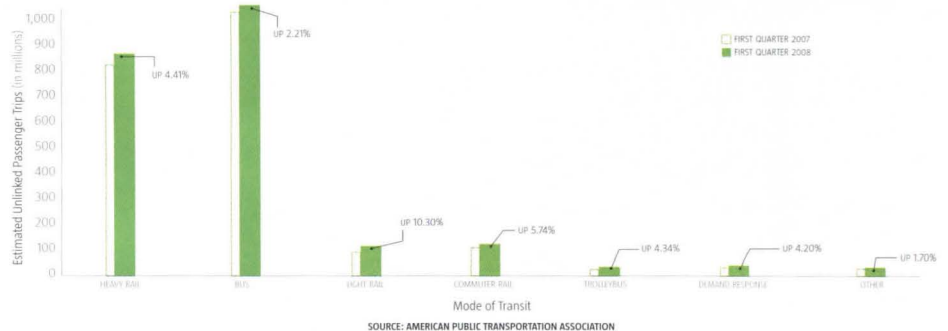
# 16

The number of New York City construction deaths in the first half of 2008, which has already surpassed 2007’s total of 12 fatalities.

Architecture Billings Index, May 2008



U.S. Transit Ridership, First Quarter 2008 vs. First Quarter 2007





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Text Margot Carmichael Lester

# LOCAL MARKET

## LAS CRUCES, N.M.

### Population/Employment

From 1990 to 2000, the city grew by 20 percent; 2008 estimate: 102,845. Annual job growth is 1.9 percent.

### Office Market

Class A space: \$21.50/s.f. (average) on 10.6 percent vacancy.

### Residential Market

Median home sale price in 2007: \$161,600.

### Market Strengths

- Proximity to Mexico
- Climate/recreation areas
- Military bases

### Market Concerns

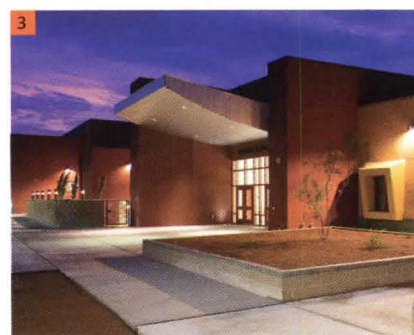
- Managing growth
- Long-term water supply
- Expanding local economy beyond military and university

### Forecast

Spaceport America—the first purpose-built spot in the U.S. for the nascent commercial space industry (Virgin Galactic is a partner)—exists mostly on paper but could drive \$112 million in construction spending. “It’s fair to expect it will play a role in our local economy” in the next 10 years, says Denton Ventures principal Matt Kenney.

**YOU COULD SAY LAS CRUCES, N.M., IS UNDER SIEGE.** Between the expansion of local military installations and repeated appearances on national “Best Places” lists, the City of Crosses is being invaded by hordes of military families and active seniors. “Currently, 50 percent of Las Cruces’ net population growth is due to in-migration,” says Matt Kenney, a principal with local developer Denton Ventures. “Las Cruces has become a popular retirement location, and the surrounding military bases are staffing up. Both groups need housing, which has led to an increase in land development and home construction.”

Growth at the White Sands Missile Range and the Holloman Air Force Base is driving development of housing and retail for military families on the northeast side of town. Appealing to those drawn by



### METRO VERDE

**Architect/developer:** Denton Ventures, Las Cruces; **Completion:** 2010 (phase one); **Cost:** \$24 million; **Size:** 187 acres • Combines residential with a retail/restaurant plaza, parks, trails, and aggressive conservation measures.

### SOARING HEIGHTS COMMUNITIES

**Architect:** Town & Home, Simi Valley, Calif.; **Completion:** 2014; **Cost:** \$302.9 million; **Size:** 796.3 acres • Part of a 50-year U.S. Air Force/Actus Lend Lease project to develop and operate family housing at Holloman AFB.

### SONOMA ELEMENTARY

**Architect:** ASA Architects, Las Cruces; **Completion:** 2006; **Cost:** \$10.4 million; **Size:** 86,000 s.f. • 36-classroom school accommodates 700 students.

### THE BOULDERS

**Architect:** Iverson Architects, Newport Beach, Calif.; **Completion:** 2005 (phase one); **Cost:** undisclosed; **Size:** 16.5 acres • 72-unit active senior community in Sonoma Ranch won the 2005 NAHB Best of Seniors Housing Award.

Las Cruces’ placement on *Forbes*’ lists of Best Places to Retire (2005) and Best Small Places for Business and Careers (2007), new master-planned communities surround the city. Though most of the large-scale development is outside the city’s center, a \$34 million downtown development plan will fund a new city hall and civic plaza, plus renovations and repairs to Main Street properties.

All the growth is good news for the city, where the economy had been flagging. “It still has a per-capita income of barely 60 percent of the national average,” says Jim Peach, a business and economics professor at New Mexico State University, one of the city’s largest employers. “Now, Las Cruces has reached the threshold size at which national firms—especially retail—take a serious look at the area.”





# THE ART OF PRECAST™

© Roland Halbe Photography Architect of Record: KZF Design Design Architect: Zaha Hadid

Cutting-edge design meets innovative precast technology in the award-winning Rosenthal Center for Contemporary Arts in Cincinnati, Ohio. Architects chose High to execute the expressive, black and white, sculptural precast concrete facade because they knew High precast would be most effective in enhancing the dramatic play of light and shadow on the jigsaw puzzle-like facade. Using a blend of aggregates and a combination of innovative, high-range, water-reducing, and viscosity-modifying admixtures, structural needs were met and the finished product is stunning. High's unparalleled commitment to new technology and innovation at their PCI-certified plants has led to solutions like this

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Text Vernon Mays Photo Stefan Hester

# SCREEN GRAB

BRANDAVENUE.TYPEPAD.COM



Culture is defined as much by *where* we are as by *who* we are, says Chris Timmerman.

**SOMEWHERE AT THE INTERSECTION** of urban design, pop culture, demographics, and architecture lies the defining character of Brand Avenue, an engaging blog whose interdisciplinary approach offers the reader a steady diet of tasty brain food. Author Chris Timmerman, an architecture intern working at HOK in St. Louis, is quick to reveal his strong interest in the subject of “place.” But his definition of the term is clearly organic, subject to a wide range of influences, including mass media, transportation, virtual environments, and retail trends.

What is so enticing about the blog is Timmerman’s ability to make connections that aren’t immediately obvious. And although he says his architecture education often pressed him to focus on individual buildings, his strategy for the site is to keep the broader picture in mind. In March 2005, writing in his first blog post, Timmerman revealed a keen interest in how the architect’s power as an image-maker and a stage-setter for cultural advancement can be applied at a larger, urban scale. That entry linked to a *New York* magazine story chronicling the rise of the “microneighborhood.” In

June, he highlighted an article about how NBC is amassing 30,000 songs to aid its narrative coverage of the 2008 Summer Olympics, connecting the power of music with associations to specific places. One of his favorite offerings was a post titled “Urban Pre-Planning,” which discussed the qualitative approach to city planning being practiced by the design firm IDEO.

Now 30, Timmerman launched the blog shortly after finishing graduate school at the University of Pennsylvania, choosing the name “Brand Avenue” to convey the notion that culture is explicitly spatial. He updates the site weekly, often including photographs and links to videos to enliven the mix of content. These days, he’s getting about 3,600 hits per month. While Timmerman admits that Brand Avenue helps keep him focused on his own interests, he also acknowledges a wider agenda for the blog: “To make a contribution to a greater conversation about the places we inhabit, our relationships to them, how culture and place are interrelated, and how we capitalize on this.” More than three years into his effort, Timmerman has clearly found his spot on the map.

## LINKS

<p><a href="http://shapeofamerica.org">shapeofamerica.org</a></p>	<p><a href="http://walkscore.com">walkscore.com</a></p>	<p><a href="http://blogs.wnyc.org/radiolab/2008/07/01/city-x">blogs.wnyc.org/radiolab/2008/07/01/city-x</a></p>	<p><a href="http://librarything.com/groups/architext">librarything.com/groups/architext</a></p>
<p>The AIA knows when to keep a good thing going. Its America’s Favorite Architecture survey and companion website proved a hit, and now the institute has created a site with minidocumentaries on a handful of the top 150 buildings, image galleries, and comments from top architects.</p>	<p>Chances are you’re hoofing it a lot more these days, thanks to painful gas prices. Just how walkable is your part of town? Plug in an address and Walk Score tallies the surrounding points of interest. The site also offers rankings for 2,508 neighborhoods in 40 cities and comparative maps.</p>	<p>“City X,” a 2004 piece by radio producer Jonathan Mitchell, is a 23-minute account of the contemporary shopping mall—that hermetically sealed temple to consumer culture—as told by the residents of one real, though nameless, Midwest city.</p>	<p>Learn what books the architecturally minded own and sign up to catalog your collection. Most common among members at press time: <i>Towards a New Architecture</i>, followed by the trio of <i>Complexity and Contradiction in Architecture</i>, <i>Delirious New York</i>, and <i>The Image of the City</i>.</p>



## A BANKER EXPLAINS HOW TO OBTAIN AND MANAGE A LINE OF CREDIT FOR YOUR FIRM.

Text Fred A. Bernstein Photo Derryl Strong

**EXTRA CREDIT**

A line of credit can be invaluable to a small or mid-sized firm, says Key Bank's Maria Coyne—just don't rely on it for capital expenses.

**IF YOU'RE LUCKY**, your firm's income exceeds its expenses. Still, you could be waiting for a large check from a client at the same time that your employees and consultants expect to be paid. Even businesses that operate in the black sometimes have cash-flow problems. And many architects make matters worse by paying insufficient attention to finances: The same practitioners who will work all night perfecting a design detail tend to ignore their bank statements.

Luckily, there's a relatively simple solution for smoothing out cash-flow fluctuations—a line of credit, which Maria Coyne says is a must for any small or medium-sized firm.

An executive vice president of Cleveland-based Key Bank, Coyne is an expert on the financing of small businesses, including architecture firms. She is also the national spokesperson for Key4Women, a program for female entrepreneurs, and she blogs about small businesses at [www.key.com](http://www.key.com). Before joining Key, she was a small-business strategist with the Greater Cleveland Growth Association and an executive with Bank One in Chicago.

**First, keep money coming in ...**

Architects, Coyne says, need to pick clients who will pay on time, although she admits that's easier said than done. What you can do is give your clients less leeway in paying you than your vendors give you—say, 30 days (for clients) as opposed to 60 (for vendors).

**... while trying not to spend too much.**

Technology has made it possible for new firms to outsource many big-ticket items. For example, instead of buying expensive printing equipment, you can hire a firm that specializes in architectural graphics.

**But when receipts don't match expenditures ...**

Coyne recommends a line of credit, which she describes as "like a credit card without the card." Once you're approved, you can draw it down simply by transferring money to your firm's checking account. The interest rate will range from prime plus one to prime plus five, depending on your creditworthiness and other factors. Payments will be either all interest or interest plus a tiny bit of principal.

**Apply for the line before you need it.**

If you're starting a new firm, you will have to show that you're creditworthy; the bank may ask to see signed contracts with clients. It also helps to have collateral, which can be personal property or accounts receivable (without collateral, you'll pay a higher rate of interest). And hope your personal credit rating is strong: Banks won't

distinguish between you and your firm when it comes to creditworthiness.

**Take advantage of SBA programs.**

The Small Business Administration has a number of programs that make it easier for you to obtain credit. Under a plan called SBA Express, the agency will guarantee 50 percent of your line (with no additional paperwork required). That kind of guarantee "helps the bank get comfortable with businesses that have no track record," Coyne explains.

**Use the line of credit to smooth over rough patches, not for one-time expenses.**

The idea is to draw it down, pay it back, draw it down, pay it back, says Coyne. For capital expenses, especially when you're starting a firm, it's best to use "term debt." Lines of credit, in which payments include no or little principal, aren't good for permanently retiring debt.

**Try to make at least the minimum payment on time.**

If you don't, you'll incur late fees, your interest rate may rise, and your credit rating will decline.

**Envision the end of the line.**

If you've maxed out your line of credit and can't pay down the balance, speak to your banker. "We'll talk to you about refinancing the debt, giving you some regular payments so you can see an end," says Coyne.



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# BUILDING: REPUTATION

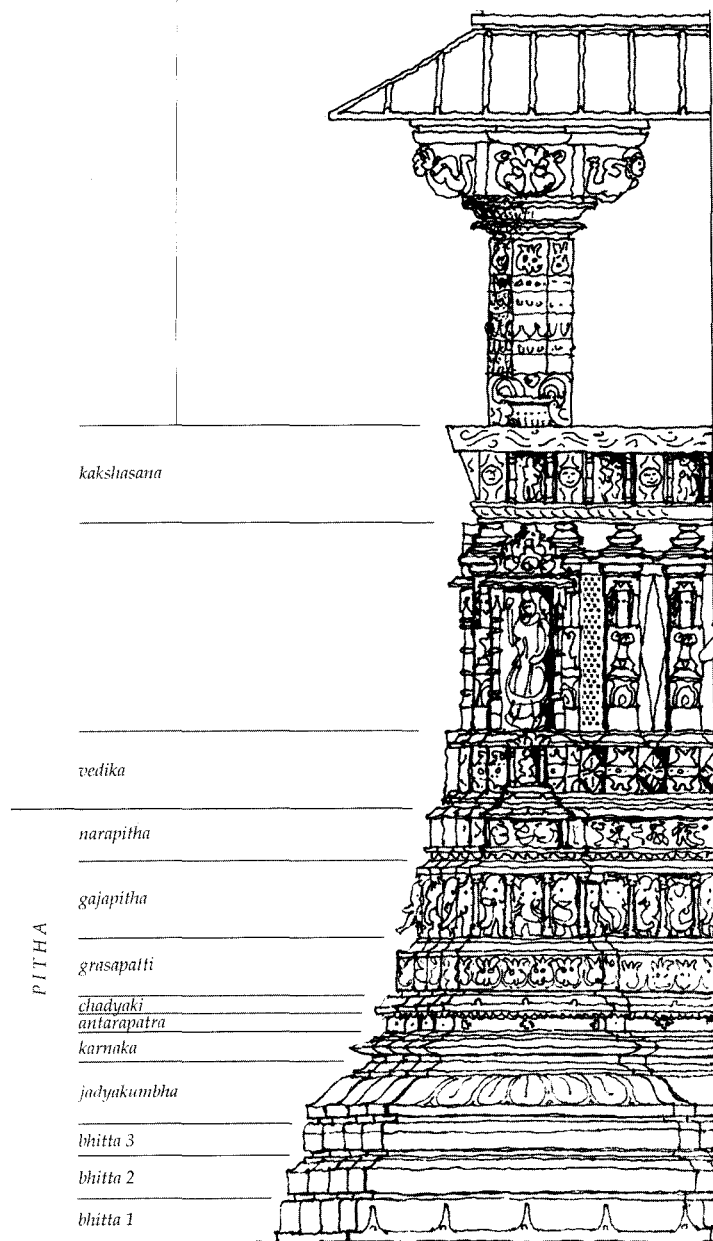
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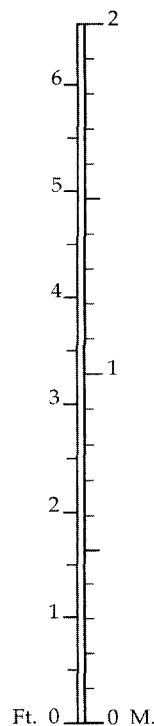
A NEW BOOK UNLOCKS THE COMPLEXITIES OF MEDIEVAL INDIAN ARCHITECTURE.

Text Ned Cramer

# DO YOU SPEAK SANSKRIT?



*The Temple Architecture of India* is richly illustrated with diagrams of specific buildings, such as the 12th century Navalakha temple, in the town of Sejakpur in western India (left). Each of the design elements has its corresponding term in ancient Sanskrit, such as *grasapatti* for the frieze of monster faces.



America (i.e., everywhere else) is no small problem in this increasingly global age, especially as U.S. architects increasingly look abroad for commissions. Practitioners setting their sights on India should benefit from a close read of Adam Hardy's *The Temple Architecture of India*, a smart, accessible history of religious architecture on the subcontinent.

The author, who teaches at the Welsh School of Architecture in Cardiff, lavishes particular attention on the monumental Hindu shrines of India's early middle ages (the 6th–13th centuries), which in most histories—and in the popular imagination—take a back seat to later, Mughal monuments like the Taj Mahal.

Hardy likens the Hindu temples' dynamic geometries to the religion's concept of the "unfolding cosmos." The medieval Indian architect, or *sthapati*, based the design of every shrine and temple on a base unit, the aedicule, which he then projected, staggered, split, and multiplied from the center outward. While the results can seem riotous to Western eyes, the

medieval Hindu temple boasted a taxonomy of parts as specific as that of classical Greece and Rome, and similarly based on the human body.

Next time you're meeting with potential clients in Mumbai or New Delhi, try saying the Sanskrit *varandika*, instead of cornice. They're sure to be impressed. ☺

*The Temple Architecture of India*, Wiley, \$75

**INDIA HAS 18 OFFICIAL LANGUAGES**, and its architectural history is just as diverse. Yet most Western architects would be hard-pressed to identify a pre-colonial Indian building by name, other than the Taj Mahal. Blame the knowledge gap on our standard histories of architecture, which, as everyone knows, focus almost exclusively on Europe and the United States. The near-complete omission of buildings from Asia, Africa, and South





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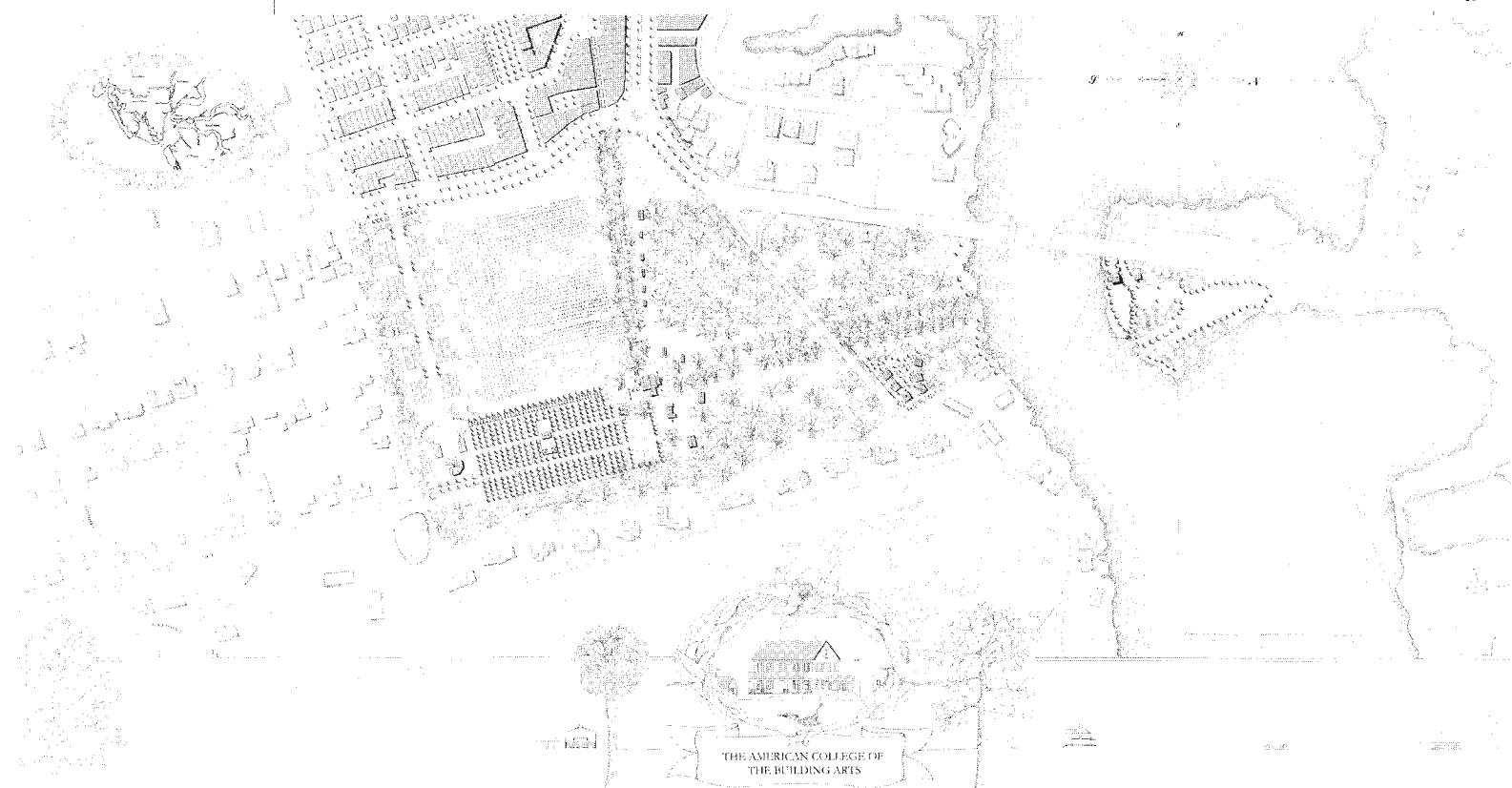
Look for more AIA-registered course materials throughout the year. Current course materials can be found online from the following companies. For more information, contact Jennifer Pearce at [jpearce@hanleywood.com](mailto:jpearce@hanleywood.com) or (202)736-3447.





UNIVERSITY OF MIAMI STUDENTS DESIGNED A NEW CAMPUS FOR A PLANTATION SITE IN CHARLESTON, BUT PRESERVATION POLITICS WILL TEACH RESTRAINT. Text Hannah McCann

# HERE'S HOPING



**Students from** the University of Miami designed a master plan for the proposed American College of the Building Arts campus on the historic McLeod Plantation. The plan may never get built but showcases the potential of a marriage between a historic site and a school that trains building artisans.

**CURRENTLY OPERATING** out of the Old City Jail in downtown Charleston, S.C., The American College of the Building Arts (ACBA) graduates its first class, of 11 students, next spring. The new accredited college teaches the crafts of architectural stonework, timber framing, plaster work, carpentry, masonry, and ironwork. Hatched in the aftermath of Hurricane Hugo in 1999, ACBA aims to rebuild the ranks of building artisans. "We're creating craftspeople not just for historic, but for contemporary building as well," says Simeon Warren, who is dean of the college and also teaches architectural stonework.

ACBA wants to build a new campus on McLeod Plantation, a 38-acre site on St. James Island in Charleston, and a team of 17 students from the Preservation Studio at the University of Miami School of Architecture has proposed how the college could occupy the site. In the New Urbanist tradition of their school (led by dean Elizabeth Plater-Zyberk), the students' plan marries adaptive reuse with historically sensitive new construction and a mixed-use urban village.

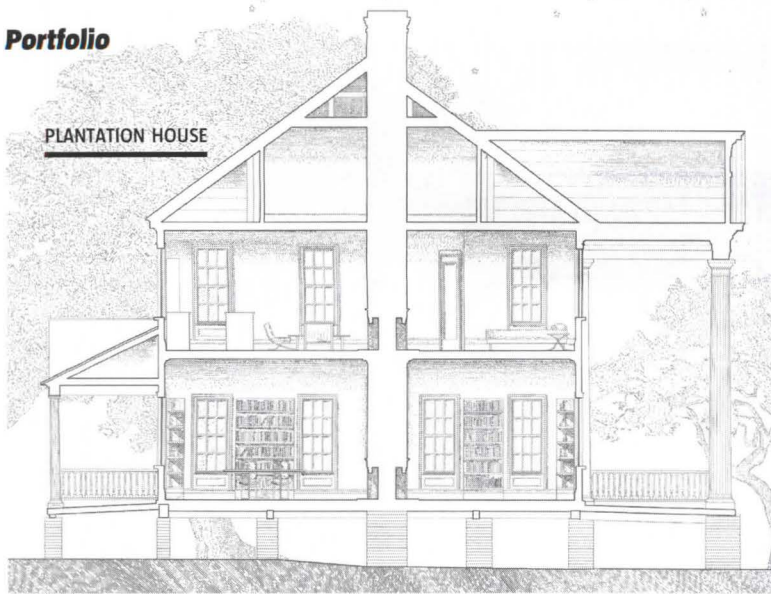
The University of Miami students proposed that ACBA students would use their expertise to preserve McLeod's historic buildings and construct new ones, modeled on the Carolina vernacular, on the southern

edge of the property's fields. Six original slave cabins would open as museums to the public. Restored fields and gardens would recall the agricultural history of the region with live crops. Restoring the path to the main house would reestablish the original main entry to the property. New workshops would resemble barns, but with a steel frame (to meet seismic and hurricane requirements), corrugated aluminum, and glass. Parking lots now on the west side of the property would become McLeod Village, a New Urbanist community with a historic character similar to downtown Charleston.

It's uncertain whether much from the students' plan will get built, given the sensitive nature of the site and the strong preservation culture in Charleston. "There are a lot of people who love McLeod Plantation just the way it is, and they don't want to see anything happen to it," says Robert Miller, one of the architects working on developing the site with the college. He admits the controversy sounds strange, given the college's preservation mission. "People from all around the country would have a hard time understanding the peculiarities of the preservation culture in Charleston," says Miller.

ACBA purchased McLeod Plantation in 2004, after the McLeod family bequeathed it to the Historic Charleston

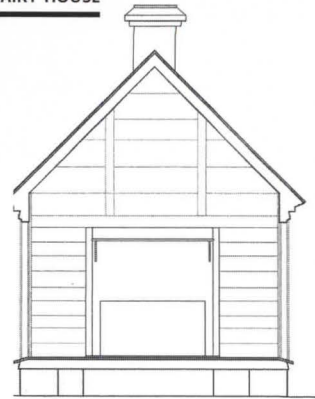




PLANTATION HOUSE



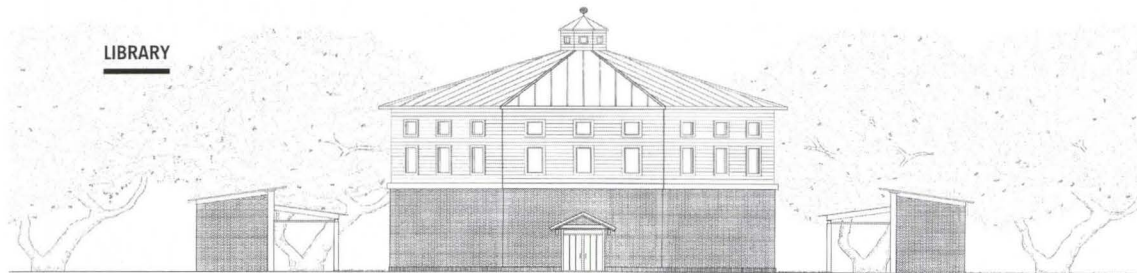
DAIRY HOUSE



The main plantation house was updated in the 1920s, but the University of Miami plan calls for the building to be retrofitted and the historical details restored. Ultimately, it would be used to house a library, archival storage, and a caretaker's apartment.

An early 19th century passive cooling system keeps the original 12-foot-by-25-foot dairy cool and tranquil. The eastern half of the building sits on piers, while the western half is built over a root cellar.

Inspired by octagonal barn types found throughout the South, the proposed library is similar to the plantation's main house in scale but would appear smaller due to a lower ground elevation. A brick base transitions to wood, separated by a masonry lintel, to reflect the trades of the school; likewise, each trade occupies one wall of the library inside.



LIBRARY



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**REGENCY**  
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Foundation. Surviving from the 19th century are the six slave cabins, a burial ground for former slaves, farm buildings, a main house that was updated in the 1920s, and landscaped gardens. Despite the site's intact historic buildings, the Historic Charleston Foundation deemed it unsuitable for use as a public museum, in part because of its incongruous surroundings: on one side is Wappoo Creek, but on the others are a country club, busy Folley Road, a strip mall, and the parking lot of a Piggly Wiggly grocery store.

The U. Miami students were drawn to McLeod Plantation by their studio professor, Joanna Lombard, who heard about ACBA's expansion plans from her former student William Bates, now a professor of architectural drawing and design at the college. The U. Miami students started their project two years ago by visiting McLeod, on their own dime, and documenting existing conditions. "You try to tell a story with a map," says Lombard, who led the project. "It's not just showing you the site, it's showing you what happens when you cross the creek." Lombard estimates that, if the drawings had been done by an office, billable hours would hover around \$100,000.

"This is a beautiful plan, but the goal is never for this college to be huge," says Bates. In fact, since 2006, ACBA has decided to locate only part of its campus at McLeod Plantation. "Because it's a historic site, we're not going to impact it that much," says Warren, adding that the students' plan has "allowed us to see the possibilities."

In the year ahead, Miller and architect Glenn Keyes will be developing a master plan for the site, to be followed by public discussion through the Board of Architectural Review in Charleston. After that, the college will enter a capital campaign to raise about \$20 million. "That will probably take five, 10, maybe even 20 years," says Warren. ☼

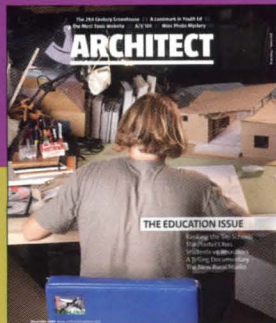


# ARCHITECT

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“There are so many avenues to get the take on what’s happening on the coasts. We’ve got a chip on our shoulders being inland. We’re not represented in the manner we should be. ARCHITECT has made itself relevant to my practice and the way my office operates.”

**BRYAN SCHMIDT, Semple Brown Design**  
Teacher. Student. Architect.







Text Katie Gerfen Jury Portraits Mike Morgan

# ARCHITECTURE HAS EVOLVED, AND SO DO WE. FROM THE WINNERS OF OUR SECOND ANNUAL R+D AWARDS, WITHOUT A FAÇADE THAT BREATHES, A RECYCLING NETWORK BASED ON THE HUMAN INTESTINAL TRACT, AN EXTERIOR LIGHTING SYSTEM INSPIRED BY PHOTOSYNTHESIS, AND OTHER SUCH WONDERS. IF INDUSTRY DROVE THE ARCHITECTURAL TECHNOLOGY OF THE LATE 19TH AND 20TH CENTURIES, BIOMIMETICS SEEMS THE ORDER OF THIS DAY AND AGE.

The jurors began the selection process with a discussion of what the criteria should be. They decided that the ideal entry should offer both a compelling hypothesis and research that led to an equally compelling answer. Sounds simple, and suitably scientific. But so many of the entries asked such provocative questions, and provided such provocative answers, that, in the fever of discussion, some of the jury members nearly missed their flights home. At the end of the day, five entries emerged as award-winners and four projects as citation-winners. All nine demonstrate that architectural technology is alive and well—and evolving in remarkable ways.







→ AWARD

## DRAPE WALL / CLOAK WALL

Two discrete wall systems based on the same concept of modularity, Drape Wall and Cloak Wall both provide alternatives to stick construction for single-family homes.

Drape Wall features a system of vacuum-formed plastic bricks that snap together on an aluminum frame to form a building's exterior shell. Some bricks are opaque and others are perforated to serve as windows and to allow ventilation. On the interior, the exposed aluminum frame is covered with a quilt or drape that serves as insulation. The quilt incorporates a layer of waterproofing and a layer of insulation that also manages acoustics. Flaps can be opened and closed to expose the perforated bricks, allowing natural light and air to enter the space.

A newer exterior wall system, Cloak Wall, expands on the principles of Drape Wall. Instead of using framing for support, the bricks of Cloak Wall are held in place by compression forces from a system of tightened wires. When a structure is built using Cloak Wall, bricks can be set in place to permit larger or smaller window openings depending on the climate. Once the position is set, bricks are clamped to the foundation by a system of tension cables. The exterior is painted with automotive paint that shifts hue depending on the angle of the sun, regulating heat absorption and therefore interior temperature. In Cloak Wall, the waterproofing barrier is a separate layer of ETFE plastic that is installed between the bricks and the quilt. The quilt itself is expanded to integrate lighting fixtures and storage pockets.

The jury appreciated the comprehensiveness of the research, and the original approach of designers Marc Swackhamer and Blair Satterfield of HouMinn Practice. "I found it very fascinating," Andres Lepik said. "I like this idea of redefining a wall system—not just make it better, but rethink it completely." Blaine Brownell praised the integration of interior systems into the quilt. "It would be interesting to see in future iterations how it plays out with further integration of these layers," he said. "It seems fairly resource-intensive still, but I like the tactility."

### PROJECT Drape Wall/Cloak Wall

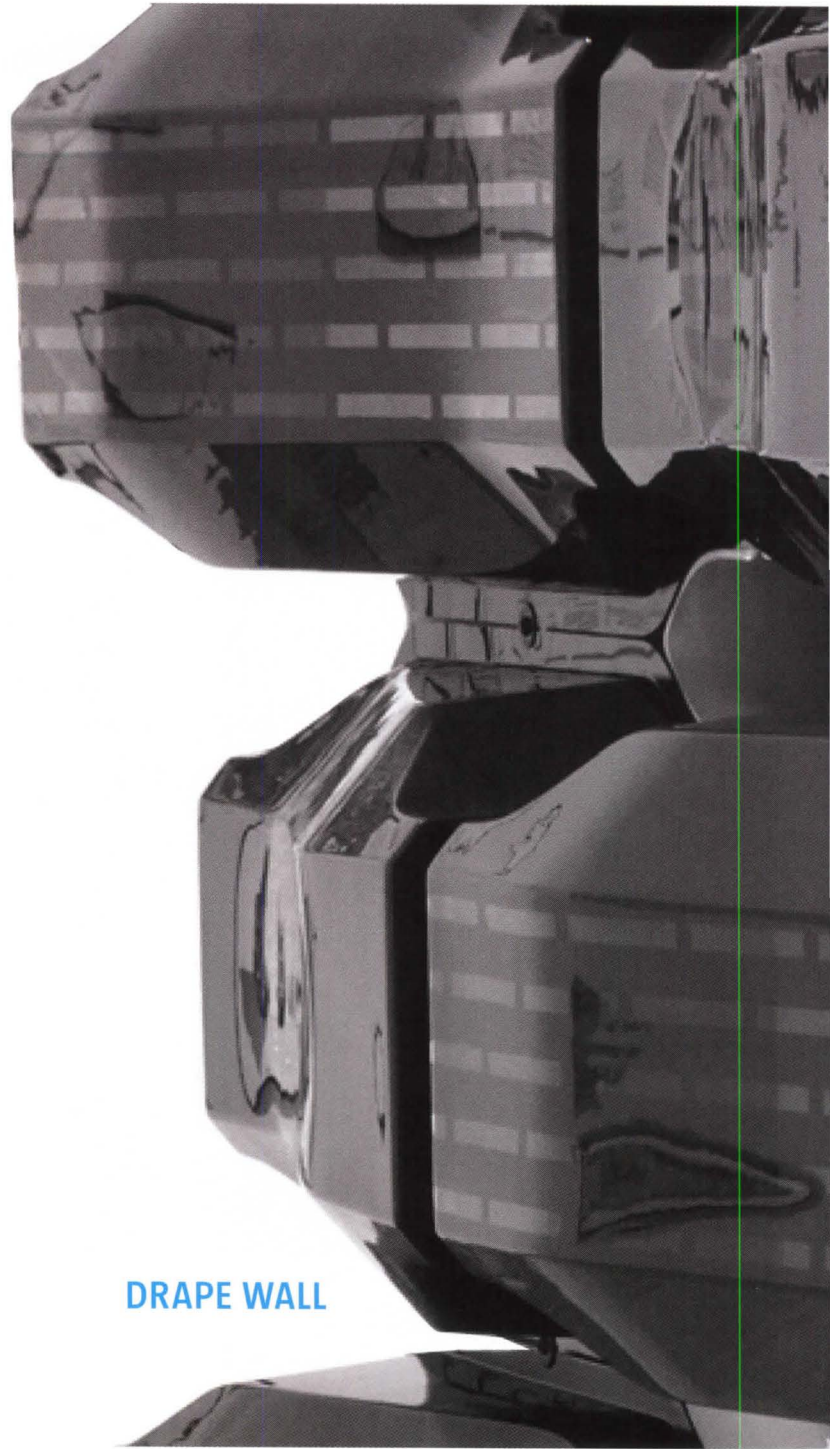
**ARCHITECT** HouMinn Practice, Houston and Minneapolis—Marc Swackhamer, Blair Satterfield

**PAINT RESEARCH** University of Minnesota—Gary Meyer (associate professor, computer science and engineering); Seth Berrier (research assistant)

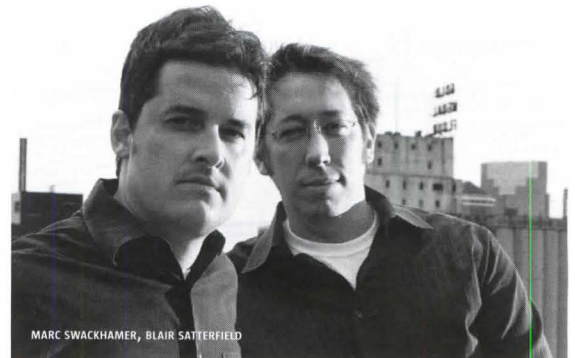
**DESIGN CRITICISM** Marcus Martinez; Patrick McGlothlin; Aidlin Darling Design—Adam Rouse; University of Cincinnati—Karl Wallick

**PROTOTYPE PRODUCTION** University of Minnesota—Dave Hultman; Mathew Haller (research assistant); Terrazign—Susanna Hohmann; Industrial Art and Design—Rob Tickle; Boston Scientific CRM—David Wulfman (principal engineer); Cranbrook Academy—Antonio Rodriguez; Loom Studio—Don Vu

**SPONSORSHIP** Dayton Hudson Faculty Fellowship; Metropolitan Design Center, University of Minnesota; Weisman Art Museum; Digital Design Consortium, University of Minnesota; Goldstein Museum of Design; Dupont Performance Coatings



DRAPE WALL

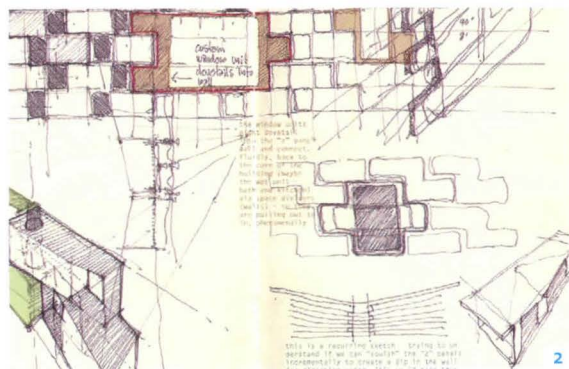


MARC SWACKHAMER, BLAIR SATTERFIELD

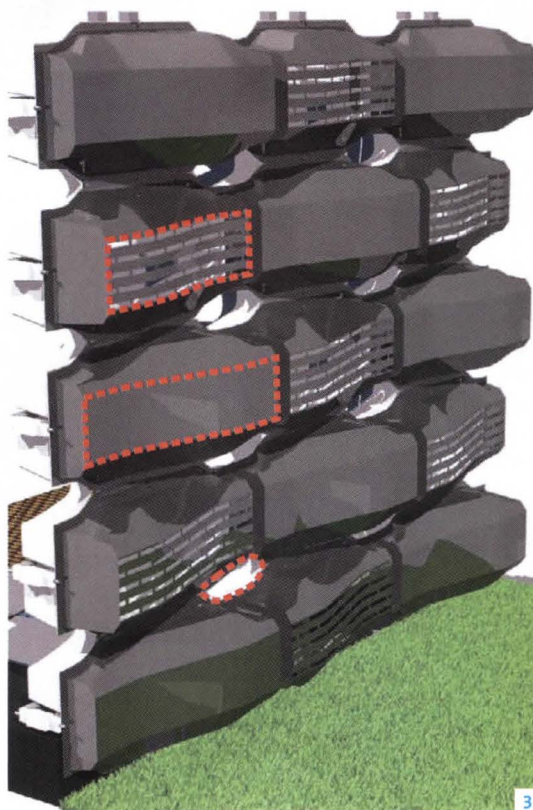




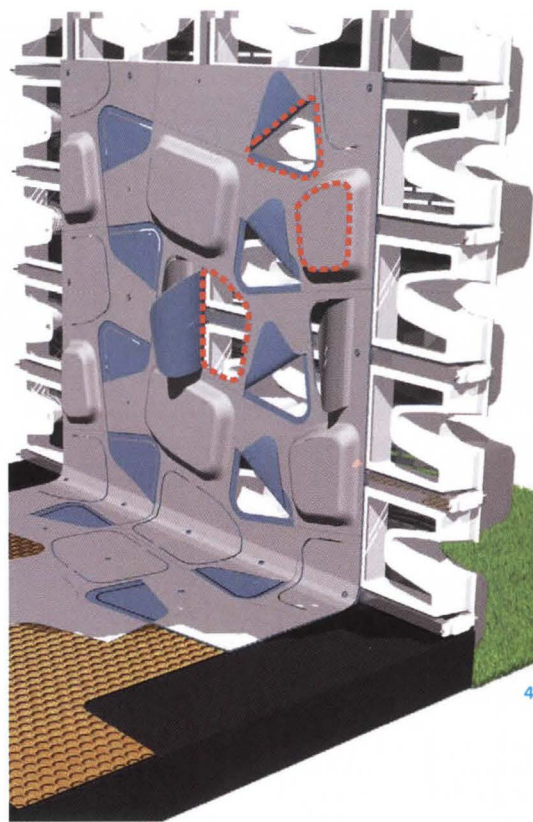
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1. In the Draper Wall system, vacuum-formed plastic bricks snap together on an aluminum frame, creating the rainscreen exterior of this housing prototype.

2. Preliminary sketches document the initial attempts to turn the Draper Wall concept into a comprehensive design for a single-family house.

3. In the final Draper Wall system, some bricks are perforated, serving as windows. These perforated bricks allow controlled airflow into the space and views from the interior.

4. A felt "draper" layer lines the interior surface of the wall system. It is backed with a blue layer of waterproofing to weatherproof the house (the exterior bricks serve only as a rainscreen). Insulating felt forms storage pockets and can be pulled aside to allow access to the "windows"—perforations in some exterior bricks.

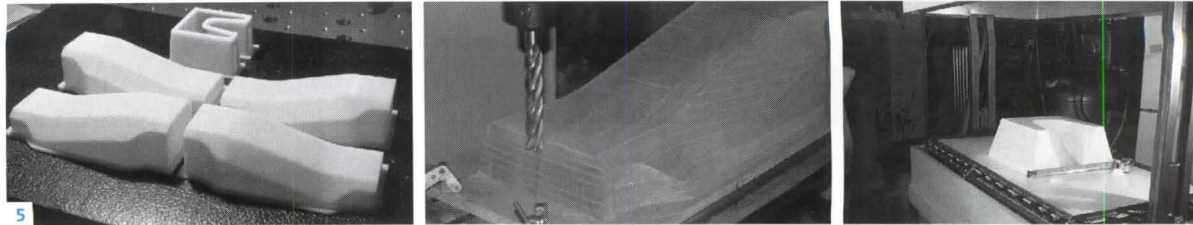


# R+D

5. Drape Wall bricks are vacuum-molded over milled forms that correspond to every brick configuration available.

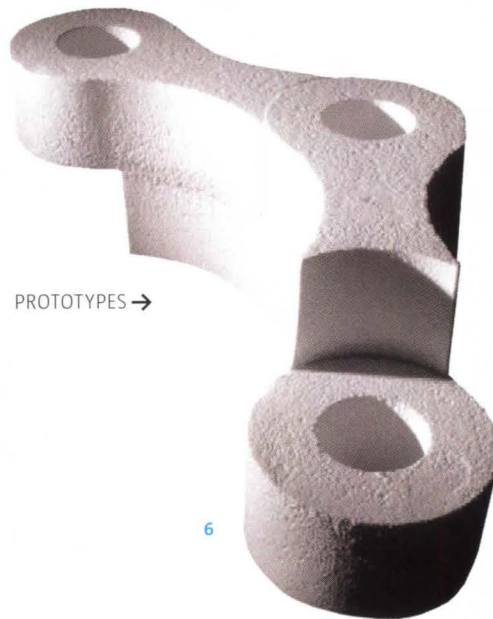
6-7. The Drape Wall system is being continuously refined, and new brick prototypes are being manufactured for testing. One option (6) is engineered for greater flexibility in overall house design, using circular forms to allow bricks to interlock at 10, 45, and 90 degrees. Another prototype (7), based on research by mechanical engineering students, provides for flexible spacing of the bricks, permitting more or less ventilation as climate conditions in different areas dictate. This latter system is the driver for the design of a full-scale installation called the Drape House.

8. Preliminary sketches (left) for the felt drape system have been manufactured into large-scale mock-ups (right). There are voids in the felt to give access to the blue vapor barrier, and zippered pockets so that residents can actively use the surface for storage.



5

MANUFACTURING ↑

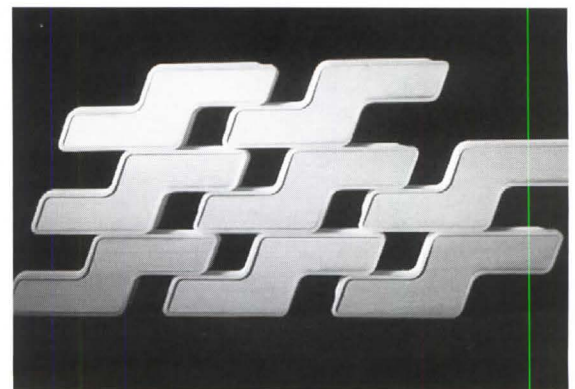
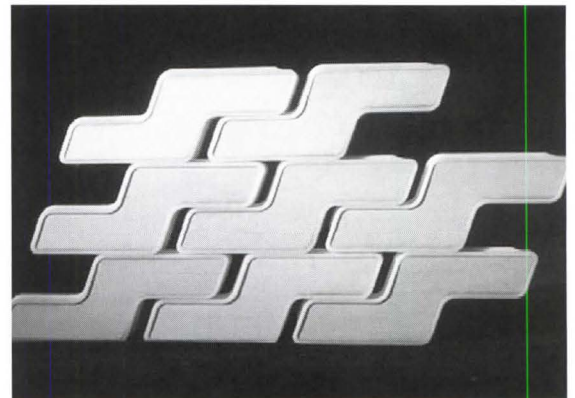
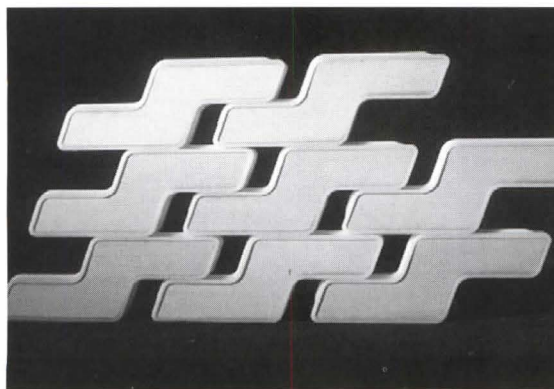
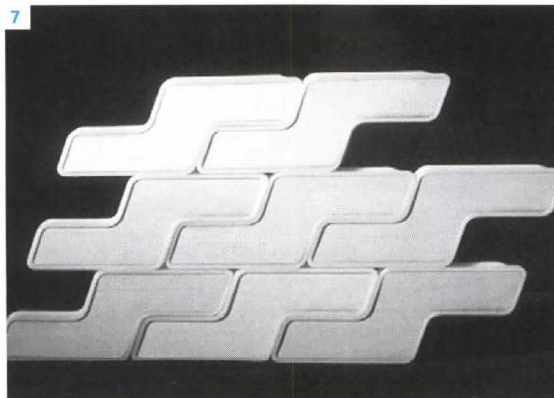


PROTOTYPES →

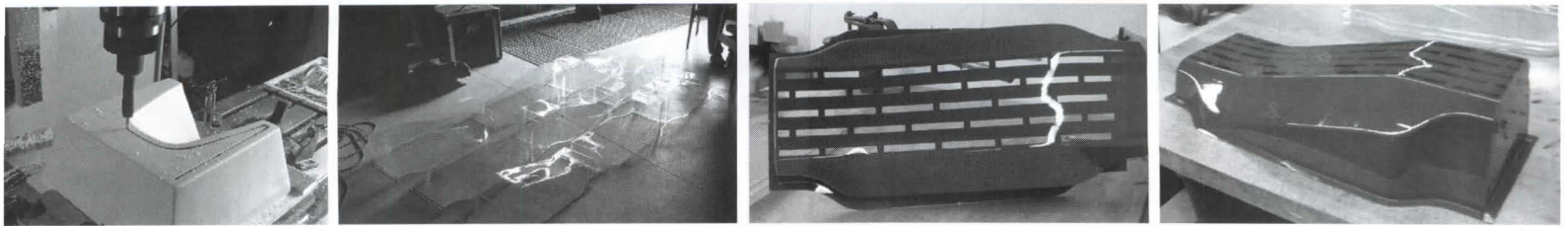
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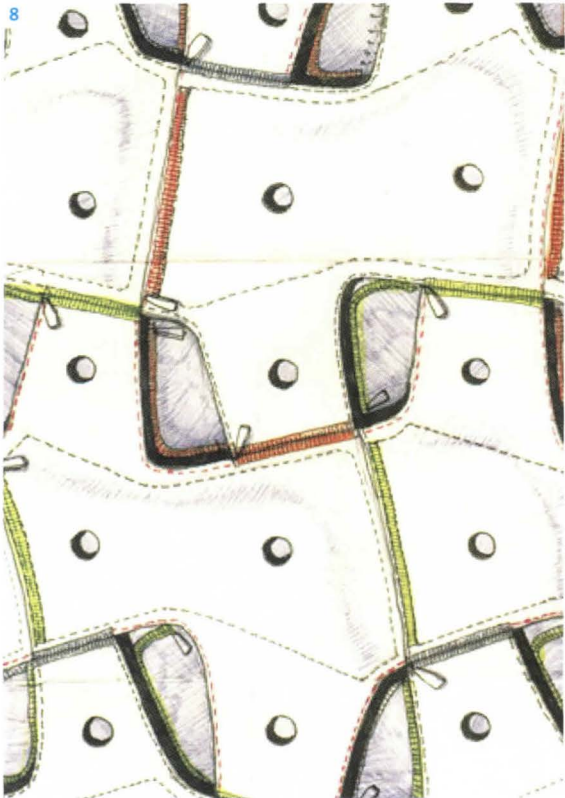
PROTOTYPES ↓







INTERIOR FELT "DRAPE" ↓





# R+D

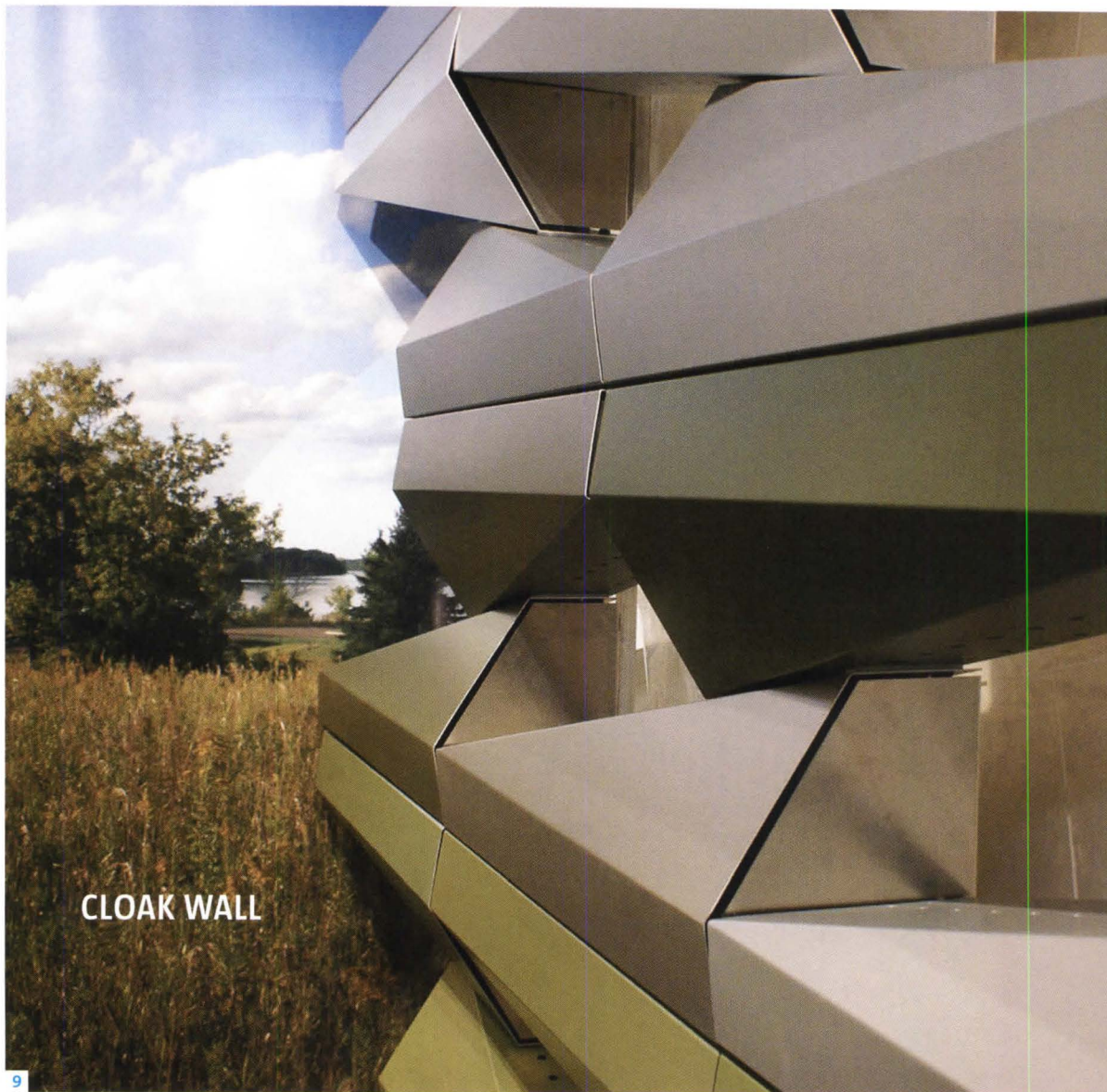
**9.** Created as part of the Goldstein Museum of Design's Here by Design III exhibition, the Cloak Wall system includes several advancements over Drape Wall, including discrete window openings. The bricks are held together by compression as opposed to being locked to a separate aluminum frame.

**10-11.** The insulating felt quilt lining the interior surface of Cloak Wall has a separate ETFE plastic waterproofing barrier that is hung behind the felt.

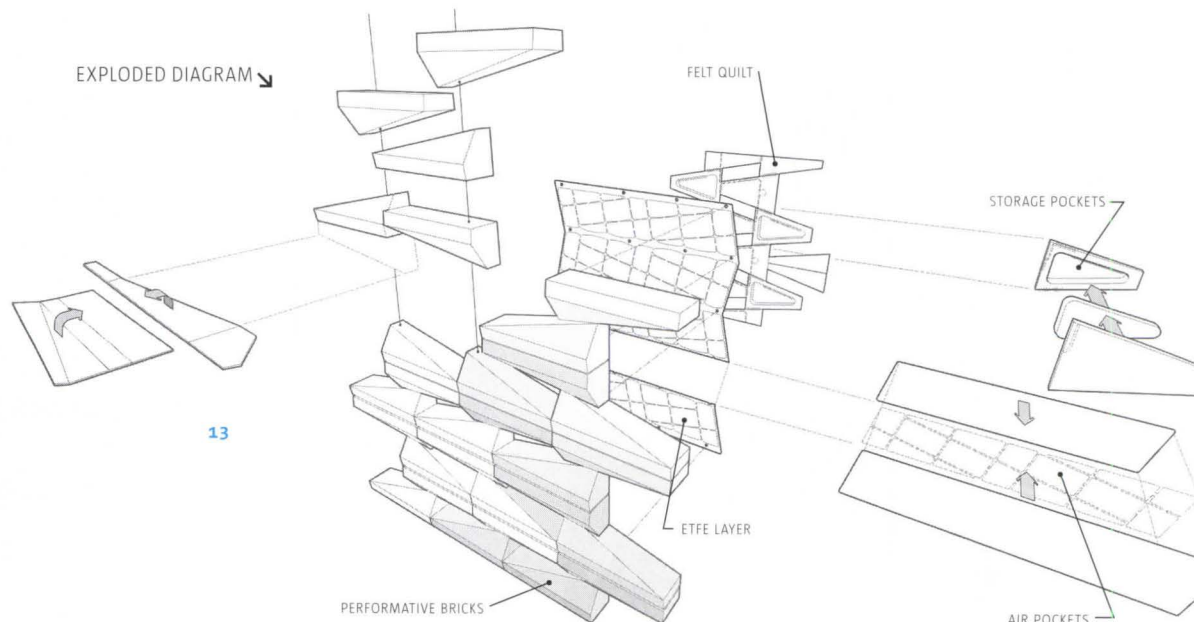
**12.** In addition to storage pockets, the felt quilt in Cloak Wall incorporates systems such as LED lights and wires for radiant heating and cooling, making it a much more active part of the interior environment than previous iterations were.

**13.** Three main layers—performative bricks, ETFE waterproofing, and felt quilt—form the wall structure, but each can be tweaked to customize a home for a specific environment. For example, air pockets in the ETFE layer can be filled to increase or decrease insulation as ambient temperatures dictate.

**14.** Cloak Wall uses a high-performance automotive paint on the exterior, which gives the appearance of changing colors as light angles shift season to season. When the sun's light is at a low angle or dim, the paint appears darker, soaking up and trapping more heat. During summer months when the sun is higher, the paint appears lighter, reflecting heat to keep the house cool.



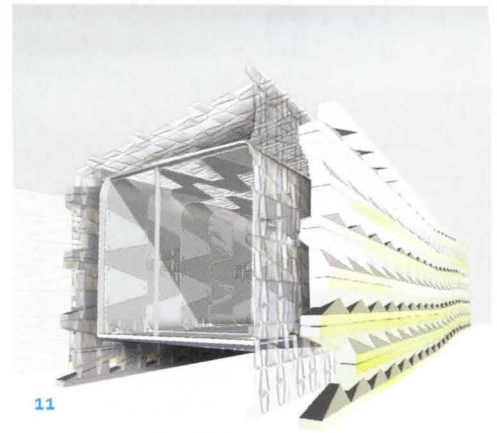
CLOAK WALL



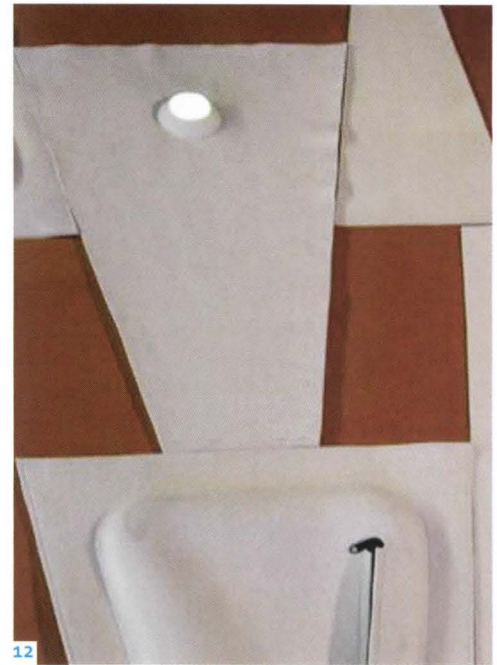




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12



14



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#bbc0c6	#4e5011	#5b81bf	#b0bcc4	#50990d

ELEVATION COLOR STUDY ↑



→ AWARD

## A SURFACE OF POINTS

In past projects, Eric Owen Moss has used fields of glass rods emerging from the ground as a means of organizing space and influencing pedestrian movement. These rods, when installed over a skylight, provided visual interest to the ceiling plane of subterranean spaces. Taking the concept a step further, the architect explored using the glass rods not just for their formal properties, but as structural components. The result is A Surface of Points, a system of deep cable trusses that incorporate glass tubes as compression members. The concept was proposed for the Smithsonian Institution Patent Office Building in Washington, D.C., and is appearing in two projects: the Nike Los Angeles offices at 3505 Hayden Avenue and 8511 Warner Drive, also in Los Angeles.

The system involves a base of steel truss frames within a boxlike enclosure. Steel cables are hung between the truss frames, approximating the surface plane of the ceiling. The cylinders, formed from ½-inch-thick laminated glass, are installed and threaded on the cables, forming the compression members of the deep cable trusses.

Depending on whether a skylight or an opaque ceiling is installed above the truss system, natural or artificial light can be constantly refracted through the glass rods. The tubes also have acoustical properties, which can be adapted by varying the length of the tubes in accordance with the natural acoustics of the room. Sound travels and diffuses in the spaces between and within the tubes, or can be reflected by the use of a plug in the bottom of the tube.

"I thought it was really interesting to invert the idea of a truss and make things that are fragile and brittle into things that are load-bearing and spanning," says Chris Genik. "The notion of a glass truss, in its capacity to be an acoustical environment and a light environment, reaches a higher plane," he adds. "I think it's a really extraordinary project and a vision of how to coerce structure into something which is also producing something for the building as a shell, a kind of container."

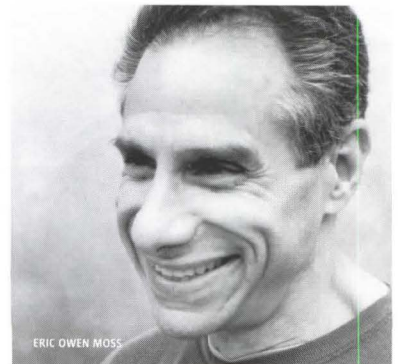


1

### PROJECT A Surface of Points

**ARCHITECT** Eric Owen Moss Architects, Culver City, Calif.—Eric Owen Moss, Dolan Daggett, Eric McNevin, Kyoung Kim, Grit Leipert, Jose Herrasti, Tom Raymont, Scott Nakao, Andrew Wolff, Fausto Nunes, Vanessa Jauregui, Herbert Ng, Ren Huang (project team)

**CONSULTANTS** Arup-NY—Neil McClelland (Smithsonian); Englekirk Structural Engineers—Bill Wallace (3505 Hayden Avenue Glass Courtyard)



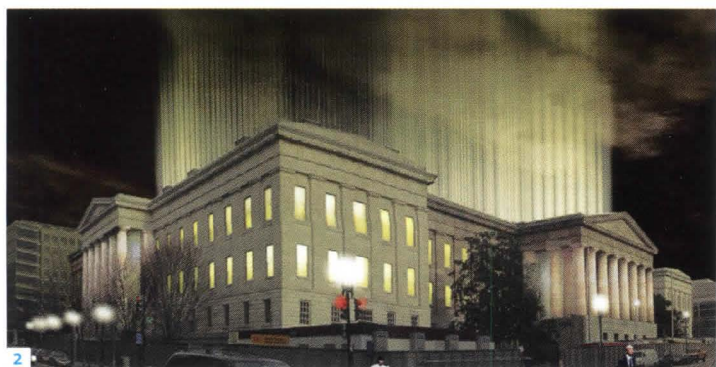
ERIC OWEN MOSS



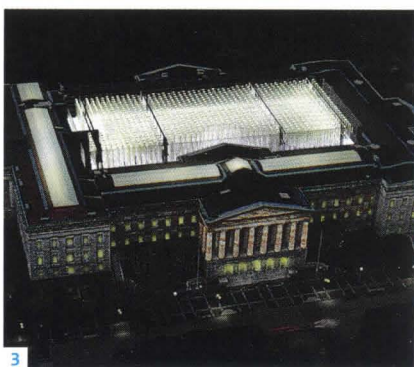


**1.** A rendering of the courtyard at Nike's Los Angeles offices demonstrates how sunlight coming through a glass atrium and through the glass tubes will illuminate the enclosed space while adding a texturizing shadow pattern to the environment.

**2-3.** With proper lighting from the interior, the proposed installation at the Smithsonian Institution Patent Office Building (which houses the National Portrait Gallery) would have created striking visual effects as the light went through each individual glass rod in the truss system. The Smithsonian competition was won by Norman Foster.

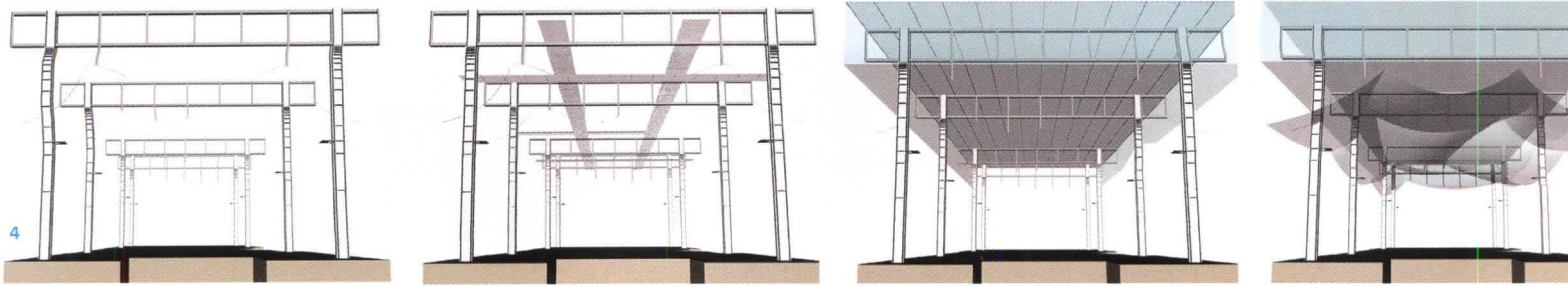


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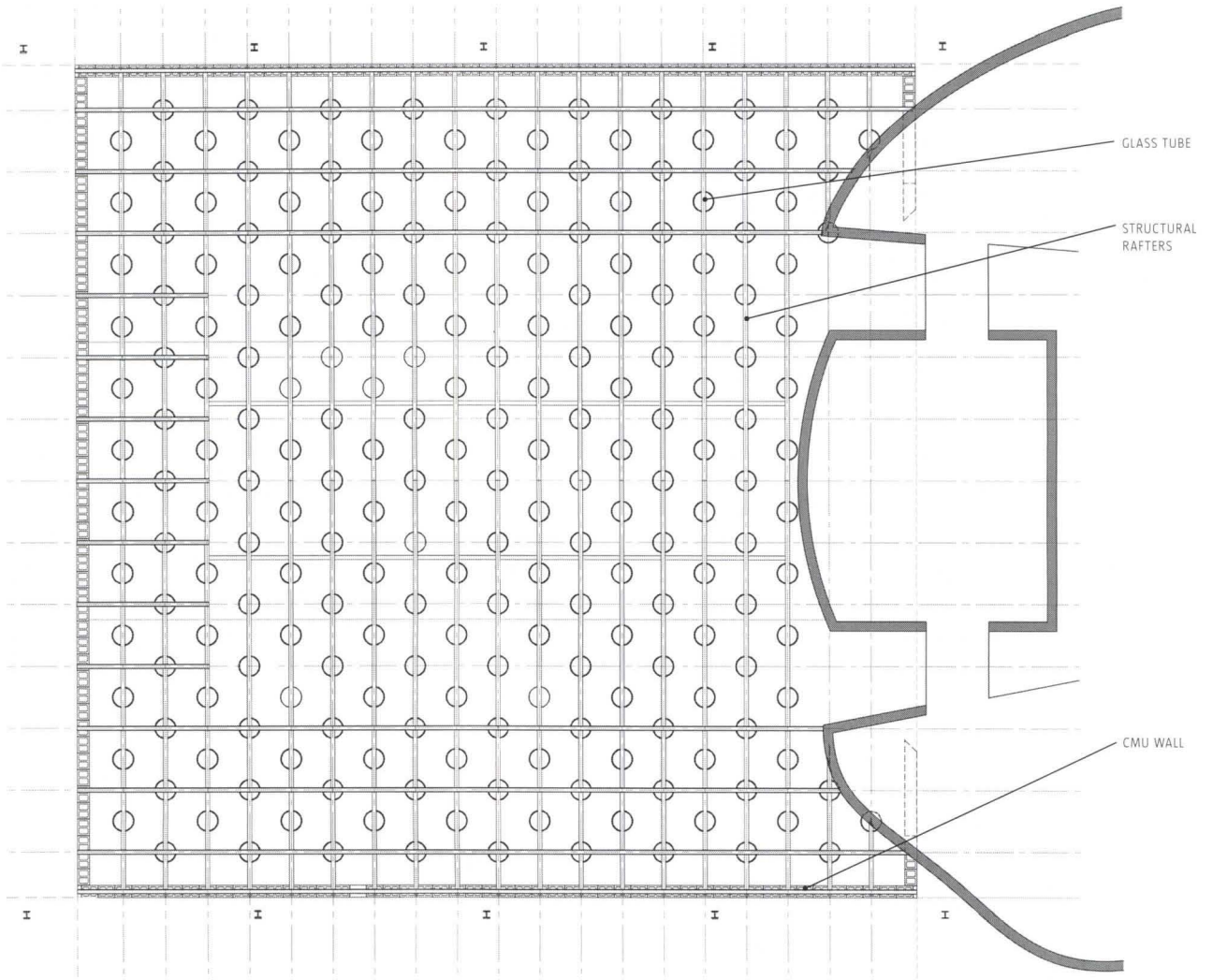
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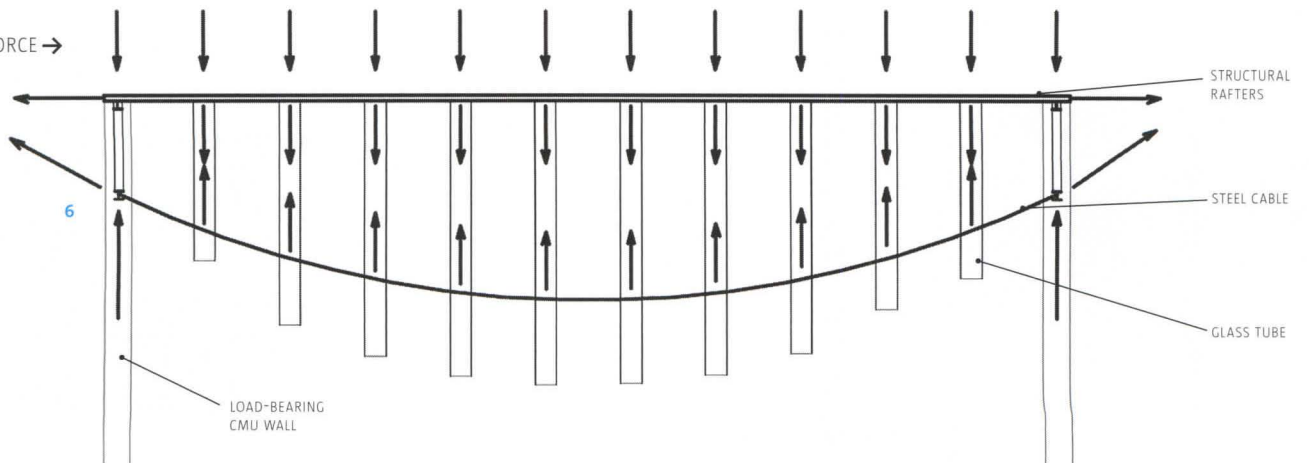


4  
PROGRESSION OF  
INSTALLATION ↑

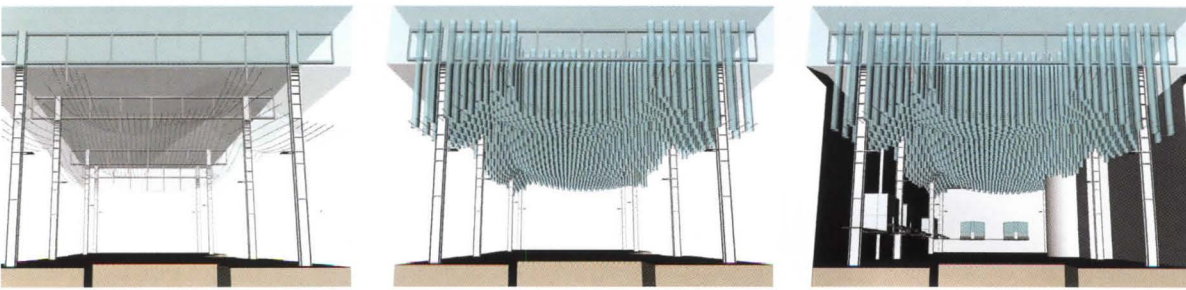
LAYOUT OF GLASS  
TUBE GRID →



6  
COMPRESSION FORCE →







GLASS TUBE STRUT

7

BRACKET

INTERNAL STAINLESS  
STEEL COLLAR

STRUCTURAL RAFTER

9/16-INCH LAMINATED  
GLASS CYLINDER5/8-INCH STAINLESS  
STEEL CABLE

4. The system devised for the Smithsonian Institution Patent Office Building would be erected in stages, beginning with a base structure of linear steel truss frames topped with service catwalks. A glass box enclosure would go up next, and the acoustics in the room would be tested to determine the undulating pattern created by tubes of different lengths. Steel cables are then hung to approximate the surface of the ceiling and to provide points of connection for the suspended rods. The tubes are then hung to form the deep cable truss system, and, finally, second-floor galleries are projected into the space to allow spectators to watch events below.

5. The truss system relies on the rods being placed in a grid pattern, such as this one at Nike's Los Angeles offices on Hayden Avenue. The pattern allows the tubes to absorb the necessary compressive force, but offsetting each row also allows for a fuller visual field.

6. Each tube serves as a compression member for the truss system, with compressive forces moving downward from the structural steel rafters and upward from the steel cables that thread through the rows of tubes. The weight of the truss system is supported by load-bearing CMU walls.

7. The individual glass tubes have metal reinforcement around each attachment point, including the top where the tube connects to the structural rafter, and the point where the steel cable threads through the tube.



→ AWARD

# ARTIFICIAL LEAF

Set to be deployed as a nontraditional façade for the planned Hotel Forest in Barcelona, the Artificial Leaf is a draping system of light-emitting modules suspended on steel mesh. The scheme is based on the analogy that if a city is a forest, each building is a tree. Adding a net of individual modules is akin to putting leaves on the tree, and like an actual plant, these leaves both generate and expend energy by harnessing the energy of the sun.

Each module is a convex disk that is 12½ inches in diameter and just over 2 inches thick at the center. One side is made from translucent plastic and the other from clear glass. Contained in each disk is a small photovoltaic cell, a light sensor, a battery, and an RGB LED source. The modules are clipped to the steel mesh and are programmed in tandem to generate different color effects—mixing different intensities of red, green, and blue creates single- and multicolored lighting displays across the façade.

The jury was impressed by the goal of making a building's façade a dynamic part of the urban landscape, and in so doing engaging the public with the built environment. "It is a way of inducing a pretty boring building envelope to deliver something that was really spectacular for the city, in its capacity to react and respond to its urban context," said Chris Genik. "It seems like a layer of interaction that cities should become increasingly vested with."

The jury also saw the potential for other applications of the net, both as a renovation tool and as an energy-gathering device. "This is a fresh and potentially more playful way to clad buildings in adaptive reuse situations," said Blaine Brownell. "You're not constrained by the modules that currently exist or performance issues embedded within an existing skin. You can simply loosely drape something like fabric that not only performs for the building—or at least has that potential—but also can create this really interesting effect in public space." The hotel and its unconventional façade, both designed by Cloud 9, will open in 2010.

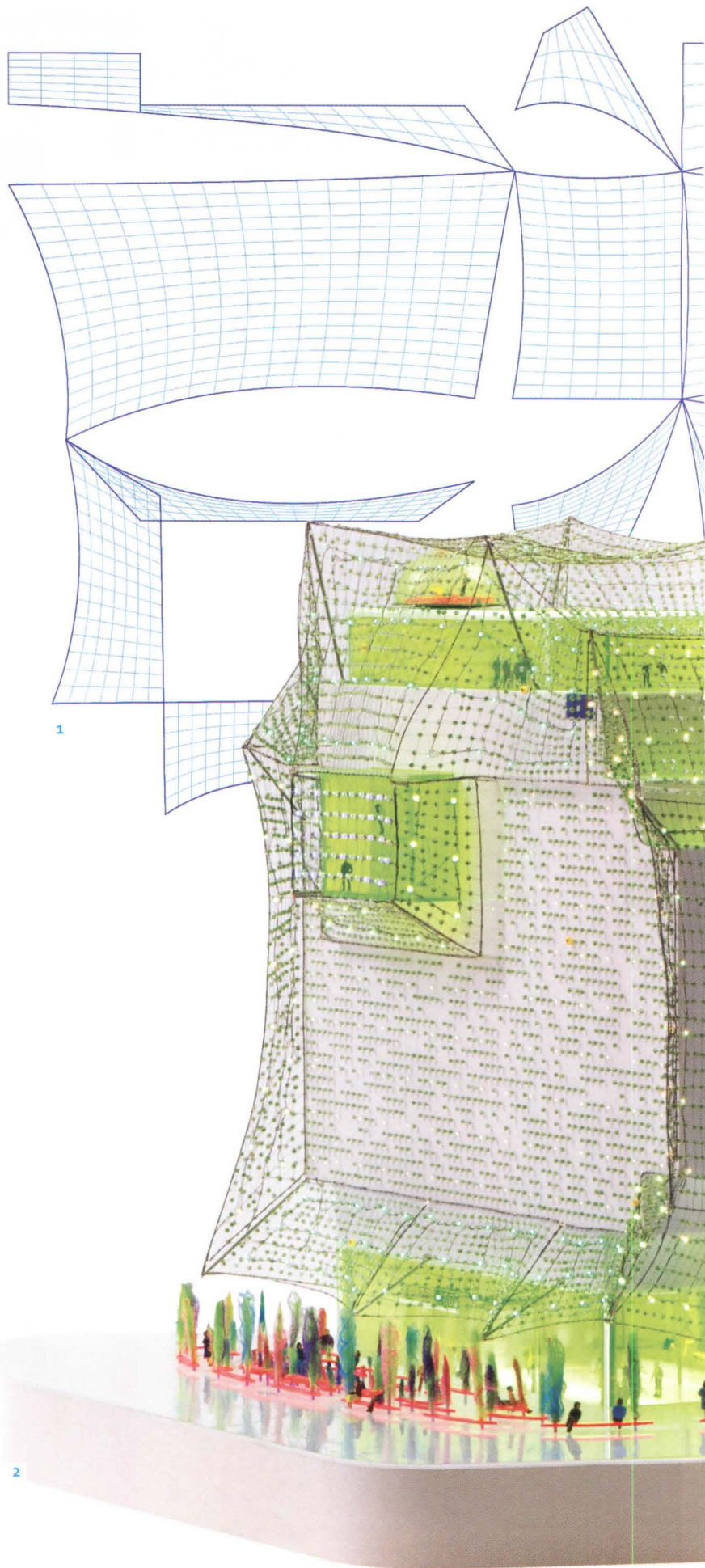
#### PROJECT Artificial Leaf

CLIENT Prestige Hotels, Roses, Spain—José Moyano, Juan Marull, José Maria Moyano, Ignacio Marull

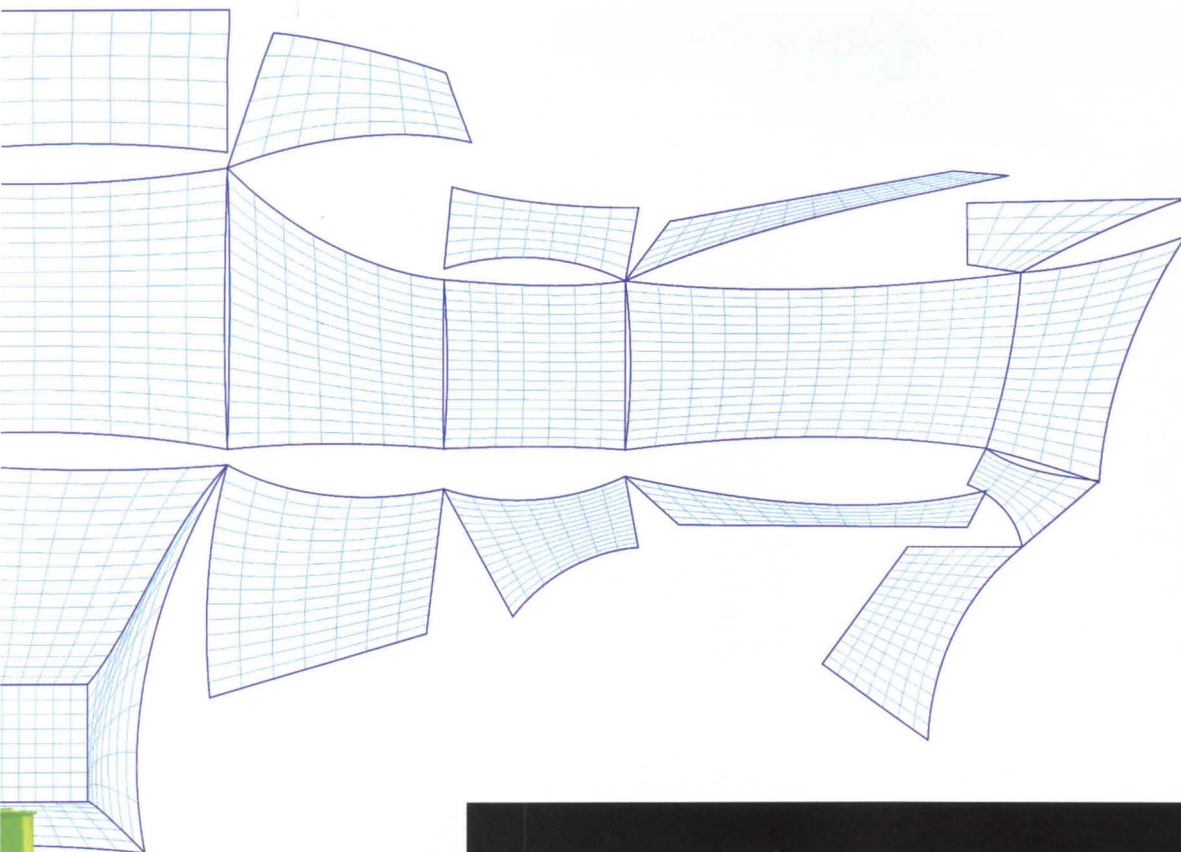
PROJECT LOCATION L'Hospitalet de Llobregat, Barcelona, Spain

ARCHITECT Enric Ruiz Geli/Cloud 9, Barcelona, Spain—Enric Ruiz Geli (principal architect); Max Zinnecker (project architect, Hotel Forest/ research and development for Artificial Leaf)

LIGHTING TECHNOLOGY iGuzzini Illuminazione—Adolfo Guzzini, Franco Nibaldi, Josep Masbernat, Alex Chiva, Massimo Gattari





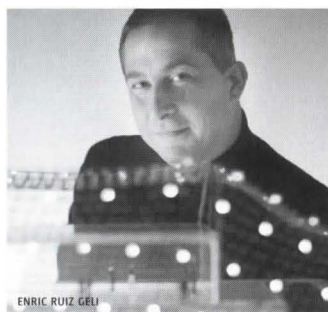


**1-2.** The pattern for the metal mesh net is tailored to fit the exact shape of the Hotel Forest in Barcelona, including terraces and outcroppings. The net has the appearance of being draped loosely, and extends farther out from the building as it nears street level, creating a canopy over pedestrians walking around the building's base.

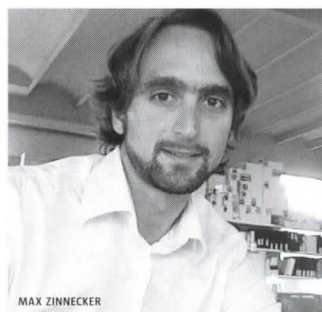
**3.** Individual leaf modules that contain PV cells to power LED sources are suspended on the net and glow at night. These modules can be programmed to emit different colors of light to create patterns on the surface. The result is a dynamic façade that engages the urban fabric surrounding it.



3

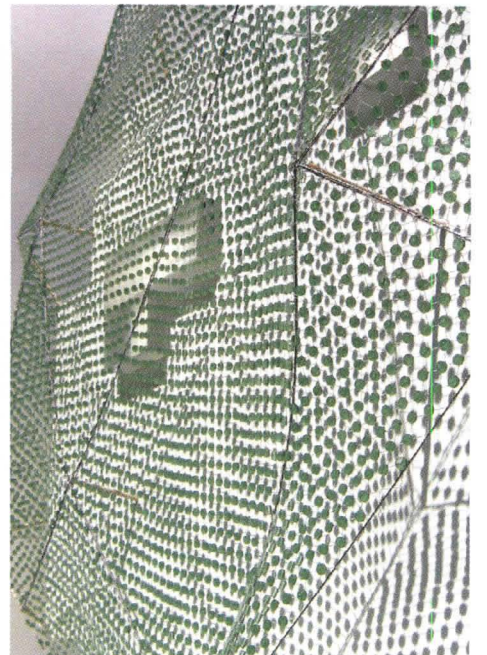
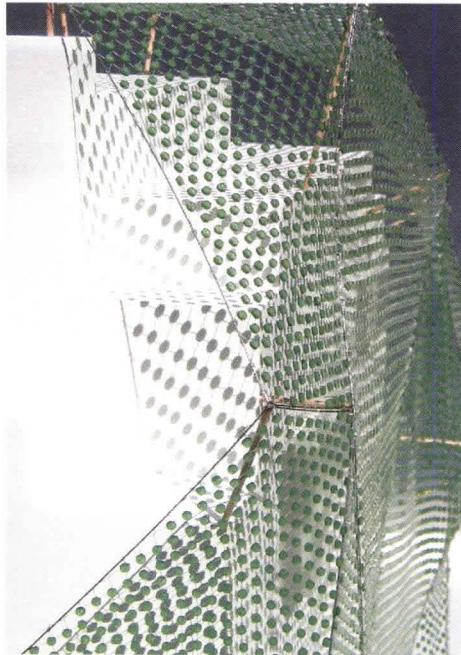
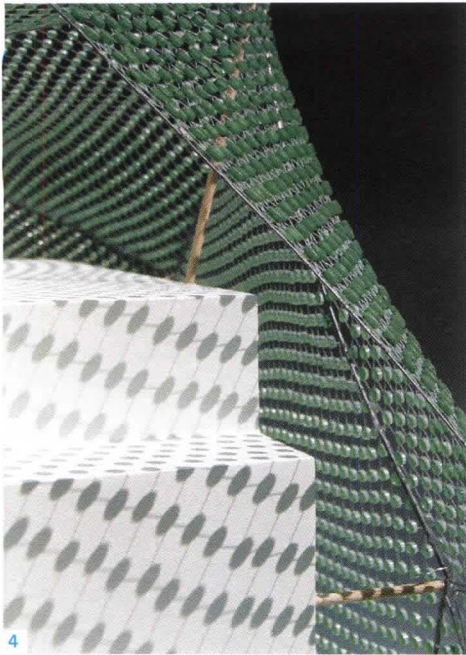


ENRIC RUIZ GELI



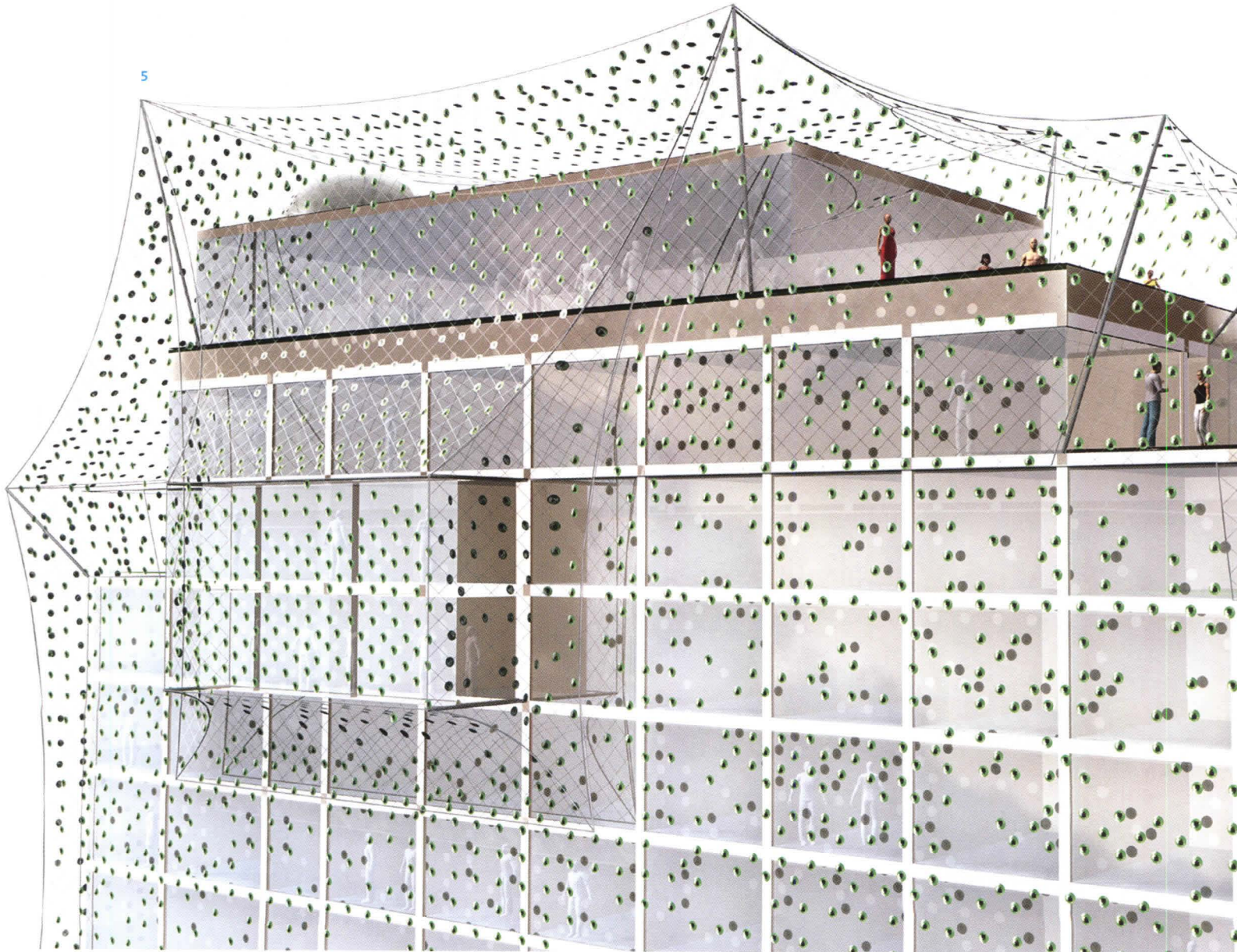
MAX ZINNECKER





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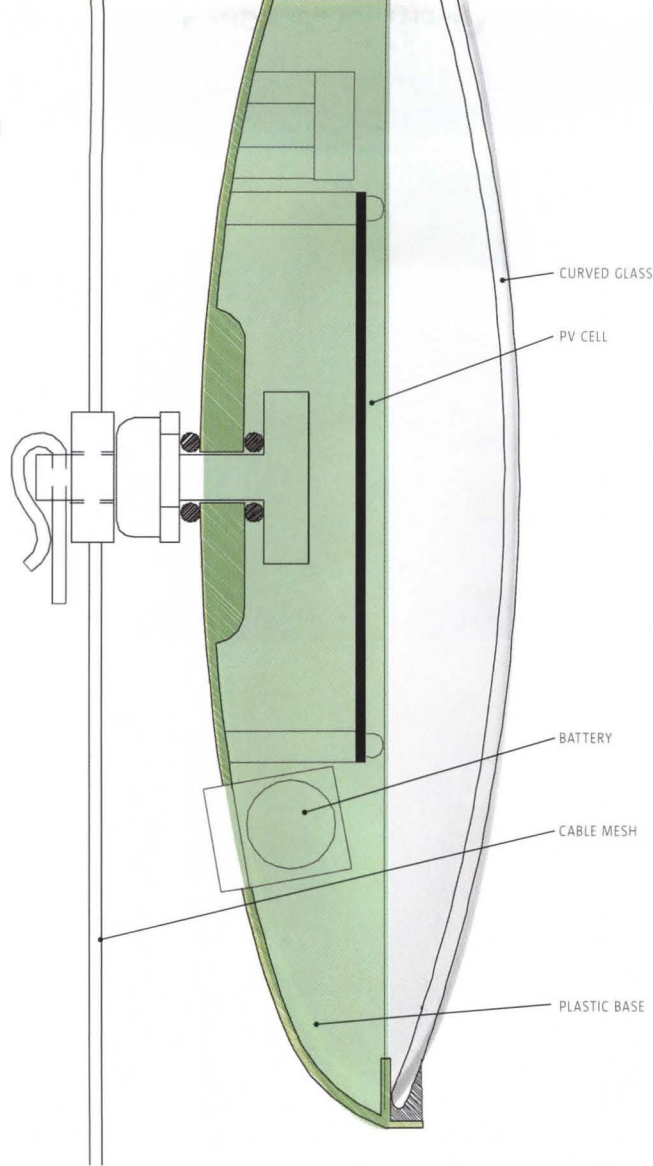
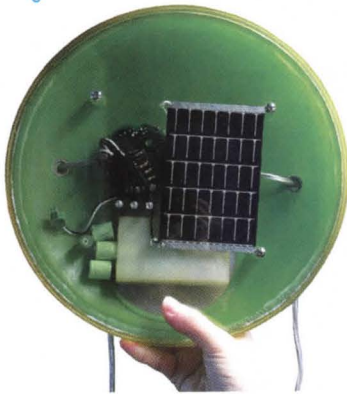




INDIVIDUAL LEAF UNIT ↓



6

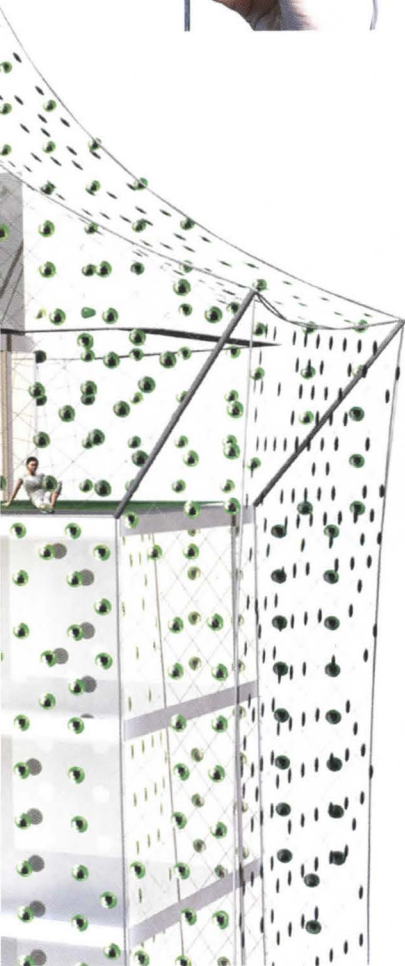
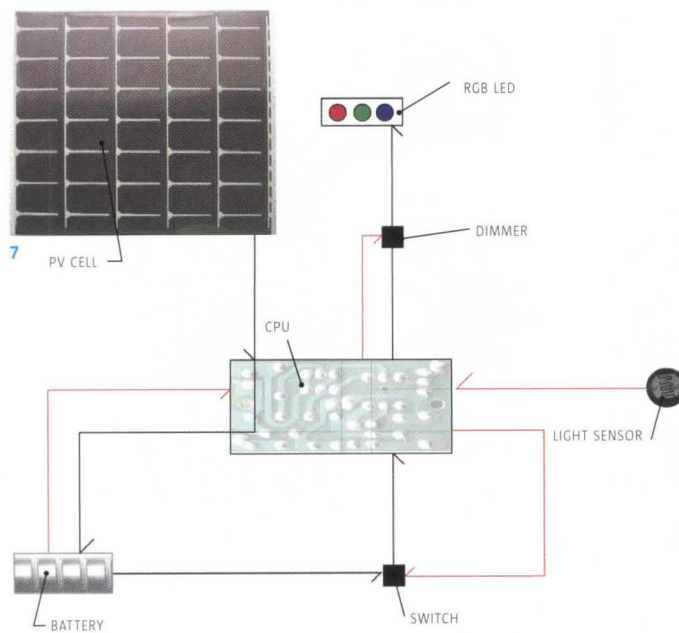


4-5. The net has an interesting visual effect on the building itself, creating filtered views from within and also superimposing a pattern of shadow across the building's surface during daylight hours. Balconies and outdoor areas are enveloped by the net as well, making the whole hotel exterior a unique layered environment.

6. Each leaf module is a convex disk with a plastic base and a clear glass face. The unit connects to the net with a simple clamp that is tightened to hold the module in place. The clear glass front allows sunlight to enter so the PV cell inside can generate power to fuel the leaf at night.

7. Each leaf is self-sufficient, with internal systems that include the PV cell and RGB LEDs that can be mixed to create different color combinations. A CPU can be programmed remotely to achieve desired color changes, and a light sensor determines when ambient light levels are low enough for the system to activate.

INTERNAL SYSTEMS ↓





1. The concept behind Living City is that a building—through a variety of sensors—can gather information about air quality, temperature, and other environmental factors, and then wirelessly share that information with other buildings on a dedicated network.

2-3. A lightweight, transparent building skin has gill-like openings that can close or open in response to the air quality of the surrounding environment, effectively allowing the building to breathe. A mockup (3) shows how the skin would appear in application, and contrasts alternating gilled panels with solid ones.

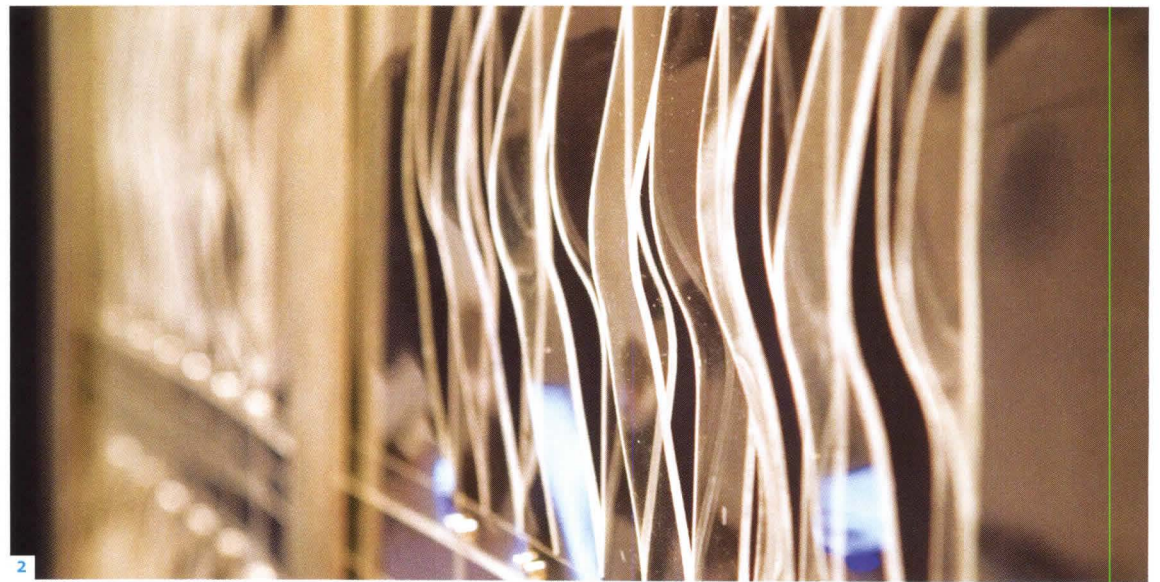
4. A control board was designed specifically to connect input data from the sensor network to the façade, and to control the pin mechanism that opens and closes the gills to permit or prevent airflow.

5. A sensor sits on the exterior window ledge gathering environmental air quality data while another sensor, uncovered, sits inside to monitor the interior air quality. The data are all routed to a software program that the team intends to publish so that others can create similar systems in other cities.

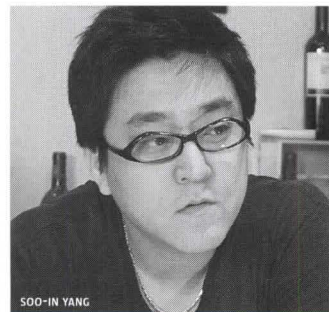
6. Depending on the location and planned duration of deployment, the input nodes or sensors have larger or smaller batteries and casings. This smaller version shows a sensor module connected to a radio module that transmits the collected data to computers and output nodes.



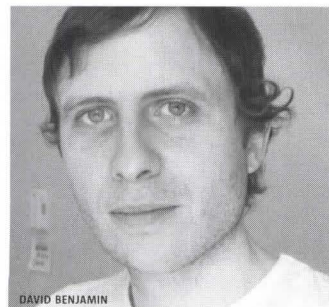
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2



SOO-IN YANG



DAVID BENJAMIN



3



→ AWARD

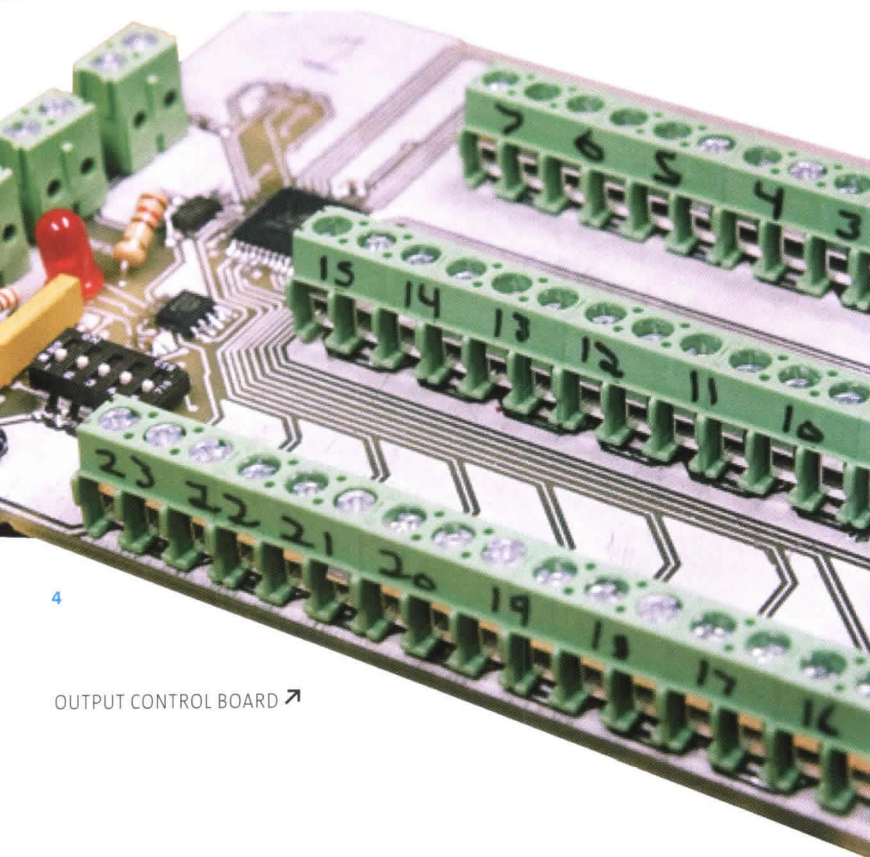
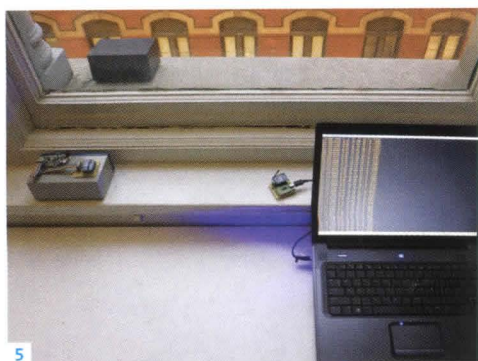
## LIVING CITY

Living City explores the notion that building façades and access to fresh air are the frontiers of public space in urban areas—that in the future, façades will belong to and serve residents as streets and parks do today. To that end, architects David Benjamin and Soo-in Yang believe that façades should be active: gathering, transmitting, and reacting to data about the surrounding environment, and dialoguing with other buildings to create a network of information. The team designed a system of sensors that can be easily mounted on a building exterior to gather information about carbon monoxide and nitrogen content in the air.

Prototype sensors were deployed on the Empire State Building and three other buildings in Manhattan to test their data-gathering and communication capacities. The next phase of the project involved getting the buildings to actually respond to the data. The team designed a prototype of façade louvers that can open or close depending on air quality readings, in effect allowing a building to breathe in reaction to environmental conditions.

The jury was taken by the project's initial premise, that air is public space. "It's the last public commodity that's available for some kind of uploading of design capacity, a sort of engagement by the public realm," Chris Genik said. "I thought that was insightful." Andres Lepik agreed: "I like the idea of buildings that communicate with each other. This is a stream of data and now these structures are starting to talk."

Genik thinks the idea should continue to be explored and developed. "The fact that it is open is what makes it a good kind of research," he said. "Not all the questions are solved, but there's a method in place. There's a set of assumptions that are being investigated. It has that kind of generosity that research should bring with it—it's not closing down opportunity."

4  
OUTPUT CONTROL BOARD ↗

5



6

## PROJECT Living City

ARCHITECT The Living, New York—David Benjamin, Soo-in Yang

SOFTWARE CONSULTANT Jason Cipriani

ELECTRICAL ENGINEERING CONSULTANTS Jesse Lackey, Todd Polenberg

WIRELESS COMMUNICATION CONSULTANT Robert Faludi

VIDEO ANIMATION Softlab—Mike Szivos, Jose Luis Gonzalez

With support from the Van Alen Institute New York Prize Fellowship, the Graham Foundation for Advanced Studies in the Fine Arts, and Dynalloy, Inc.

In association with the Living Architecture Lab at Columbia University Graduate School of Architecture, Planning and Preservation

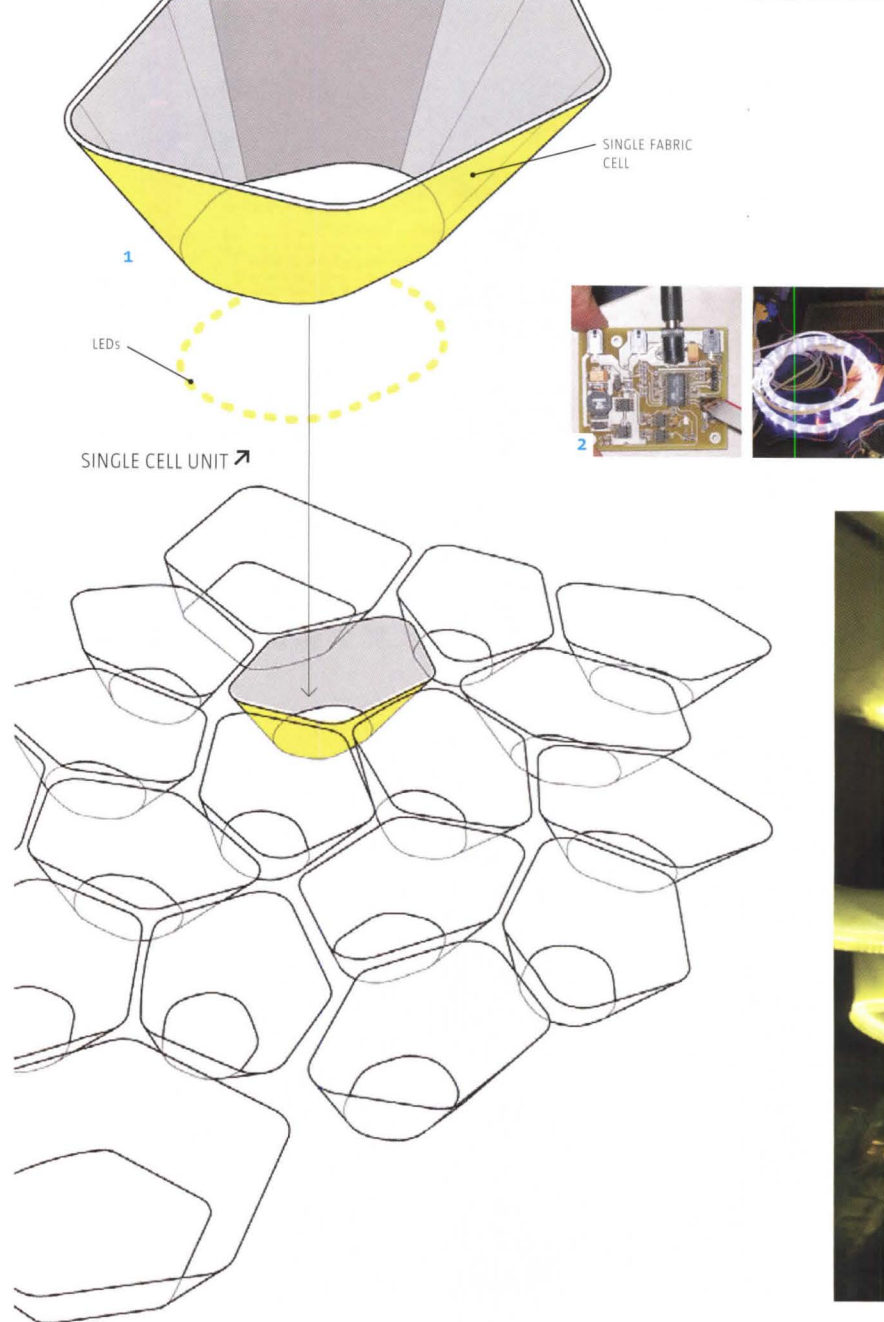


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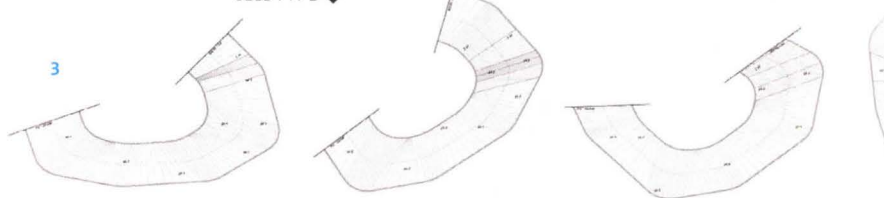
# HOVER

Designed as a temporary canopy for the DesCours festival, an annual weeklong celebration of design sponsored by AIA New Orleans, Hover is a luminous canopy featuring both LEDs and photovoltaic cells that power them. Höweler + Yoon designed Hover—an entirely off-the-grid construction—as a kit of parts that is easily scaled up or down to adapt to a variety of venues and increase the potential for future installations. Coated nylon ripstop fabric is stretched and framed into a form derived from a cell in the human body. Each unit is rimmed at the top with flexible photovoltaic cells that generate enough energy to power a rope of LEDs placed in the fabric around the base. These fabric units were manufactured in several sizes, carefully measured to allow for replicable multicell groupings that can be rotated and fit together to form the layout of the complete installation. The installation reacts directly to the surrounding environment, emitting more light on sunny days and less on cloudy days, a direct effect of the amount of energy absorbed and generated by the PV cells.

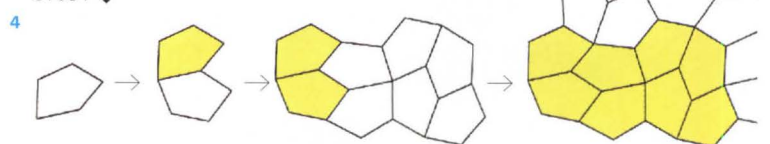
The jury remarked on how the project's formal and technical simplicity stimulates a larger dialogue about temporality and urban space. "It's something that can be very quickly installed and make a significant sort of presence for itself," Chris Genik said. "It's not a very deep project, but it taps into a number of different ideas about temporary places." Blaine Brownell, while concerned about the integration of the flexible PV cells with the fabric, appreciated the exploration of new material technologies: "I liked the fact that it attempted to be fairly hermetic in terms of supplying the solar cells using the latest technology and flexible films, as well as the lighting of the structure."



FABRIC PATTERNS FOR EACH CELL TYPE ↓



FOOTPRINT REPLICATION STUDY ↓



**PROJECT** Hover, New Orleans  
**SITE OWNER** Mari Kornhauser  
**CLIENT** DesCours, New Orleans  
**SPONSOR** AIA New Orleans—Melissa Urcan (executive director)  
**ARCHITECT** Höweler + Yoon Architecture, Boston—Eric Höweler, J. Meejin Yoon (principals); Meredith Miller (project architect); Daniel Cho, Lizzie Krasner, Gabe Blue Cira (project team)  
**ELECTRONICS ENGINEER** Parallel Development—Will Pickering  
**STRUCTURES** Paul Kassabian



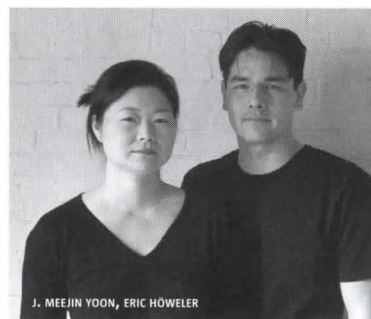
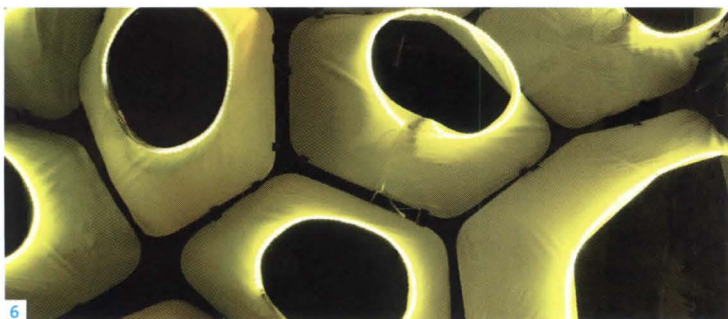
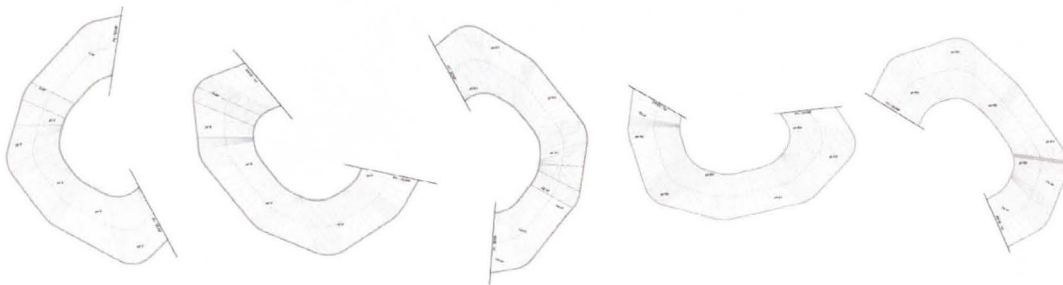


**1.** Each cell is formed from coated nylon ripstop fabric rimmed with flexible PV cells at the larger, sky-oriented opening. A rope of LED lights is suspended in the fabric at the base, generating light that diffuses along the nylon, creating a luminous effect.

**2.** Each unit was constructed and installed by hand, and each has its own PV cells and power conversion system to generate energy for the LEDs. This allows every cell to operate independently in the system.

**3-4.** To create the different sizes and shapes of the cell units, a series of templates was devised as a finite number of options. These options can then be arranged into easily replicable building blocks to form larger installations.

**5-6.** The final installation is a luminous canopy that lends a sense of space to an outdoor environment. The system reacts to the climate as well, shining more brightly on sunny days, when more energy can be collected by the PV cells.





→ CITATION

## INLAND STEEL RESTORATION

Skidmore, Owings & Merrill is revisiting one of its seminal projects of the 1950s, the Inland Steel Building. The firm has been asked to renovate the Chicago landmark into an office hotel, a building type that offers potential tenants a sustainable and fully outfitted office space while still allowing for flexibility in office layout, size, and lease duration. That means a ground-up renovation to meet contemporary standards of sustainability, as well as the outfitting of spaces with flexible systems to allow for the reconfiguration of space for each “guest.”

Because of the building’s landmark status, certain of SOM’s proposed improvements—like a planned double-glazed curtain wall—cannot be implemented. But there are other, permissible strategies that will improve the building’s performance, such as chilled beams, which use less energy for cooling than conventional HVAC systems. The architects have developed a system of modular partitions with spring-loaded connectors that take advantage of the existing column-free space. SOM also designed a catalog of furniture that guests can choose from; all pieces fit the building’s 1950s aesthetic while conforming to modern sustainable standards for VOCs and formaldehyde.

The jury was taken with the commitment to finding new methods, and overcoming challenges, in an effort to make a mid-century building sustainable by today’s standards. “The fact that this is landmarked actually created huge limitations on the retrofit,” said Blaine Brownell. “It couldn’t be double-glazed, which probably would have been much better, so there’s all kinds of attention being paid to these minor environmental upgrades—with, I’m sure, significant cost as a result. Ultimately, it shows that there’s a [larger] problem: Are we being serious about upgrading these buildings?” Andres Lepik appreciated the attention to detail: “You take a landmarked tower and make a sustainable restoration, down to the desks and the chairs.”

**PROJECT** Inland Steel Building Restoration

**CLIENT** Capital Properties

**ARCHITECT** Skidmore, Owings & Merrill, New York—Stephen Apking (design partner); Peter Magill (managing partner); Carl Galioto (technical partner); Nazila Shabestari Duran (project manager); Claes-Henric Appelquist (senior designer); Jim Simmons (technical coordinator); Noboru Ota, John Darrow, Katherine Shen (designers); Ece Calguner Erzan, Fatmir Hodzic (technical architects); Jeong Hee Kim, Yoonsoo Oh, Joey Fonacier (rendering team); Madeline Chang (material research); Jennifer Rainey (LEED specialist)

**M/E/P/STRUCTURAL ENGINEERS** Skidmore, Owings & Merrill, New York—Roger Frechette (HVAC/M/E/P director); John Pulley (manager of sustainable engineering); Jeffery Boyer (sustainable engineer); Bin Hu (sustainable specialist); Mike Scotter (mechanical associate); Kenneth Mocko (mechanical engineer); Noriel Nicholas (electrical associate); Mir Hameeduddin (electrical engineer); Ishac Koussa, Thomas Bailey (plumbing engineers); William Baker (structural partner); Chuck Besjak (associate structural director); Brian McElhatten (structural engineer)

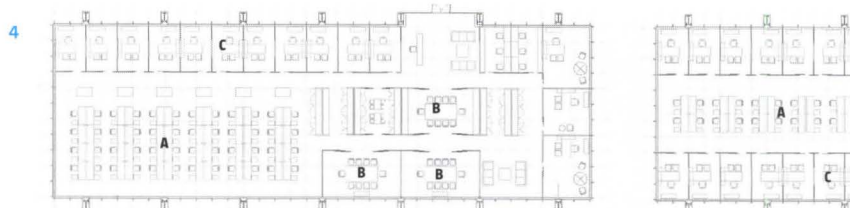


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3

FLOOR PLAN OPTIONS ↓



A. OPEN PLAN OFFICE B. CONFERENCE C. PRIVATE OFFICES D. SHARED OFFICES



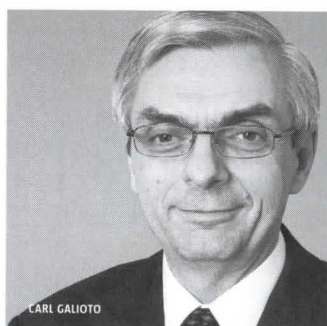


1. An archival photograph shows an interior of the Inland Steel Building not long after it was completed in the 1950s.

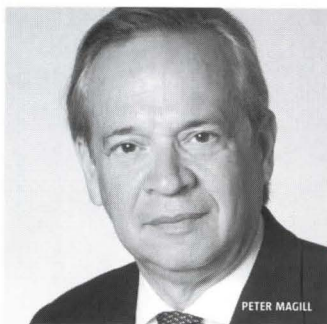
2. The façade of the building has achieved landmark status, so it will remain unchanged during the renovation and restoration process.

3. Plans to convert Inland Steel into an office hotel replicate the mid-century aesthetic with updates such as a perforated metal ceiling and motorized shades to cut down on heat gain.

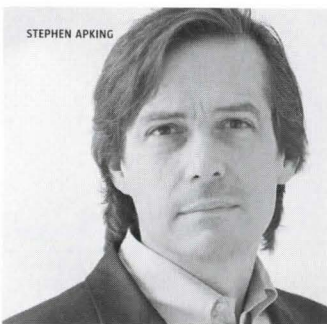
4. The open floor plates allow tenants to customize their own floor plans with a mix of open plan, shared, and private office space; conference rooms; and communal areas.



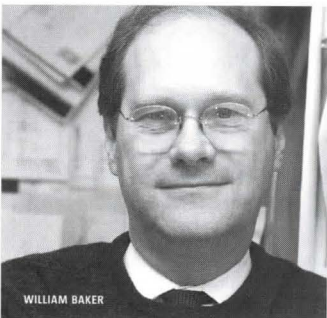
CARL GALIO



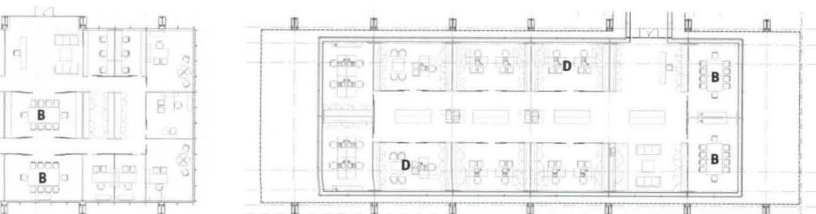
PETER MAGILL



STEPHEN APKING



WILLIAM BAKER



TOP LEFT: EZRA STOLLER/ESTO;  
TOP RIGHT: BOB SHIMER



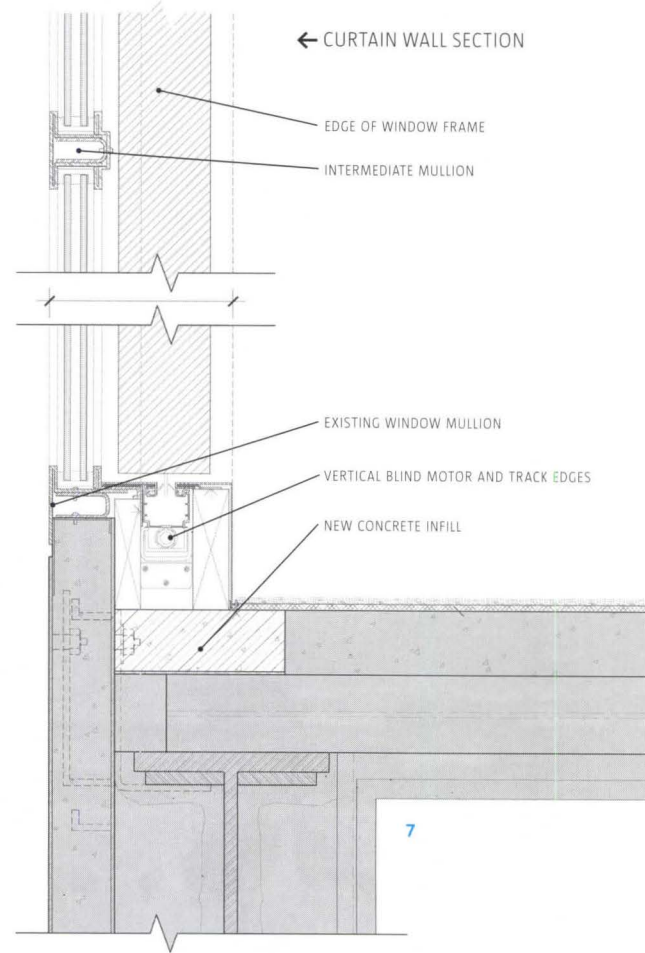
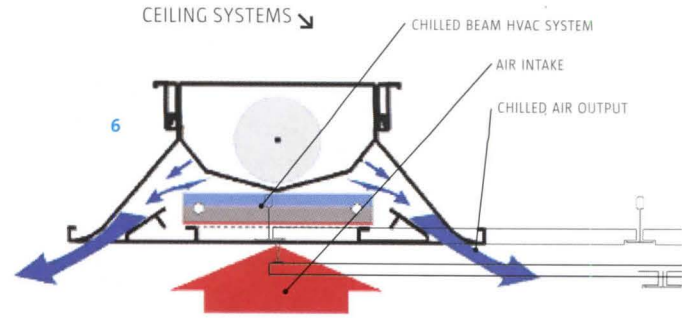
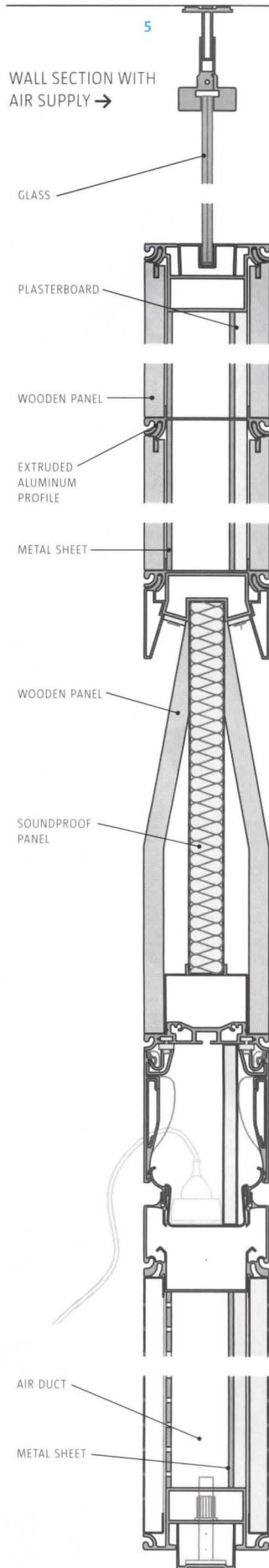
5. A system of demountable walls was devised so that each completely open floor can be divided as the client sees fit. The panel shown in section is faced in wood and contains a concealed air duct to aid airflow throughout the space and air return to the chilled beam system above the metal ceiling.

6. The perforated metal ceiling tiles conceal a series of systems including the lighting fixtures, the bulk of the sprinkler system, and the chilled beams, which serve as a low-energy HVAC alternative.

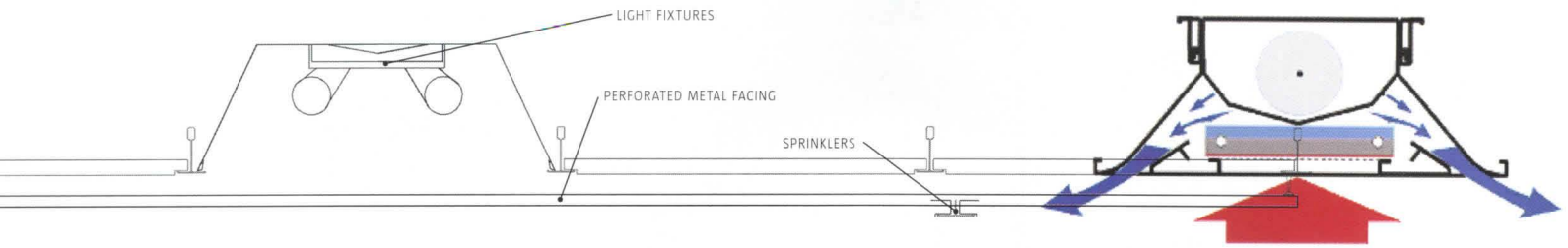
7. Originally, the architects planned to retrofit the curtain wall system to include double glazing for performance reasons, but concerns from the landmarks commission led to the development of a series of motorized shades (seen here in section) to increase the thermal performance of the single-glazed façade.

8. Each space can be customized to fit a client's needs, but all finishes maintain a mid-century sensibility to reflect the building's history.

9. Guests at the office hotel can outfit their space from a catalog of furniture designed to marry a sleek 1950s aesthetic with low-VOC and low-formaldehyde materials to answer modern concerns about sustainability.









1. The process of manufacturing and assembling the east wall (at left) is highlighted by the adjacent wall panels (at right), which display the tooling paths for each MDF piece used in the east wall's fabrication.

2. A section of the east wall bows into the slide library to direct light from the room's skylight into the adjacent hallway.

3. Light from the surrounding hallways flows through the incised tooling paths on the north, south, and west walls, creating a luminescent quality when diffused by the linoleum surface laminated onto the MDF sheets.

4. The room houses thousands of drawers for storing projection slides and a table for researchers to examine and collect what they need.





→ CITATION

## SLIDE LIBRARY COLUMBIA UNIVERSITY

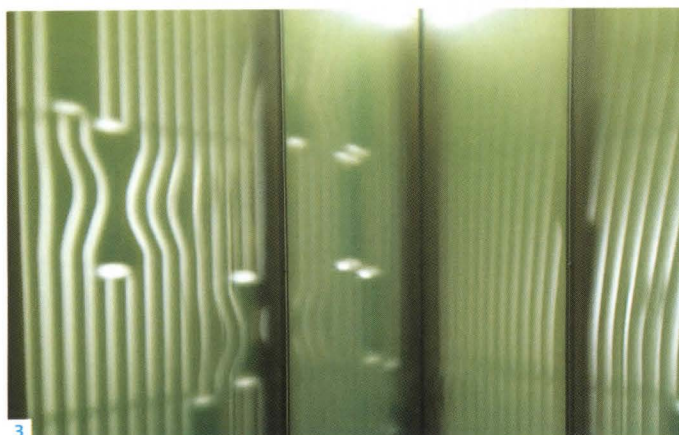
One of Columbia University's newest facilities has a very specialized purpose: the storage and conservation of projection slides, a staple of art history and archaeology instruction. In this project, architects Marble Fairbanks created an enclosure for thousands of slide file drawers dominated by an undulating east wall of milled MDF panels and ½-inch-thick glass, stacked vertically and threaded onto a series of supporting rods. The MDF panels were CNC milled in an on-campus workshop and are meticulously shaped so that the profiles combine to form a sinuous wall surface. At intervals, two sheets of glass are placed between the MDF panels on the threaded support system. This allows for light to shine through the width of the glass, adding visual texture. The other three walls are made up of MDF panels laminated with sheet linoleum and inscribed with the tooling paths of pieces in the east wall.

The jury found the process of designing and fabricating the project even more interesting than the end result. The process was organized to foster alliances between several university departments and teams of students. A new fabrication lab on campus has a mandate to explore innovative fabrication and assembly techniques at full scale. This group joined forces with the facilities department, students from the school of architecture, and the clients from the art history and archaeology department to create a laboratory environment that utilized the strengths of the university community to create a project that will serve it.

"It's understanding that the campus has its own kind of ecosystem of decision-making. That's seldom ever captured," Chris Genik said. "This kind of effort should be commended because it's unusual." The other jury members agreed: "It's made in the university by the university," Andres Lepik said. "It's bringing forces together and creating this idea of working together in different faculties."



2



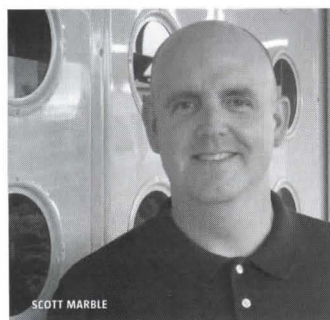
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4



KAREN FAIRBANKS



SCOTT MARBLE

**PROJECT** Expanded Alliances, Slide Library, Department of Art History and Archaeology, Columbia University, New York

**CLIENT** Department of Design and Construction, Columbia University; Department of Art History and Archaeology, Columbia University

**ARCHITECT** Marble Fairbanks, New York—Scott Marble, Karen Fairbanks (partners); Jake Nishimura (project architect); Eric Ng, Katie Shima (design team)

**COLLABORATORS** Graduate School of Architecture, Planning and Preservation, Columbia University, New York—Avery Digital Fabrication Lab: David Benjamin (project manager); Cory Clarke, Phil Anzalone (co-directors); Ian Weiss, Darren Zhou, Jamison Guest, Katie Mearns, Taka Sarui, Soo-in Yang, Amy Yang (fabrication team); Mark Taylor, Paul Miller, Taka Sarui, Alexandra Distler, Chyanne Husar, Sabri Farouki, Chris Kanipe, Jamison Guest, Armando Ortiz (assembly team)

**LIGHTING DESIGNER** Rick Shaver Architectural Lighting

**STRUCTURAL ENGINEER** Norfast Consulting Group

**MECHANICAL ENGINEER** Charles G. Michel Engineering PC

**GENERAL CONTRACTOR** Ideal Interiors

**OFF-SITE FABRICATORS** Bjork Carle Woodworking, Stainless Metals Inc., Kangoo Products

**SIZE** 1,000 square feet

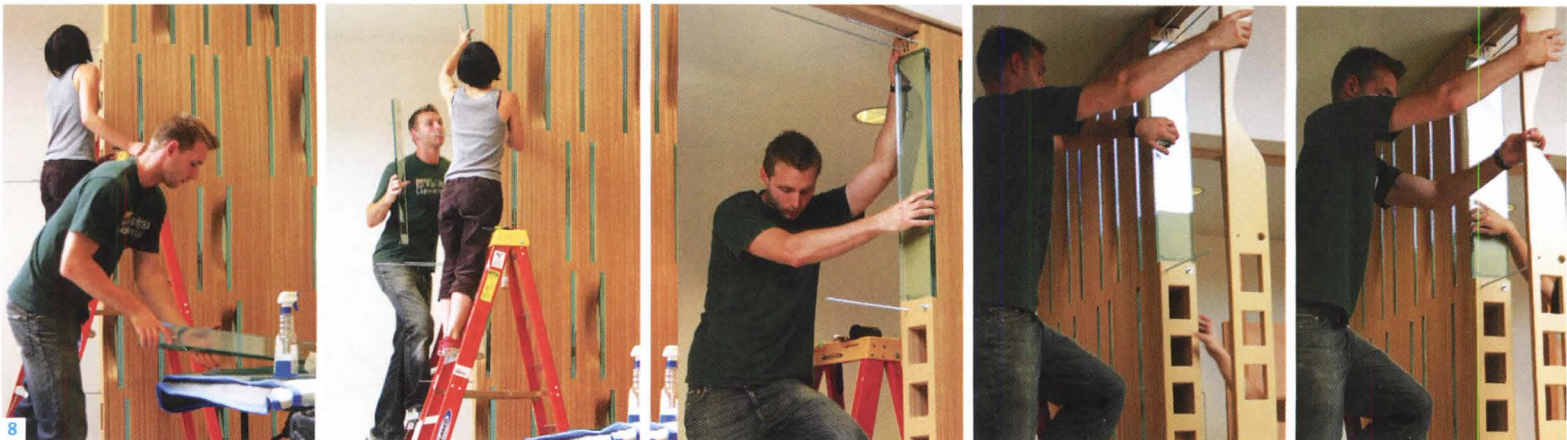


MILLING PATH FOR WALL COMPONENTS ↓

5

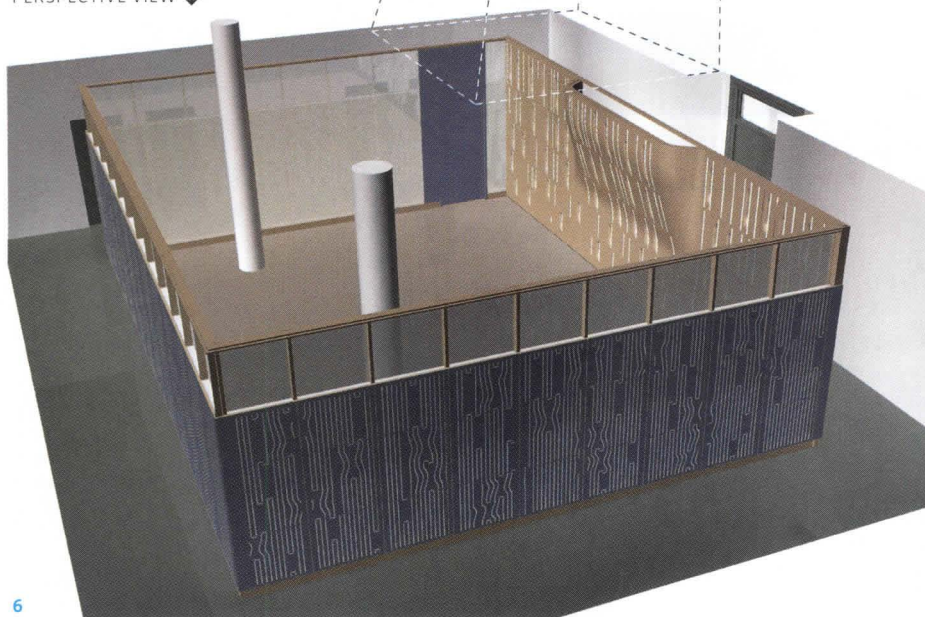


EAST WALL ASSEMBLY ↓





PERSPECTIVE VIEW ↓



6

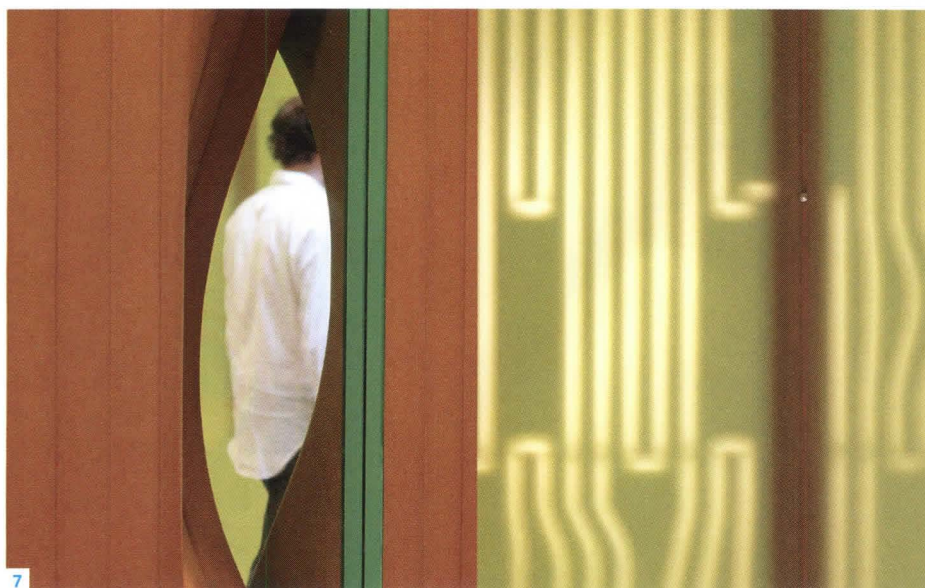
5. In order to conserve materials and provide an exercise in efficient tooling at the fabrication lab, all of the MDF pieces for the east wall were arranged on sheets so that only 82 were used for the final product.

6. A rendering shows the integration of the undulated east wall and the incised panels on the other three walls, as well as the path of natural light through the skylight (indicated with hatched lines).

7. The east wall's undulated form creates small openings where it is possible to look between the slide library and hallway.

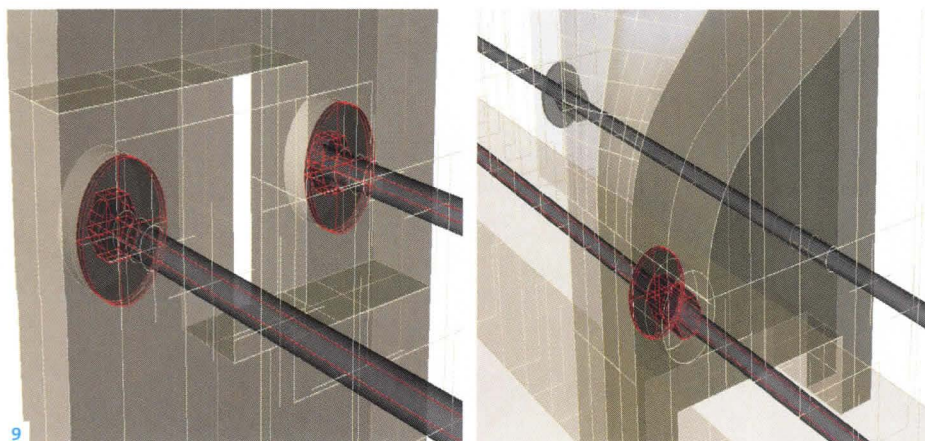
8. Students from Columbia's Graduate School of Architecture, Planning and Preservation assembled the east wall by threading each numbered piece of MDF and glass onto a series of supporting rods.

9. The threaded rod system consists of 18-inch-long threaded rods connected with threaded couplings. Top and bottom tracks keep the pieces in place, and compression from the rods keeps the glass sheets in place with no adhesive.



7

THREADED ROD SYSTEM FOR EAST WALL ASSEMBLY ↓



9



→ CITATION

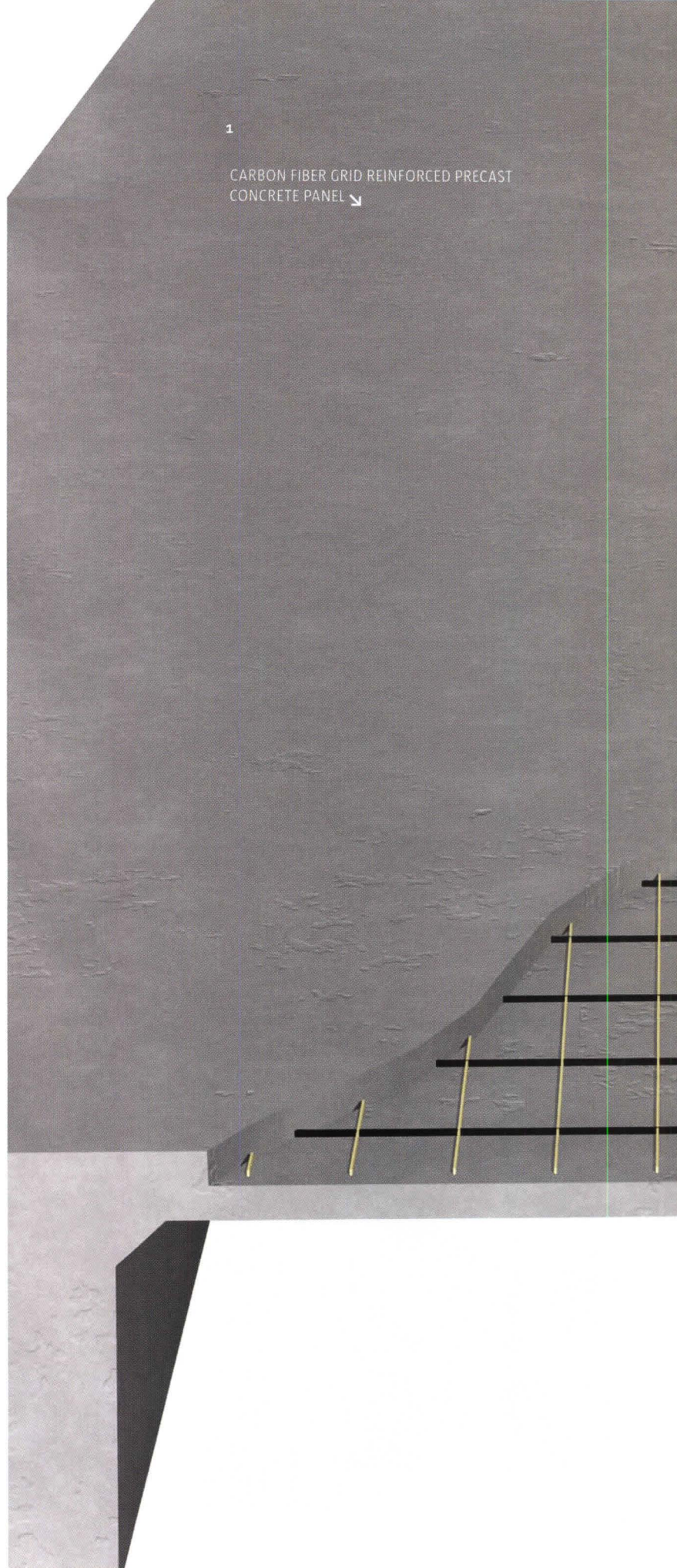
# CARBON FIBER GRID REINFORCED PRECAST CONCRETE

The problem of corrosion in precast concrete is often attributed to the steel rebar reinforcement; steel being a corrodible material, it is especially vulnerable during the curing and drying process, when it is locked into an environment that is very wet. AltusGroup, a national organization composed of 13 precast companies, and Chomarat, a producer of carbon fiber grids, answered by replacing the steel rebar in concrete with a carbon fiber grid. The grid is thinner and lighter than the steel, and it requires less concrete to cover it. The result: thinner, lighter panels (up to 75 percent lighter architectural wall panels) and increased insulation, because the carbon fiber doesn't conduct heat or cold. This new material already has been used in architectural and insulated sandwich wall panels.

The jury wished that the submission had included more information on testing done during the product-development process, as well as on the lifecycle benefits. Ultimately, they decided to cite the product because of its potential for revolutionizing the use of concrete, one of the most ubiquitous materials in construction today.

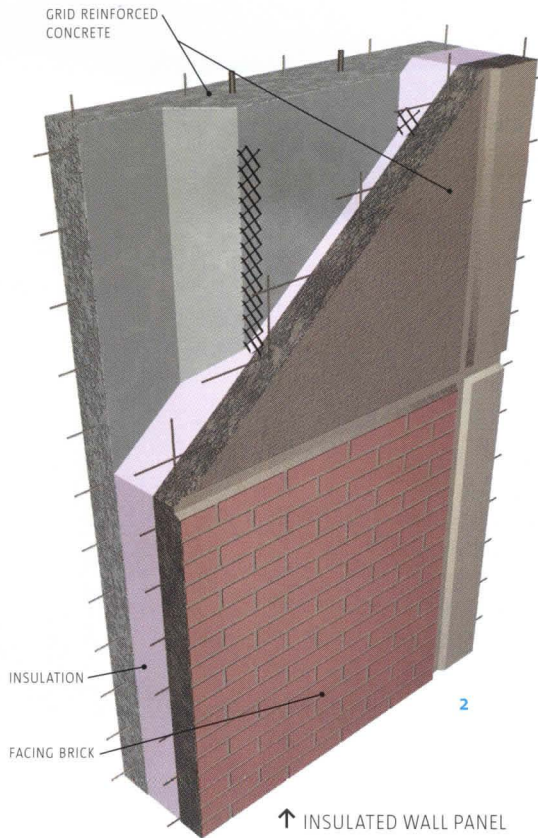
"From an engineering standpoint, a structural standpoint," said Blaine Brownell, "the fact that you can use less material makes it part of the trajectory of doing more with less, which has an environmental aspect to it as well as a trend of hybridization—of using different types of materials to make a sum that's greater than the parts." The jury also appreciated the product's simplicity. "I found it pretty interesting as a new technology, and one which might be really very helpful," said Andres Lepik. "Somebody had a very simple, basic, and strong idea."

1

CARBON FIBER GRID REINFORCED PRECAST  
CONCRETE PANEL ↘

**PRODUCT** Carbon Fiber Grid Reinforced Precast Concrete  
**MANUFACTURER** AltusGroup and Chomarat  
**PATENT HOLDERS** Kenneth Baur, John Carson, Harry Gleich,  
 Gary C. Graziano, Thomas G. Harmon, Harold G. Messenger

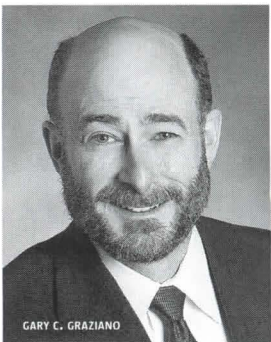




1. By using a carbon fiber grid instead of steel rebar as support for its precast panels, AltusGroup is able to manufacture a lighter and thinner panel than those made of traditional precast concrete.

2. The product has been used in insulated wall panels and allows for thinner wall sections and better thermal performance, as the carbon fiber grid doesn't conduct heat or cold.

3. The grid is embedded in liquid concrete like traditional steel rebar. But instead of corroding on contact with the liquid, creating the potential for cracks or breaks, the grid is nonreactive.



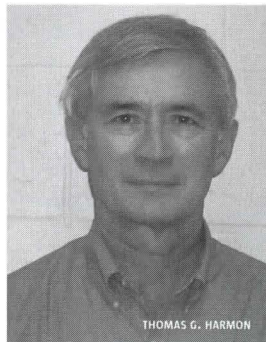
GARY C. GRAZIANO



KENNETH BAUR



HARRY GLEICH



THOMAS G. HARMON



→ CITATION

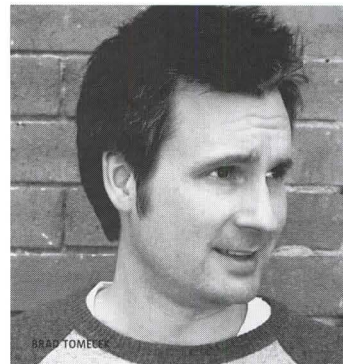
# DENVER FILTER

What began as an exercise in designing a new recycling kiosk for downtown Denver became a larger meditation on the solid waste collection systems of modern cities, resulting in the design of a large-scale system for moving waste. The specific question that architects Studio HT strove to answer over the course of their research was, as stated in their entry, "How can the activity of recycling achieve greater alignment between the methods and intention?"

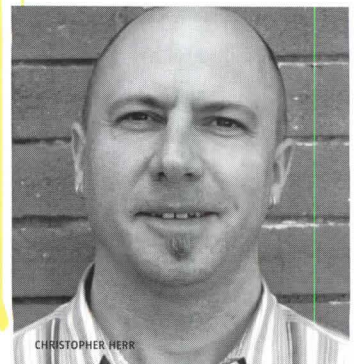
The team examined the systems of conveyors and sorters at the local recycling plant and transferred the notion of conveyor belts in a factory to a series of underground tunnels, linked to a series of designated input and output points—much like sewers. To move the waste through the tunnels, the team looked to principles of biomimetics: By using electromagnets to expand and contract a flexible membrane inside each tunnel, waste can be moved along by an action similar to peristalsis, the movement of the intestines during human digestion. This membrane, with few mechanical components that could fail, would push the waste along to the designated dump site without relying on water.

The jury viewed the Denver Filter as a utopian idea and admired the entrants' process. "In order for waste to be reintegrated in the whole cycle of life, you have to remake the way we understand how we live in cities," Chris Genik said. "Here's somebody putting their foot down and saying, 'First, we're going to have to reinvent the infrastructure and then see what else we need to do.'"

Andres Lepik, too, was taken by the idea, with some reservations: "It has this utopian energy. They're not answering all the questions, but they're opening up new ways of thinking about a city, about how a city in the future can work, even if this is not a system which will ever work." Genik wasn't as quick to dismiss the system's real-world feasibility. "Don't you imagine that, for example, the New York sewer system could be retrofitted with a series of tubular structures that could enable this, and you just use conventional manholes to dump waste in?" he speculated. "There's a part of it that's absolutely visionary and there's another aspect of it that's just retrofitting wherever it exists."



BRAD TOMECEK

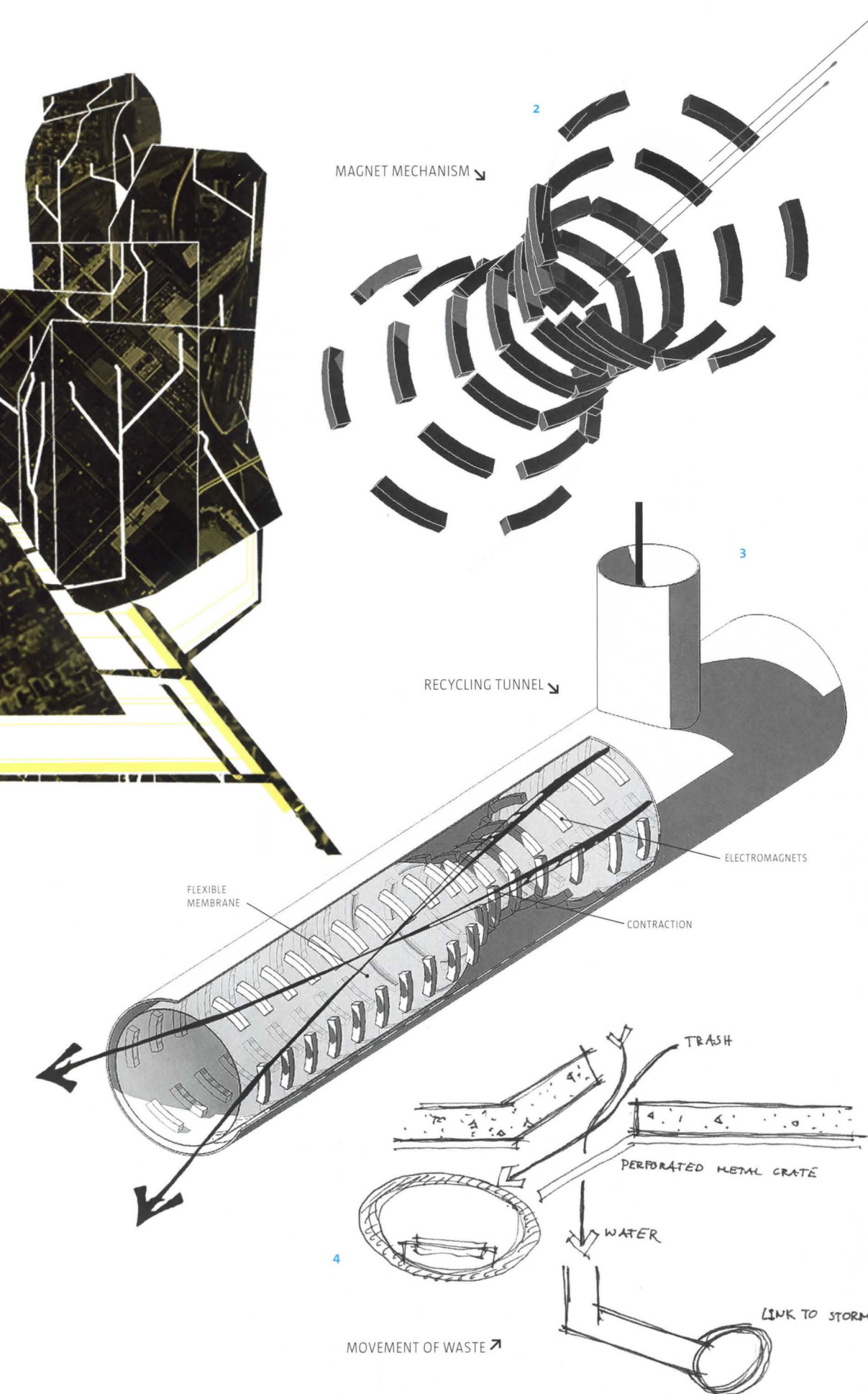


CHRISTOPHER HERR

PROJECT Denver Filter

ARCHITECT Studio HT, Boulder, Colo.—Justin Ewing, Brad Tomecek, Christopher Herr, Kevin Sietmann, David Neiger (project team)





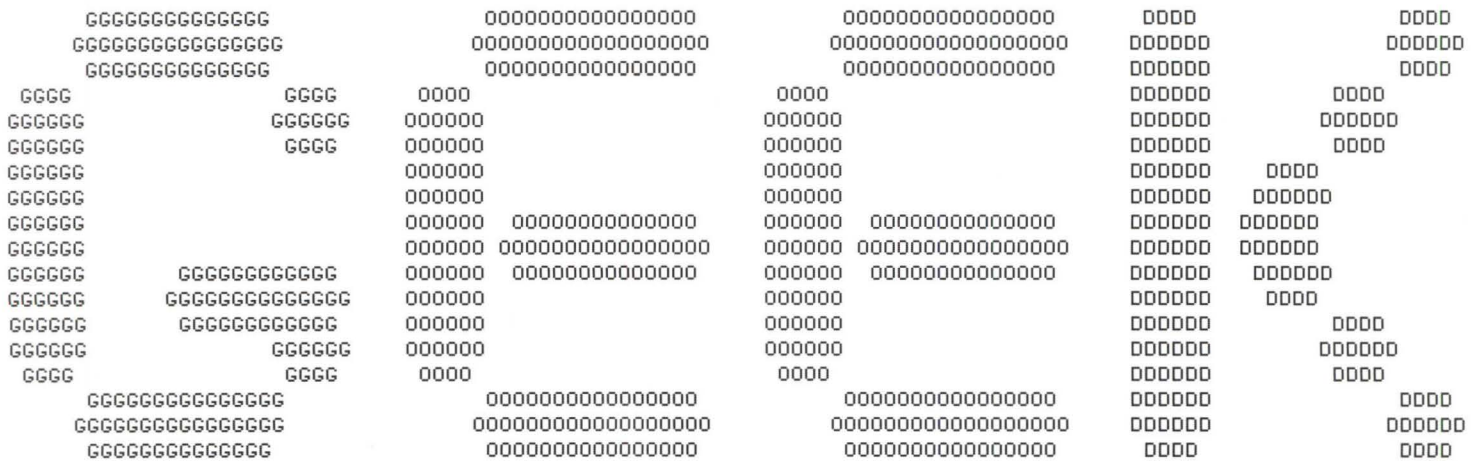
1. The system is designed so that pedestrians can drop recyclables into a receptacle at street level that connects directly to the tunnels, which move the items through the city to predetermined exit points.

2. A series of electromagnets would encircle each of the flexible tube linings, causing the tubes to contract and expand based on the attractive and repellent properties of the magnets themselves. This would mimic the smooth muscle contractions of the human intestines, called peristalsis.

3. By connecting the collection receptacles directly to the tunnels, the system requires relatively few moving parts, in turn needing much less maintenance by city workers.

4. To ensure that the tunnels aren't overcome by storm water, a perforated metal grate sits near each opening, allowing water to run off through a link to the existing storm sewer system.






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Text Hannah McCann

# CULTURE

BOOKS, EXHIBITS, OBJECTS



## OBJECT

**Svenskt Tenn Lounge Chair** • *Josef Frank* • 1940s • \$3,350 • Before his name became synonymous with furniture that comforts body and mind, Josef Frank spent several pivotal years in Berlin, working for the architect Bruno Möhring, meeting his Swedish wife, and receiving his first big contract, to furnish the East Asian Museum in Cologne.

That was before he fell out with Mies, Corbu, and the rigidity of Modernism, and before he fled the rise of Fascism. Frank moved to Stockholm to become the first designer for the Swedish interiors company Svenskt Tenn, where he designed almost 2,000 fabrics, lamps, rugs, and furniture pieces, including this rattan chaise.

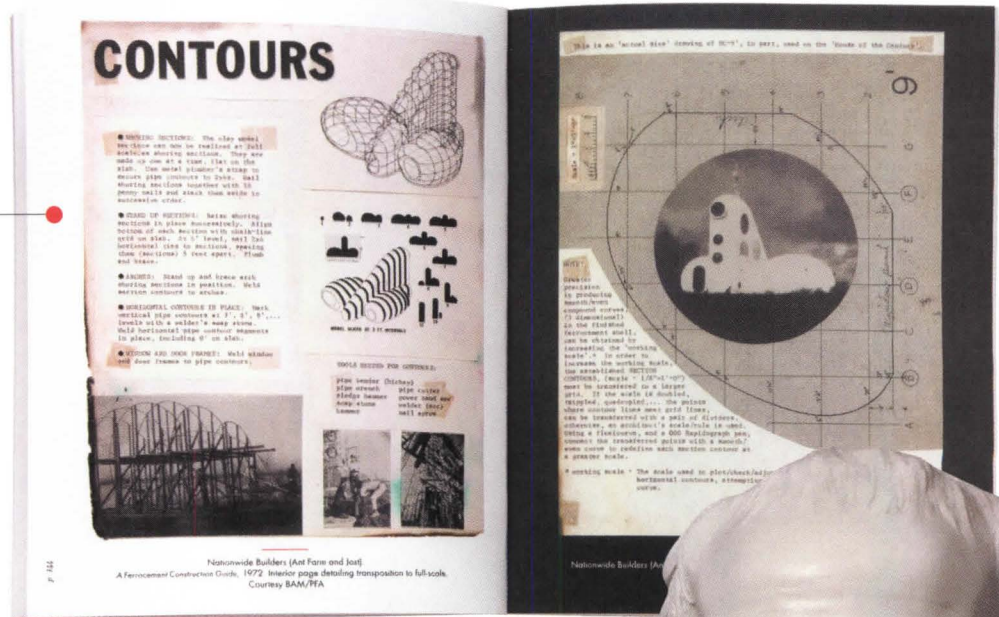
Starting Aug. 19, two concurrent exhibits in Berlin welcome Frank back to and explore his early influences. Sharing the show of Frank's pre- and post-war designs are the Swedish Embassy and the new Berlin offshoot of Jacksons Gallery, the Stockholm-based dealers in 20th-century Scandinavian design. [www.jacksons.se](http://www.jacksons.se)



## CULTURE

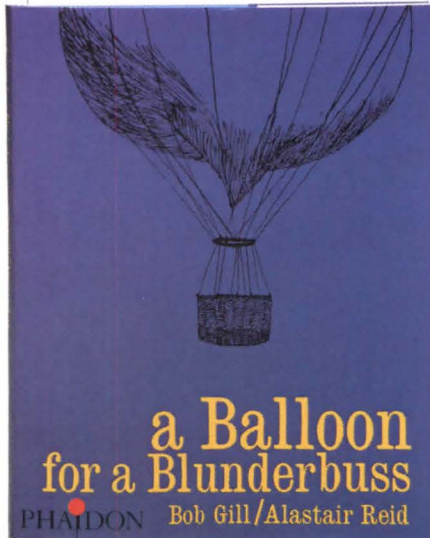
## BOOK

**Living Archive 7: Ant Farm** • By Felicity Scott • Architects get radical with electronics and environmental politics in this 21st century look back at the Ant Farm. In 1968, the experimental collective chose their name to sound like a rock band, and for 10 years they took the same approach to their work. Crisscrossing the country, Ant Farm unleashed their video art and blobby structures—decades before the introduction of Maya and form-Z—documented and diagrammed here. *Actar*; \$54.95



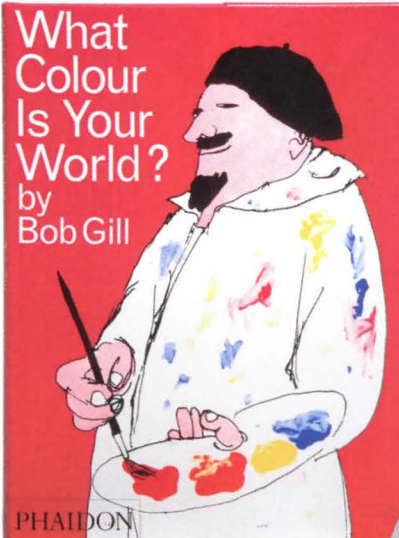
Nationwide Builders (Ant Farm and Jori)  
A Ferrocement Construction Ditch, 1972. Interior page detailing transportation to full scale.  
Courtesy: BAM/FA

Nationwide Builders (Ant Farm and Jori)



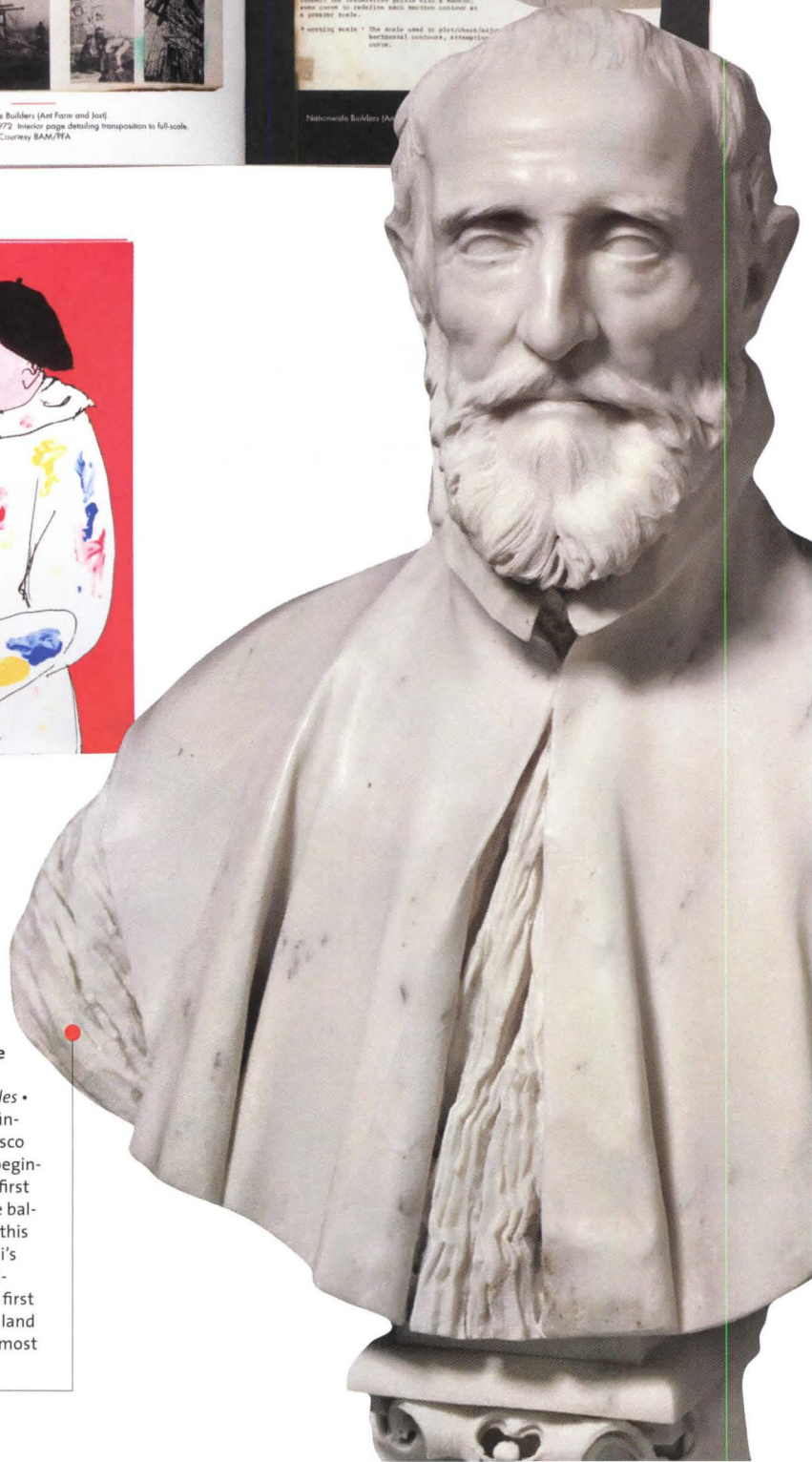
## BOOKS

**A Balloon for a Blunderbuss/What Colour Is Your World?** • By Bob Gill and Alastair Reid/By Bob Gill • It's been over 45 years since Bob Gill wrote and illustrated children's books that celebrate the whimsy of everyday objects and the punch of saturated color. The graphic designer was also starting Fletcher/Forbes/Gill, the design firm that would grow to become Pentagram. Gill released eight children's books in the 1960s; these two are the first of several that are being restored and rereleased in coming months. *Phaidon*; \$14.95 each



## EXHIBIT

**Bernini and the Birth of Baroque Portrait Sculpture** • J. Paul Getty Museum, Los Angeles • Aug. 5 through Oct. 26 • Bernini finished this marble bust of Francesco Barberini in 1623, a year before beginning—at the ripe age of 25—his first architectural project, the bronze baldachin for St. Peter's Basilica. In this comprehensive survey of Bernini's portrait busts—never before collected in one exhibition and the first major show of Bernini's work to land in the U.S.—long-gone sitters almost talk back. *getty.edu*







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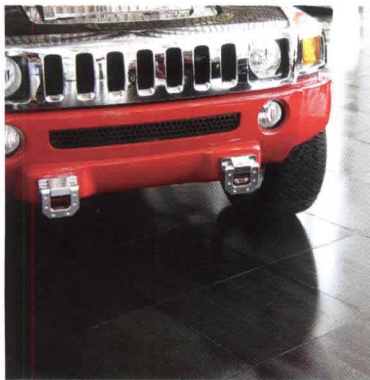


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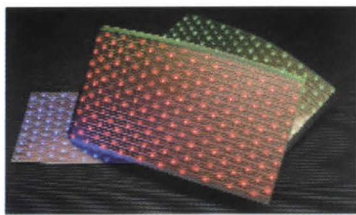
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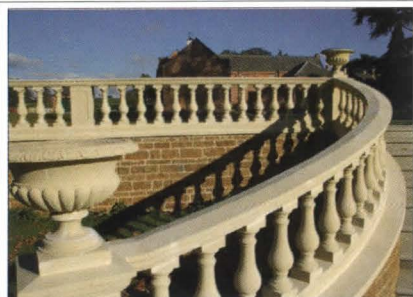
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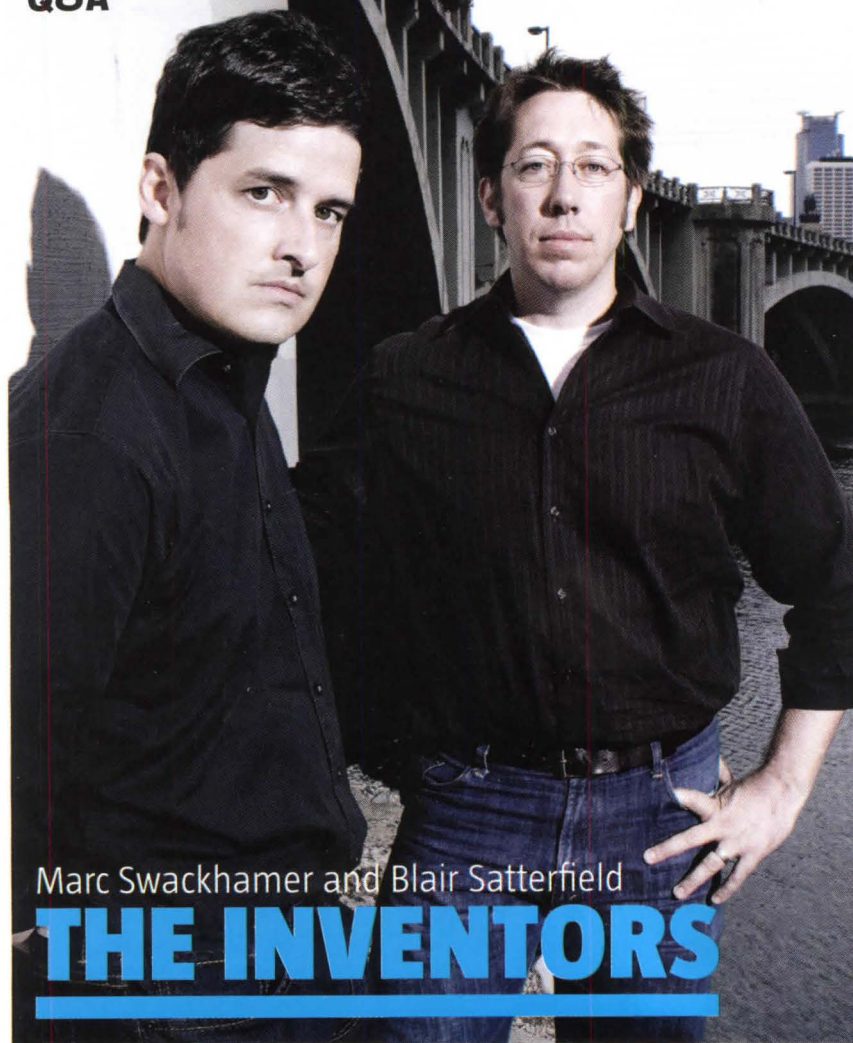
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Marc Swackhamer and Blair Satterfield

## THE INVENTORS

Interview Edward Keegan Photo Noah Kalina

JUST DO IT: THE PRINCIPALS OF HOUMINN PRACTICE DISCUSS HOW THEIR R+D AWARD-WINNING DRAPE WALL/CLOAK WALL SYSTEM DRAWS INSPIRATION FROM EXTREME-SPORTS GEAR.

**AGES** 37 (Swackhamer), 40 (Satterfield)  
**FIRM** HouMinn Practice, Houston and Minneapolis

**OTHER** Satterfield and Swackhamer began their design collaboration as Fleece Design while students at Rice University in Houston. When Swackhamer moved to Minneapolis to teach at the University of Minnesota, they took the first syllable from each city to rename the firm.

### How did your collaboration get started?

*Satterfield:* We began with a housing competition. There has been a natural progression focusing on the details of the house. Neither of us had an agenda to do R&D work.

*Swackhamer:* I got a grant from the Metropolitan Design Center at the University of Minnesota that enabled us to build a full-scale prototype of our entry. We've prototyped three or four projects, Drape Wall being one of them and Cloak Wall being the most recent.

*Satterfield:* Manipulating the form of the house has its limitations, but when you move into the wall section, you move into performance parts of the house. Look at a car, airplanes, sportswear. You see intelligence invested in the surface and the skin. We felt there's a territory between the inside and the outside envelope that has been ignored.

**"Cloak" and "drape" both imply large enclosures. Yet bricks tend to be small units.**

*Satterfield:* "Cloak" and "drape" refer to the interior skin of the walls. The bricks act as sort of an exoskeleton for

the assembly. It's the reverse of a typical wall, where the weather seal is on the outside. In our project, the weather seal is the innermost layer, and this "drape" surface handles the intelligence of the wall.

*Swackhamer:* The bricks are a rainscreen. They're not the primary weatherproofing.

### So it's waterproof zippers that allow you to penetrate the surface?

*Swackhamer:* We took the low-tech approach to ventilation, where someone on a nice day could unzip a bunch of pockets on the inside of the wall to let air flow through it. On a stormy day, those could be zipped back up. The waterproof zippers—used in high-tech, high-performance climbing gear—keep the water out. The zippers could be applied to insulative surfaces, allowing the drape to be quite thick and insulated.

### Can you point to any architectural precedents for zippers in buildings?

*Satterfield:* Marc and I look outside of traditional practice. Tent structures and shelter are a starting point. We look at gaskets, sailing gear, and performance sports gear as a way of bringing that into a more architectural setting.

*Swackhamer:* We examined a Nike shirt. It was woven in such a way that the thickness of the material changed as the shirt moved around the body. Under the armpits and on the back where you sweat a lot, the fabric was really thin. In areas where a shirt would wear out quicker, like around the elbows and around the shoulders, the fabric thickened. Because of the way the fabric was woven, it had an impact on the appearance of the shirt. That's interesting to us—that a performative requirement you're trying to meet instigates an aesthetic to the project.

**It seems both of you are overly concerned with clothing.**  
*Satterfield:* You wouldn't know it by looking at us.

### How does the two-city collaboration work? How do you bring people from other disciplines into the process?

*Swackhamer:* It offers us different collaborators and opportunities. I'm part of a digital design consortium at the university—computer scientists, engineers, as well as architects. The collaborations evolve through conversation and trying to meet people who do interesting work.

*Satterfield:* We see rapid development of ideas in the application of technology in fashion or industrial techniques. You get more lifecycles out of shirts than you do watching a building be constructed. We look at things that are moving quickly, and we apply them to a slower technology like architecture.

### Are there plans for a building-scale installation?

*Swackhamer:* We would love to build this. I think the stars have to align with the client, site, and conditions.

*Satterfield:* Maybe some enlightened client will see our project in ARCHITECT and jump at the chance.

→ Audio of this Q&A is available online at [www.architectmagazine.com](http://www.architectmagazine.com).



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