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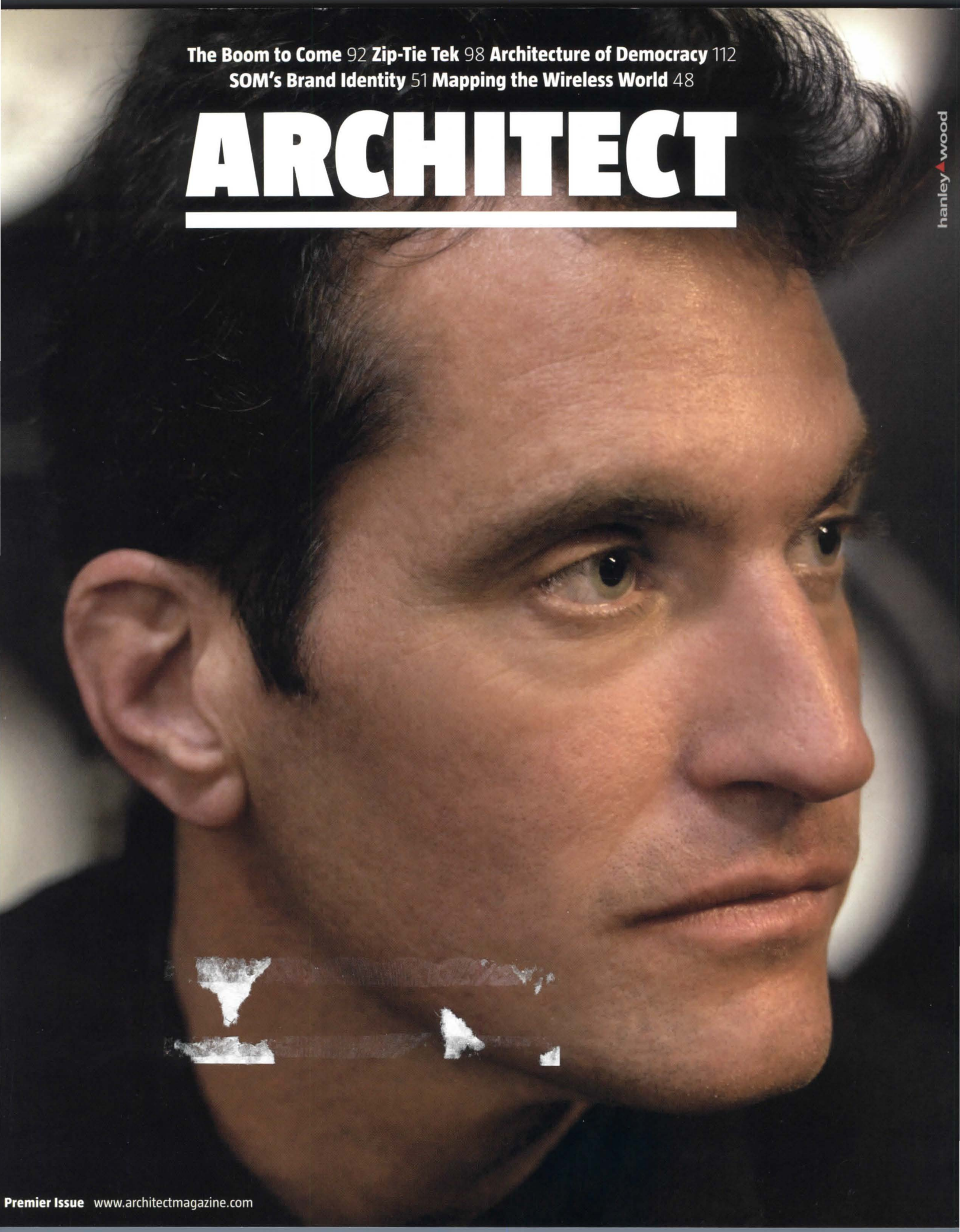
ARCHITECT



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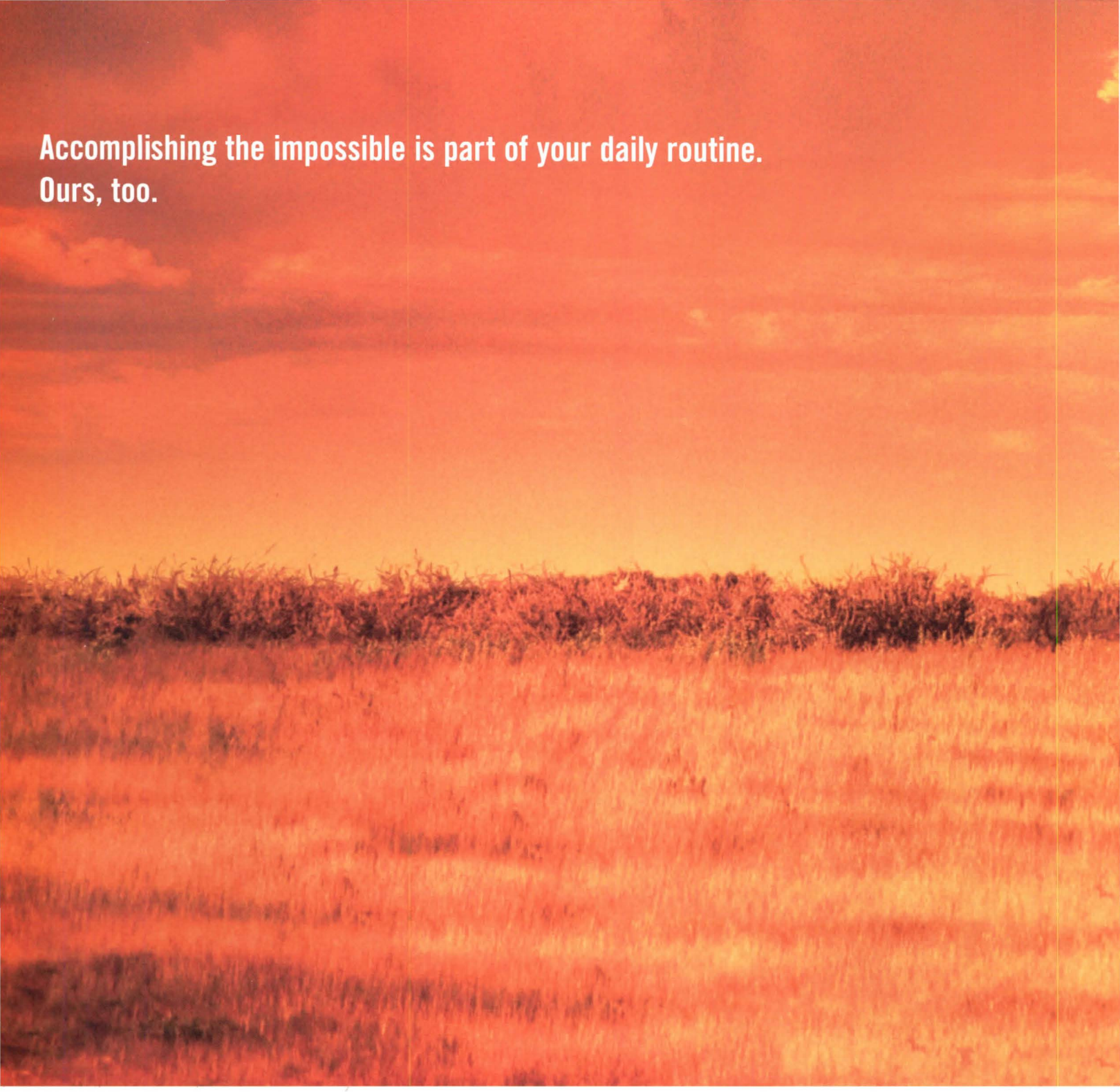

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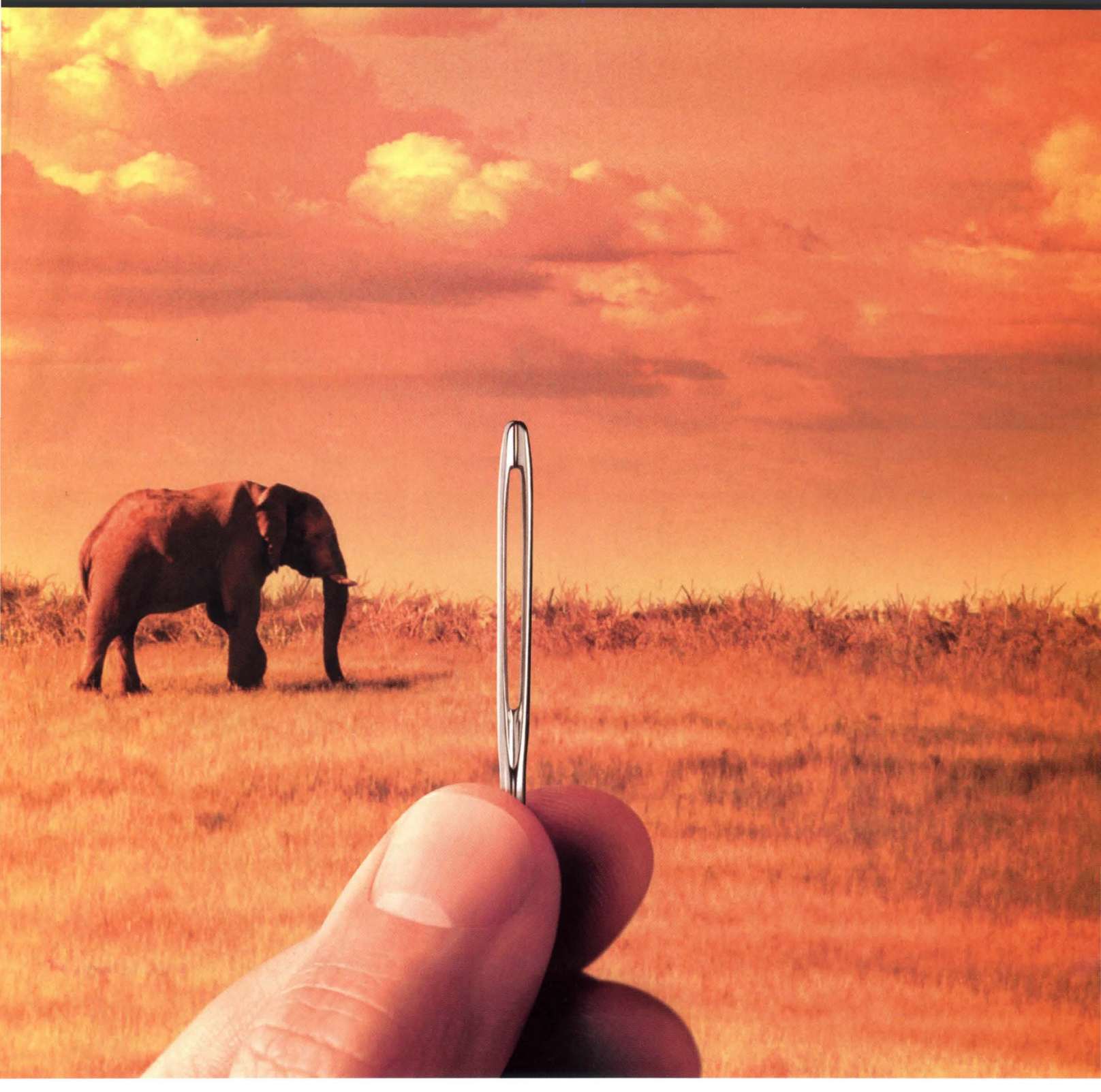

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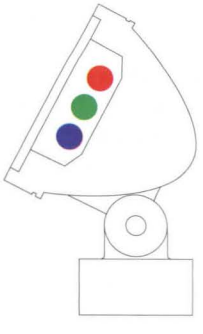

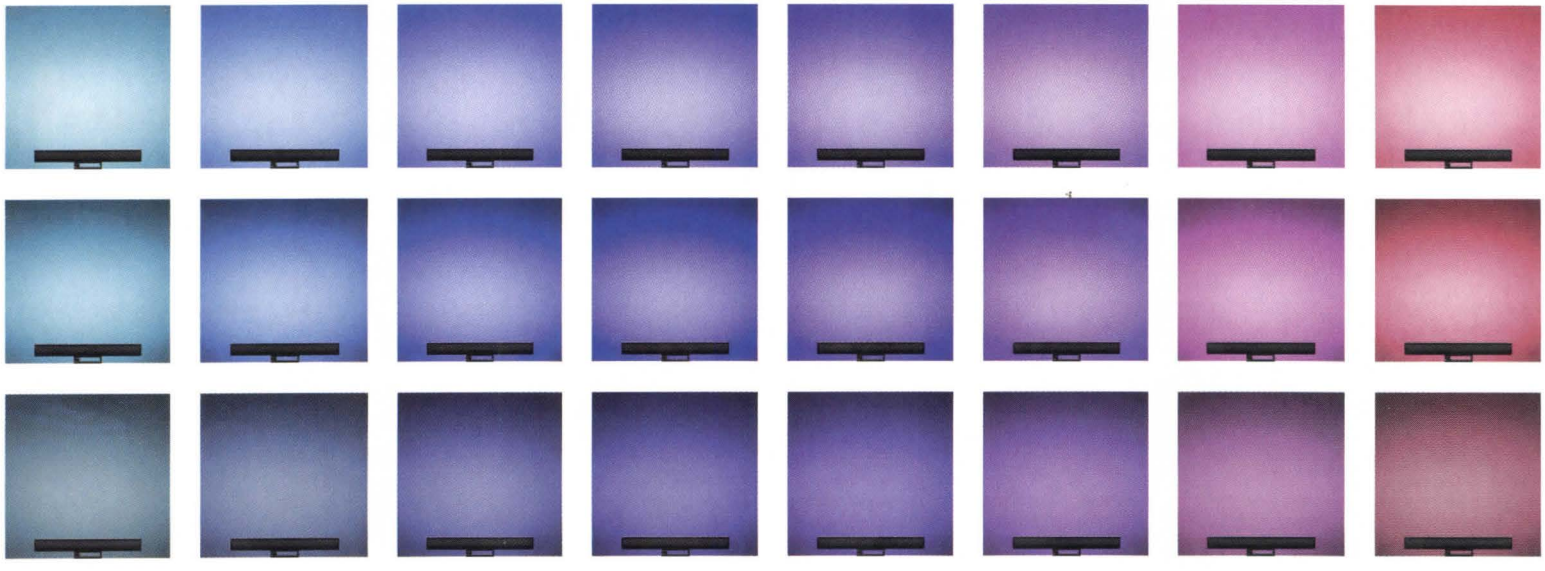

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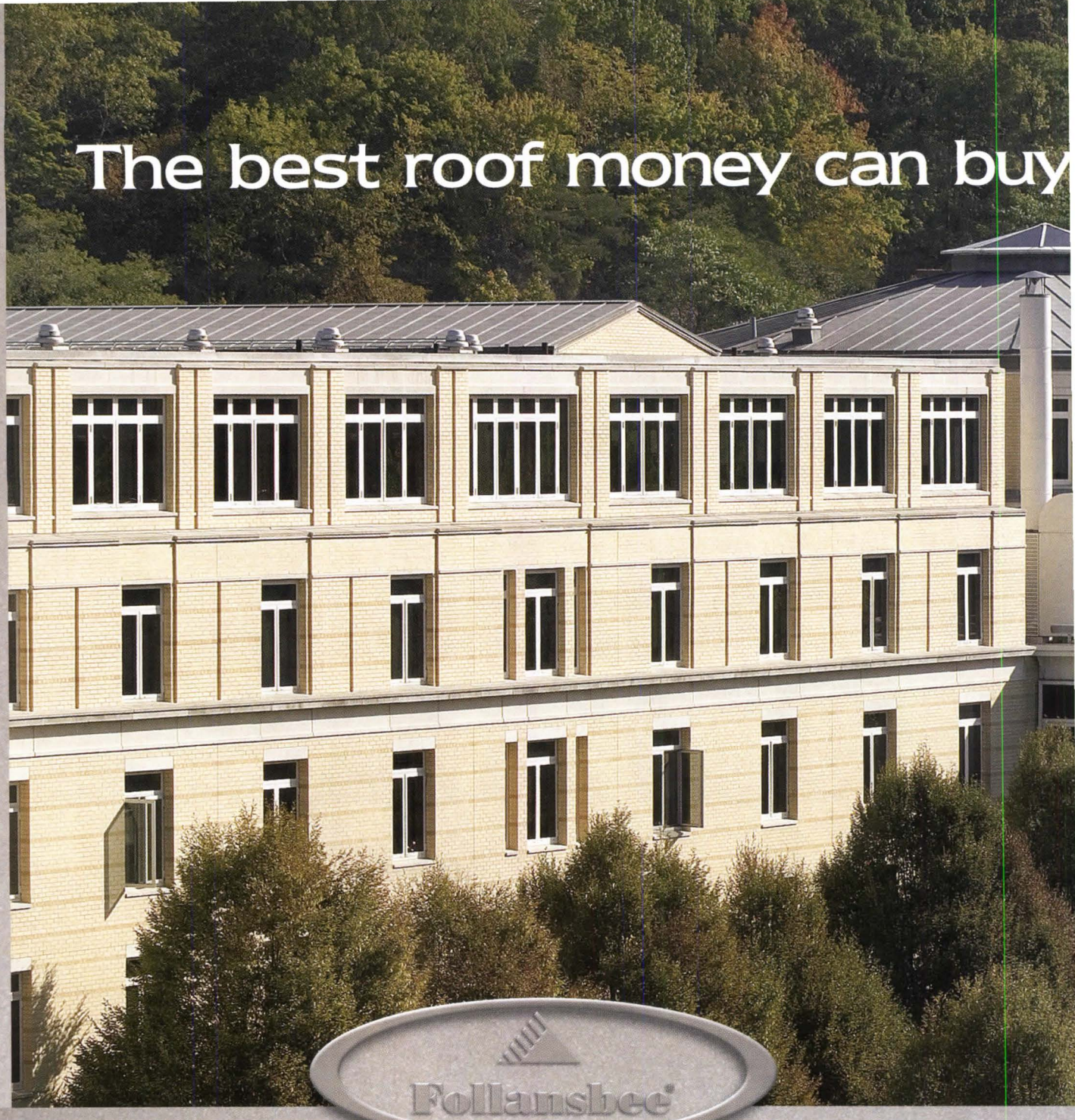

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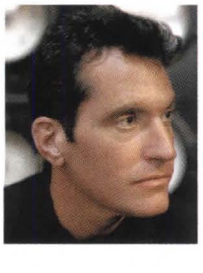
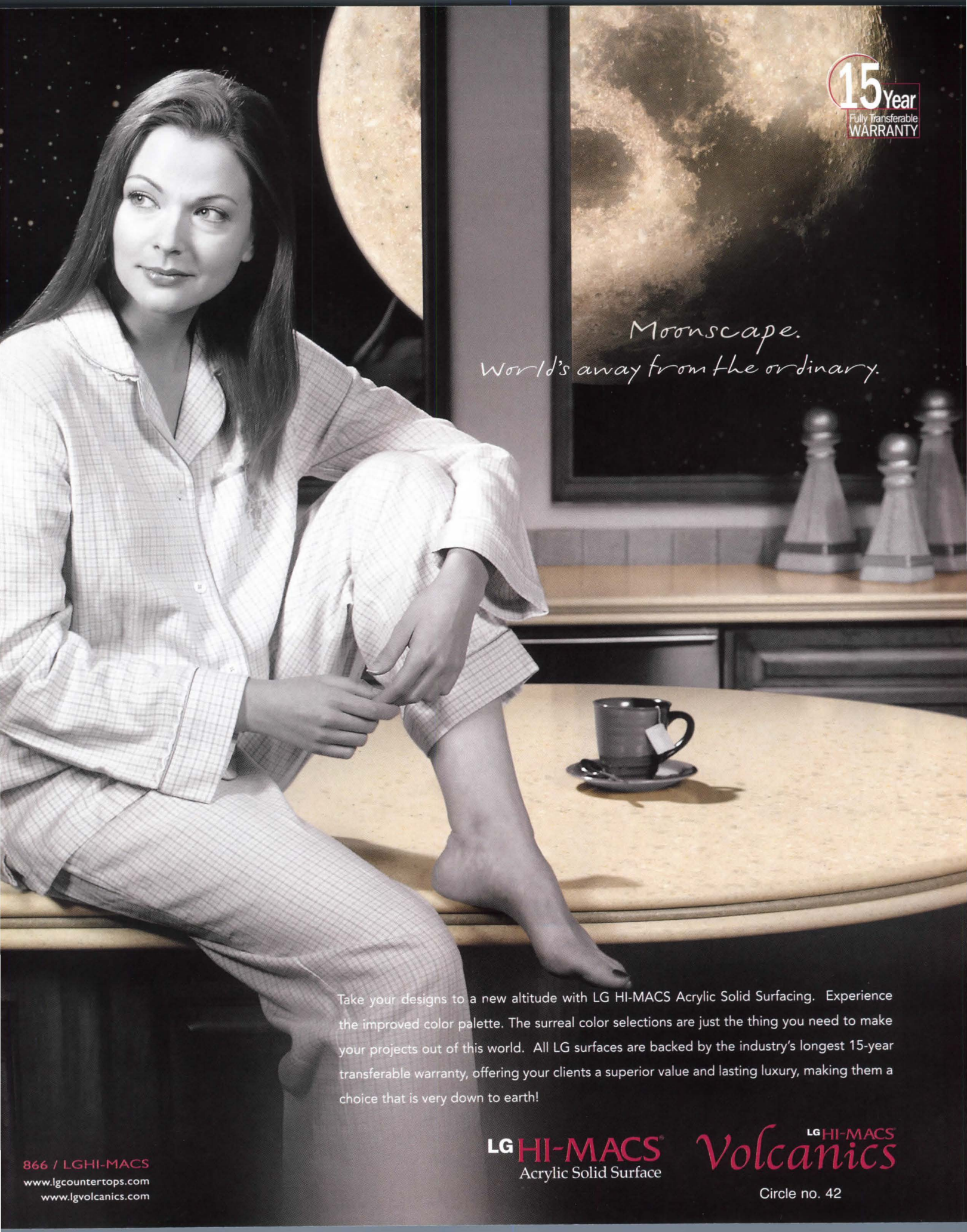


ON THE COVER
SOM design partner Ross Wimer, one of the participants in "Seven-Point Perspective," page 82, and leader of the website design process described in "SOM.com," page 51. Photo by Peter Rad.

AMERICAN ARCHITECTURE EMBODIES THE IDEALS OF DEMOCRACY FOR WHICH OUR REVOLUTION WAS FOUGHT AND OUR CONSTITUTION CREATED.

From "Architecture of Democracy," page 112



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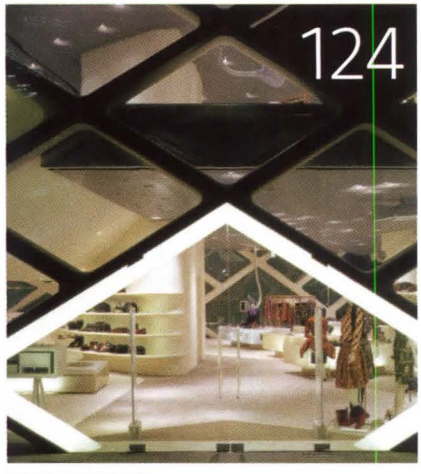

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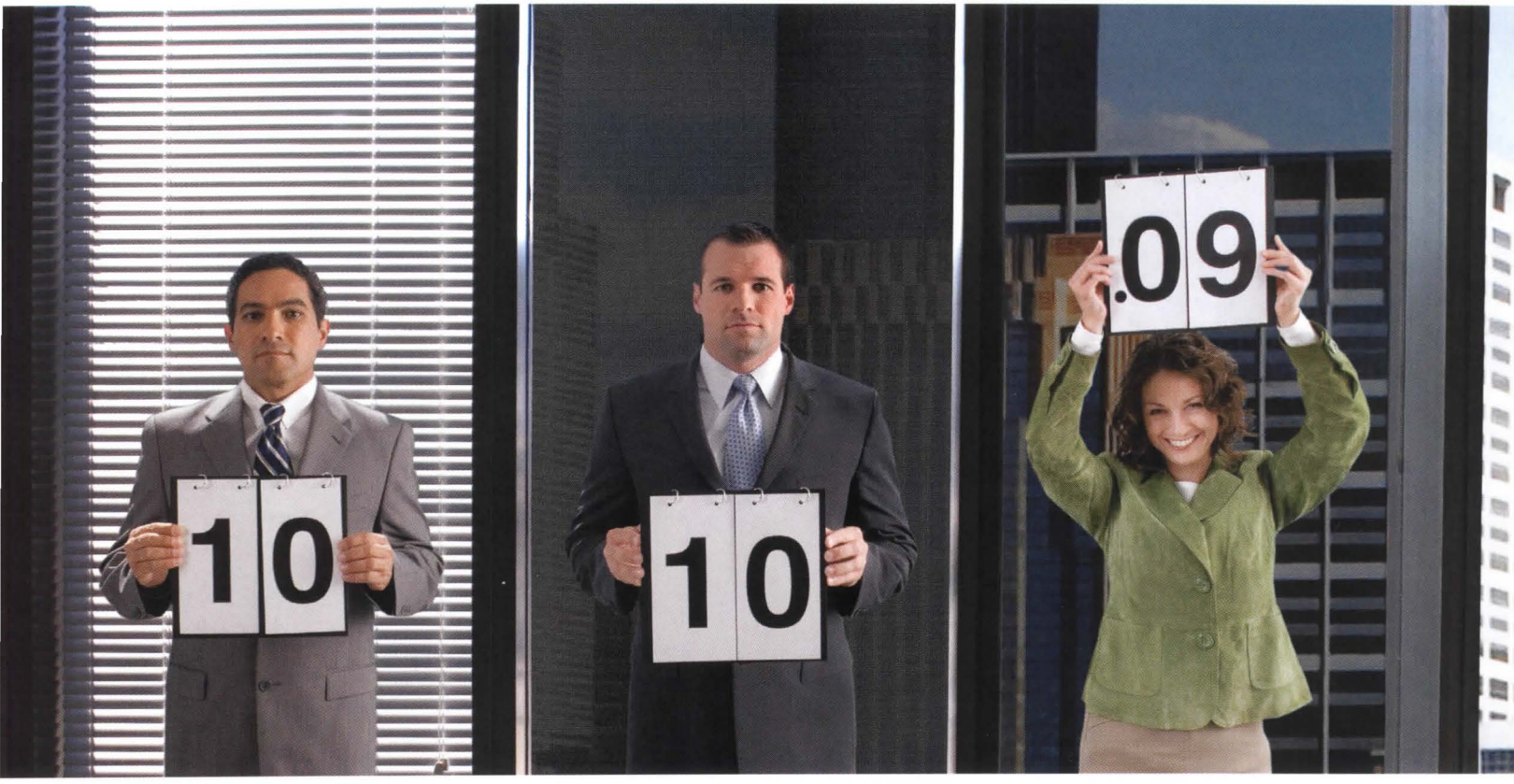

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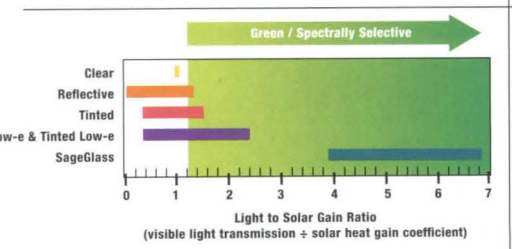

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Design architect: Bernard Tschumi Architects, New York, NY and Paris, France
Architect of record: glaserworks, Cincinnati, OH

CONTRIBUTORS

Cindy Coleman *Seven-Point Perspective, page 82*
Cindy Coleman is a partner in the Chicago-based design firm Frankel + Coleman and an associate professor in the Architecture, Interior Architecture, and Designed Objects department at the School of the Art Institute of Chicago.

Heidi Glenn *The Program Program, page 59*
The senior congressional correspondent for *Tax Notes* magazine, Heidi Glenn is pursuing a master's in journalism at American University, where she is fine-tuning her photojournalism skills.

Linda Hales *Culture, page 119*
The first design critic at *The Washington Post*, and before that, editor of the newspaper's Home section, Linda Hales has also written for *Elle Décor*, *House Beautiful*, the *International Herald Tribune*, and *The Wall Street Journal*.

Edward Keegan *Chicago Condos, page 69; Q&A: Dirk Denison, page 136*
Chicago architect Edward Keegan has written for *Architecture*, *Metropolis*, *Interior Design*, the *Chicago Tribune*, and *Crain's Chicago Business*. He has curated several exhibitions for the Chicago Architecture Foundation and teaches at Archeworks and Andrews University. *Chicago Architecture*, Keegan's second book, will appear in 2007.

Margot Carmichael Lester *Market Intelligence: Memphis, Tenn., page 44*
Margot Carmichael Lester, a freelance writer based in Carrboro, N.C., covers business and pleasure for the *L.A. Business Journal*, *Playboy*, MULTIFAMILY EXECUTIVE, and BUILDER. She is the author of three books, including *Be a Writer: Your Guide to the Writing Life* (Leverage Factory, 2006), co-written with Steve Peha.

Vernon Mays *Zip-Tie Tek, page 98*
Vernon Mays is curator at the Virginia Center for Architecture in Richmond and founding editor of *Inform* magazine. Before relocating to his native Virginia, Mays was a senior editor at *Progressive Architecture*. In 2001 he received Institute Honors for Collaborative Achievement, a national AIA award that recognizes exceptional contributions to design. Recently, Mays was appointed to the GSA's National Register of Peer Professionals.

Arthur C. Nelson *America Circa 2030, page 92*
Arthur C. Nelson, Ph.D., is professor of urban affairs and planning and co-director of the Metropolitan Institute at Virginia Tech's Alexandria Center. A fellow of the American Institute of Certified Planners, he is widely known for his work in growth management, development policy, and infrastructure finance.

Peter Rad *Cover; Seven-Point Perspective, page 82; Q&A: Dirk Denison, page 136*
The work of New York–based photographer Peter Rad has appeared in the pages of *Details* and *Vogue*, as well as in ad campaigns for companies such as American Express, Nokia, and Visa.

Andrew Wagner *Screen Capture, page 48*
Andrew Wagner is the incoming editor in chief of *American Craft*. Formerly an executive editor at *Dwell*, he was also the founding editor of *LIMN* and of *Dodge City Journal*. He is a consulting editor at *Places*, and his writing has appeared in *Azure*, *Blueprint*, *Breathe*, *Loud Paper*, *Travel and Leisure*, and *The San Francisco Chronicle*.

Jacob Ward *SOM.com, page 51*
Jacob Ward, a senior editor at *Men's Journal* and former managing editor of *ReadyMade*, writes about architecture and design for *Wired*, *Metropolis*, and *I.D.* He lives in Brooklyn.

Kathryn Jenson White *Box Office, page 106*
Kathryn Jenson White is a freelance writer and editor and a journalism professor at the University of Oklahoma. Recent stories have won awards from the Society for Professional Journalists and the International Regional Magazine Association.

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ARCHITECT

EDITOR IN CHIEF
Ned Cramer
ncramer@hanleywood.com

ART DIRECTOR
Abbott Miller, Pentagram

MANAGING EDITOR
Hannah McCann
hmccann@hanleywood.com

ASSOCIATE EDITOR
Braulio Agnese
bagnese@hanleywood.com

DESIGNERS
Abbott Miller
Kristen Spilman
Johnschen Kudos
Pentagram

EDITORIAL DIRECTOR, E-MEDIA
John Butterfield

CHIEF DESIGNER, E-MEDIA
Thomas C. Scala

SENIOR WEB EDITOR
Rachel Arculin
rarculin@hanleywood.com

PROJECT MANAGER, E-MEDIA
Andrew Breychak

DIRECTOR OF PRODUCTION AND PRODUCTION TECHNOLOGIES
Cathy Underwood

AD TRAFFIC MANAGER
Lauren Dobos

PREPRESS MANAGER
Fred Weisskopf

DIGITAL IMAGING MANAGER
George Brown

MARKETING DIRECTOR
Lucy Hansen

EDITORIAL AND ADVERTISING OFFICES
One Thomas Circle, N.W.
Suite 600
Washington, DC 20005
Phone: 202.452.0800
Fax: 202.785.1974

Hanley Wood Business Media

PRESIDENT
Peter M. Goldstone
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CHIEF FINANCIAL OFFICER/ CHIEF OPERATING OFFICER
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CHIEF EXECUTIVE OFFICER
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CONTROLLER
Randy Best

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ARCHITECT

GROUP PUBLISHER
Patrick J. Carroll
pcarroll@hanleywood.com
630.705.2504

PUBLISHER
Russell Ellis
rellis@hanleywood.com
202.736.3310

REGIONAL SALES MANAGER/SOUTHEAST
Nellie Callahan
ncallahan@hanleywood.com
202.736.3320

REGIONAL SALES MANAGER/WEST
Megean Coldwells
mcoldwells@hanleywood.com
626.577.0021

REGIONAL SALES MANAGER/MIDWEST
Michael Gilbert
mgilbert@hanleywood.com
630.705.2589

REGIONAL SALES MANAGER/NORTHEAST
Cliff Smith
csmith@hanleywood.com
917.705.3439

FINANCIAL ANALYST/
SALES DATABASE MANAGER
Christina Covington

INSIDE SALES ACCOUNT EXECUTIVES
Phone: 202.452.0800
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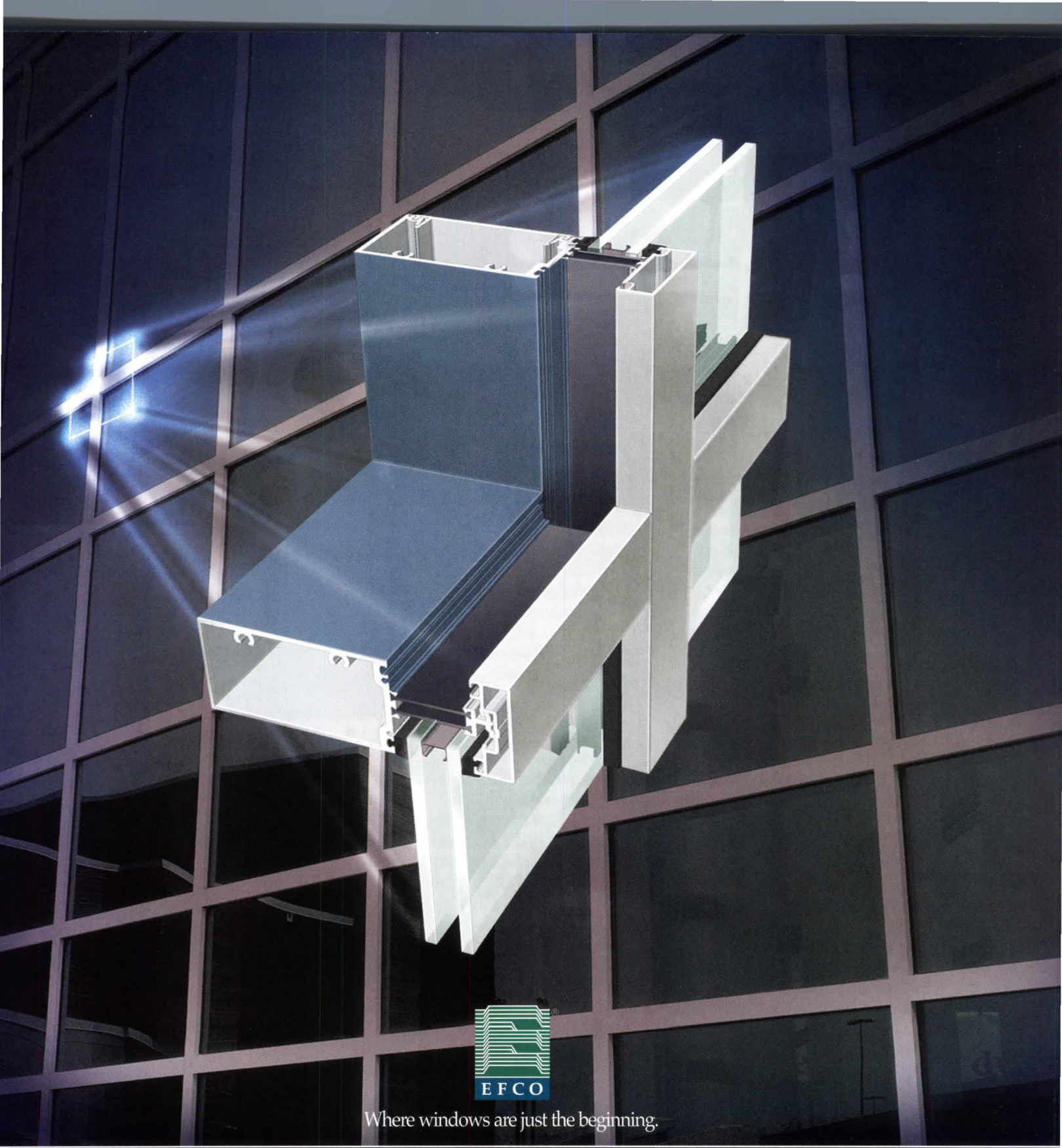

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FOR STARTERS

IS IT SILLY TO LAUNCH an architecture magazine with a 2,000-year-old premise?

Anyone who's lived through architecture school will remember, undoubtedly with great joy, the assignment from Marcus Vitruvius Pollio's *De architectura*, the oldest surviving book on architecture. Vitruvius, for those who missed class that day, was a practicing architect and contemporary of the Roman emperor Augustus. His book sets forth three essential qualities for architecture: *utilitas, firmitas*, and *venustas*—commodity, firmness, and delight, in the earliest English translation from the 17th century. Fast forward through titanic changes in every aspect of human existence, and no one's come up with a better definition of architecture and the responsibilities of a practicing architect. It'll do for ARCHITECT.

Translating Vitruvius into an architecture magazine is a complex task—whether the starting point is the original Latin or Jacobean English. The words commodity, firmness, and delight meant one thing in the 1600s; now they suggest different meanings, not all of them polite. Instead, today's architects say program, structure, and design, which can be confusingly technical, but are much safer to use in the company of clients. I think Vitruvius would understand.

For a magazine editor, it's tempting to skip the translation and let the buildings do the talking. The old-school method of architectural journalism is all about the building review, a story type with a fixed kit of parts: 1,000 words or so of muted criticism, a few presentation drawings, and a suite of photographs taken at sunrise or sunset, with no people in the way.

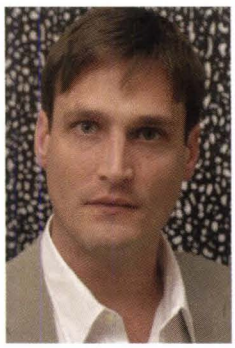
In this model, the design media habitually compete to publish the latest projects by the hottest designers, giving the occasional nod to large firms and emerging practitioners. But no matter the subject, a design review tells only one side of the story. You don't need Vitruvius to tell you which one.

Architectural journalism can serve the profession better by voicing the complexities, values, and concerns of the discipline itself. Every architect knows that architecture is more than just a synonym for a building, and that a building is more than just a beautiful object. ARCHITECT will portray architecture from multiple perspectives, not just as a succession of high-profile projects, glowingly photographed and critiqued, but as a technical and creative process, and as a community.

Because buildings do not spring from the ground, fully formed, ARCHITECT will celebrate the people—famous and otherwise—who get buildings built. Moreover, because the profession of architecture doesn't exist in a vacuum, ARCHITECT will introduce its readers not just to other architects, but to those strange creatures who labor on the periphery, such as contractors, real estate developers, and building-product manufacturers.

To be successful, ARCHITECT must be useful. In these pages, leading experts will share reliable advice about business development, building and information technology, practice management, and other subjects that don't fit the curriculum in architecture school.

We'll also try to entertain you. Our graphic designer, Abbott Miller of Pentagram, promises that every bit of this information will appear in an accessible and compelling format. In brief, ARCHITECT will use the language of design to engage a community of designers.



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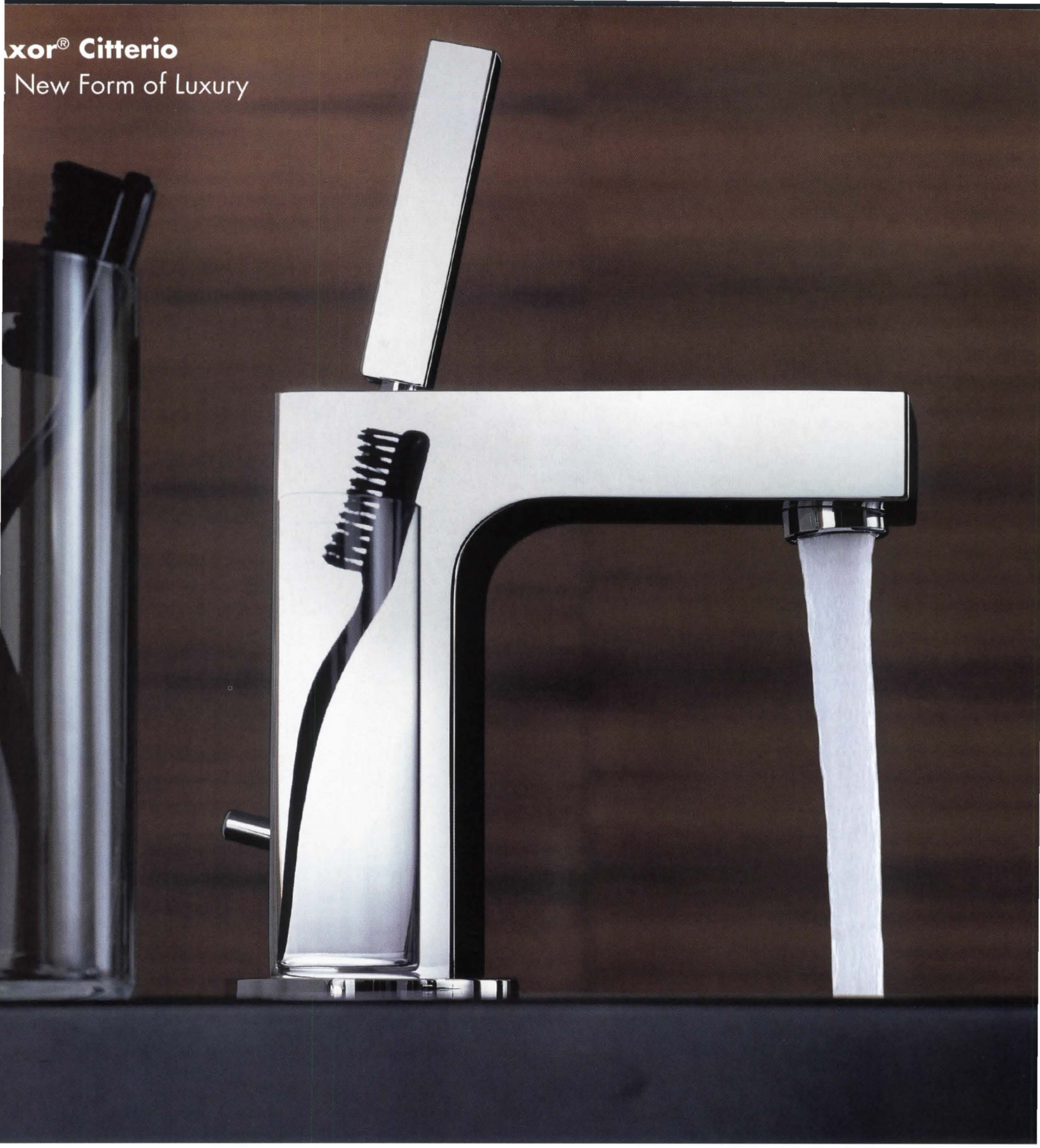
Ned Cramer
Editor in Chief

ARCHITECT WILL PORTRAY ARCHITECTURE FROM MULTIPLE PERSPECTIVES, NOT JUST AS A SUCCESSION OF HIGH-PROFILE PROJECTS, BUT AS A TECHNICAL AND CREATIVE PROCESS, AND AS A COMMUNITY.



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The ARCHITECT creative team includes (from left) graphic designers Kristen Spilman and Abbott Miller of Pentagram and editors Ned Cramer, Hannah McCann, and Braulio Agnese of Hanley Wood. Not pictured: a remarkable group of creative, technical, and business experts at Pentagram and Hanley Wood who have shepherded the magazine and accompanying website into being.

In my second year of architecture school, a professor told the assembled studio class, "You must take a position." Her tone delivered a second message: "And if you don't, you're worthless." The memory still upsets me. I'd like to think that questions are more important than conclusions. ARCHITECT is designed to be open-minded.

Instead of taking sides, ARCHITECT will provide forums for discussion. In print, on our website, and at events around the country, ARCHITECT offers every practitioner a standing invitation to share ideas and rally around issues of universal concern—from best practices in business to aspirations for society and the environment. Commodity, firmness, and delight are lofty goals, and ARCHITECT needs your participation to attain them. Join us every month for the making of a new ARCHITECT. Vitruvius will be there.

Hail and Farewell

As a new magazine arrives, an old one departs: In October 2006, *Architecture* published its final issue. The *Architecture* Home of the Year awards are slated to appear in the very next issue of ARCHITECT, and the P/A Awards will continue without interruption. This year's P/A jury met in October. For the results of their deliberations, look to the January 2007 issue of ARCHITECT. A call for entries for the 55th annual awards will soon follow.

The November/December issue of *Architectural Lighting*, sister magazine of *Architecture*, and now of ARCHITECT, will appear as scheduled, under the thoughtful direction of editor Elizabeth Donoff.

Ned Cramer
Editor in Chief

ARCHITECT OFFERS A STANDING INVITATION TO SHARE IDEAS AND RALLY AROUND ISSUES OF UNIVERSAL CONCERN—FROM BEST PRACTICES IN BUSINESS TO ASPIRATIONS FOR SOCIETY AND THE ENVIRONMENT.

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LETTER FROM FRANK ANTON

AS YOU BEGIN READING this new architectural magazine, maybe you're asking: Why a new magazine? Why now? And who's behind it?

Let me answer those good questions in reverse order. The publisher of ARCHITECT is Hanley Wood, for 25 years the leading media company serving the residential construction market. Hanley Wood publishes 20 magazines for housing professionals, including its flagship titles, BUILDER and REMODELING, as well as the only magazine serving architects whose practices focus on housing, RESIDENTIAL ARCHITECT. In other words, while you might not know Hanley Wood or read any of its other magazines, the company is not a newcomer.

The answer to question two—why now—is provided by the Brookings Institution, a think tank in Washington, D.C. About two years ago, Brookings released a study on how demographic changes and market trends will affect the nation's built environment. In doing the study, Brookings wanted to quantify how many homes and office buildings and other structures must be built to accommodate future growth. The conclusion: the built environment will effectively double in size by 2030. In other words, a building boom of unprecedented proportions is underway, and you—the architect—should and must play a crucial and bigger role in influencing what gets built.

In answering the remaining question—why a new magazine—I find myself reminded of a line of lyrics from Bob Dylan's classic "Stuck Inside of Mobile with the Memphis Blues Again." Dylan sings, "Your debutante just knows what you need, but I know what you want." Most architects already receive a well-established, highly acclaimed magazine that month after month offers up a record of important projects that they need to see. ARCHITECT will offer up more of what you really want, and need. Yes, it will inspire you with beautiful photographs of groundbreaking buildings (you can't cover architecture without talking about buildings any more than you can cover baseball without covering the Yankees), but it will also inform you about how market conditions will affect your practice, how better client services and marketing can build your business (yes, your practice is a business), how technology will change your workplace and the products you specify, and how new management strategies will make your staff more successful in every way. In other words, ARCHITECT will be about architecture and buildings, but above all it will be—as its name implies—about you and your life's work.

My life's work is magazines. In fact, in my office there's a picture my daughter drew of me when she was in preschool, with this caption: "My Daddy makes magazines." Making this new magazine a magazine you will want to read is my goal, as well as the goal of its editor in chief, Ned Cramer. We believe that if you read it, it will help you to become a better architect, which in turn will make good architecture more widespread and more valued, just as the nation embarks on its biggest building boom ever.

Frank Anton
Chief Executive Officer
Hanley Wood, LLC

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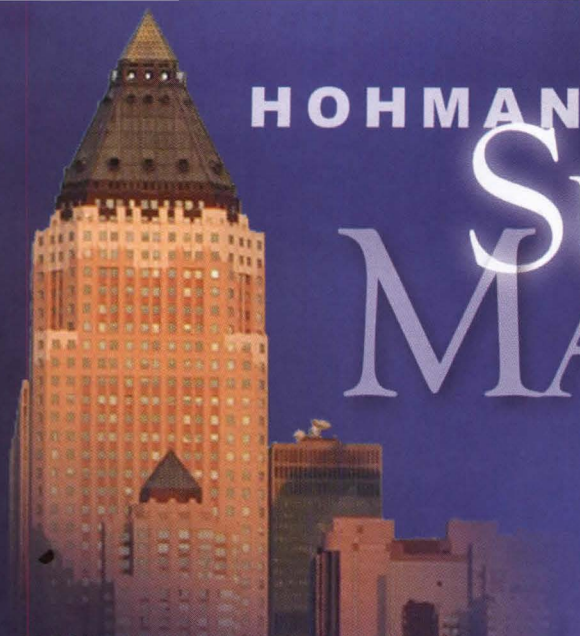

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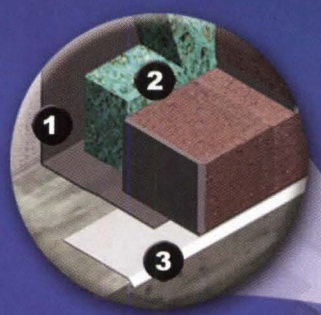

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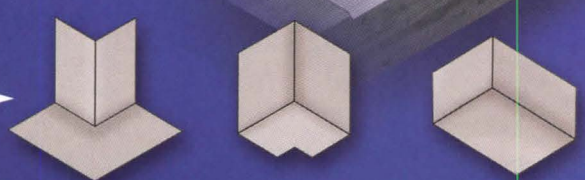

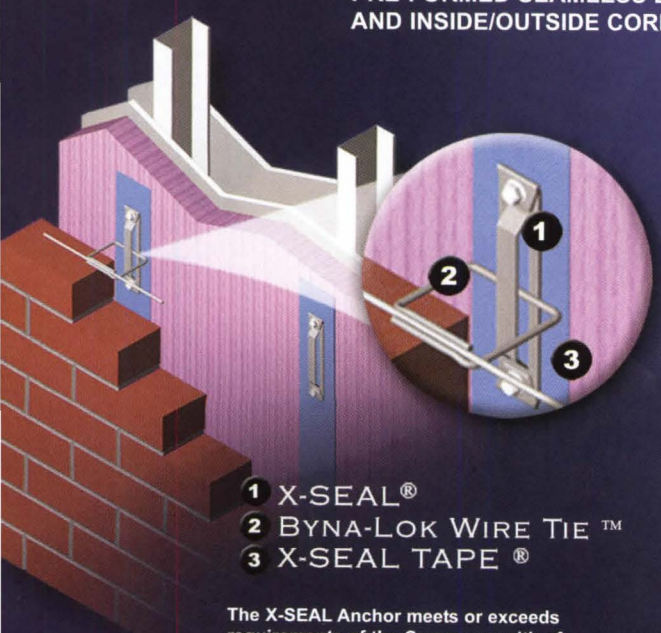

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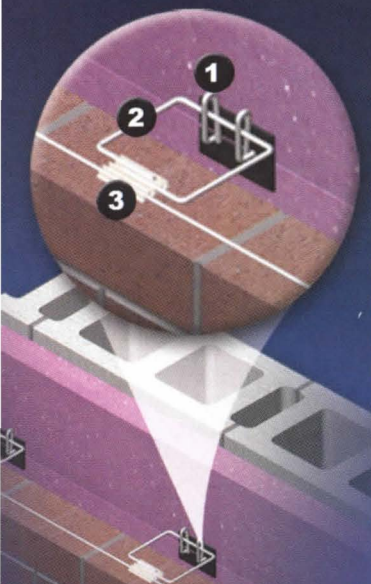

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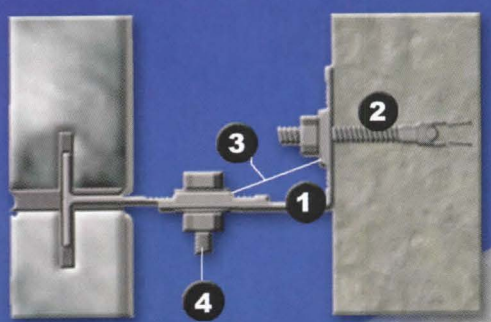

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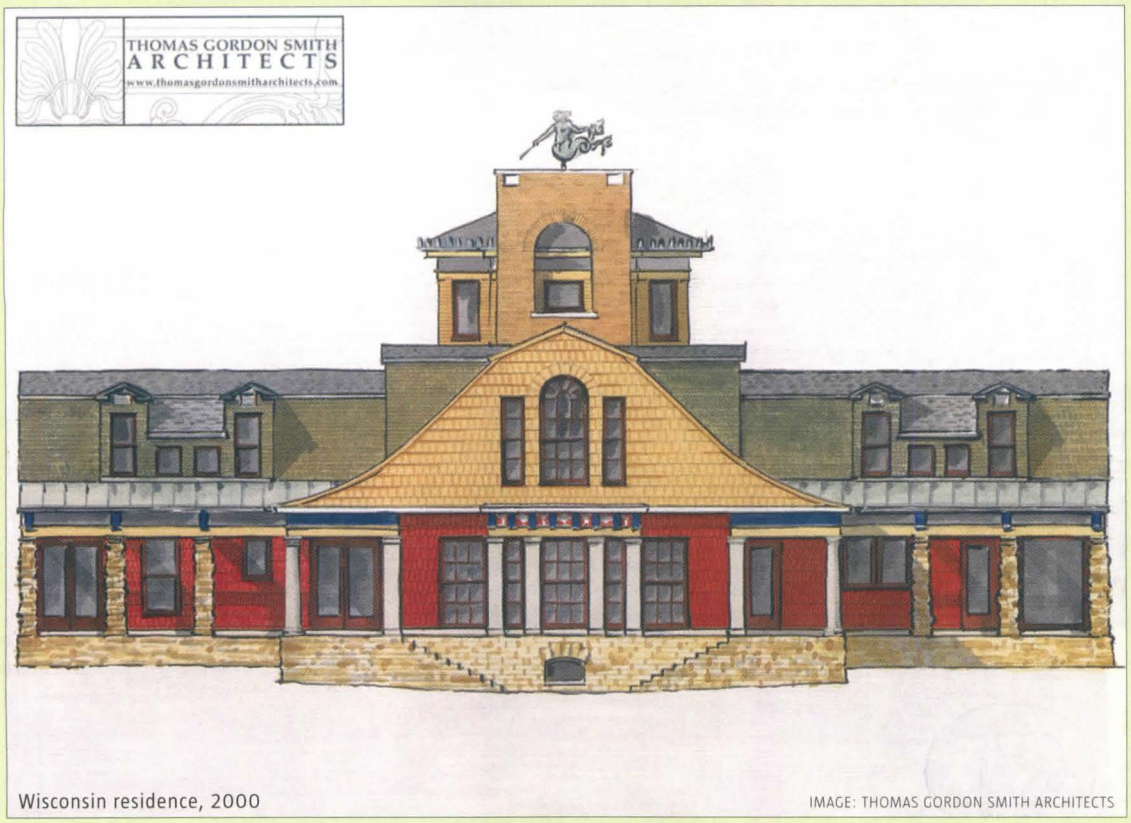

Wisconsin residence, 2000 IMAGE: THOMAS GORDON SMITH ARCHITECTS

THOMAS GORDON SMITH, a practitioner and champion of classical architecture, will be the U.S. General Services Administration's new chief architect, according to a Sept. 6 article in *The Wall Street Journal.*

The appointment of Smith could mean that future federal construction projects will embrace a more traditional style, in contrast to the legacy of the previous chief architect, Edward Feiner, who retired in January 2005. Feiner established a design-review process at the GSA that commissioned projects from avant-garde architects such as Thom Mayne and Richard Meier as well as more-traditional architects such as Robert A.M. Stern and Ralph Jackson.

Stern, dean of the Yale School of Architecture, is pleased with the news. "[Smith is] a wonderful choice [who will] probably get a lot of people crazy," said Stern in the *Journal* article. "[He has] a strong point of view, and that's great. But he has the capacity to shift and manage his position without closing the door to others."

But not everyone in the architecture community is so sanguine. "A representative of the U.S. government needs to act on balance in the selection of architects," Stanley Tigerman, principal of Tigerman McCurry Architects in Chicago, tells ARCHITECT. "And with Jeff Speck [director of design at the National Endowment of the Arts, appointed in 2003] and now Smith, there seems to be a right-wing Republican pattern.... To have [Smith] as head of GSA—shocking barely begins to describe it."

No official word on the appointment had been released by press time, and both Smith and the Public Buildings Service commissioner's office at the GSA declined to comment on the matter.

THOMAS GORDON SMITH

Positions: principal, Thomas Gordon Smith Architects, South Bend, Ind.; professor, University of Notre Dame School of Architecture, Notre Dame, Ind.

Selected projects: Divine Mercy Catholic Church, Laredo, Texas (2001); World Trade Tower, Shanghai, China (1996; in collaboration with Shanghai Design Institute); Bond Hall School of Architecture, University of Notre Dame (1997; in collaboration with Ellerbe-Beckett)

Selected publications: *Vitruvius on Architecture* (New York: Monacelli Press, 2003); *Classical Architecture: Rule and Tradition* (Layton, Utah: Gibbs M. Smith, 1988)

Monograph of work: *Thomas Gordon Smith: The Rebirth of Classical Architecture,* by Richard John (London: Andreas Papadakis, 2001)

Website: www.thomasgordonsmitharchitects.com

Clips

Times are good for architects and engineers, according to **ZweigWhite.** In its "2006 Fee & Billing Survey of Architecture, Engineering, Planning & Environmental Consulting Firms," the Chicago-based consulting and research group finds that the median profit margin at architecture and engineering companies is at its highest point since 2001, rising to 12.5 percent from 11.1 percent.

More good news: The AIA's **Architecture Billings Index** for August jumped to its highest mark since July 2005, rising to 59.5 from the previous month's mark of 51.8 (any score over 50 indicates an increase in billings). Broken down by sector, commercial and industrial projects led the way with a score of 61.4.

Washington University in St. Louis has named **Bruce Lindsey,** the Paul Rudolph Professor of Architecture at Auburn University, dean of the College of Architecture and the Graduate School of Architecture & Urban Design. Lindsey will start his new position on Nov. 10.

Aaron Betsky has been named director of the Cincinnati Art Museum and will assume his new post on Nov. 21. Betsky had been the director of the Netherlands Architecture Institute, located in Rotterdam, since 2000.

Qingyun Ma, founder and design principal of the Shanghai, China, architecture firm MADA s.p.a.m., will be the new dean of the University of Southern California School of Architecture, effective Jan. 1. Ma has previously been a visiting professor at Harvard University, the University of Pennsylvania, and Columbia University in the United States, as well as at several European universities and institutes.

→ *continued on page 30*

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Workplace

Happy at the Office

New survey identifies top 20 firms to work for

BILLINGS, CLIENT SATISFACTION, AND AWARDS are three ways an architecture firm might measure success. Being named among the best places to work is another.

In September, Chicago-based consulting and research group ZweigWhite announced the results of its first-ever "best architecture firm to work for" survey, which focused on work environment and design opportunities for employees.

Topping the list of 20 (see below): Cincinnati-based FRCH Design Worldwide; Little, in Charlotte, N.C.; and Bloodgood Sharp Buster Architects & Planners, in West Des Moines, Iowa.

ZweigWhite principal Laura Rothman says the company has been conducting similar surveys of engineering firms for several years. Earlier this year, she says, ZweigWhite added architecture firms to the mix in preparation for its third annual Best Firm to Work for Summit, held in September.

The electronic questionnaire—which was announced to the several thousand firms in ZweigWhite's database as well as through a press release—comprised a corporate survey and an employee survey, says Rothman. Firms that completed the corporate part were provided a link through which employees could respond to the second part. At least 20 percent of a firm's employees had to respond for the firm to be added to the results.

In the end, 60 architecture firms and more than 4,000 employees were included in the final tally. Each firm will receive a copy of its responses to both portions of the questionnaire, Rothman says. The document will also show how the responses compared with those of the other 59 firms.

RANK	FIRM	HEADQUARTERS	NUMBER OF EMPLOYEES
1	FRCH Design Worldwide	Cincinnati	200
2	Little	Charlotte, N.C.	275
3	Bloodgood Sharp Buster Architects & Planners	West Des Moines, Iowa	300
4	Sasaki Associates	Watertown, Mass.	250
5	EDSA	Fort Lauderdale, Fla.	200
6	BSA LifeStructures	Indianapolis	215
7	Scott&Goble Architects	Tulsa, Okla.	70
8	RNL	Denver	200
9	Mackey Mitchell Associates	St. Louis	45
10	Kahler Slater	Milwaukee	125
11	Harley Ellis Devereaux	Southfield, Mich.	500
12	MulvannyG2 Architecture	Bellevue, Wash.	400
13	JLG Architects	Grand Forks, N.D.	25
14	Hnedak Bobo Group	Memphis, Tenn.	100
15	WESKetch Architecture	Millington, N.J.	30
16	Dominick Tringali Architects	Bloomfield Hills, Mich.	25
17	Perkowitz+Ruth Architects	Long Beach, Calif.	320
18	Cuhaci & Peterson Architects	Orlando, Fla.	100
19	SGA Cos.	Bethesda, Md.	15
20	Maxwell Johanson Maher Architects	Nashville, Tenn.	40

Clips

The Urban Land Institute has awarded **Peter Calthorpe,** principal of Calthorpe Associates in Berkeley, Calif., and a co-founder of the Congress for New Urbanism, the 2006 J.C. Nichols Prize for Visionaries in Urban Development. The $100,000 prize is given to a person whose career demonstrates a commitment to the highest standards of responsible development. Calthorpe is the first architect to receive the award.

A recent report from **The Brookings Institution** examines how land use is regulated in America's 50 largest metropolitan areas: The Northeast and Midwest generally use regulations to exclude growth, while the West uses regulations to accommodate and manage growth. In Texas, the report says, metro areas have "a regulatory order of their own ... [and] an unparalleled openness to growth and development."

The fall issue of *Catalyst,* a magazine for Atlanta's small- and midsize-business community, lists two architecture firms among its Top 50 Entrepreneurs for 2006. **Brown Doane Architects** was No. 4, and **Thompson, Ventulett, Stainback & Associates** came in at No. 22. All of the companies on the list, which ranks according to sales revenue growth, reported 2005 revenue of between $5 million and $200 million.

Architecture and planning firm **Ayers/Saint/Gross** received a design award in October from the Baltimore chapter of the AIA for the master plan it developed for Long Beach, Miss. The design, by Dhiru Thadani, director of the firm's town planning studio in Washington, D.C., was created as part of the Mississippi Renewal Forum, a post–Hurricane Katrina redevelopment charette.

→ *continued on page 34*

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Design

Brad Pitt Picks Matthew Berman, Andrew Kotchen

Workshop/apd wins New Orleans housing competition

IMAGES: WORKSHOP/APD

Andrew Kotchen (far left) and **Matthew Berman**, principals of Workshop/apd

ACTOR BRAD PITT has put $200,000 and immeasurable PR value into a competition for sustainable and affordable housing in New Orleans.

Organized with the nonprofit Global Green USA, the contest was intended to spark development in the city's flood-ravaged Ninth Ward. The winning plan, dubbed GREEN.O.LA, calls for 12 apartment units, six single-family houses, a community center, and a day-care facility to be built on 1.5 acres along the Mississippi River. Developer Trizec Properties Inc. has donated $100,000 toward the purchase of the land.

Pitt, who calls himself an "architecture junkie," came up with the idea for the competition. He also chaired the jury, which included Pritzker laureate Thom Mayne of Morphosis. GREEN.O.LA, selected from more than 160 entries, comes from Matthew Berman and Andrew Kotchen of the New York firm Workshop/apd.

Their scheme features modular structures in long, narrow forms that recall the shotgun houses destroyed by Hurricane Katrina. A land bridge links residents to the Mississippi in a positive way, and steel framing and construction techniques will be resistant to future hurricanes. Berman and Kotchen aimed for net-zero energy consumption with photovoltaics, geothermal heat pumps, water-reclamation systems, and green-roof treatments.

"It's supposed to be a model for sustainability on the Gulf Coast," Berman says.

GREEN.O.LA will cost an estimated $5 million to complete, according to Berman. Global Green is raising funds for construction, and Pitt, who will be filming in New Orleans over the winter, has vowed to watch over the project.

"This competition captures some of our best qualities as a society, our ingenuity, and our goodwill," Pitt says. "Our goal is to actually get them built." LINDA HALES

At press time, the designs from the competition's six finalists were viewable at *http://competition.globalgreen.org/images/final_panels.*

Efficiency

AIA, Contractors, Owners Join Hands on Industry Transformation

THE AIA, the Associated General Contractors of America (AGC), and the Construction Users Roundtable (CURT) announced in July the formation of a collaborative working group to "address and solve problems caused by industry fragmentation, lack of clear communication across professions, and old business models." The group's leaders are Norman Strong, AIA vice president; Doug Pruitt, AGC vice president nominee; and William Tibbit, former CURT president.

Markku Allison, a resource architect at the AIA and part of the group's staff, says the group has its roots in CURT's Architecture/Engineering Productivity Committee, which includes representatives from the AIA and the AGC. The committee developed two white papers—one analyzing industry inefficiencies, the other suggesting ways to optimize the construction process.

(CURT, created in 2000 by construction and engineering executives of major owner corporations, seeks to improve the cost effectiveness of how construction is planned, carried out, and managed. Member companies have at least $75 million in annual construction and maintenance expenditures.)

Spurred by the white papers, in May the AIA and the AGC held a construction industry summit in Washington; attendees included architects, engineers, contractors and subcontractors, attorneys, insurers, and owners. The event focused on the changes that are necessary to bring about industry transformation. The decision to form the AIA-AGC-CURT working group was one result of the summit.

Allison says that in addition to Strong, Pruitt, and Tibbit, the group, which does not yet have a name and is not expected to be permanent, would include a "thought leader" from each organization, as well as a volunteer and key staff person from each organization. Allison could not comment on what, exactly, the group will produce, except to say that its primary focus will be on creating strategies to bring about industry change.

My turn

Ken M. Tse, AIA, LEED AP
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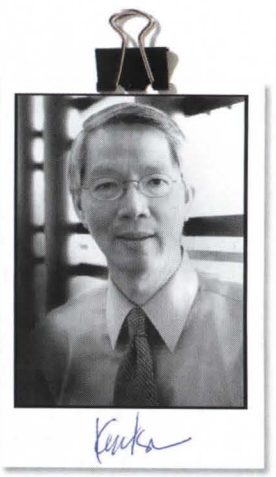

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Clips

In early October, Philadelphia Mayor John Street appointed architect and urban planner **Janice Woodcock** as executive director of the City Planning Commission, a Cabinet-level post. Woodcock, a past president of the Philadelphia chapter of the AIA, has worked as a project director for the city's Capital Program Office since 2004.

The Art Institute of Chicago has tapped **Zoe Ryan** to be the Neville Bryan Curator of Design. For the past six years, Ryan has been curator at the Van Alen Institute in New York City.

Benjamin Moore & Co. announced the winners of its 2006 Hue Awards, which recognize exceptional use of color in architecture and interior design: Lifetime Achievement: **Ettore Sottsass** (Milan, Italy); Contract Exteriors: **SMC Alsop** (Toronto); Contract Interiors: **Saia Barbarese Topouzanov Architechtes** (Montreal); Residential Exteriors: **Ibarra Rosano Design Architects** (Tucson, Ariz.); Residential Interiors: **David Ling** (New York); and Social Responsibility: **Gary Wang** (Cambridge, Mass.).

Witold Rybczynski, the Martin and Margy Meyerson Professor of Urbanism at the University of Pennsylvania's School of Design, has been awarded the National Building Museum's eighth Vincent J. Scully Prize. A popular architectural critic and essayist, Rybczynski will receive the award at the museum on Jan. 17, after which he will give a lecture on 20th century American urbanism.

The terminal that the **Richard Rogers Partnership** designed for the Barajas Airport in Madrid, Spain, has won the 2006 Stirling Prize, given annually by the Royal Institute of British Architects. The competition jury praised the building for "the sheer scale and complexity of what has been tackled and achieved." This is the first Sterling Prize for the firm, whose National Assembly building in Cardiff, Wales, was also on this year's short list.

Bill Stumpf, a principal at furniture-design firm Stumpf Weber + Associates, died on Aug. 30. He was 70. A longtime contractor for Herman Miller, Stumpf is perhaps best known for designing the Aeron chair in collaboration with industrial designer Don Chadwick.

Architect and preservationist **Richard Blinder,** a founding partner of Beyer Blinder Belle, died on Sept. 7. He was 71.

On Sept. 27, the International Criminal Tribunal for the Former Yugoslavia convicted former Bosnian Serb leader Momcilo Krajisnik of crimes against humanity and sentenced him to 27 years in prison. Some of the evidence used to convict him came from **András Riedlmayer,** bibliographer of the Aga Khan Program for Islamic Architecture at Harvard University's Fine Arts Library. Riedlmayer has documented the destruction of churches, mosques, and libraries that occurred in the Balkans during the 1990s, producing at least two reports for the tribunal, as well as other documents and publications.

According to the Oct. 7 issue of *New Scientist,* the real estate mantra **"location, location, location"** has been backed up with a mathematical model. By adapting a theory of magnetism, physicist Pablo Jensen of the École Normale Supérieure in Lyon, France, has been able to calculate a number (Q) for shops based on the nearness of attractive and repellant businesses. The higher the number, the better the shop's location.

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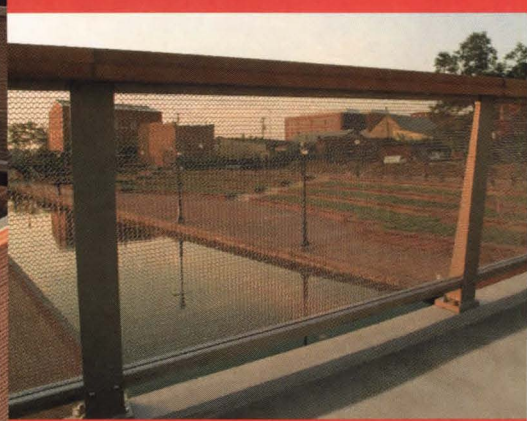

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Museum

Denver Home for Clyfford Still's Art Gets Less Abstract

Three firms chosen to show designs

DENVER IS EXPERIENCING an architectural renaissance these days, perhaps most notably in its construction of new museums.

Daniel Libeskind's addition to the Gio Ponti–designed Denver Art Museum opened on Oct. 7. The Museum of Contemporary Art/Denver is raising funds for a new building, designed by architect David Adjaye of London. And on Nov. 6, three architecture firms will present their designs for the Clyfford Still Museum, which will be making its home in the city by 2009.

The firms tapped by the Clyfford Still Museum are Allied Works Architecture of Portland, Ore.; New York–based Diller Scofidio + Renfro; and Olhausen DuBois Architects, also based in New York. The three were chosen in September after the selection committee interviewed five semifinalists.

Untitled (PH-118), 1947 PHOTO: CLYFFORD STILL MUSEUM

In an interview a few days before the announcement of the finalists, museum director Dean Sobel described all of the semifinalists as "more subtle in terms of forms and materials and less iconic [in their approach]," adding that the selection committee has "built into the process the understanding that [the museum] is much more about the content than the appearance." A salient point, since the building will exhibit the life's work of a single artist, abstract expressionist Clyfford Still.

When Still died in 1980, the vast majority of his art seemed to disappear with him. Still's estate held 90 percent of his output, and his will stipulated that the art would be given only to an American city willing to build a museum devoted solely to his work. For nearly a quarter-century, however, none was successful in its negotiations with the artist's widow, Patricia Still. Until Denver came calling, that is. In 2004, she agreed to bequeath her late husband's collection to the city; after her death in 2005, the city received about 400 more pieces of art as well as the artist's archives.

Sobel says that the selection committee will announce its final architect choice by early 2007. The 30,000-square-foot museum is expected to cost between $12 million and $20 million.

Codes

An Easier Way to Comply With Accessibility Standards

BACK IN THE DAYS OF HAMMURABI, king of Babylon, the building code was pretty simple: If your structure collapsed and killed the owner, you died. Things have become more complicated since then, if less severe. Today's architect must satisfy a host of regulations and standards, not to mention federal law. For places of public accommodation, however, the issues related to accessibility just became a little easier to understand.

The International Code Council (ICC) is offering a free tool for comparing two federal accessibility standards with the International Building Code (see "Matrix Sources," below). The 2006 IBC/ADAAG Comparison, a 393-page chart, is available for download as a PDF from the ICC's website. To access the chart, users must fill out a web-based form, after which they will receive an e-mail containing a link to the web page where the document can be downloaded.

The matrix was developed by Perry, N.Y.–based BDBlack Codes, a firm that offers consulting and training services on building codes and the ADA, the Fair Housing Act, and Section 504 of the Rehabilitation Act. Earlier this year, BDBlack developed a similar matrix for the U.S. Access Board that references the 2003 IBC and 2004 Supplement.

The IBC/ADAAG Comparison was downloaded 2,700 times in the first two months after it was made available in early July, says Gretchen Hesbacher, public relations specialist at the ICC.

Find the matrix at *www.iccsafe.org /2006comparison-request.html.*

MATRIX SOURCES

2006 International Building Code (which references the 2003 edition of ICC/ANSI A117.1 Standard on Accessible and Usable Buildings and Facilities)

2004 Americans With Disabilities Act and Architectural Barriers Act Accessibility Guidelines for Buildings and Facilities

1990 Americans With Disabilities Act Accessibility Guidelines

Legislation

California Law Makes Architects' Liability More Equitable

Local agencies can no longer hold design professionals responsible for mistakes of others

ON JAN. 1, 2007, architects in California can learn to stop worrying and love the public agency project.

That's the day Assembly Bill 573 goes into effect. The legislation, signed by Gov. Arnold Schwarzenegger in September, prohibits California's local public agencies from requiring design professionals—defined as architects, landscape architects, engineers, and land surveyors—to be responsible for the negligence and errors of other parties. Design professionals' liability for their own construction defects remains unaltered.

AB 573 is the "most significant change to state law for design professionals," says Mark Christian, director of legislative affairs at the AIA California Council. Under current law, he says, public agencies have been able to make broad indemnification a "take it or leave it" proposition for architects and other designers.

Yet architects' insurers are not obligated to cover claims resulting from the errors and omissions of others. As a result, says Christian, taking on a public agency project frequently turns into "contractual roulette," a game that only the larger firms have been willing to play.

But the issue isn't limited to California, notes Brian Stewart, a member at South Pasadena–based law firm Collins, Collins, Muir & Stewart who represents architects and worked to get AB 573 passed. In "most states," he says, public entities are able to force similarly one-sided indemnity agreements on architects. Now, at least in California, says Stewart, liability is a "balanced playing field."

AB 573 was the third effort in eight years to get such legislation enacted, says Christian. Authored by Assemblywoman Lois Wolk (D-Davis) and sponsored by the Consulting Engineers Land Surveyors of California, the bill was supported by several industry groups—including the AIA California Council, the California Professional Association of Specialty Contractors, and the California Landscape Contractors Association—as well as more than 200 businesses of all sizes.

Deadlines

Competitions and more

NOVEMBER 16
Nathan Phillips Square Design Competition
Toronto is holding an international design competition for the revitalization of Nathan Phillips Square, a leading tourist attraction for the city and a national and provincial landmark.
www.toronto.ca/npsquarecompetition

NOVEMBER 30
Ceiling Innovation Awards for Design Excellence
Open to architects and industry design professionals who have completed projects in which at least 50 percent of the ceiling system is composed of Chicago Metallic products. Projects must have been completed between January 2002 and November 2006.
www.ceilinginnovationawards.com

DECEMBER 1
American Architectural Foundation Minority/Disadvantaged Scholarship
Open to high school seniors and college freshmen who plan to study architecture in an NAAB-accredited program.
www.archfoundation.org

DECEMBER 1
International Parking Institute Awards for Excellence
Open to public agencies, jurisdictions, institutions, organizations, or corporations that own parking facilities completed, renovated, or in progress since Jan. 1, 2004.
www.parking.org

DECEMBER 1
Submissions for Exhibition of School Architecture
Sponsored by the National School Boards Association and the AIA, the exhibition will occur at the NSBA's annual conference in April 2007. Projects must have been completed since Jan. 1, 2004, or be in progress by Jan. 1, 2007.
www.nsba.org

On the Move

Adrian Smith Leaves SOM

Longtime Skidmore partner bucks retirement to start new firm

ADRIAN SMITH ANNOUNCED in early October that he was leaving Skidmore Owings & Merrill (SOM) to start a new Chicago-based firm specializing in large international and sustainable projects. "We'll be competing with SOM," Smith says. He plans a firm of 50 architects or more.

A Chicago native, Smith began working at SOM in 1967 while he attended the University of Illinois at Chicago. Except for a six-month stint at Perkins+Will, SOM has been Smith's sole professional home. He became a partner in 1980, collaborating with luminaries such as Bruce Graham, Walter Netsch, and Myron Goldsmith as he worked his way up the ranks. Smith characterizes his departure as the latest changing of the guard. "They have transitioned from generation to generation," he says. "It's the reason SOM has lasted 70 years."

Smith's role at SOM changed in recent years as new partners in their mid-40s emerged and he approached mandatory retirement at 65. Three years ago, he became a consulting design partner—a perceived demotion that some considered his first step toward the door, even while he maintained design control over such major projects as Trump Tower Chicago, Burj Dubai (planned to be the world's tallest building), and the "Zero Energy Tower" (the corporate headquarters for Guangdong Tobacco Co. in Guangzhou, China).

"I want to start my own practice," says Smith, 62, who hopes to work for at least another 10 to 15 years. He left SOM with 10 of his projects still in progress, although only three are not yet in construction. Smith has offered to consult with SOM on design issues that may remain; he will be involved on a case-by-case basis only if both SOM and the clients concur.

Smith isn't concerned about finding challenges that will match his previous commissions. "I have an international reach," he says. "I'm probably more well known in China than I am here." EDWARD KEEGAN

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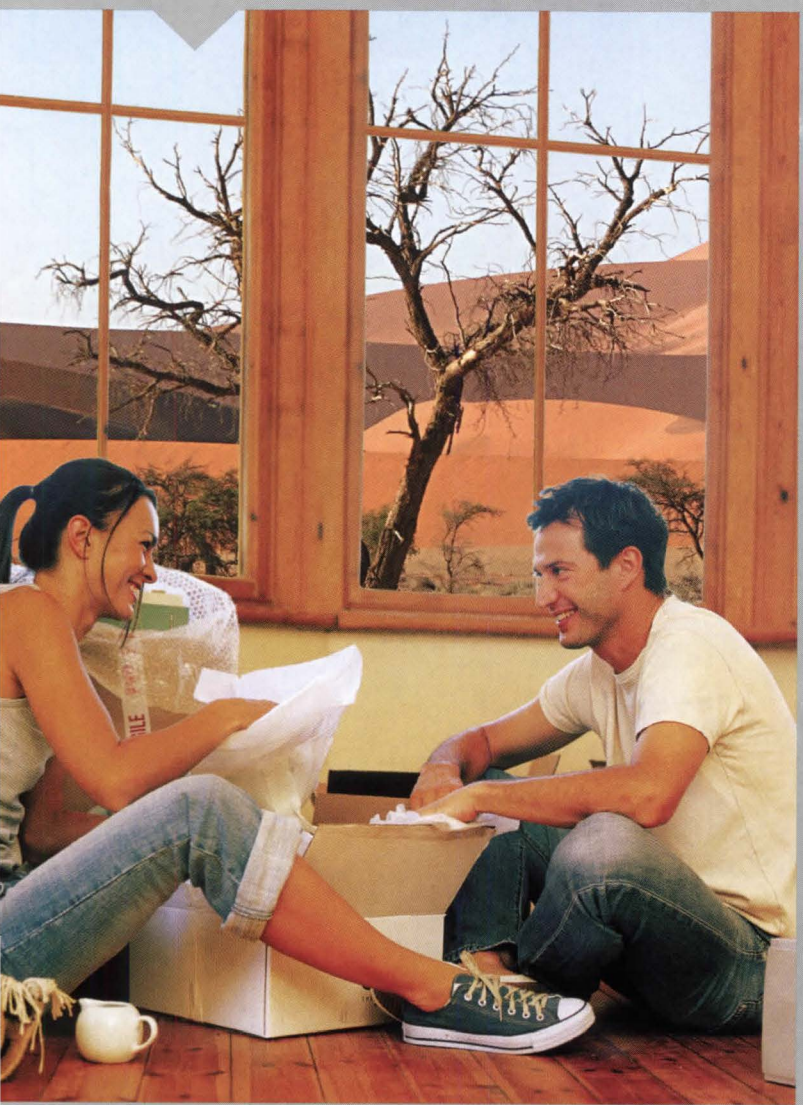

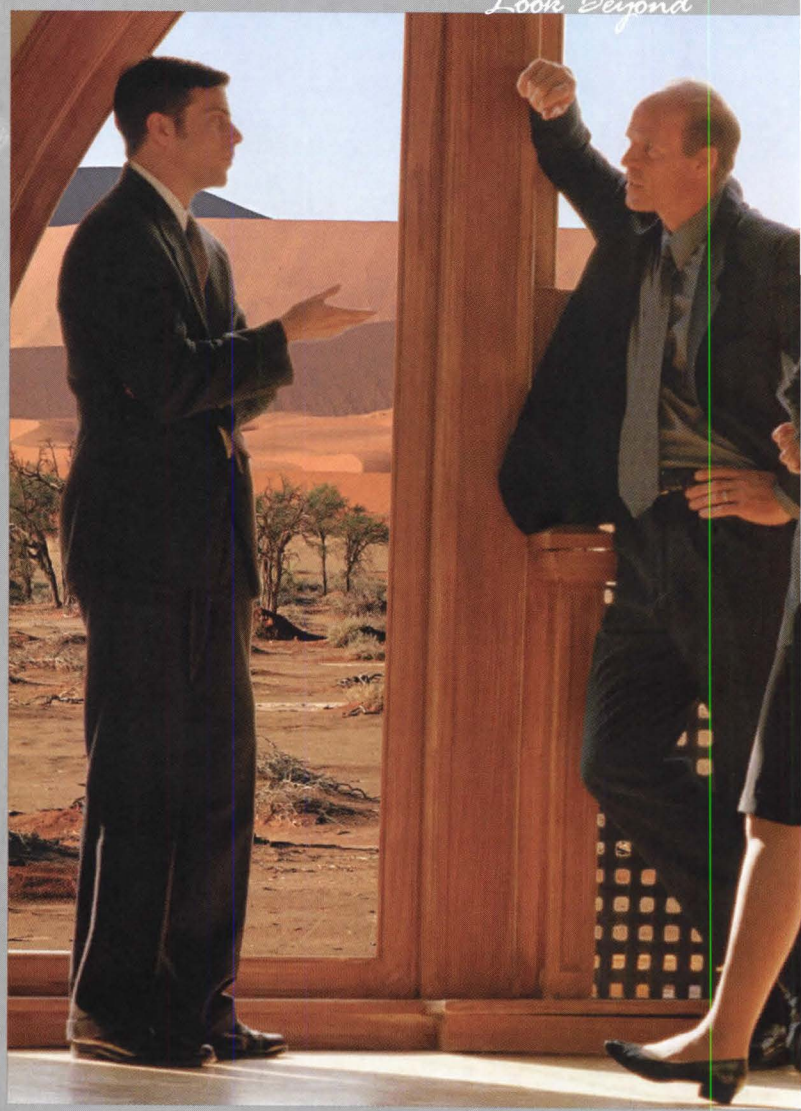

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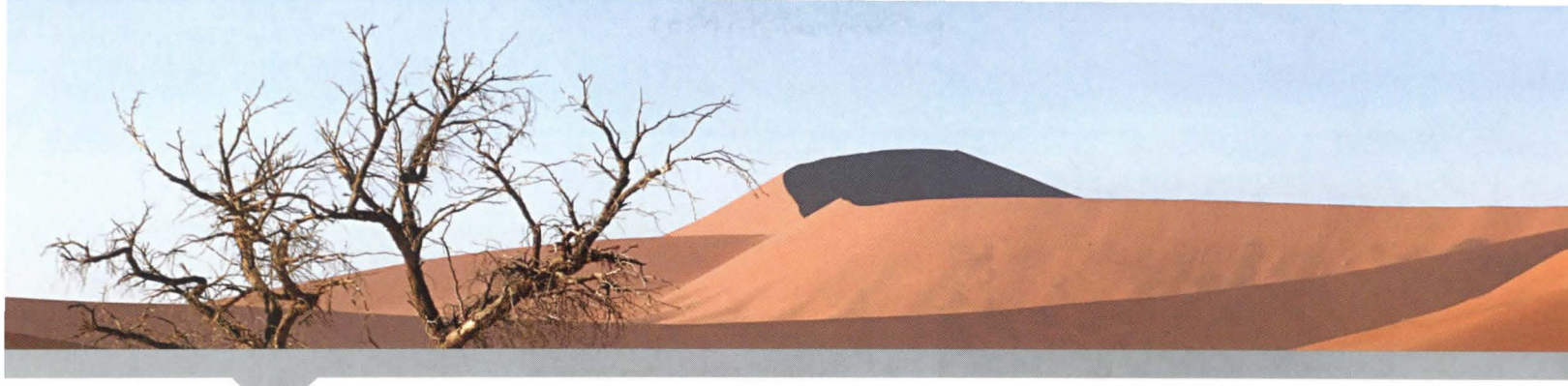

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Glass Thickness	Air Space	Winter U-value		Summer U-value		% Transmittance			% Reflectance			Shading Coefficient	SHGC	RHG	
		Air	Argon	Air	Argon	Visible	Solar	UV	Vis out	Vis in	Solar			Air	Argon
SGL	1/2"	0.30	0.24	0.28	0.22	41	20	20	11	11	34	0.27	0.24	59	56
1/8"	1/2"	0.30	0.24	0.28	0.22	40	19	19	12	11	33	0.27	0.23	58	55
5/32"	1/2"	0.29	0.24	0.28	0.22	40	19	17	12	11	31	0.27	0.23	58	55
3/16"	1/2"	0.29	0.24	0.28	0.22	39	18	16	13	11	29	0.27	0.24	58	56
1/4"	1/2"	0.29	0.24	0.28	0.22	38	18	16	13	11	27	0.27	0.23	58	55

All values are for center of glass and were obtained using LBNL's Window 5.2 software
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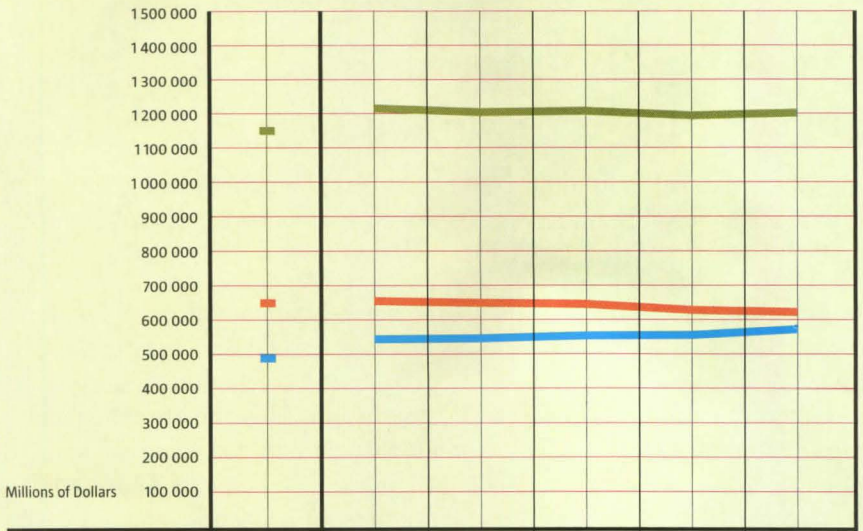
MARKET INTELLIGENCE NATIONAL

August 2006

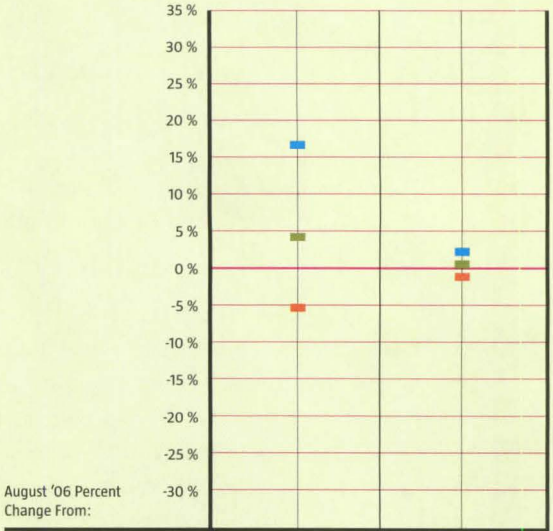
Construction Spending

From the U.S. Census Bureau's monthly report on the value of construction put in place

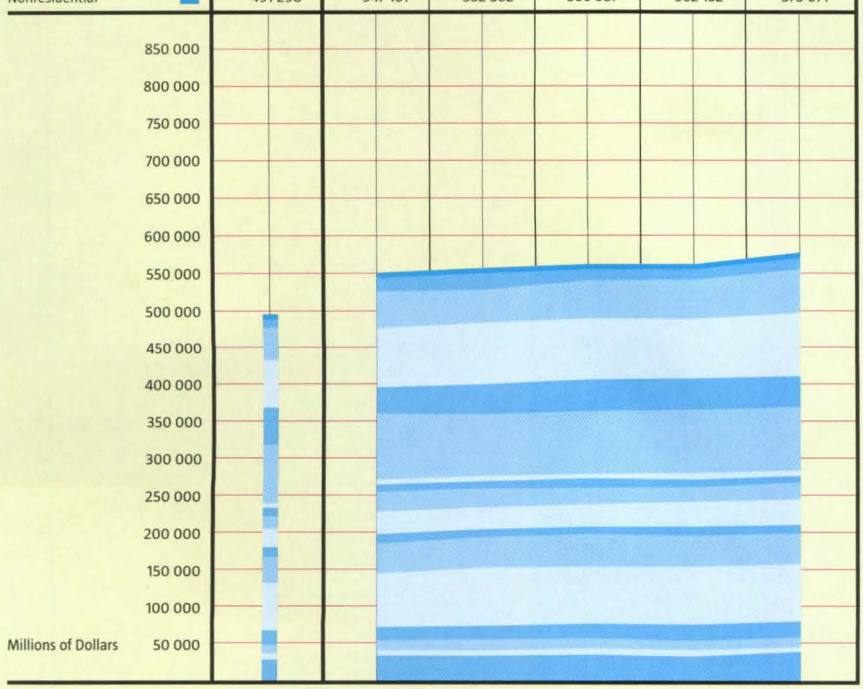
TOTAL CONSTRUCTION (SEASONALLY ADJUSTED)



Months	August '05	April '06	May '06	June '06	July '06	August '06
Total Construction	1 150 316	1 214 449	1 209 192	1 209 249	1 196 755	1 200 686
Residential	659 018	667 288	656 629	648 862	634 603	625 615
Nonresidential	491 298	547 161	552 562	560 387	562 152	575 071



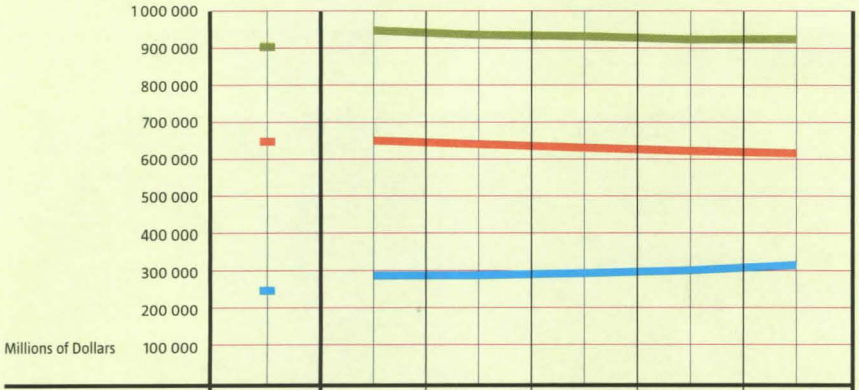
Months	August '05	July '06
Total Construction	4.4 %	0.3 %
Residential	-5.1 %	-1.4 %
Nonresidential	17.1 %	2.3 %



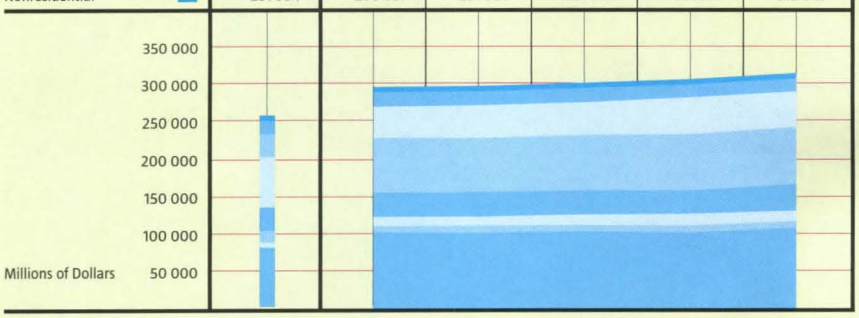
Construction: Nonresidential (August '06 total, millions of dollars)

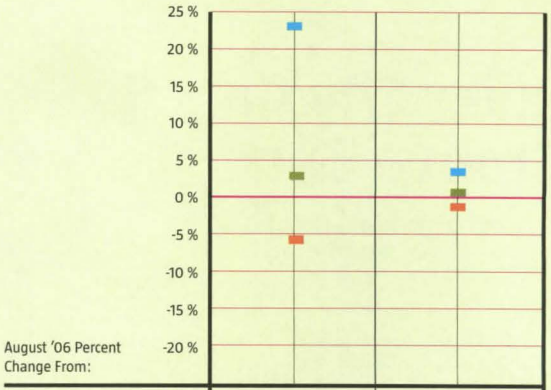
- Lodging (21,062)
- Office (56,274)
- Commercial (84,751)
- Health care (43,328)
- Educational (84,011)
- Religious (82,220)
- Public safety (10,483)
- Amusement and recreation (22,766)
- Transportation (29,967)
- Communication (15,375)
- Power (42,288)
- Highway and street (78,354)
- Sewage and waste disposal (19,231)
- Water supply (13,074)
- Conservation and development (5,233)
- Manufacturing (40,744)

TOTAL PRIVATE CONSTRUCTION (SEASONALLY ADJUSTED)



Months	August '05	April '06	May '06	June '06	July '06	August '06
Total Construction	902 729	948 467	939 186	937 190	927 949	929 051
Residential	650 776	657 807	647 205	639 426	626 212	617 006
Nonresidential	251 954	290 661	291 980	297 765	301 737	312 045



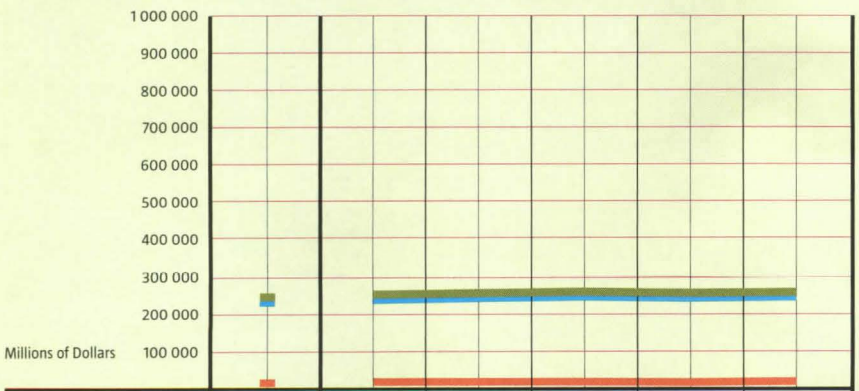


Months	August '05	July '06
Total Construction	2.9 %	0.1 %
Residential	-5.2 %	-1.5 %
Nonresidential	23.8 %	3.4 %

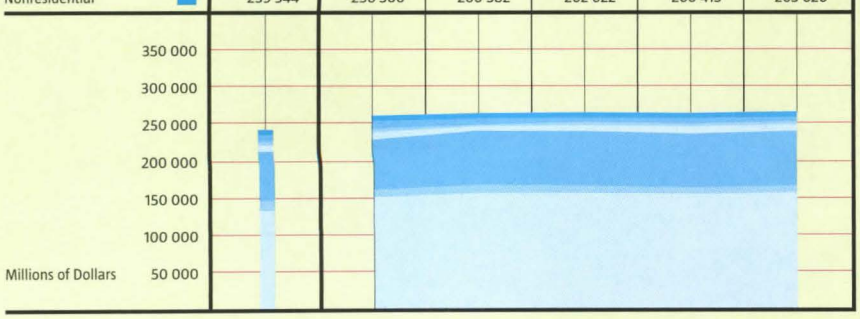
Private Construction: Nonresidential (August '06 total, millions of dollars)

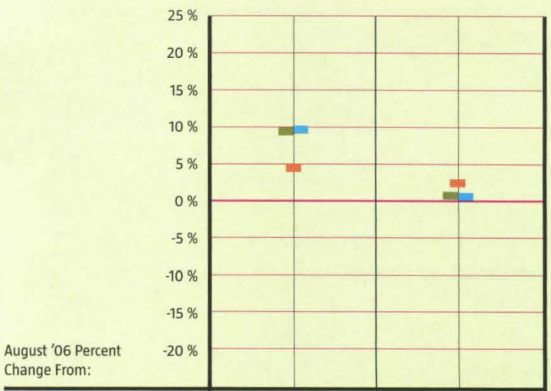
- Lodging (20,494)
- Office (45,435)
- Commercial (80,950)
- Health care (33,620)
- Educational (13,346)
- Religious (8,197)
- Other (108,414)

TOTAL PUBLIC CONSTRUCTION (SEASONALLY ADJUSTED)



Months	August '05	April '06	May '06	June '06	July '06	August '06
Total Construction	247 586	265 981	270 006	272 059	268 806	271 635
Residential	8 242	9 481	9 424	9 437	8 390	8 609
Nonresidential	239 344	256 500	260 582	262 622	260 415	263 026





Months	August '05	July '06
Total Construction	9.7 %	1.1 %
Residential	4.5 %	2.6 %
Nonresidential	9.9 %	1.0 %

Public Construction: Nonresidential (August '06 total, millions of dollars)

- Office (10,383)
- Commercial (3,802)
- Health care (9,618)
- Educational (70,644)
- Public safety (10,059)
- Other (157,172)

MARKET INTELLIGENCE LOCAL

Memphis, Tenn.

River City Gets Its Groove Back

FOR MOST OF THE 1960S AND 1970S, 6.5-square-mile downtown Memphis was singing the blues. Employers and residents were moving to the suburbs, and much of the central city, including the famous Peabody Hotel and historic Beale Street, was left for dead. "Few Memphians would [disagree] that one development in particular served as a catalyst for much of the development downtown Memphis is experiencing today," says Andy Kitsinger, director of planning and development for the Memphis Center City Commission. "On July 31, 1975, Jack Belz purchased the Peabody Hotel for $75,000 and began a $24 million renovation." The hotel reopened in 1981.

Today, approximately $3 billion in public and private funds has been invested in the area's renaissance. The result, says Jim Lutz, assistant professor in the architecture program at the University of Memphis, is "a Southern, Mississippi River town with a fair part of its historic fabric still intact. It comes by its 'grittiness' honestly. The rebirth of downtown Memphis is proof of what can be accomplished through the vision and commitment of architects and developers willing to be urban pioneers." MARGOT CARMICHAEL LESTER

OFFICE MARKET

Downtown Memphis has 2.8 million square feet of office space. "There has not been a new, Class A office building delivered since 1997, and none is on the immediate horizon," says Don Drinkard, marketing specialist for CB Richard Ellis. "The rental rates you need to achieve to attract tenants to downtown Memphis cannot support new office development."

	2Q05	2Q06
Vacancy	16.8%	18.2%
Availability	17%	22.7%
Average Asking Rate	$15.70/s.f.	$15.81/s.f.

Source: CB Richard Ellis/Memphis

RESIDENTIAL MARKET

The residential population has grown 10.3 percent since 2000. The current downtown Memphis population is 18,000, with 33,167 estimated by 2111; about 68,000 people work there. Information workers and second-home buyers are driving sales. "Buyer demand seems to be steady, with some fears of cooling in the high-end residential market, particularly condos," says Jim Lutz.

NOTABLE PROJECTS

PHOTO: JEFFREY JACOBS PHOTOGRAPHY

GE5 is an infill project consisting of five modern townhomes on the edge of a historic arts district. Designed by Archimania; developed by Woodard Properties.

PHOTO: RICK BOSTICK/PHOTODESIGN

FedEx Forum, the city's most expensive new-construction project at $250 million, is home to the NBA's Memphis Grizzlies and also hosts concerts and community events. Designed by Ellerbe Beckett Architects in association with Looney Ricks Kiss; developed by the Public Building Authority.

→ *continued on page 46*

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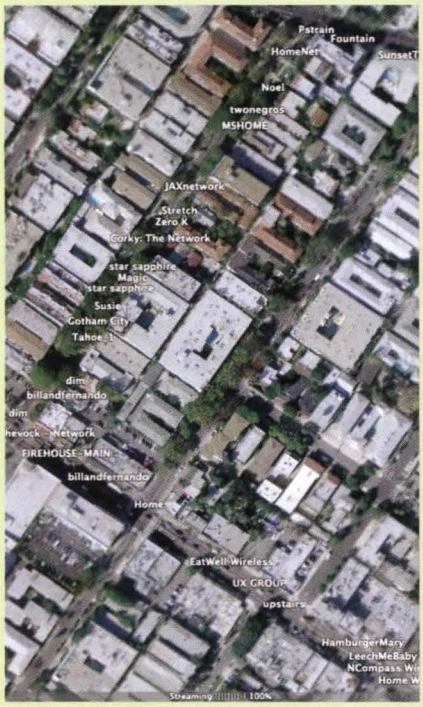
Mapping the wireless world with Mark Hansen



MEET MARK HANSEN: humble, mild-mannered, 42-year-old statistics professor; artist and co-creator of the "Listening Post," an art installation that culls text fragments in real time from thousands of unrestricted Internet chat rooms; and, perhaps most interestingly, a proud new faculty member of the Center for Embedded Networked Sensing (CENS) at UCLA.

Though the center's name might sound terribly esoteric, the goal of its research is quite simple and, in the end, absolutely fundamental to the creation of a high-functioning community. Simply put, embedded networked sensing systems are collections of wireless smart sensors and actuators (devices that transform input signals from these sensors into data) hidden in the natural and built worlds. These networks monitor previously unobservable events, leading to better understanding and management of our complex physical environment.

Last year, Hansen created a UCLA graduate seminar called Site Specifics (Statistics 160/260) to map the wireless networks of the greater Los Angeles basin. Setting out to investigate a number of physical, localized sites, from hospitals to high schools, Hansen and his students conducted "Bluetooth sweeps" using GPS units to map the broiling invisible infrastructure of contemporary communication.

In one of the more compelling episodes, a group of students trolled West *Hollywood*, as Hansen explains, "scanning for open wireless networks—routers that people install in their homes, often without any password protection, 'inviting' anyone to share their internet connection." Hansen and his students found that many of the informal networks had names like "are you stealing my stuff," "go away," and similarly unfriendly monikers, exposing the fact that despite the seemingly private world of these hidden networks, "people are clearly aware of how visible they are."

Though technology has often been labeled a community-killer because of its ability to obliterate public interaction, Hansen's work, true to the stated goals of CENS, seems to suggest that in fact our social realm is merely morphing into a privatized kind of public existence. "The wireless maps give us new views of our neighborhoods," Hansen says, "a shared view of the digital layers that exist on the built environment, pointing to just how connected we are." ANDREW WAGNER

INTERVIEWS

archinect.com/features/article.php?id=43677_0_23_0_M
BLDGBLOG founder Geoff Manaugh and **Detlef Mertins,** chair of the University of Pennsylvania's Architecture Department, discuss the "tactics of architectural education in this time of rapidly shifting technology."

bldgblog.blogspot.com/2006/08/logistics-of-distance-interview-with.html
Manaugh also spoke with **Kazys Varnelis**, just before Varnelis moved in August to Columbia University to found and direct the Network Architectural Lab, part of the Graduate School of Architecture, Planning, and Preservation. Varnelis, who with Robert Sumrell runs the architecture collective AUDC, describes the NetLab as "a research center for investigating the impact of recent changes in telecommunications and computation on architecture and urbanism."

WEBSITE

www.building-utopolis.com
Computer art technician Michel Labelle has been creating **Utopolis,** a city in which all of the buildings are made from Lego pieces, for many years. A few of the models are even available for purchase.

VIDEO

www.cityofsound.com/blog/2006/08/architects_may_.html
A gamer and aspiring architect who goes by the online name Kasperg has created a walk-through of **Frank Lloyd Wright**'s Kaufmann House (aka Fallingwater) using a source engine normally employed to create video game landscapes. As Dan Hill notes in his blog, City of Sound, "Video game engines seem to be providing the most fluid, rich environments for exploring buildings, short of being there, outpacing much traditional architectural software."

SURVEYS

cadinsider.typepad.com/my_weblog/2006/09/survey_why_do_y.html
Roopinder Tara, president and CEO of TenLinks.com and founder of the blog CAD Insider, has created a survey "to explore why users buy a particular **CAD software.**" The survey, which will remain online through November, shows updated results with each respondent.

www.enhsa.net/tuning
The **European Network of Heads of Schools of Architecture** has posted an online questionnaire for European employers of young architects. According to Constantin Spiridonidis, ENHSA coordinator, the questionnaire was created because a pilot ENHSA survey found that "the most significant competences ... are very poorly ensured by the architectural education system."

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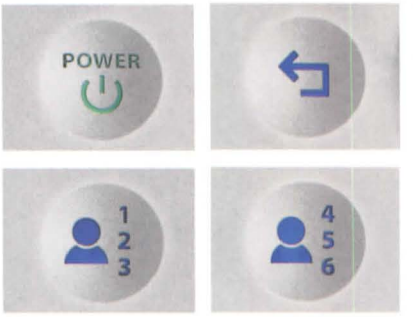
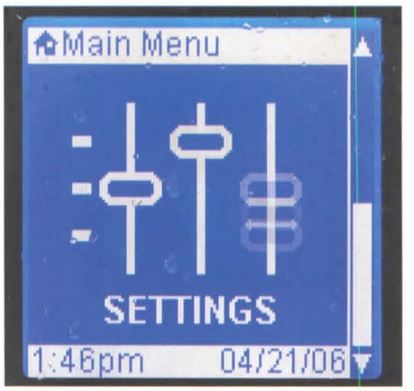
High flow rate of up to 21 gallons per minute	Allows users to simultaneously run up to eight showering components
Digital thermostatic performance	Delivers precise and consistent water temperature
Six-port valve	Enables users to create elaborate custom shower configurations

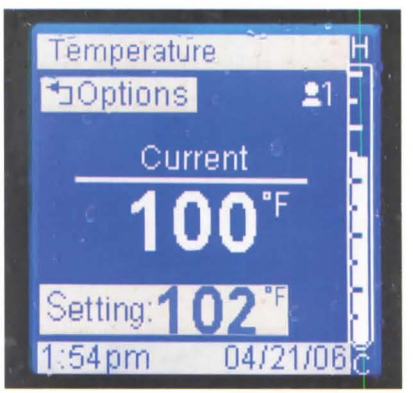
Shown on front K-684-1CP DTV Digital Interface in Polished Chrome.



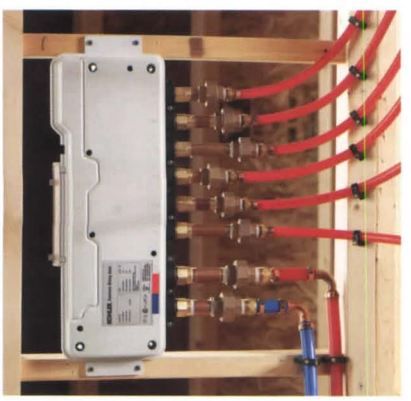
Digital soft-touch interface allows user to effortlessly navigate menus.



Personalized settings give the homeowner complete control of the experience.



Precise, digital control ensures consistent water temperature.



Six-port valve designed for simplified installation and a maximum flow of 21 gpm.

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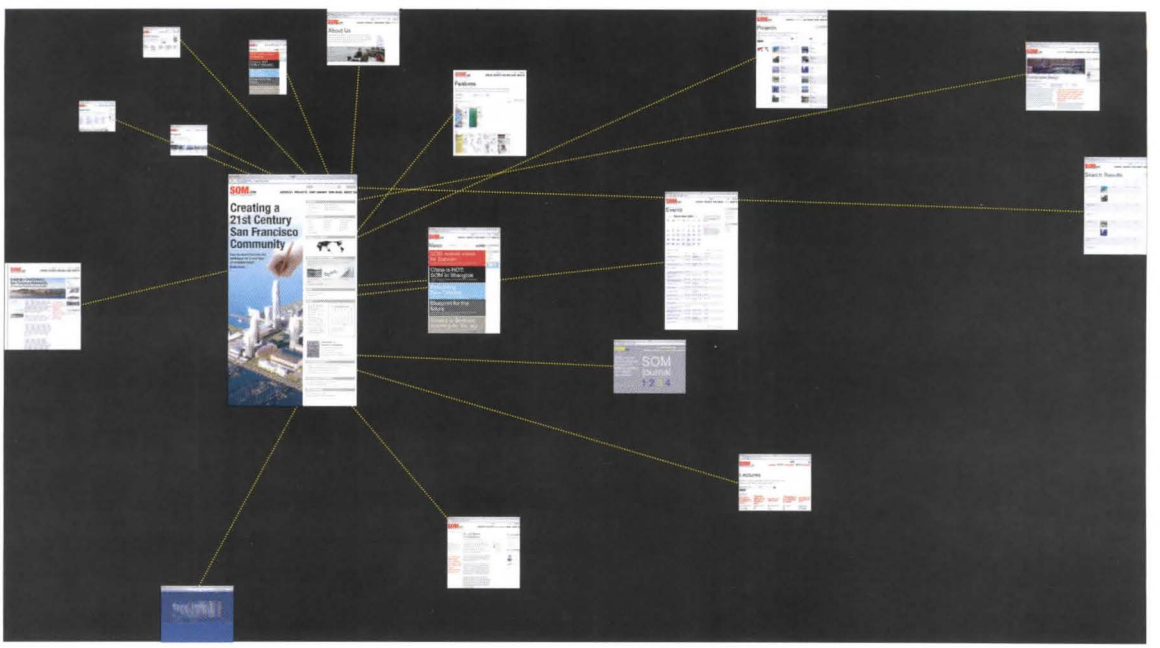
HOW BRUCE MAU GOT SOM'S BRAND TO BREATHE—ONLINE.

STORY Jacob Ward

SOM.COM



Flexible Format
SOM's new website (right) replaces a Flash-based site that is attractive but difficult to modify and search.

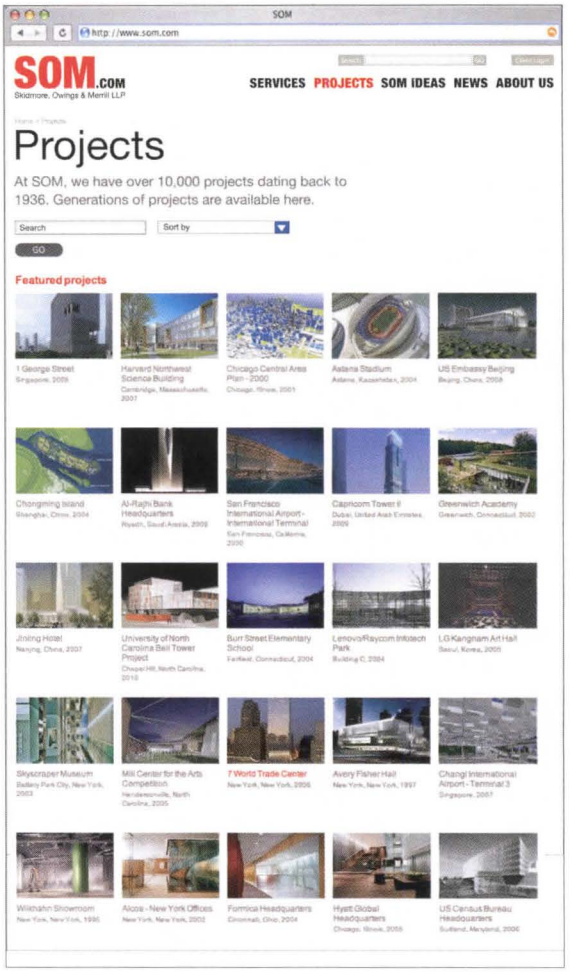
FROM THE MOMENT OF RIBBON-CUTTING, a building ages in a planned downward curve. The architect is judged by how well his or her plan accommodates its use over time, and it is in the nature of architects to imagine that they can put in place now something that will reflect well on them for the future. Thorough preparation, careful execution, a shaking of hands, and the building is launched.

But Bruce Mau, who just finished redesigning www.som.com, the internet presence of Skidmore, Owings & Merrill (SOM), has brought a new perspective. Mau's team tossed out the notion that a firm's brand on the web should be prepared and executed like a grand, fixed façade. Instead, Mau showed the partners that the inner workings of an architecture firm—its internal research, its water cooler epiphanies, its aborted projects—best reflect its strengths.

The SOM site that Mau is replacing was built by Tanagram Partners, a Chicago firm, in 1999. The organizational concept was complicated. Inspired by Thinkmap, a visual thesaurus software that creates constellations of related words, SOM wanted to reflect the interconnected constellation of work the firm had done in its 60-plus years. The goal was to create a visually interesting experience without relying on endless photographs of the projects themselves.

Looking at the site, you can see what they were after. The original SOM.com is dignified and attractive, and the constellations of words burst into intuitive groupings. Related concepts—"News," "Awards," "By Date"—slide into proximity as you click, and the effect is that of navigating forward through a starscape. But as a business tool, it's severely limited. And like the occupants of a poorly designed building, the firm quickly discovered that it was trapped in an inflexible structure and soon outgrew it.

SOM's site was based on Flash, a web design standard that in effect draws pictures rather than printing text. It's an easy way of putting glitzy animation into a site, and web designers still use it for certain dynamic objects and features. But when the whole site is built on Flash, it offers nothing for



News Is News
Users looking to SOM.com *for cutting-edge information* will find the latest reports and announcements from across the firm (far left). For the significant number of visitors researching SOM's history, a searchable archive of projects is another key element of the site.

text-based search engines like Google to analyze. In effect, the site doesn't reveal itself—you have to go through its glitzy front door and wander the halls to find what you need. Once inside, even the internal search function on SOM.com is spotty. Type "Freedom Tower," "Kahn," "Bunshaft," or "Sears" into the home page's search box, and a PC user sees only a handful of results. Mac users (journalists, an important audience, tend to favor Macs) get no results.

Bruce Mau Design (BMD) spent most of 2004 faithfully observing and analyzing SOM's traffic to the website, but found that the design—politely referred to in Mau's brief as "the site's idiosyncratic implementation"—made it nearly impossible to determine who was using the site and how.

It's accepted wisdom among web designers that internet ventures live or die by their ability to study the behavior of their customers. The most advanced sites—those like Amazon and Google—strive for the godlike ability to predict what visitors will want and continuously analyze their customers' behavior to do so. SOM's site, by comparison, might as well have been a luxurious, bound monograph, mailed blindly to its clients. The slick-but-unanalyzable site robbed SOM of the ability to determine in detail whether visitors were coming from educational, commercial, or governmental domains, how many foreign visitors they were getting, how long each visitor stayed on the site, whether they returned, what links elsewhere on the web were most helpful in driving traffic to the site, and what search engine terms ("Bunshaft"? "Modernism"? "Corporate Architecture"?) were leading visitors to SOM. And those are the most basic considerations; never mind the possibility of distinguishing the surfing behavior of idle visitors from that of potential clients.

"The website is our first interview with a client," explains Ross Wimer, SOM's design partner in charge of the redesign project. "In one case, because our site wasn't really searchable, a potential client went to Wikipedia"—a publicly edited online encyclopedia—"to read our partner

bios. One partner had a false bio someone had written, and the client was so turned off that we didn't get a shot at the project."

BMD quickly established certain baseline standards a new site must meet. SOM.com must offer immediately relevant information and services. Rather than entice users with a restrained, mysterious home page design, the site should immediately allow users to "sort, select, combine, collect, and subscribe" to what they need. And recognizing that most Internet users find what they need through search engines like Google—not truly visiting sites, but touching down on the specific information they're looking for, then leaping somewhere else entirely—the site had to be legible to search engines. But these were mechanical considerations. The challenge was making it all reinforce SOM's brand.

A firm like Skidmore, Owings & Merrill, Mau's team realized, has tremendous brand equity, built on the combined advantages of size, depth of experience, and pedigree. As the country's third-largest firm, with eight offices and approximately $240 million in revenue, it has no trouble attracting big clients, and with 70 years of iconic structures in its portfolio, its reputation is tremendous. But as Mau wrote in his recommendations to the firm, "SOM is respected for what it has done, but expected to do more."

With hundreds of SOM architects constantly studying subjects from airport security to communism, the site should be, in effect, a newsroom, complete with up-to-the-minute reports, op-eds, and event announcements from all over the firm.

The key to representing SOM well is not to reflect only its massiveness or its age, Mau pointed out. It's to offer quick and complete access to the extraordinary amount of knowledge the firm has accumulated and continues to accumulate.

BMD created a comparative analysis of other firms' sites. Some, like Renzo Piano and Richard Rogers, scored high for intuitive design and the straightforward presentation of a great deal of information. Others, like Frank Gehry and Tadao Ando, barely have a site. SOM, as a collection of partners, rather than a single leader, needed a site that reflected an entire institution.

"We had visited their offices in New York, Chicago, and San Francisco," says Tobias Lau, BMD creative lead on the website for SOM. "And what struck us was the number of people in their 20s leading the charge on massive projects all over the world. Many architecture firms are organized around a central icon, but here we were seeing a very positive group dynamic between younger and older designers. A modern, minimalist site couldn't possibly communicate the amount of creativity and activity going on at the firm."

In an effort to focus thinking about the site's audience, BMD conducted interviews of typical SOM.com users. The team then constructed six hypothetical users: a potential client from the United Arab Emirates, the editor of a major architecture magazine, a Danish design student, a professor in China, an SOM employee, and an architect at a partner firm. Each archetype represented a different set of needs the website had to fill, and making the six categories into distinctive characters brought home the urgency of meeting their requirements. Nothing terrifies a partner like the prospect of inadvertently turning away a potential client, and the hypothetical UAE client—highly placed in the Ministry of Finance and Industry, pressed for time, looking to build a training facility for senior government officials—was someone SOM wouldn't want to disappoint.

Then, in a shrewd piece of client management, Mau showed the partners a clearly delineated set of options for what their site might look like. At one end of the spectrum, he showed them the Chanel website, as polished and singular as a handbag. At the other, he displayed Yahoo's endless torrent of news headlines and competing pieces of information.

With hundreds of SOM architects constantly studying subjects from airport security to communism, the site should be, in effect, a newsroom, complete with up-to-the-minute reports, op-eds, and event announcements from all over the firm. As a profession, the ongoing education involved in architecture is matched only by journalism. Architects are constantly learning about new subjects, and Mau recognized that this aspect of the job had tremendous brand value. To be a thought leader in architecture, SOM needed to be thinking out loud.

Although it hadn't been revealing it on the web, the firm is extremely sophisticated internally about refining its collective knowledge: the *SOM Journal*, for example, an annual critique of the firm's work written by external critics, engineers, and designers, shows off the firm's spirit of self-improvement, the depth of its experience, and its commitment to learning. BMD determined that the *Journal*, along with a dynamic calendar of events, news headlines, feature stories about ongoing projects, and projects listed by region and type, should be a fixture of the new site.

By requiring fresh content, the site demanded to be directly and deeply connected to the firm's internal processes. RSS—a way of subscribing to content from preferred sources on the web—would keep subscribers in constant touch with change at the firm. Blogging of research and development within the company's internal site would keep all parts of the firm intellectually interconnected. And on the public site, publishing the best voices from the internal blogs would keep interested observers constantly informed about the firm's latest research. As one SOM client put it, "SOM is a tremendous intellectual network" that had not yet been married to effective communications technology. According to another, "the whole basis of the website should be to give a snapshot of where the firm is and how it's deployed at this time."

In order to embody SOM's brand, the site had to encompass the firm's long and storied history (a significant chunk of those who come to the site, Mau learned, were architecture students trying to learn the firm's place in history). But it needed to also be global, current, and supportive of evolving business goals. "When I go to London to pitch a project," Wimer explained to Mau in an early meeting, "they want to know how we're going to bring our experiences designing for Shanghai and Dubai to bear there."

In the end, Mau's team decided that the site should be three things: an evolving story, a campus for learning, and a cultural player. It should be a reflection of what Mau called "design excellence"—a 60-year legacy of 10,000 projects coupled with forward-looking initiatives like *SOM Journal*, hundreds of education programs, and in-studio learning. The site needed to take possession of architectural discourse by constantly publishing perspectives on architecture and planning. "SOM is already practicing design excellence," Mau wrote to the partners. "The activities just need to be captured and shared."

Content on the site, which goes live at the end of the year, is updated by a dedicated web editor, hired exclusively to curate SOM.com in consultation with the partners. Interviews, a blog-style column, transcripts and video of lectures and appearances, case studies, and features are all edited and presented as an ongoing publication, much as newspapers and magazines generate content for the web. As a result, SOM's site, like its brand, is no longer a static thing. It's an active, spontaneous entity, full of future promise—not just a beautiful bulwark against decay. A

USER ARCHETYPES

Bruce Mau Design developed six hypothetical users of SOM's website based on internet traffic analysis and competitive research. Each character represented an audience any firm's site must serve. With a face on each user segment, the need to revamp the site suddenly became focused and urgent.

1. POTENTIAL CLIENT
Mohamed Khalfan, 42, Dubai, United Arab Emirates
Government official, Ministry of Finance and Industry
A highly placed and overworked senior official, Khalfan is an "efficient, no-nonsense search fanatic" charged with assessing architecture firms in preparation for an architecture competition to build a new training facility. SOM's ability to immediately give him the information he needs is the first requirement for getting his very lucrative business.

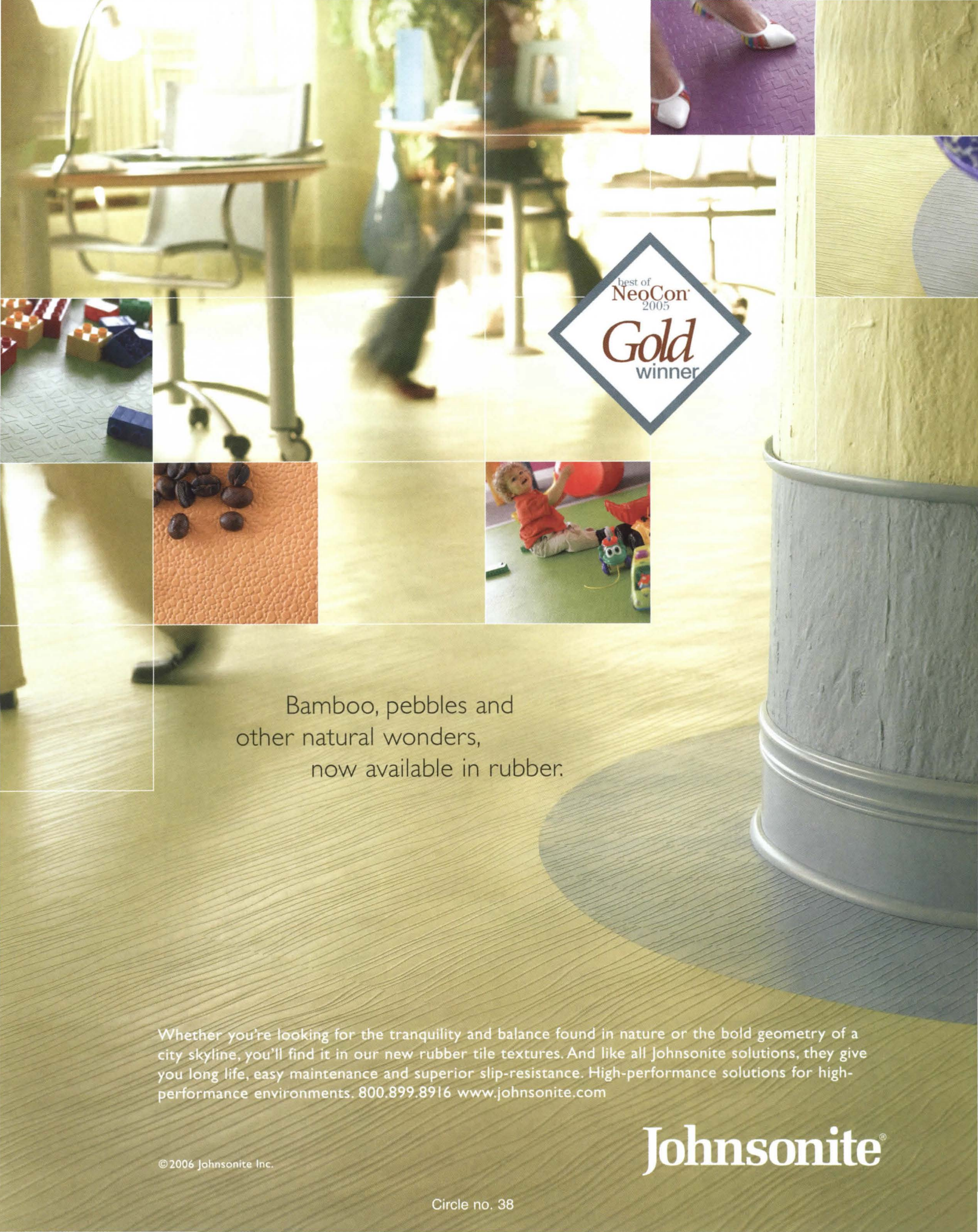
2. MEDIA
Chris Woods, 37, New York
Editor, major architecture magazine
As a decision-making editor at an influential design magazine, Woods is relatively up-to-date on the latest doings of major architecture firms. But with a fast-approaching deadline for choosing firms to include in a large "Future of American Architecture" package, he needs to quickly survey SOM's most recent work and achievements.

3. EDUCATION (STUDENT)
Marianne Jensen, 23, Copenhagen, Denmark
Student, design school
Jensen is widely respected among her peers as the "go-to" person for cutting-edge design matters, and she has an insatiable curiosity about the latest innovations around the world. Being one of her oft-visited bookmarks is essential. She'll transmit trends within her circle of burgeoning professionals, plus she's potentially a valuable future employee of SOM.

4. EDUCATION (FACULTY)
Wong Deng, 55, Nanjing, China
Professor of architecture and urban planning, China Art Academy
Architecture professors establish a firm's place in history, and professor Wong Deng's ability to draw on images and information from SOM's site determines whether he helps make the firm visible to the next generation of designers and developers in the bonanza of the Chinese market.

5. EMPLOYEE
Ian Blythe, 29, Chicago
Architect, SOM
As one of the several hundred architects, engineers, and administrators who most often visit SOM.com, Blythe mostly uses the site to access the firm's intranet, where he browses through the technical library. He periodically contributes to design blogs at other Web sites, and he wants to be better connected with SOM projects around the world.

6. COLLABORATOR
David Solomon, 28, Los Angeles
Architect, Gehry Partners
Architects need to search for upcoming projects and services to anticipate partnership possibilities with SOM. Solomon is one of the young design elite at Frank Gehry's L.A. office.



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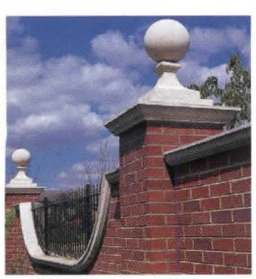
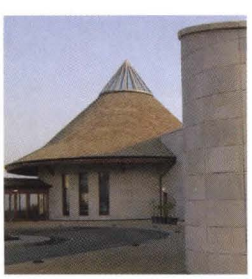
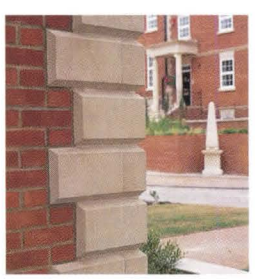

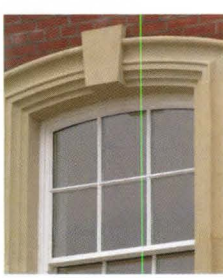

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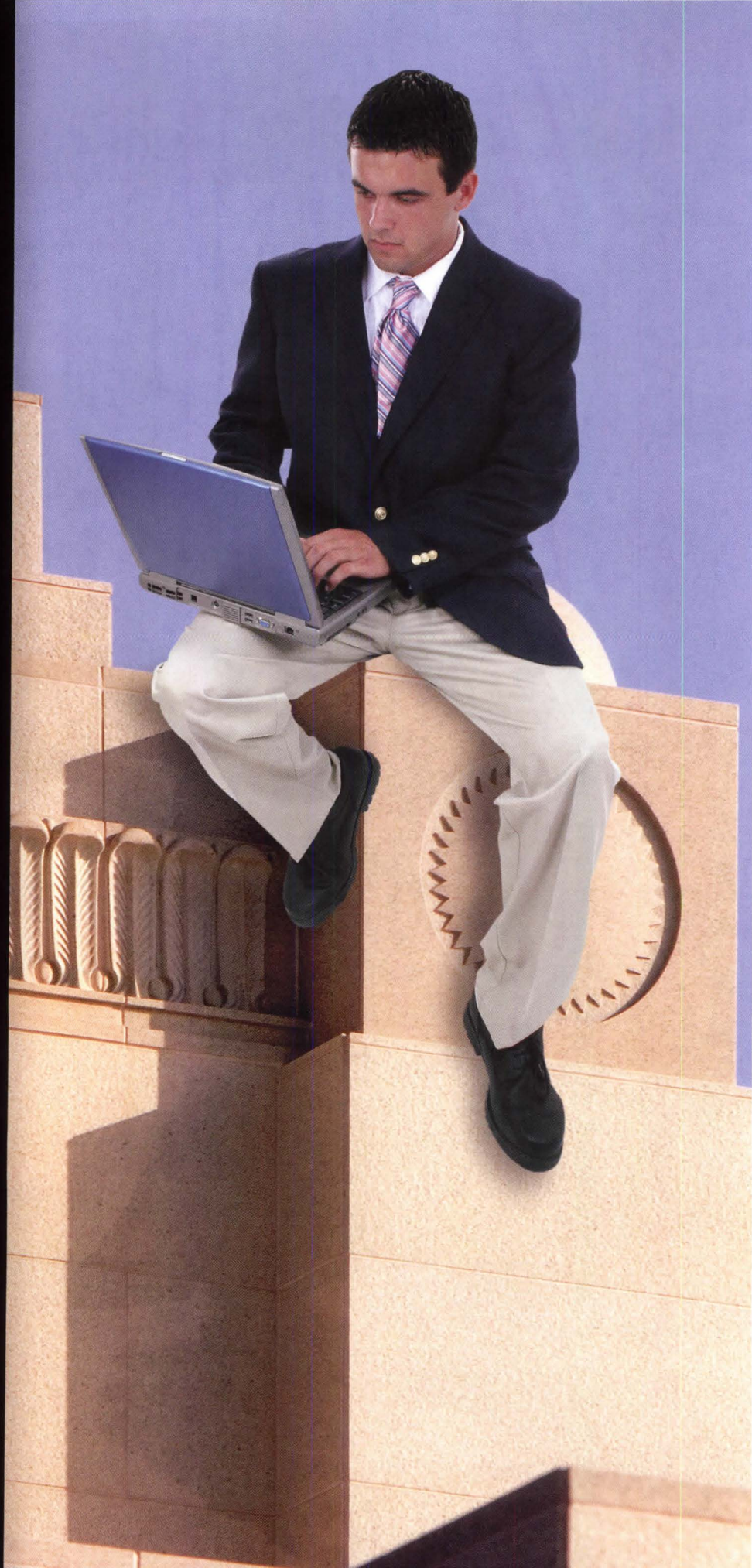


A FLEDGLING HOUSTON COMPANY EXPANDS ON THE BIM MODEL WITH A PRE-DESIGN SOFTWARE THAT TRACKS BUILDING PROGRAM. SIX ARCHITECTS GIVE IT A TEST RUN. STORY AND PHOTOS Heidi Glenn

THE PROGRAM PROGRAM

The team at Trelligence, maker of Affinity software, includes (from left) founder and lead programmer Larry Ciscon; Carole Kernohan, vice president of channels; and Leslie Butterfield, senior vice president of sales and marketing, whose staff works in Ciscon's air-conditioned garage.

ASK LARRY CISCON to illustrate the future impact of Affinity, the architectural programming software he developed and began selling in June, and his thoughts turn to the World Trade Center in New York.

Well into the post-9/11 planning process, he explains, the location of David Child's Freedom Tower was deemed to be too close to the West Side Highway, and it had to be moved.

"Our software would have immediately turned on a red flag," Ciscon says. "It would have said the footprint is too close to the road."

The CAD industry understandably focuses on design. Built on the BIM revolution, Trelligence's Affinity may be the first software of its kind, designed specifically to address the programming stage of planning, designing, and constructing a building. Affinity, Trelligence's website promises, "fast forwards the BIM model into the pre-design phase delivering time and cost savings."

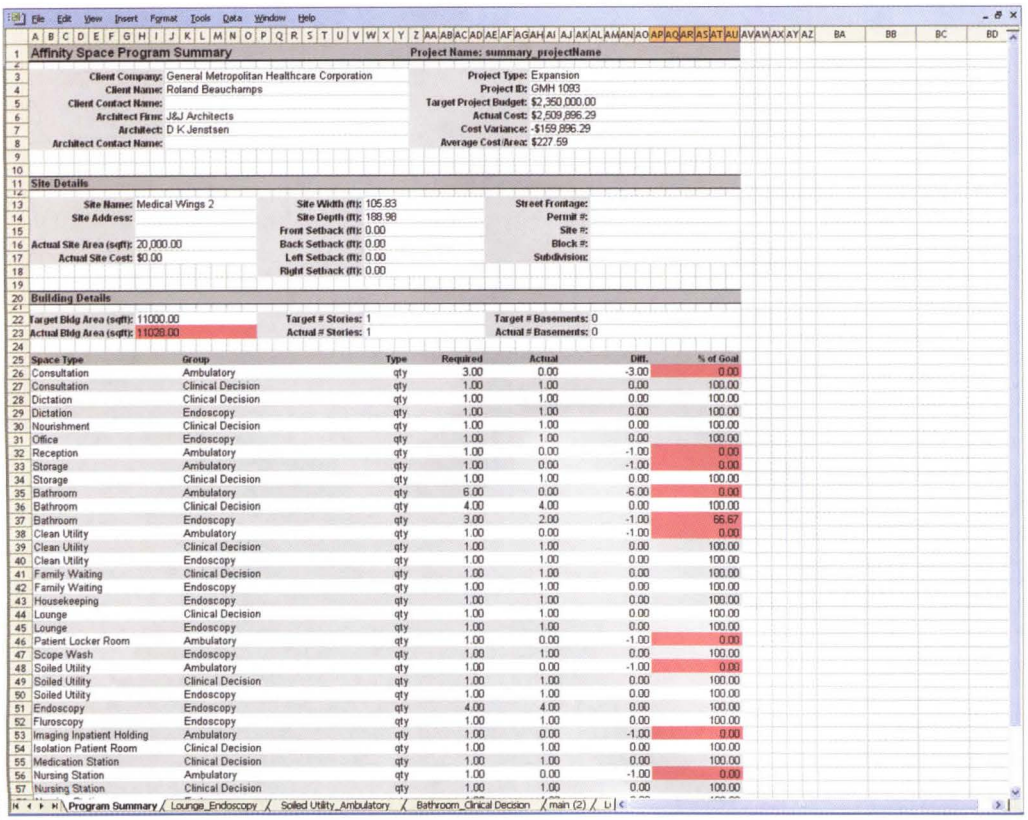
Affinity allows users to track a client's program requirements in spreadsheet format and to distribute the program requirements in two- and three-dimensional schematic designs, either using preset templates or starting from scratch. The software flags instances where the schematic designs and the program requirements don't match. The program also allows users to log details such as actual and target square footage, actual and target cost estimates, and building specifications. A Flash-based client questionnaire helps architects gather the necessary data.

Program requirements are defined up front and can be modified along the way. At any stage, Affinity can produce reports on the schematic design, program, and cost, as well as requirements and their change history, all in Excel or HTML.

"The fact that Affinity enables you to go back and forth between the numbers and visual is, I believe, one of its greatest strengths," Ciscon says.

This is just one of the pieces of the puzzle that's going to allow us to become guardians of a building as it goes through time.

Frank Kelly, SHW Group



Affinity Space Program Summary

Client Company:	General Metropolitan Healthcare Corporation
Client Name:	Roland Beauchamps
Client Contact Name:	
Architect Firm:	J&J Architects
Architect:	D K Jenstsen
Architect Contact Name:	
Project Name:	summary_projectName
Project Type:	Expansion
Project ID:	GMH 1093
Target Project Budget:	$2,350,000.00
Actual Cost:	$2,509,896.29
Cost Variance:	-$159,896.29
Average Cost/Area:	$227.59

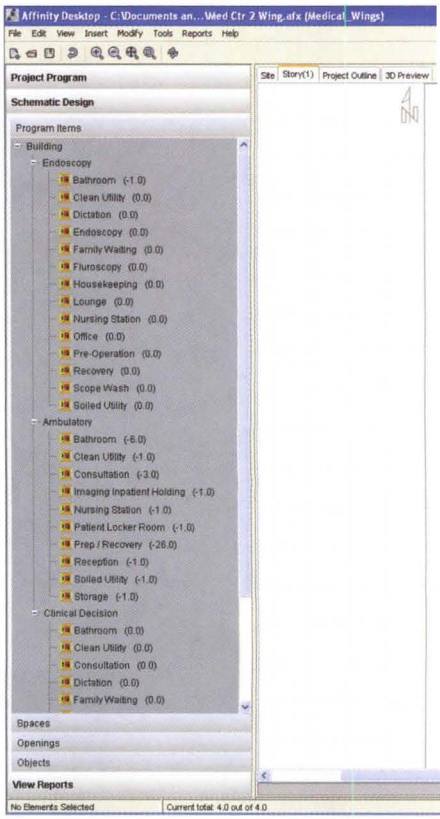
Site Details

Site Name:	Medical Wings 2	Site Width (ft):	105.83
Site Address:		Site Depth (ft):	188.98
		Front Setback (ft):	0.00
Actual Site Area (sqft):	20,000.00	Back Setback (ft):	0.00
Actual Site Cost:	$0.00	Left Setback (ft):	0.00
		Right Setback (ft):	0.00
Street Frontage:			
Permit #:			
Site #:			
Block #:			
Subdivision:			

Building Details

Target Bldg Area (sqft):	11000.00	Target # Stories:	1
Actual Bldg Area (sqft):	11028.00	Actual # Stories:	1
Target # Basements:	0		
Actual # Basements:	0		

Space Type	Group	Type	Required	Actual	Diff.	% of Goal
Consultation	Ambulatory	qty	3.00	0.00	-3.00	0.00
Consultation	Clinical Decision	qty	1.00	1.00	0.00	100.00
Dictation	Clinical Decision	qty	1.00	1.00	0.00	100.00
Dictation	Endoscopy	qty	1.00	1.00	0.00	100.00
Nourishment	Clinical Decision	qty	1.00	1.00	0.00	100.00
Office	Endoscopy	qty	1.00	1.00	0.00	100.00
Reception	Ambulatory	qty	1.00	0.00	-1.00	0.00
Storage	Ambulatory	qty	1.00	0.00	-1.00	0.00
Storage	Clinical Decision	qty	1.00	1.00	0.00	100.00
Bathroom	Ambulatory	qty	6.00	0.00	-6.00	0.00
Bathroom	Clinical Decision	qty	4.00	4.00	0.00	100.00
Bathroom	Endoscopy	qty	3.00	2.00	-1.00	66.67
Clean Utility	Ambulatory	qty	1.00	0.00	-1.00	0.00
Clean Utility	Clinical Decision	qty	1.00	1.00	0.00	100.00
Clean Utility	Endoscopy	qty	1.00	1.00	0.00	100.00
Family Waiting	Clinical Decision	qty	1.00	1.00	0.00	100.00
Family Waiting	Endoscopy	qty	1.00	1.00	0.00	100.00
Housekeeping	Endoscopy	qty	1.00	1.00	0.00	100.00
Lounge	Clinical Decision	qty	1.00	1.00	0.00	100.00
Lounge	Endoscopy	qty	1.00	1.00	0.00	100.00
Patient Locker Room	Ambulatory	qty	1.00	0.00	-1.00	0.00
Scope Wash	Endoscopy	qty	1.00	1.00	0.00	100.00
Soiled Utility	Ambulatory	qty	1.00	0.00	-1.00	0.00
Soiled Utility	Clinical Decision	qty	1.00	1.00	0.00	100.00
Soiled Utility	Endoscopy	qty	1.00	1.00	0.00	100.00
Endoscopy	Endoscopy	qty	4.00	4.00	0.00	100.00
Fluroscopy	Endoscopy	qty	1.00	1.00	0.00	100.00
Imaging Inpatient Holding	Ambulatory	qty	1.00	0.00	-1.00	0.00
Isolation Patient Room	Clinical Decision	qty	1.00	1.00	0.00	100.00
Medication Station	Clinical Decision	qty	1.00	1.00	0.00	100.00
Nursing Station	Ambulatory	qty	1.00	0.00	-1.00	0.00
Nursing Station	Clinical Decision	qty	1.00	1.00	0.00	100.00



SCREEN CAPTURES: TRELLIGENCE

Currently, Affinity 3.5 works as a stand-alone program and as a plug-in for Archicad, allowing program analysis to continue as the design progresses.

According to Leslie Butterfield, the company's senior vice president of sales and marketing, Trelligence is working on a desktop version for Mac computers and a plug-in for Autodesk Revit. A 4.0 version of Affinity is in the works.

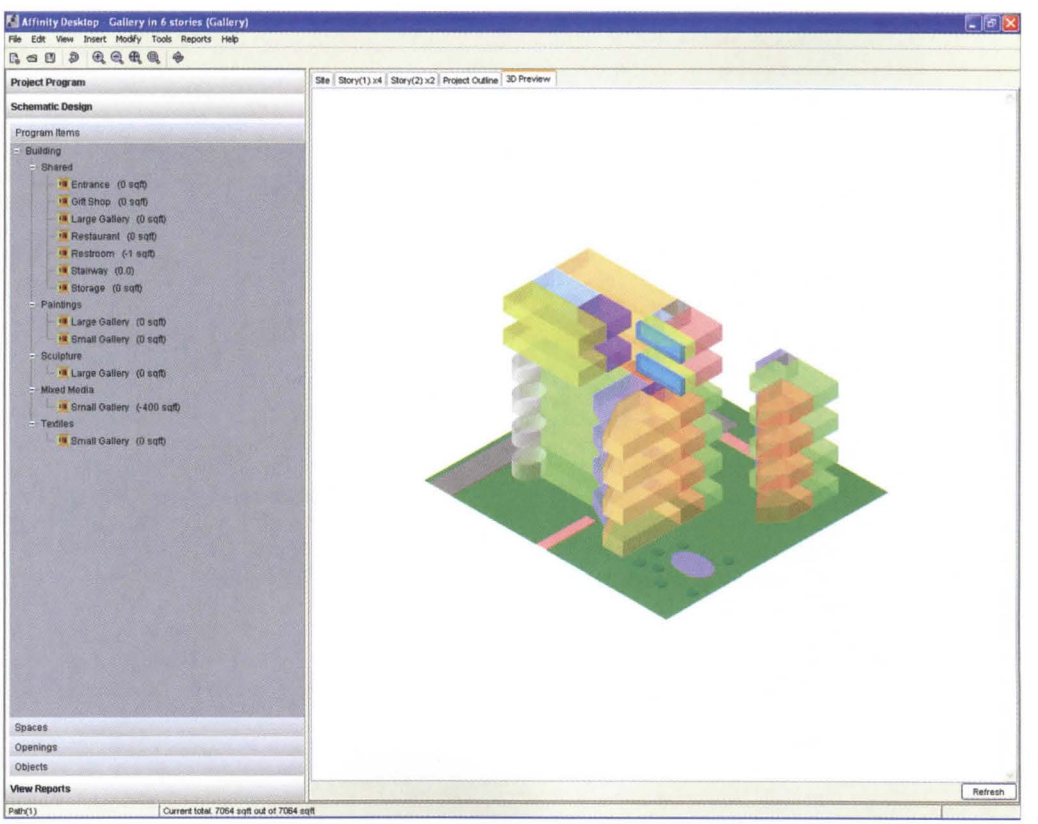
Affinity currently ships with six templates, but Butterfield considers them simple, "training-wheel" solutions; Trelligence can deliver customized templates as a professional service if firms do not want to customize the templates themselves.

"I expect we will increase the number and depth of templates in the future, and we will probably make more of them available on our customer portal where customers can share them," Butterfield says.

Since its May, Affinity has been sold to several large firms, such as Skidmore, Owings & Merrill, CUH2A, and Linbeck. Butterfield says more firms—and even the General Services Administration and the U.S. Army Corps of Engineers—are evaluating it.

In July, ARCHITECT sat down with six Houston architects who, after a two-hour test-run of Affinity, offered their own evaluations. Most of the participants were unfamiliar with the software until that morning, when Ciscon and Butterfield gave them a quick overview.

Affinity allows users to work in three formats (from left): spreadsheet, plan, and 3-D. The software tracks program data across all three simultaneously.



CAD Interface

JON JAY ERNST: What we do now is pretty labor-intensive, bringing data out of Archicad and putting it into an Excel spreadsheet, and trying to custom-tailor Excel spreadsheets to read the data.

I see a lot of possibilities for interfacing Affinity with our CAD package, which is pretty nice if we can keep it updated along through the design process and spit out spreadsheets. I think it'll be a big time-saver.

NICOLA SPRINGER: It's tied in to the CAD program, making a seamless progression from programming through the design phase. As someone who's on a project from conceptual design through the end, I like the idea of potentially having more of a tie-in on the programming phase. There's also a level of comfort for the client knowing that there's that connection.

Client Relationships

JASON TRAMONTE JR.: I could see this tool being used in our office immediately, on a large corporate headquarters project that we just got. The clients don't have an established budget. They want help to determine what the right budget is for the amount of square footage and the amenity spaces that they need. Affinity would be a way to help with that.

Affinity helps tell the story of your design and how you got there—and helps sell your design along the way. If you're configuring spaces and places around the clients' program and the building takes shape from the inside out, the clients have seen it along the way. When you come up with the final program, they don't have to ask, "Why'd you do a U-shaped building?" They know already.

FRANK KELLY: The typical reason that clients end up unhappy with buildings is not because you didn't do what they want, but, in fact, because they didn't ask you to do it in the first place. I jokingly refer to myself as the Grand Inquisitor; at times I really, really lean on clients to be sure of what they want.

We do mostly K–12 school work, and we can't get educators to talk to us about education. They say, "Well, my room's too small," or, "The bathroom's too far down the hall." And I keep saying, "How do you want to work with kids? Talk to me about how you want to teach." And boy, you've got to reach clear down their throats and drag it out of them.

One of the worst things you can get is what's known as an "educational specification," where some soul sat down and wrote a volume about every room in the entire building. From the janitor's closet to an auditorium, they'll write a specification and say how many square feet and what's on the floor and what's on the ceiling. I think they assume that the architect's going to take those and glue them all together and make a building out of them.

You need a format that's flexible enough to address programming issues before you start to talk about the spaces. A building is not just an assembly of boxes. It's a whole environment that does things that are all connected together, and that's the part to me that counts.

ERNST: I've got two projects right now, and I can think of about 40 hours Affinity would've saved me in the last two weeks, just to be able to communicate back and forth with the contractor and the client about what happened to spatial-program information along the trail.

Data Management

JASON ST. JULIAN: Our project managers are really focused on data—pricing and square footages. Affinity is a huge tool for keeping track of that. When we draw in Archicad now, we draw walls, draw our spaces, input our area fills, and track square footages, and we have to also input the data into Excel. Affinity eliminates a lot of that manual labor.

ANDY MACPHILLIMY: Our programming is a paper-intensive process, and we end up with these large books that sit on shelves after we've gotten into schematic design. The program gets lost as the project evolves. Going back to check is very difficult, particularly when you're looking at giant books that have page after page of requirements.

What we are seeing in the evolution of software is now a great ability to define a building very quickly from a program. A front-end plug-in that accumulates the detailed requirements and integrates with CAD software is definitely a brilliant move.

> Affinity helps tell the story of your design—and helps sell your design along the way.
>
> Jason Tramonte Jr., Kirksey Architecture

Budget Tracking

MACPHILLIMY: I can think of a performing arts project where the owners asked us to add some things, and we advised them that the numbers were being pushed, because it's not convenient to ask a contractor to price in the middle of an evolving design. But if we had an opportunity, through a tool like this, to see the evolution of numbers, the clients might have backed off earlier than they did in that process. I think real-time information-costing can be very beneficial in helping the architect manage the process.

I think this tool would help quickly translate program information into test fits, when you have a client who says, "We want to move, but we don't know whether we want to be in this building or that building." We probably take a client to seven or eight buildings. And it's costly to them, but this might allow a much more efficient process.

Building Information Modeling

KELLY: I see a lot of possibilities here. You could take a room and assign outlets and light fixtures to keep track of costs. An owner could take that information to an accountant at the end of the project and say, "Here's my building broken down into a spreadsheet. I've got five outlets in this room; show me how I'm going to depreciate them."

This whole thing could be a huge database that we all use, not only to manage the buildings but to gather information from previous designs. This is just one of the pieces of the puzzle that's going to allow us to become guardians of a building as it goes through time.

MACPHILLIMY: The beauty of computers is the digital information is there forever and useful to anybody that needs access to it—you can take this programming information and create a useful database as a foundation that can move through the design process, construction, and ultimately to the end user.

ERNST: The BIM concept for designers, architect, builders, developers, and end users is the future of the industry. Affinity is one of the more important links in the BIM concept design chain. Affinity's ability to stay in sync with our conceptual models all the way through to production, while allowing easy access to customizable printed data sheets, gives us a report card, if you will, on how well we have met the program design criteria. In a typical design process, much of this information can be lost, and valuable opportunities are missed. It is the ease of using the software, keeping it updated through design and production, and the ability to track both hard and soft program requirements, as well as the more ambiguous experiential ones, that impresses me most about the future of this software.

The Reviewers

Name: Jon Jay Ernst
Title: Architect/Designer
Firm: Collaborative Designworks
Age: 40
Duties: Design, marketing, production, billing

Name: Frank Kelly
Title: Senior Vice President, Director of Planning/Programming
Firm: SHW Group
Age: 65
Duties: School facility planning

Name: Andy MacPhillimy
Title: Principal
Firm: Morris Architects
Age: 56
Duties: Director of the education studio

Name: Nicola Springer
Title: Senior Associate
Firm: Kirksey Architecture
Age: 36
Duties: Project architect/designer/manager

Name: Jason St. Julian
Title: Associate
Firm: Kirksey Architecture
Age: 34
Duties: Hospitality project management; consultant and document coordination

Name: Jason Tramonte Jr.
Title: Associate
Firm: Kirksey Architecture
Age: 31
Duties: Project designer

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TITLE *Core Vase*
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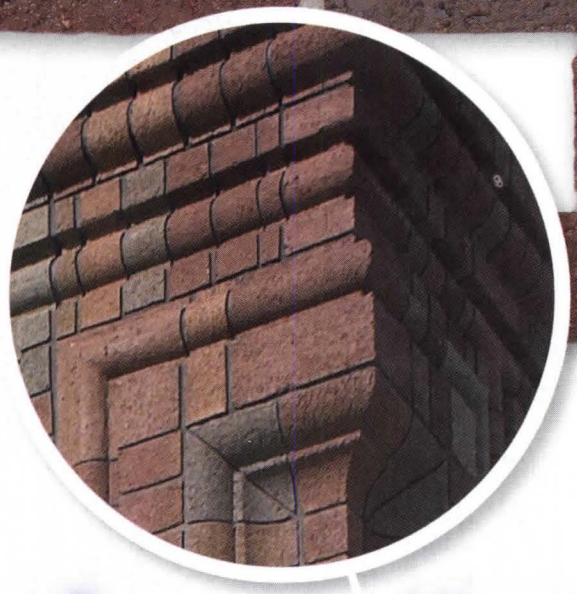

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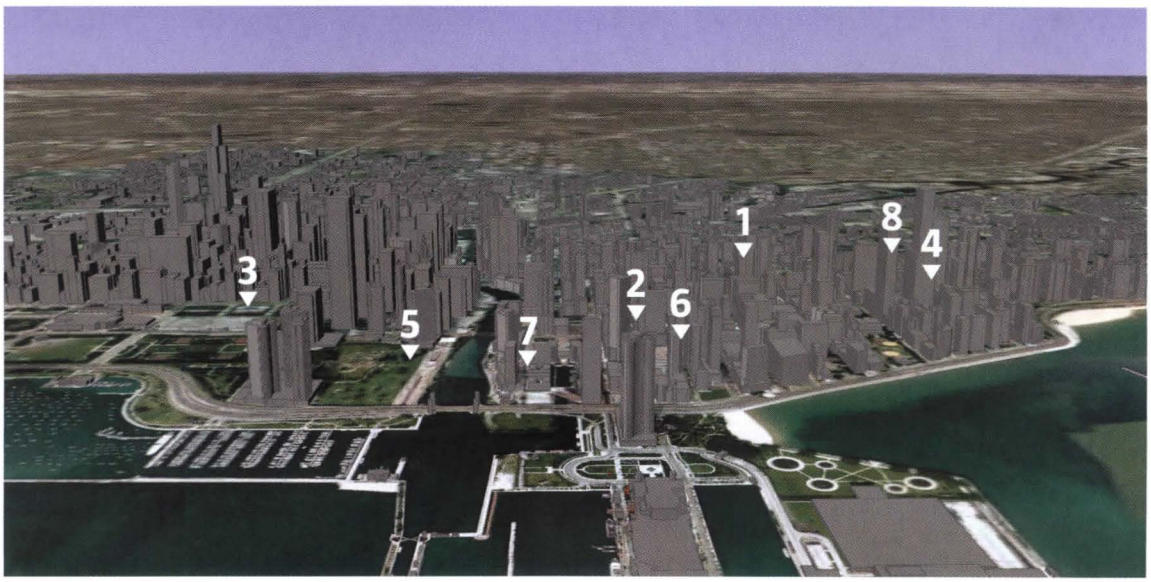
DESIGN QUALITY RESUMES ITS PLACE IN THE RESIDENTIAL DEVELOPMENT FORMULA.

Edward Keegan

CHICAGO CONDOS



SCREEN CAPTURE: GOOGLE EARTH

1. 156 West Superior
The Miller/Hull
2. 550 North St. Clair
Brininstool + Lynch, Architects
3. The Legacy at Millennium Park
Solomon Cordwell Buenz
4. 30 West Oak
Booth/Hansen Associates
5. Aqua
Studio/Gang/Architects
6. 600 North Fairbanks
Murphy/Jahn Architects
7. Fordham Spire
Santiago Calatrava SA
8. Culver House
Dirk Denison Architects

IT'S HIP TO LIVE MODERN IN CHICAGO, judging from the designs of many new condominium towers proposed or under construction in the city. It wasn't always this way. Chicago earned its reputation as the birthplace of modern architecture more for large-scale commercial projects than for the occasional residential standout such as Ludwig Mies van der Rohe's 860-880 Lake Shore Drive and Bertrand Goldberg's Marina City. Most postwar apartment buildings in Chicago are banal and uninspired exercises in modernism, with little to distinguish them from the city's notorious public housing projects.

Such was the state of affairs until the current residential building boom started to transform the skyline. When the office market tanked in the early 1990s and it became obvious that a business-only downtown would never become a 24/7 activity zone, the city's planning department encouraged residential building in the Loop and the area immediately to the north. The earliest residential high-rises completed under this strategy were hefty and undistinguished. Generally constructed with exposed concrete frames, these new features on the skyline caused considerable consternation within the local design community.

That frustration eventually echoed through city hall. In February 2002, Mayor Richard M. Daley proclaimed (via a banner headline in the daily *Sun-Times*), "No More Ugly Buildings." Fortunately, developers took the hint, and some architecture firms raised their aspirations to meet the new design-based demand.

Another fortuitous development has been the city's rigorous new energy code and the availability of a new green building technology: innovative thermal glazing that makes glass-sheathed high-rises more energy efficient than their concrete-clad predecessors.

Not every new residential building in Chicago meets the high standards demonstrated by this portfolio, and the uncertain housing market may affect the trend toward design quality. *Crain's Chicago Business* reports that local investor-buyers are exhibiting the same skittishness as in other big-city markets. While the average price of a Chicago condo rose by 7 percent in the second quarter of 2006, overall sales were down 21 percent as compared with second quarter 2005. If reports continue to predict the end of the housing boom, at least the Chicago market is experiencing an upswing, aesthetically speaking.

1 156 West Superior
The Miller/Hull Partnership; Seattle, Wash.

Miller/Hull's first building in Chicago is the only one in this portfolio to utilize a steel-frame structure. Commercial glazing systems and metal-slat screens enhance the industrial character of a design that the architects characterize as an "irreducible living machine."

Associated Architect Studio Dwell Architects
Primary Contractor Skender Construction Co.
Developer Ranquist Development
Financing Withheld by owner
Construction Cost Withheld by owner
Status Completed July 2006
Total Dwelling Units 11
One-Bedroom: 3 Two-Bedroom: 7
Three-Bedroom: 1
Number of Floors 9
Gross SF 26,000 square feet
Structure Steel frame and CMU
Amenities Arclinea kitchens, private decks, media rooms

2 550 North St. Clair
Brininstool + Lynch, Architects

This structure sports a contemporary aesthetic that's the specialty of architect David Brininstool and his partner, Brad Lynch. Most apartment plans use interior glazing and eschew traditional hung doors for sliding panels to create more open, modern layouts—a quality that the building's marketers are deliberately highlighting.

Primary Contractor Linn-Mathes Inc.
Developer Sutherland Pearsall Development Corp.
Financing Private
Construction Cost $42 million
Status Due for completion summer 2007
Total Dwelling Units 112
Studio: 18 One-Bedroom: 26
Two-Bedroom: 36 Three-Bedroom: 24
Other: 8 penthouses, each with 3 or more bedrooms
Number of Floors 26
Total Height 296 feet
Gross SF 224,000 square feet
Structure Post-tension, cast-in-place concrete
Amenities Indoor pool, fitness center, garden

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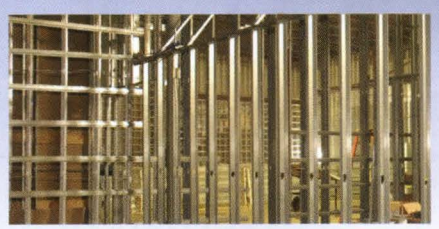

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Solomon Cordwell Buenz

3 The Legacy at Millennium Park
Solomon Cordwell Buenz

The Legacy at Millennium Park will have extraordinary views of the park, but it's a block away—so the "at" designation seems to be a bit of the marketer's artful ploy. Rooftop gardens are situated atop four existing structures, which will house parking, retail, and School of the Art Institute facilities.

Primary Contractor Walsh Construction
Developer Joint Venture: Mesa Development and Walsh Investors
Financing La Salle Bank
Construction Cost $225 million
Status Due for completion late summer 2009
Total Dwelling Units 355
One-Bedroom: 27 Two-Bedroom: 199
Three-Bedroom: 112 Four-Bedroom: 17
Number of Floors 72
Gross SF 1,050,000 square feet (589,000 square feet net sellable residential)
Structure Concrete structure with curtain wall exterior cladding
Amenities Balconies, resident parking, lap pool, gardens

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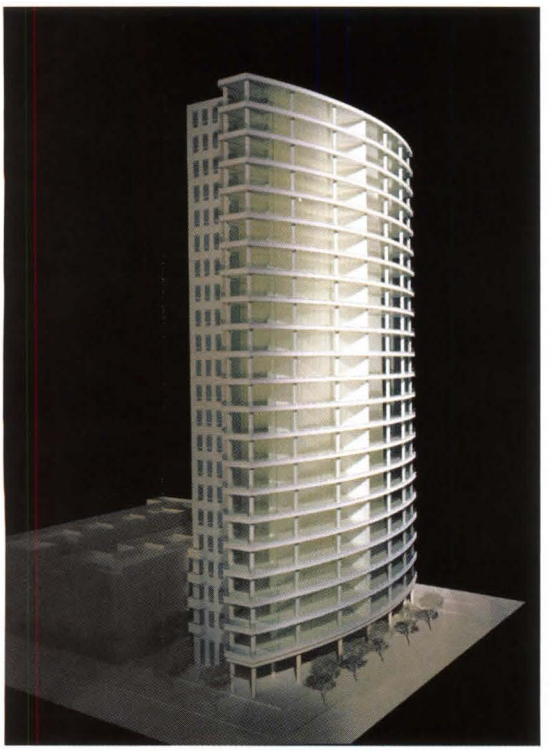
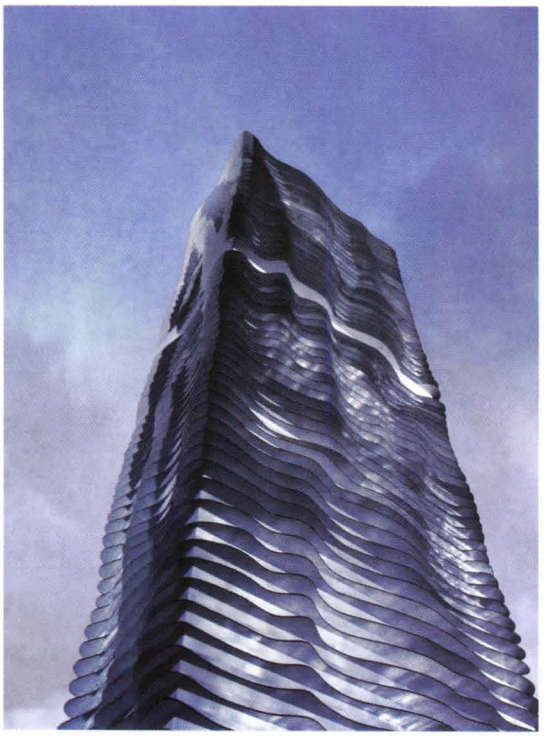


4 30 West Oak
Booth/Hansen Associates

Square buildings are no longer de rigueur. Booth split 30 West Oak into two opposing volumes: a slightly canted concrete structure to the north and a gracefully curving glass lozenge to the south. Large living spaces occupy the glazed volume, while smaller, more-private rooms fill the concrete portion.

Primary Contractor Smithfield Construction Group
Developer Smithfield Properties
Financing Withheld by owner
Construction Cost Withheld by owner
Status Completed October 2006
Total Dwelling Units 46
One-Bedroom: 4 Two-Bedroom: 12
Three-Bedroom: 23 Four-Bedroom: 6
Number of Floors 24
Gross SF 169,000 square feet
Structure Concrete
Amenities Two rooftop terraces, exercise room



5 Aqua
Studio/Gang/Architects

While cast-in-place concrete has long been the norm for high-rise apartment construction in Chicago, no one since Bertrand Goldberg (with his iconic Marina City) has explored the sculptural possibilities inherent in the material. Jeanne Gang's Aqua promises a new take on the box, using computer and GPS technologies to form more than 80 floors of undulating slabs.

Associated Architect Loewenberg Associates
Primary Contractor McHugh Construction
Developer Magellan Development Group
Financing TBD
Construction Cost $300 million
Status Due for completion summer 2008
Total Dwelling Units
Hotel: 210 **Rental:** 476
Condo: 234
Studio: 12 Convertible: 30
One-Bedroom: 46 One-Bedroom + Den: 36
Two-Bedroom: 44 Two-Bedroom + Den: 18
Three-Bedroom: 44 Three-Bedroom + Den: 4
Three-Bedroom Duplex: 4
Penthouse: 2
Number of Floors 81
Gross SF 1,750,000 square feet
Structure Reinforced, cast-in-place concrete
Amenities Indoor and outdoor pools, library, coffee bar, roof gardens

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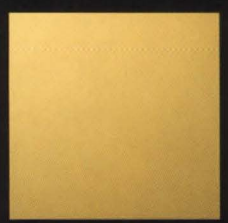
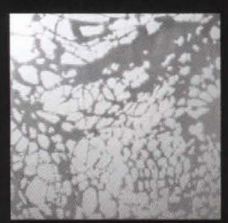


Back Painted Glass



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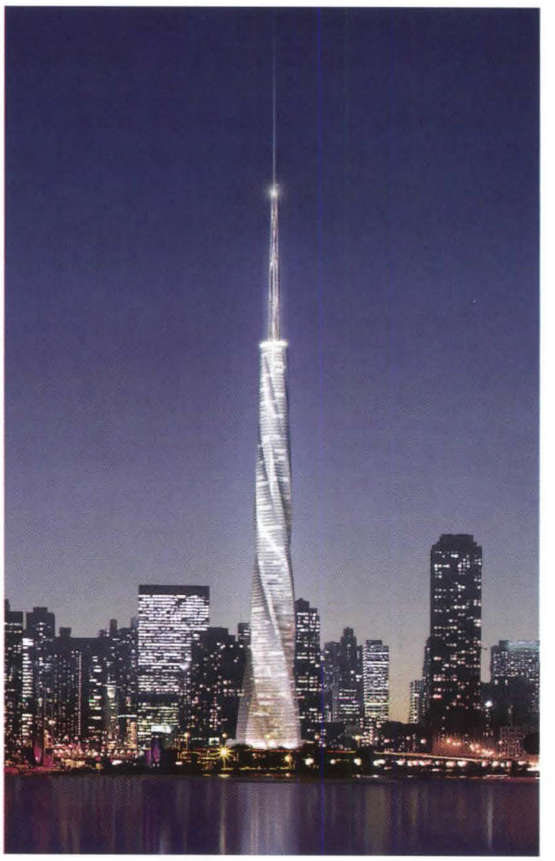
6 600 North Fairbanks
Murphy/Jahn Architects

Helmut Jahn's first commercially developed residential structure in Chicago is being marketed closely with his globetrotting persona; promotional materials for 600 North Fairbanks use "Helmut Jahn Architect" rather than the corporately correct "Murphy/Jahn."

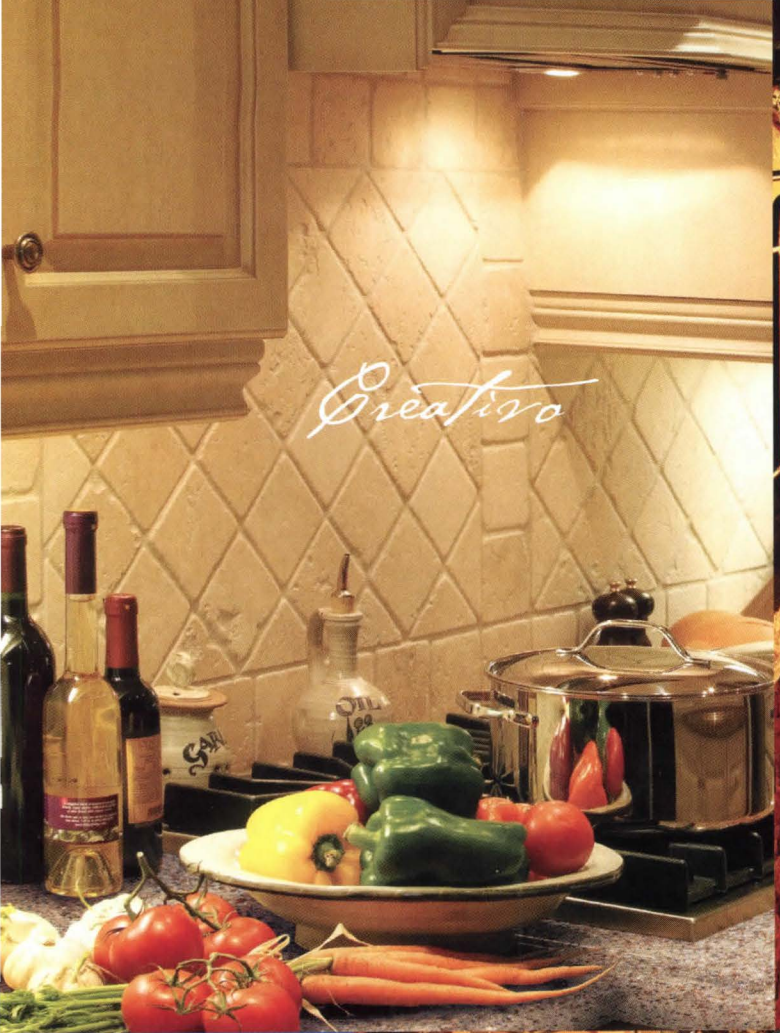
Primary Contractor Bovis Lend Lease
Developer Schatz Development
Financing Fremont Investment & Loan
Construction Cost Withheld by owner
Status Due for completion March 2008
Total Dwelling Units 227
One-Bedroom: 118 Two-Bedroom: 77
Three-Bedroom: 32
Number of Floors 41
Gross SF 452,277 square feet
Structure Reinforced concrete
Amenities Balconies, swimming pool, media/party room, landscaped roof deck

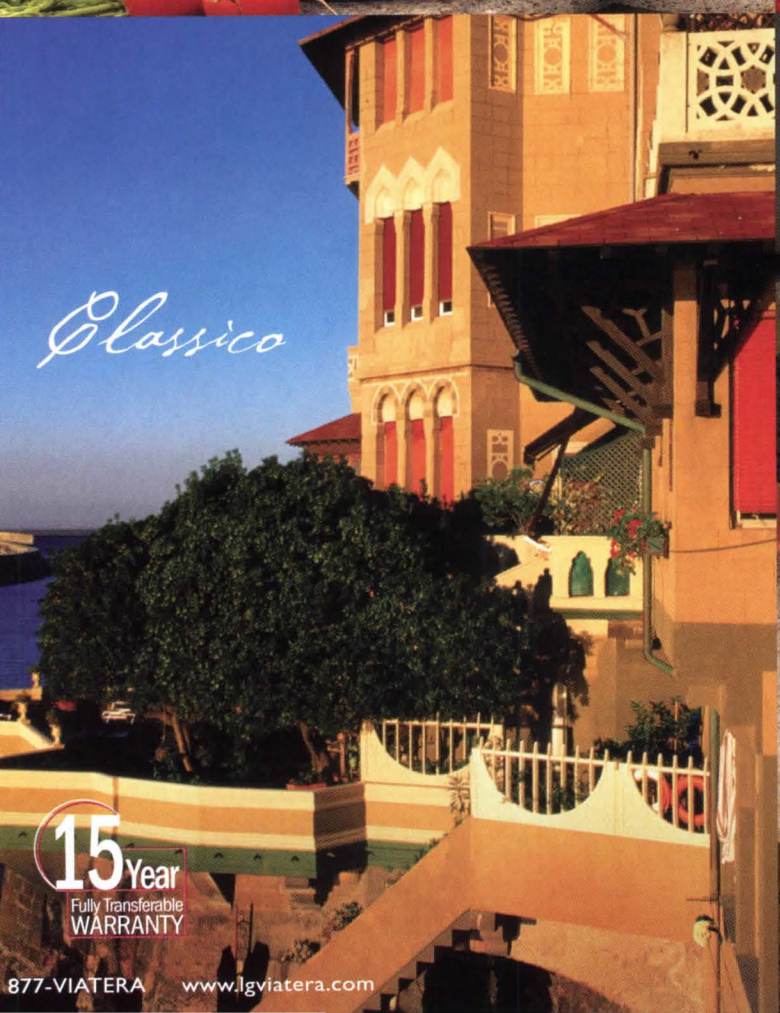


7 Fordham Spire
Santiago Calatrava SA

The 1,450-foot-tall Sears Tower capped Chicago's skyline in 1974. Since then, many have proposed taller, but none have succeeded. Local developer Chris Carley announced Santiago Calatrava's design for a 2,000-foot tower in July 2005, but Carley sold the site to an Irish developer a year later. The new owner has indicated interest in building the Spanish architect's design, but many technical details remain undeveloped, and the gradual slowing of the city's real estate market suggests that Chicago's legacy of unbuilt tall towers may gain another entry.

Associate Architect DeStefano+Partners
Primary Contractor Undetermined
Developer Design produced for The Fordham Co. Ownership of site transferred to Shelbourne Development Ltd.
Financing Shelbourne Group; Anglo Irish Bank
Construction Cost $1.2 billion
Status Proposed (predicted spring 2007–2010)
Units 300 (+ 150 hotel rooms)
Number of Floors 124
Gross SF Undetermined
Structure Undetermined
Amenities Undetermined





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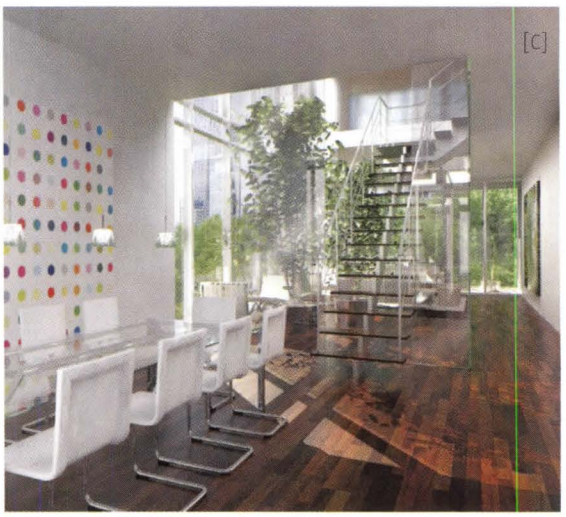
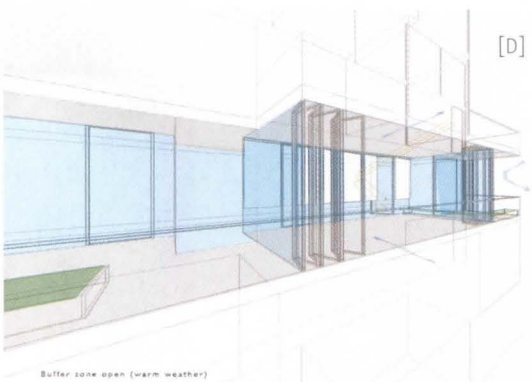
[B]


[C]

8 Culver House
Dirk Denison Architects

Architect and developer Dirk Denison (Q&A, page 136) weaves green terraces and trees throughout the glassy façades of his six-story Culver House to enhance each apartment's living spaces and to represent the ecologically sensitive nature of his project's conception. Denison is selling the apartments with design services that customize each unit to the individual buyer's needs.

Primary Contractor Undetermined
Developer Culver House
Financing Withheld by owner
Construction Cost Withheld by owner
Status Undetermined
Expected Opening Undetermined
Total Units 8
One-Bedroom: 1 Two-Bedroom: 3
Three-Bedroom: 3 Four-Bedroom: 1
Number of Floors 6
Gross SF 27,100 square feet
Structure Concrete
Amenities Undetermined



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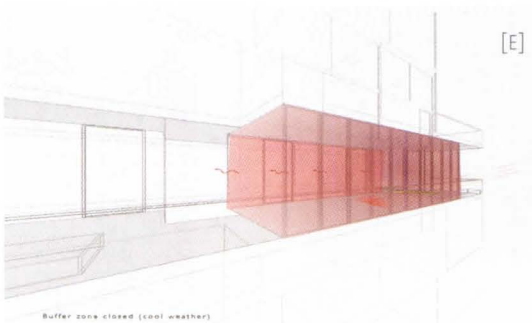

[E]

[A] East Elevation
The east façade of Culver House faces Washington Square, one of Chicago's oldest parks and the center of a city landmark district.
[B] Roof Garden
Denison designed the building's perimeter as an interlocking sequence of roof gardens, terraces, and sunrooms.
[C] Interior
The interior layouts and finishes derive from Denison's extensive experience as an architect of high-end houses.
[D&E] Buffer Zones
Sunrooms serve as a thermal barrier between apartment interiors and Chicago's extreme climate.

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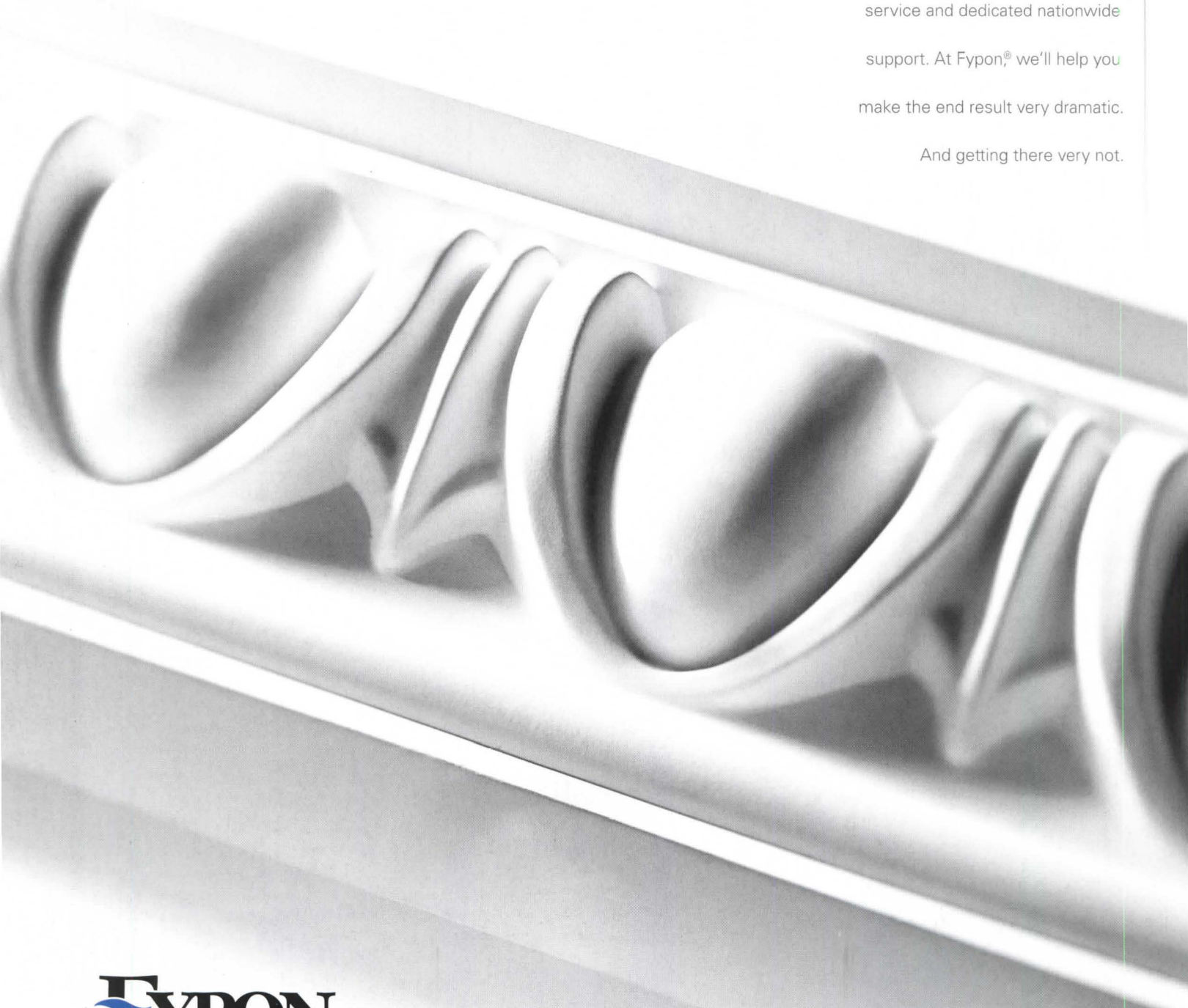

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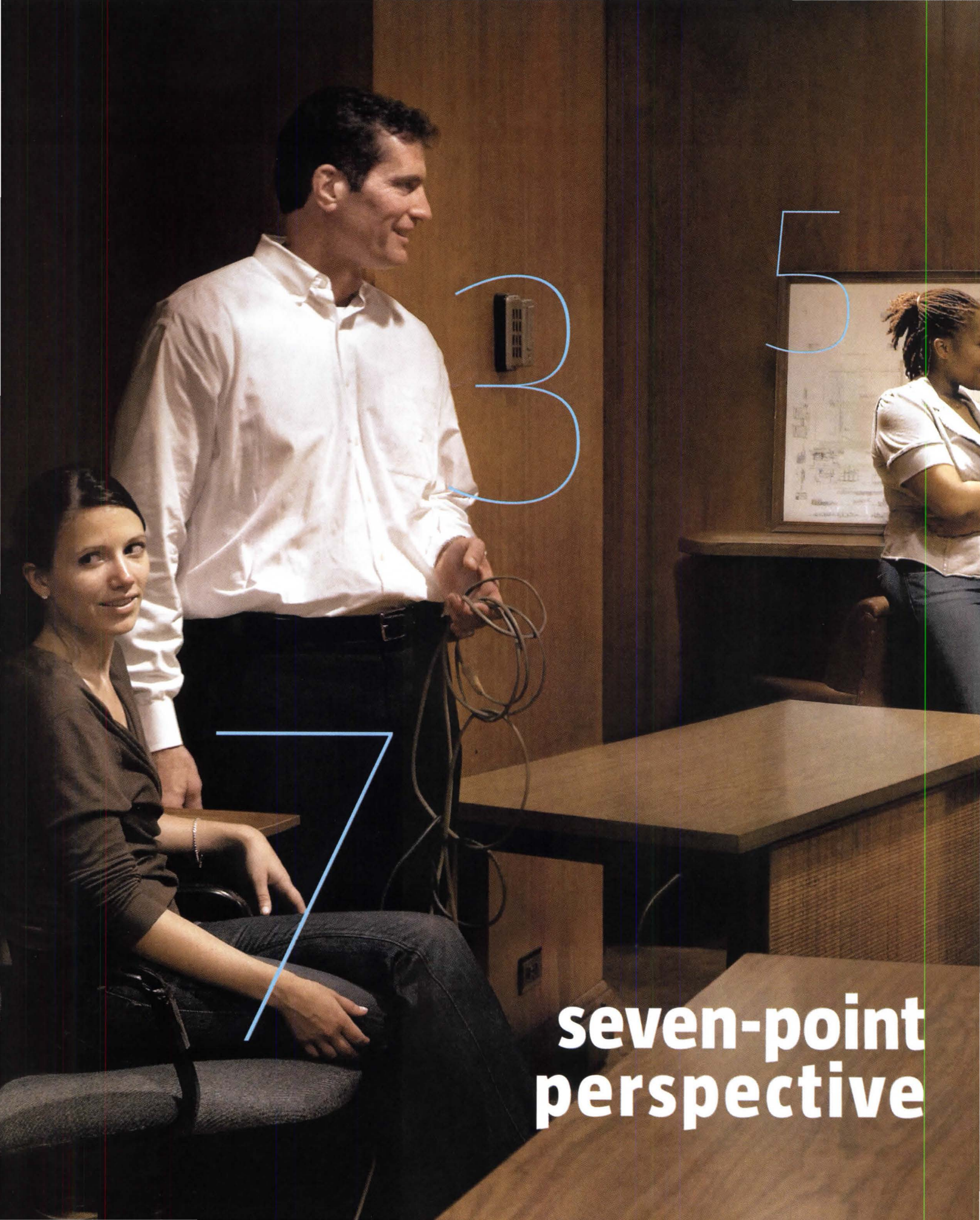

3
5
7
seven-point
perspective

architects in search of a profession

Story Cindy Coleman **Photos** Peter Rad

THERE'S A CERTAIN BEAUTY TO NUMBERS. Not only do they bring order to chaos, they also help explain complex issues in finite terms. For this first issue, ARCHITECT set out to get a statistical fix on the profession. A seemingly simple task, you'd think, but one that assumes the numbers exist—and they don't.

The U.S. Census, typically the ultimate source for demographics, makes no distinction between architects and landscape architects. The professional organizations maintain data only about their own constituencies: the AIA counts membership, while the National Council of Architectural Registration Boards tracks licenses and registrations.

In 2004, the AIA resolved to rectify the situation, adopting a landmark initiative to determine the demographics of the profession at large. With the AIA's research in but the first of several phases, ARCHITECT took an alternative approach.

Trading the quantitative for the qualitative, ARCHITECT gathered in Chicago with a group of academics and practitioners from different regions of the country and steps on the career ladder. We asked them to share their personal goals and their perceptions of the state of the profession.

What emerged was something greater than seven individual points of view. The participants collectively exhibited a remarkable regard for the responsibilities of architecture—to the client, to the environment, and to society as a whole. None of them equated job satisfaction with celebrity.

Opinions confirm something that numbers can't: Architecture has a healthy conscience. CINDY COLEMAN

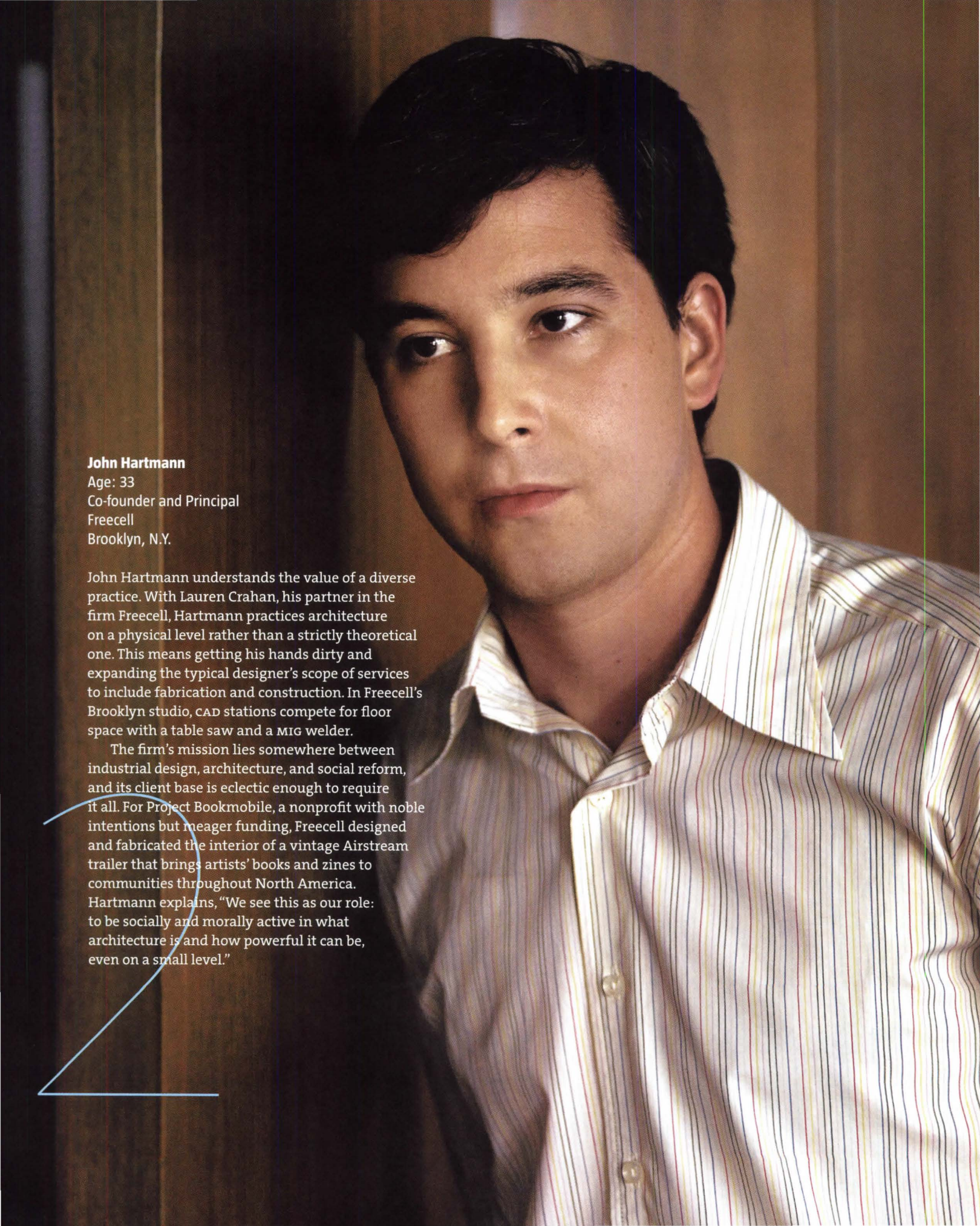
Renée Cheng
Age: 43
Associate Professor and Department Head
College of Architecture and Landscape Architecture
University of Minnesota
Minneapolis

Having attended Harvard College and the Harvard Graduate School of Design, Renée Cheng thought she was destined for an East Coast career in the fast lane. What she didn't know was that her passion for teaching would eventually outpace her passion for practice. Today, she designs curricula rather than buildings.

Cheng's educational philosophy derives from Bauhaus great Josef Albers, who believed that the role of education was to help students see the world differently. As Cheng sees it, her obligation is as much about preparing future architects for practice as it is about making them great thinkers.

The mindset of both practice and the academy has changed since the roaring '80s, when Cheng was in school, moving away from corporate good to public and environmental good.

For Cheng, her own value system has changed too: "Success is creating something really great," she says, "whether it's a family, an educational opportunity, or a building, and making it with integrity, beauty, and joy."



John Hartmann
Age: 33
Co-founder and Principal
Freecell
Brooklyn, N.Y.

John Hartmann understands the value of a diverse practice. With Lauren Crahan, his partner in the firm Freecell, Hartmann practices architecture on a physical level rather than a strictly theoretical one. This means getting his hands dirty and expanding the typical designer's scope of services to include fabrication and construction. In Freecell's Brooklyn studio, CAD stations compete for floor space with a table saw and a MIG welder.

The firm's mission lies somewhere between industrial design, architecture, and social reform, and its client base is eclectic enough to require it all. For Project Bookmobile, a nonprofit with noble intentions but meager funding, Freecell designed and fabricated the interior of a vintage Airstream trailer that brings artists' books and zines to communities throughout North America. Hartmann explains, "We see this as our role: to be socially and morally active in what architecture is and how powerful it can be, even on a small level."

3

Ross Wimer
Age: 44
Design Partner
Skidmore, Owings & Merrill
Chicago

Travel is a fact of life for a partner at SOM, and Ross Wimer acknowledges that it prevents him from feeling part of a community beyond his laptop. Nonetheless, size has its advantages. The firm's incredible infrastructure and technology resources liberated Wimer to discover his potential as an architect.

In defining success, Wimer references T.S. Eliot, who maintained that when you create a work of art, it occupies a place on a continuum with other great works of art. Eliot's theory sets a standard for Wimer, distinguishing status quo architecture from architecture that contributes. He explains that the greatest joy in being an architect is the moral obligation that goes into the work. "What we do affects a lot of people—the people who use it, who drive by it, or live in the shadows of it," Wimer says. "We don't have to look far to make a difference; we do it every day."

Daniel S. Friedman
Age: 55
Dean
College of Architecture and Urban Planning
University of Washington
Tacoma, Wash.

Having dedicated most of his professional career to architectural education, Daniel Friedman sees himself fitting into an intellectual tradition of architecture as an instrument for social change. He entered architecture school in the 1970s after working as a social-service provider and witnessing firsthand the damaging results of insensitive architecture.

According to Friedman, the student of today is totally emancipated from 20th century models of education. Thanks to unprecedented information access and powerful new tools for visual representation, students are capable of thinking more critically about design. "We need to move away from a generalized view of education and provide a more flexible, transdisciplinary curriculum that cultivates the love of risk, a fearlessness that comes from a precise, complete knowledge base," he says. The time is ripe, Friedman believes, to change how architecture education is positioned: teach a theory of knowledge rather than a compositional skill.

5

Regina Johnson
Age: 21
Student
Florida A&M University
School of Architecture
Tallahassee, Fla.

Now in her senior year, Johnson doesn't plan to fit into any prescribed role after completing her architectural education. She hopes to experience construction management and design-build but also gain real-world design experience.

Frank Gehry is Regina Johnson's design hero for his ability to "get away with some crazy stuff." At the same time, she acknowledges that getting away with crazy stuff isn't really a motivator for her generation. Doing community work through the American Institute of Architecture Students and the co-ed architecture fraternity Alpha Rho Chi has given Johnson clarity about the profession and her place in it. She thinks the most important aspect of architecture is a building's impact on its users and the environment. As for why anyone should choose architecture as a profession, she's clear on that one too: "You get to be creative, and see your creation being used by others."

Eric Romano
Age: 35
Project Architect/Designer
HOK
St. Louis

During school breaks from the University of Michigan, Eric Romano did internships with large and small firms, helping him realize that his combined engineering and architecture education was better suited to a large multidisciplinary practice that knew how to use his talents. Romano has worked at HOK since graduation, and he praises the firm's ongoing appreciation of his skills and support of his desire to grow as a practitioner.

Romano notes that at HOK, opportunities come to those who can think clearly and can communicate their intent quickly and effectively. Romano's personal definition of success is different today than it was at school, when it meant being published. "Today," he says, "success means being able to manage your life well, having the respect of your peers and clients that come back for more, and meeting your financial goals."

Sharon Puczynski
Age: 27
Intern Architect/Director of Business Development
Morter Architects
Vail, Colo.

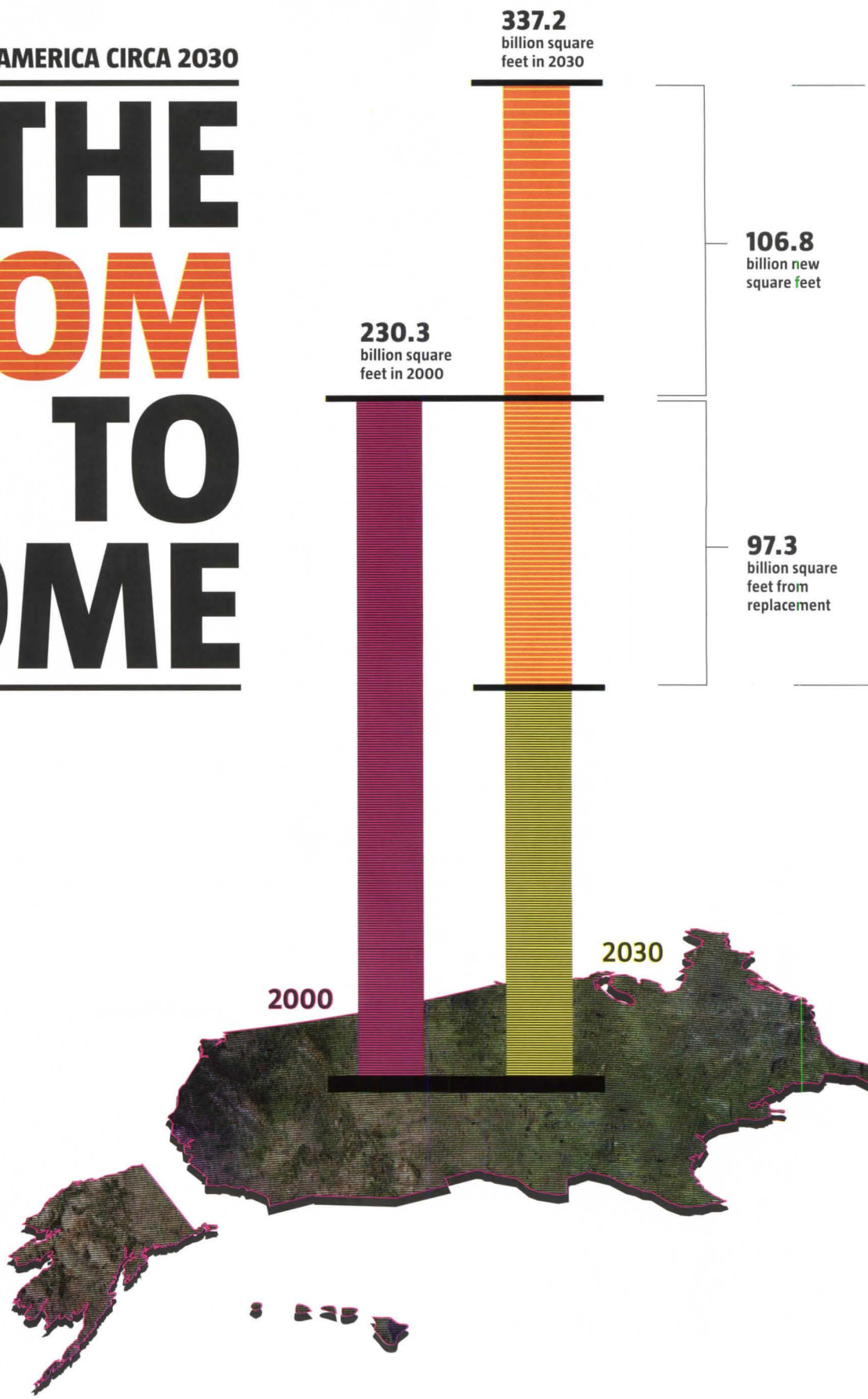
Sharon Puczynski chose to study architecture because, from an early age, she was enamored with the beauty of building. After graduating from the University of Colorado's architecture program, however, stints with a small residential practice and a hospitality firm made her realize that her strengths were management and business. Puczynski picked up and enrolled in an MBA program at the University of Denver. For her, the MBA fills the gaps for a career path "beyond the boards."

The advantages of this multidisciplinary education are already evident in Puczynski's current job at Morter Architects, where her responsibilities include marketing and human resource management. Still, there are times her ambition feels out of sync with architects her age, who very much want what she describes as "straight" architectural careers that focus more narrowly on building form. How does Puczynski define success? "A happy client: It's good for business."

Data and Analysis Arthur C. Nelson **Illustrations** Cybu Richli

AMERICA CIRCA 2030

THE BOOM TO COME



204.1 BILLION SQUARE FEET OF NEWLY BUILT SPACE BY 2030

DOES THE HOUSING DOWNTURN HAVE YOU SPOOKED ABOUT **FUTURE DEVELOPMENT?** FEAR NOT, SAYS URBAN PLANNING ANALYST ARTHUR C. NELSON. THERE'S PLENTY OF SPACE JUST WAITING TO BE BUILT.

THE BIG PICTURE
In 2030, there will be 106.8 billion square feet of new development, about 46 percent more built space than existed in 2000—a remarkable amount of construction to occur within a generation. What is equally important, though, is that 97.3 billion square feet of existing space will need to be replaced. In other words, new and replacement-related development will amount to 204.1 billion square feet, equal to almost 90 percent of the built space that existed in 2000.

IN DECEMBER 2004, The Brookings Institution published a report by Virginia Tech professor Arthur C. Nelson titled "Toward a New Metropolis: The Opportunity to Rebuild America." An analysis of what the built environment will be like in 2030, it determined, among other things, that "about half of the buildings in which Americans live, work, and shop will have been built after 2000" and "most of the space built between 2000 and 2030 will be residential space."

Over the following year, as news about the report got out, its findings were splashed on the front page of *USA Today* and other national and local papers, parsed by commentators and industry analysts, and touted by various groups in the building community. The report seemed to bolster the idea of a construction boom that would continue unabated.

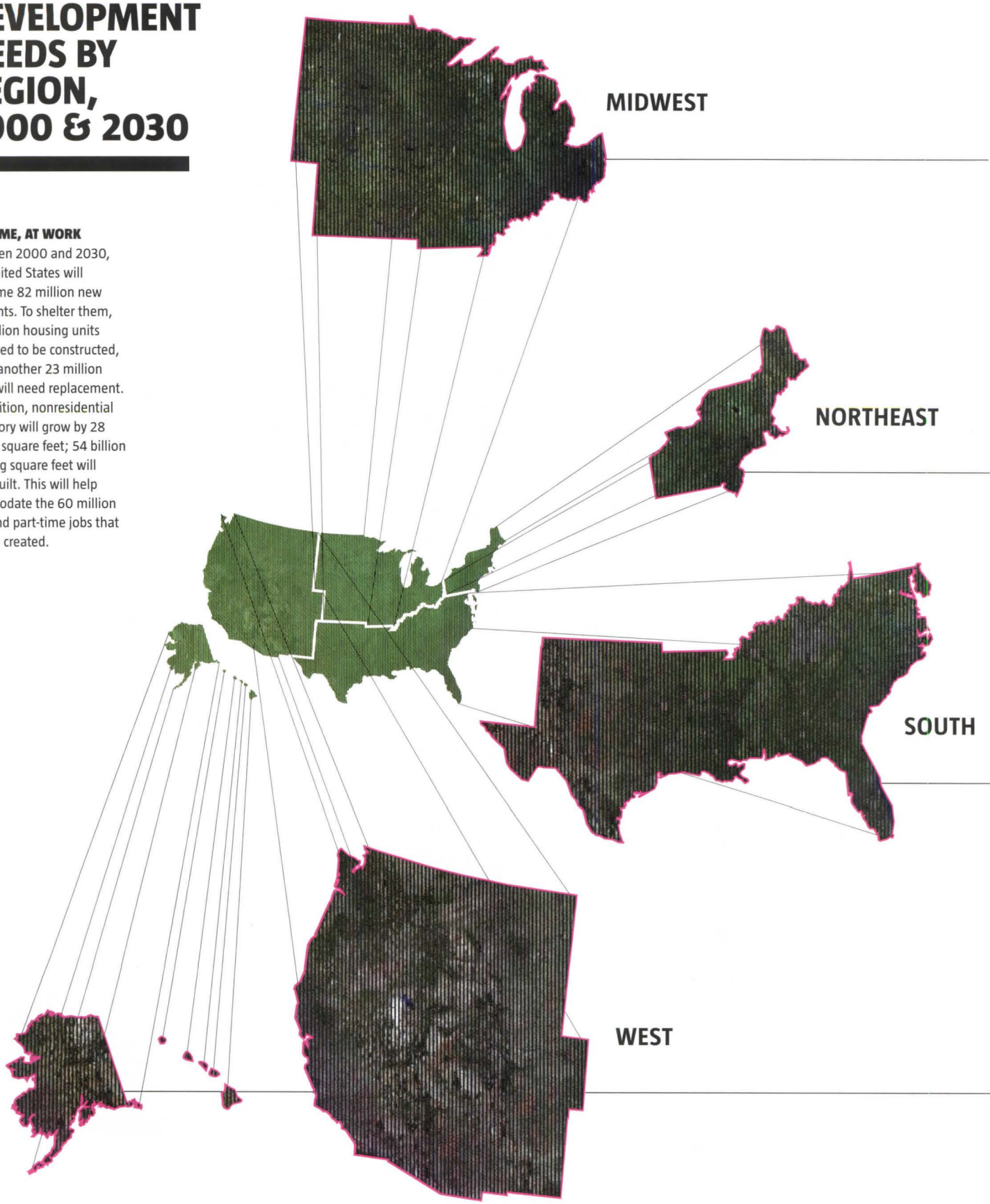
Then came 2006, and a cooling housing market, and suddenly things didn't seem so promising.

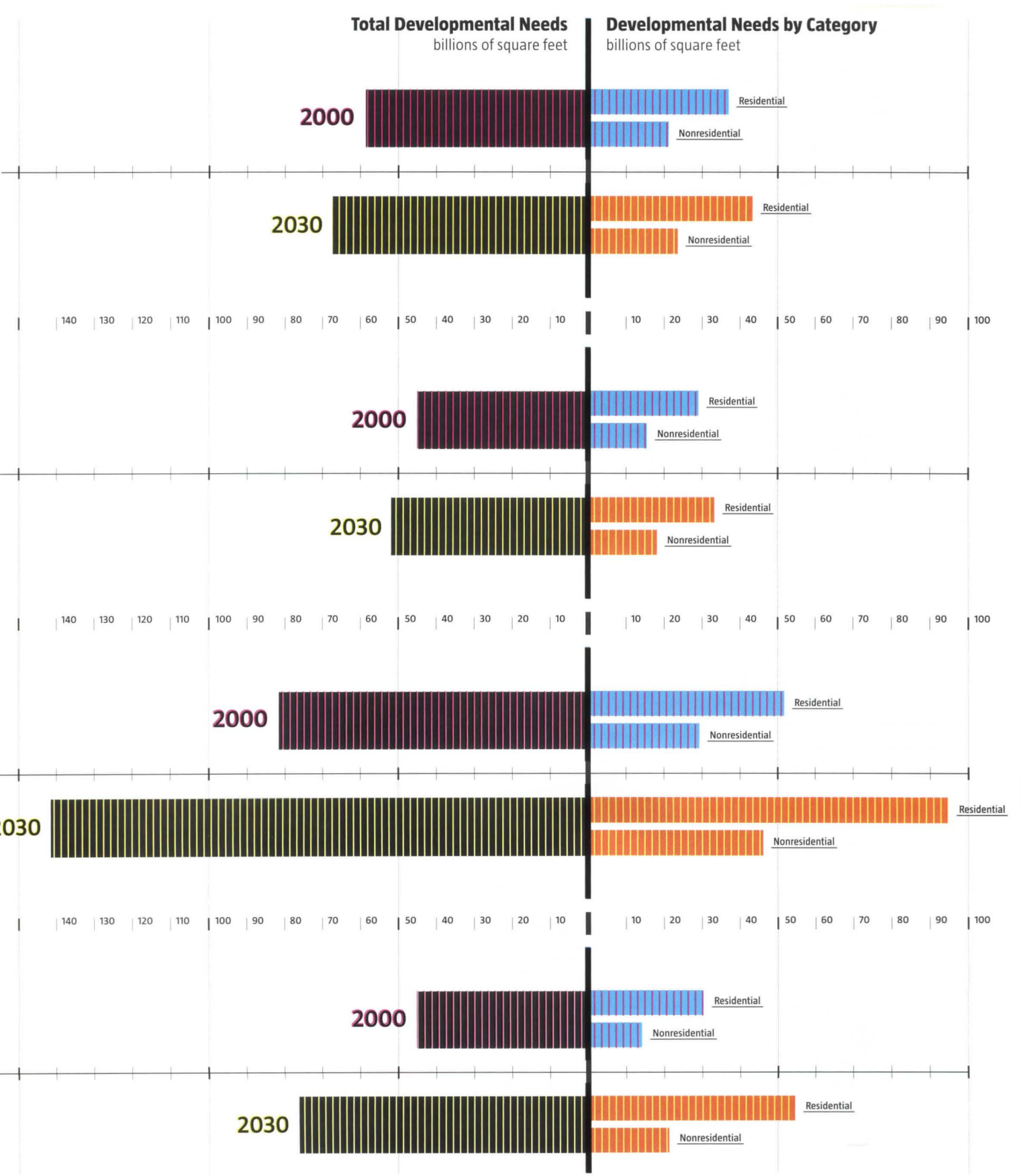
So ARCHITECT invited Nelson to revisit his data and provide a brief, fresh look at the prospects for America's built environment. The future is as bright as ever, he finds—it just doesn't look quite the same as it did two years ago. The following pages break down how and where the boom will unfold and present Nelson's thoughts on related trends and developments. BRAULIO AGNESE

About the Data The sources for the figures and analysis in this report include the U.S. Census Bureau, the U.S. Department of Energy, the U.S. Department of Labor, HUD, the Society of Industrial and Office Realtors, and the Council on Tall Buildings and Urban Habitat. Queries about source data may be addressed to Arthur C. Nelson at acn@vt.edu. Numbers may not add to totals due to rounding.

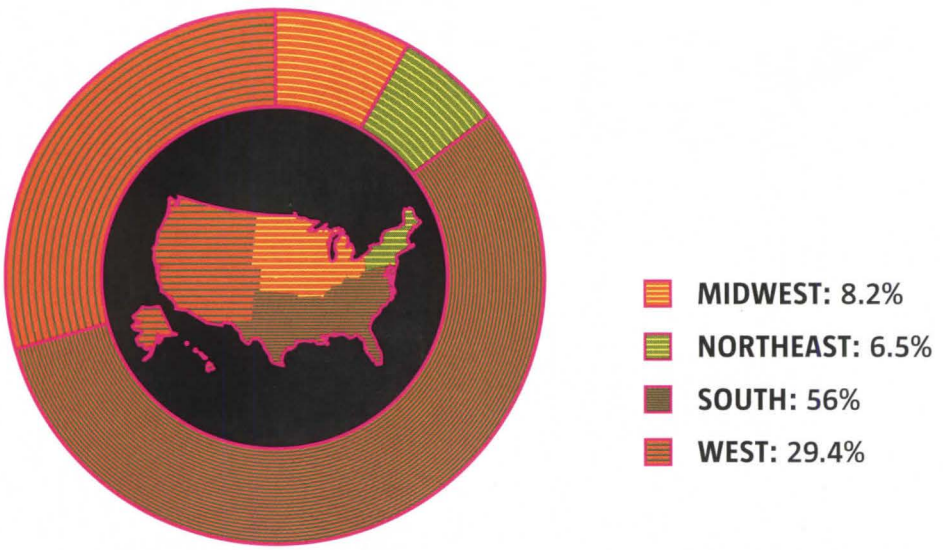
DEVELOPMENT NEEDS BY REGION, 2000 & 2030

AT HOME, AT WORK
Between 2000 and 2030, the United States will welcome 82 million new residents. To shelter them, 34 million housing units will need to be constructed, while another 23 million units will need replacement. In addition, nonresidential inventory will grow by 28 billion square feet; 54 billion existing square feet will be rebuilt. This will help accomodate the 60 million full- and part-time jobs that will be created.




Total Developmental Needs
billions of square feet
Developmental Needs by Category
billions of square feet
2000
Residential
Nonresidential
2030
Residential
Nonresidential
140 130 120 110 100 90 80 70 60 50 40 30 20 10
10 20 30 40 50 60 70 80 90 100
2000
Residential
Nonresidential
2030
Residential
Nonresidential
140 130 120 110 100 90 80 70 60 50 40 30 20 10
10 20 30 40 50 60 70 80 90 100
2000
Residential
Nonresidential
2030
Residential
Nonresidential
140 130 120 110 100 90 80 70 60 50 40 30 20 10
10 20 30 40 50 60 70 80 90 100
2000
Residential
Nonresidential
2030
Residential
Nonresidential

SHARE OF TOTAL GROWTH BY REGION, 2000–2030



GROWTH RING
Over the next generation, as during the previous one, the increase in population and employment will favor the South and the West. The two regions will acccount for more than 85 percent of the nation's growth. Yet in urban areas, metropolitan New York will see the most new and replaced nonresidential development. Coming in second and third will be metropolitan Los Angeles and metropolitan Chicago, respectively.

Society's Effects on Development

The life span of commercial, industrial, and institutional buildings is 50 years, on average, and less than 20 for many. All too often, reuse seems financially infeasible, with the result that new demand is met by new construction. This is beginning to change, as driven by three factors.

FIRST, society is changing dramatically, and along with it, people's preferences. In the 1950s, half of American households had children, and only about one in 10 was a single-person household. In 2030, only about a quarter of all households will have children, and about one in four will be a single-person household. Suburbs built to meet the demands of children no longer serve that purpose, and unless they retool, they will suffer economically. About 85 percent of the new demand for housing will come from childless households.

SECOND, energy prices and congestion will force millions of households to reconsider whether living in distant suburban and exurban areas makes sense. It will to many, but to many more it may not.

THIRD, households are reconsidering what they want out of where they live. Because many professionals are having children later in life, they may not want to give up an urban lifestyle just to move to the suburbs where the "good schools" are, only to return to urbanity when the kids are gone.

And because adults will likely live 20 or so years longer in the next generation than in the last one, many realize that child rearing will consume only about a quarter of their adult lives. Moreover, many will choose a different child-rearing lifestyle from that of their parents. Millions—and conceivably most of these Generation Y and Z households—will want walkable neighborhoods where coffee and pastries can be a principal social experience; and as they go through life, they will want to remain in the same neighborhood.

While these patterns may appear to affect mostly residential development, think again: Millions in the next generation, and perhaps a majority, will want to live in communities with shopping, services, restaurants, and places to work.

The Less-Than-World-Wide Web

Some may think that telecommuting and Internet retailing will have a dampening effect on new nonresidential construction. Yet federal data indicate that office and retail space per capita rose nationally between 1992 and 2003—a time of growing Internet activity. Although these influences may have a moderating effect, they are not considered significant factors. Why?

For one thing, people are social creatures, and usually in need of a little variety. Yes, Internet retailing is growing, but after a decade it still amounts to just 3 percent of all sales. Moreover, its rate of growth is slowing down. For comparison, consider that over the past 10 years in-store retail sales growth has outpaced inflation-adjusted personal income growth by more than 25 percent, suggesting that people still like to shop in person.

A generation ago, public-policy experts saw telecommuting as the solution to problems such as congestion, pollution, and the declining nuclear family. Yet just about the same percentage of people in 2005 telecommuted as did a generation ago. Why? Again, humans are social creatures. People who telecommute by staying home three to five days a week will often get "cabin fever," and productivity will begin to fall unless there are social or workplace regulatory adjustments, such as remote monitoring of one's work computer at home.

The Promise of Redevelopment

Much activity will be focused on the redevelopment of suburban shopping centers and malls, as well as office and business parks. Why? There are five important reasons.

FIRST, these properties are usually under single ownership. This makes it easy to "assemble" the land and negotiate development deals.

SECOND, suburban malls and shopping centers have lots of land—more than 1.1 million acres spread across America's suburbs, most of which is parking.

THIRD, infrastructure is already in place; no new water or sewer extensions are needed, and the roads already exist. This does not mean that infrastructure need not be upgraded—but it would probably have to be ripped up and replaced anyway because of age.

FOURTH, these properties already enjoy significant accessibility advantages, being located along at least one major road; many have bus and/or rail transit that already exists or is in the works.

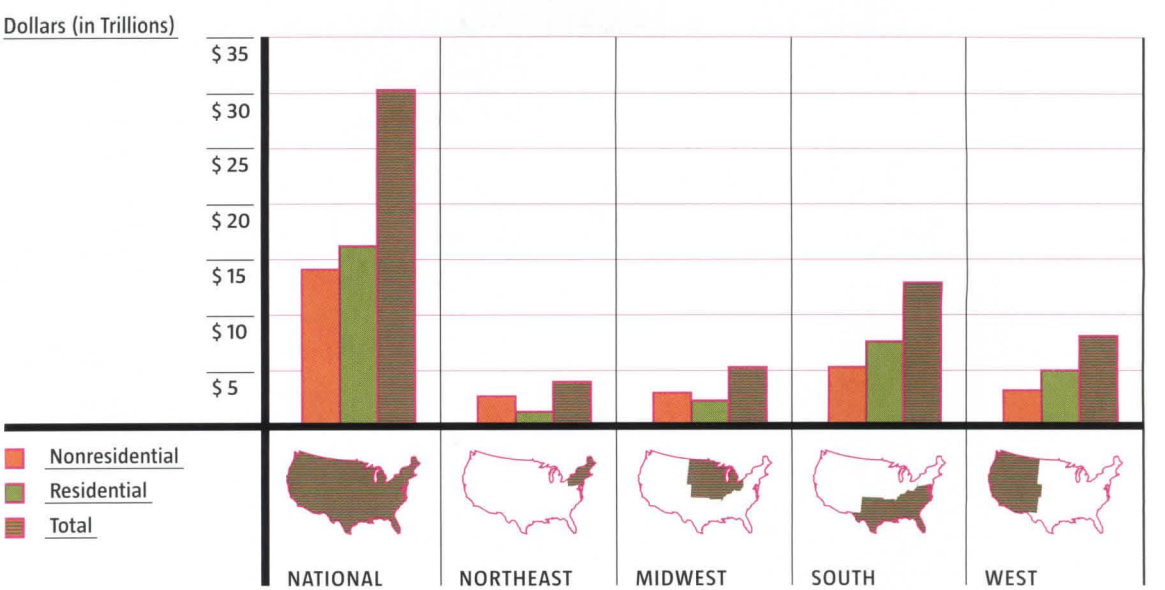
FIFTH, they are already the "centers" of local communities and, if redeveloped wisely, may help improve a community's sense of place, not to mention its market position.

Redeveloping suburban retail and low-rise office centers at 2.0 FAR (roughly the conversion needed for financial feasibility) could technically accommodate all nonresidential new development needs and then some. More likely, a third would be good candidates for redevelopment at this scale (equivalent to projects with four levels, leaving half the land area available for parking and open spaces), and these could meet the needs for about 40 percent of all future nonresidential development, plus a sizeable share of all future residential development.

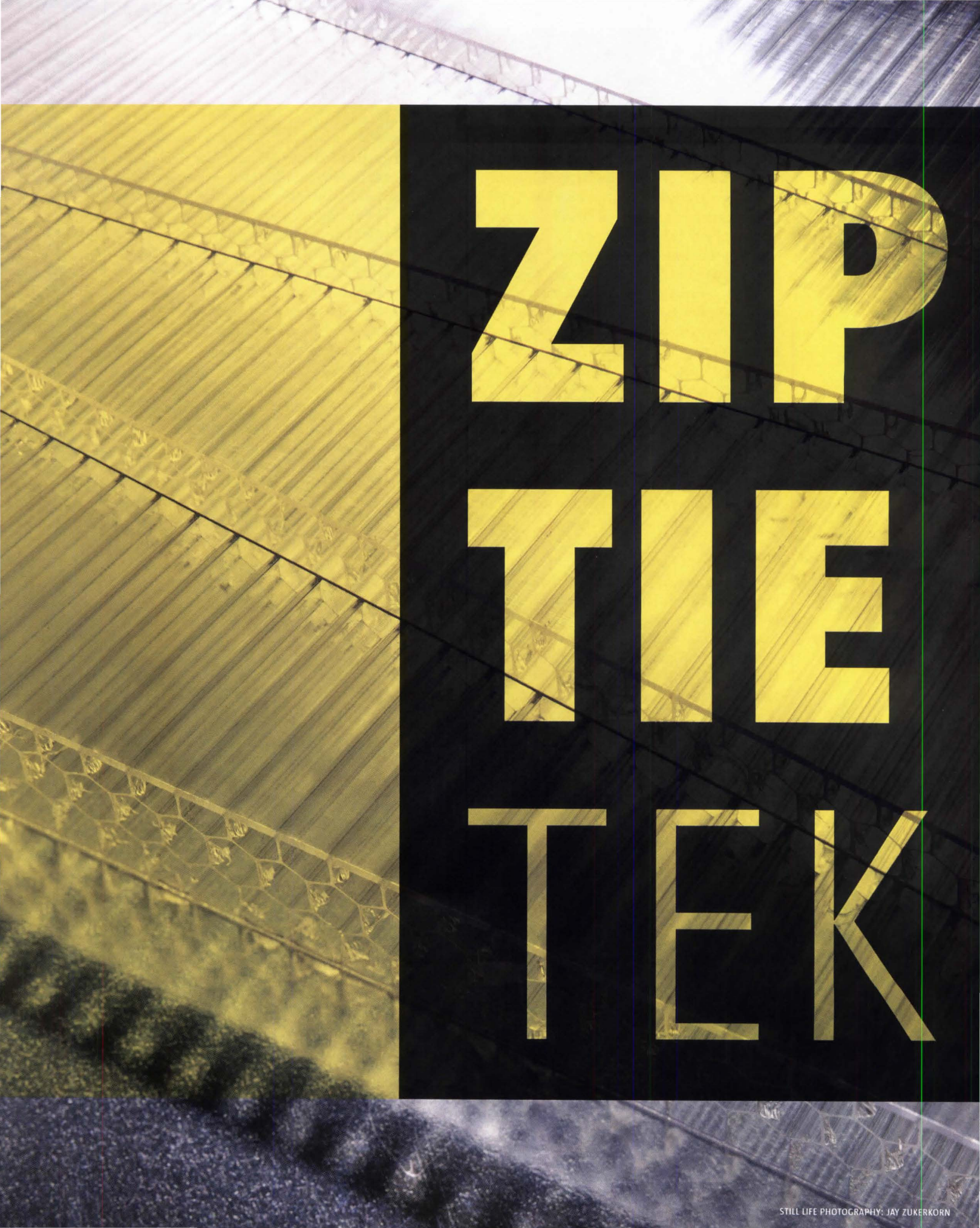
In Conclusion

Many challenges loom in coming years, not the least of which are changing local government attitudes about planning and zoning, getting financial institutions to be more progressive, and, above all, educating the American public about the sea change that is about to occur on the built environment. **A**

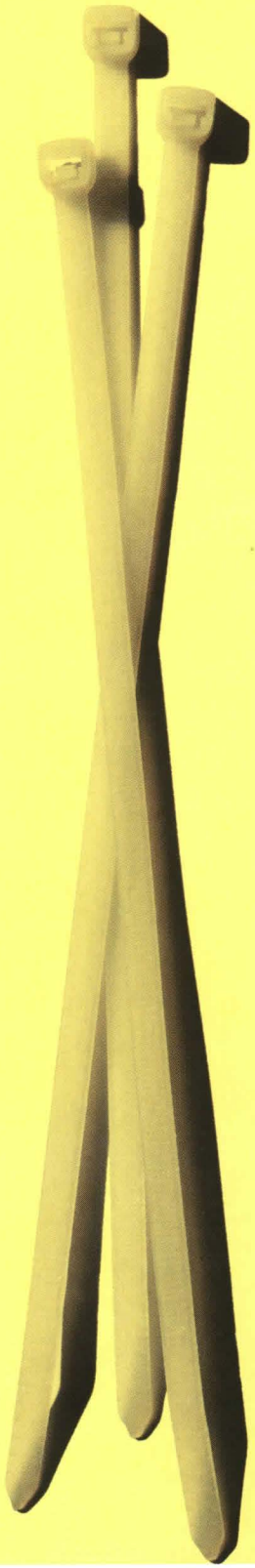
ESTIMATED VALUE OF CONSTRUCTION, 2000–2030



FOLLOW THE MONEY
About $30 trillion in total new development (including infrastructure) will occur between 2000 and 2030. The South and West will lead the way with $21 trillion between them. In nonresidential development, the South's $5.3 trillion will dominate; the West and Midwest will have roughly $3 trillion each, with the Northeast adding $2.7 trillion.



STILL LIFE PHOTOGRAPHY: JAY ZUKERKORN



The Ties that Bind

Vernon Mays

When it comes to architecture, New Orleans-based architect Ammar Eloueini follows his intuition. And by paying attention to his instincts, he now stands among the leaders of the digital design revolution, testing the limits of form and training the next generation of software-savvy designers.

As associate professor at the Tulane University School of Architecture and founder of AEDS (Ammar Eloueini Digit-All Studio), Eloueini has created a platform for exploration of computer-aided design and its ability to produce space that, in his words, "engages human perception." Projects ranging from animated stage sets to retail stores for fashion designer Issey Miyake have given him real-world experience at a scale that fits the experimental nature of his work. "There's a technology aspect I'm interested in, but most of all it's about the physical experience of the results," he explains.

Born in Lebanon and raised in Paris by parents who, 25 years ago, fled political tensions in the Middle East, Eloueini has been writing his own rules for architectural practice from day one. While enrolled at the Ecole d'Architecture in Paris, he came to the United States as an exchange student. Before returning to Paris, he toured American graduate schools from coast to coast. Columbia, in particular, caught his attention. "They were changing into what became the paperless studio," he recalls with enthusiasm. "I didn't see anything remotely like it at the time. And I thought: 'This is where I really want to be.' "

The chance to learn from Greg Lynn and Hani Rashid at Columbia was invaluable. But when Eloueini completed the graduate program in 1996, he headed straight back to Paris, where he secured his architectural registration. He went to work setting up his own shop, borrowing the cash for a silicon graphics machine and newly developed animation software. Using these new design tools, he started entering competitions, teaching workshops, and speaking at conferences on digital design.

Eloueini officially launched AEDS in 1997 and began attracting attention for his work in widely published competitions such as the one for Wall Street's Cultural Information Exchange Center. That led to invitations to lecture in Italy, then to teach in Germany. Everything snowballed in 1998 and 1999, when he was hired to run the Digital Media Program at the University of Illinois at Chicago, then invited by Massimiliano Fuksas to work on the 2000 Venice Biennial, and soon afterward informed that he had received a grant from the French Ministry of Culture to fund an exhibition of his work.

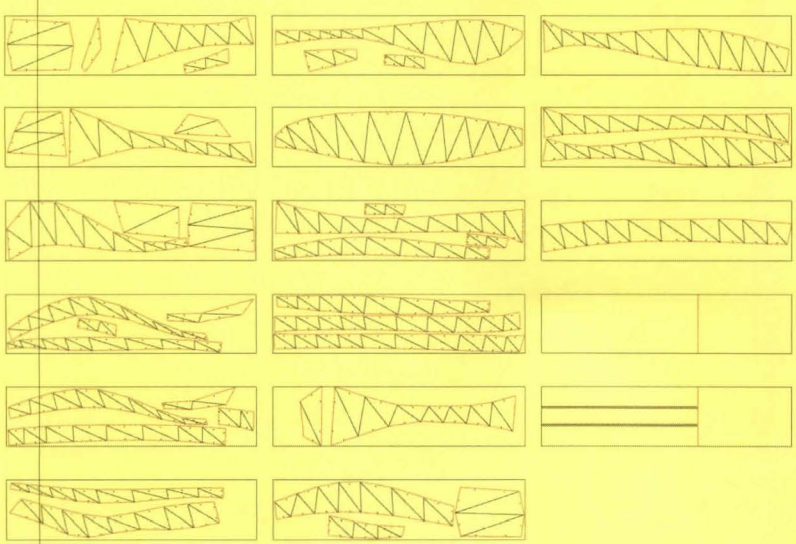
The biggest break happened by chance. When Eloueini was installing his solo exhibit in a small Parisian gallery, Miyake passed by and stopped to take a closer look. "We started talking, and he asked about the work," says Eloueini. "Then he asked me to send more information. This is how the whole adventure with Miyake began." That adventure has led to three commissions for Miyake showrooms, the first one in Germany and two in France.

While they differ functionally, the retail shop and the other works illustrated here share many attributes. Similar in scale, budget, materials, and fabrication techniques, they constitute a family of solutions that emerged from the focused research on polycarbonate panel construction that Eloueini has pursued since 2001, when he received the Nouveaux Albums des Jeunes Architectes, the French Institute of Architects' top award for architects under 35. Yet in spite of all the high-tech gymnastics that make these multifaceted installations possible, Eloueini's biggest stroke of genius may be the low-tech means he uses to assemble them: the humble zip-tie. Without it, his three-dimensional creations would all fall flat.

PROJECT: PLEATS PLEASE, ISSEY MIYAKE, BERLIN

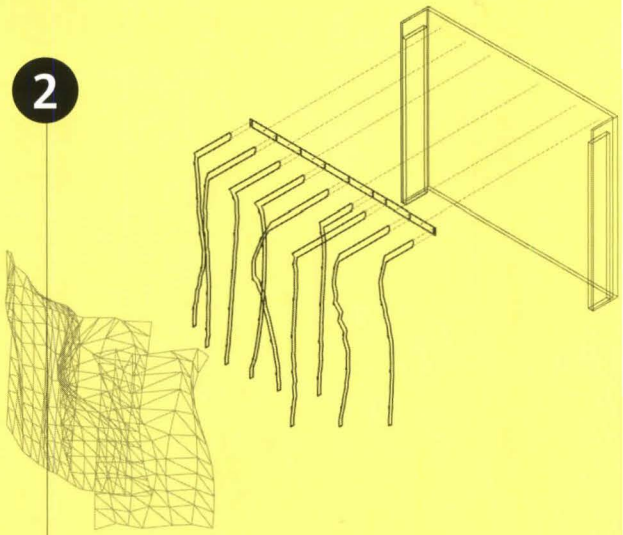
Eloueini's first collaboration with fashion designer Issey Miyake was for a retail space in the Galeries Lafayette, a building by Jean Nouvel. Working within the confines of a wedge-shaped space, Eloueini envisioned an installation at the back of the store that would take its cues from Miyake's pleated designs, but consist of something other than the product line. "It's this folding surface that relates to Miyake's work," Eloueini explains. "The polycarbonate refracts light. So the idea was to have all the clothes—many in flashy colors—reflect in the surface." The wall's complex shape transforms light, color, and shadow into an ever-changing geometric curiosity. Some of the space behind the screen is used for storage, and some as a fitting room. Moving figures behind the translucent material lend a sense of theater to the shop, which opened in December 2004.

1



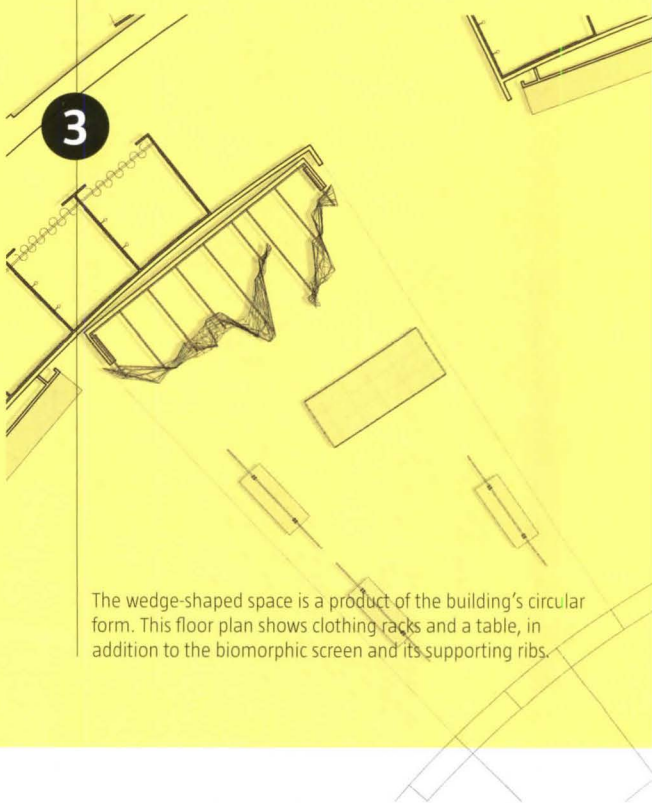
Eloueini typically starts a design with animation software such as Softimage. Once the complex surface is resolved, he imports the drawing into Pepakura, an inexpensive software that flattens the complex surface and numbers the pieces. From there, the drawings are taken into AutoCAD, or a similar program, to complete the data for the CNC (computer numerically controlled) milling machine. The drawings shown here document the 17 polycarbonate panels, each 2 feet by 8 feet, used in the Berlin showroom.

2



Tenant restrictions at the Galeries Lafayette prohibited attaching fixtures to the floor. So, as this assembly drawing shows, the screen was designed to attach to the wall and simply rest on the floor. The polycarbonate surface, once assembled, gives the piece its stability.

3



The wedge-shaped space is a product of the building's circular form. This floor plan shows clothing racks and a table, in addition to the biomorphic screen and its supporting ribs.

4

After the milling process, individual sections were laid out on the factory floor. For high-end projects such as the Miyake showrooms, Eloueini favors a 12mm-thick panel for its strength and structural rigidity.

5

Structural ribs for the wall and frames for the table and racks were cut from 50-inch-by-100-inch sheets of half-inch aluminum plate. This photograph shows the remains of one aluminum panel after pieces have been cut on an abrasive waterjet cutting machine.

6

To test its accuracy, the full-scale piece was assembled in a Chicago factory before being shipped to Germany. Here, a section of the wall begins to take on its final shape as the zip-ties are threaded and tightened.

7

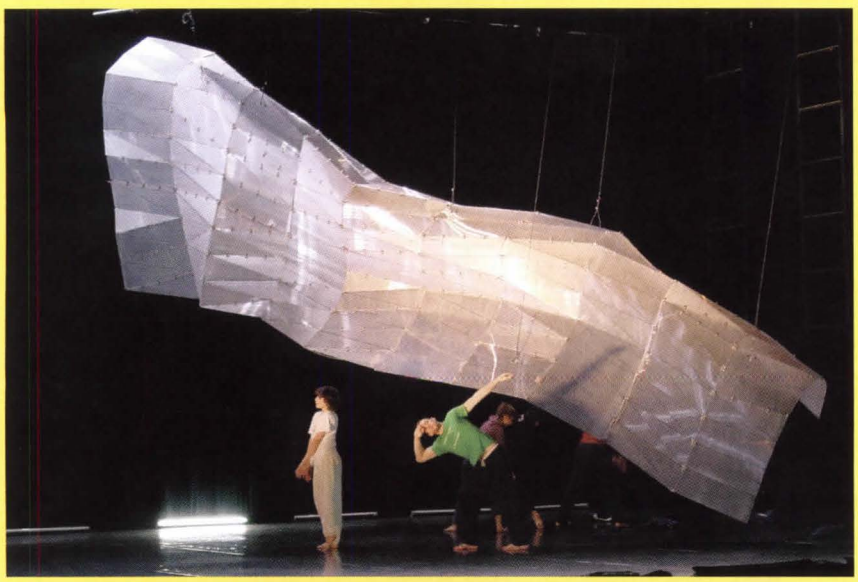
Eloueini chose to have the interior elements fabricated in Chicago because the schedule was critical and he was familiar with the team there. The piece was mocked up in full scale before being disassembled and shipped flat. The lightweight material and zip-tie fasteners make for a system that is easy to transport and quick to assemble.

8

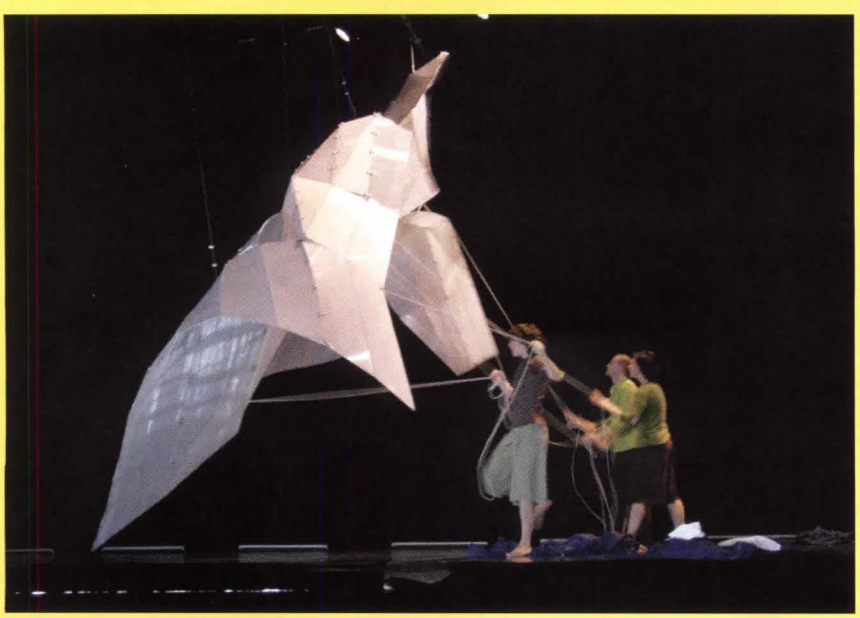
After final installation, the faceted wall blends reflections from the room and filtered light from behind. The effect is multiplied by the addition of Miyake's clothes. Zip-ties also attach the polycarbonate to the frame.

PROJECT: *CALIFORNIA*: STAGE SET FOR JOHN JASPERSE

Eloueini designed the set for *California*, a dance production created by choreographer John Jasperse. After premiering in Cannes, France, in November 2003, the dance company began an international tour. Eloueini's task was to design a set that would pass through customs quickly and easily; it had to be small and light enough to fit into two containers the size of a suitcase. Because the set is secured by zip-ties, it can be erected in hours and easily dismantled and packed, ready to be taken to the next performance venue.

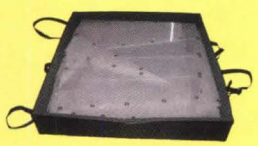


A



B

C



D

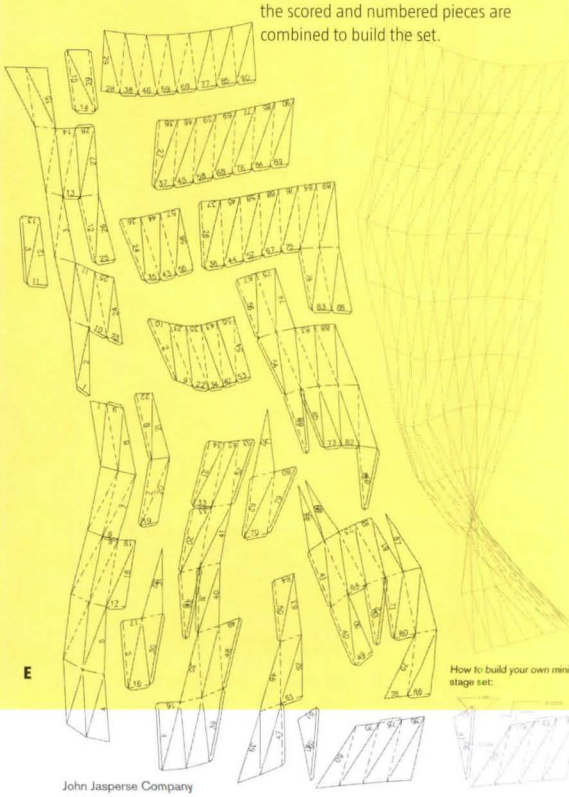
A The 25-foot-long set, suspended from overhead rigging, consisted of a three-dimensional canopy that hovered and dipped over the stage.

B Eloueini conceived of the set as a surface that morphs, allowing for various interactions with the dancers. Here, the parts simulate kites.

C This detail drawing of the polycarbonate material shows the result after routing. One surface of the sheet remains intact to act as a hinge.

D When dismantled, the entire set fit into two 4-foot-by-4-foot boxes that traveled with the dance company.

E Directions for the stage crew included this diagram showing how the scored and numbered pieces are combined to build the set.

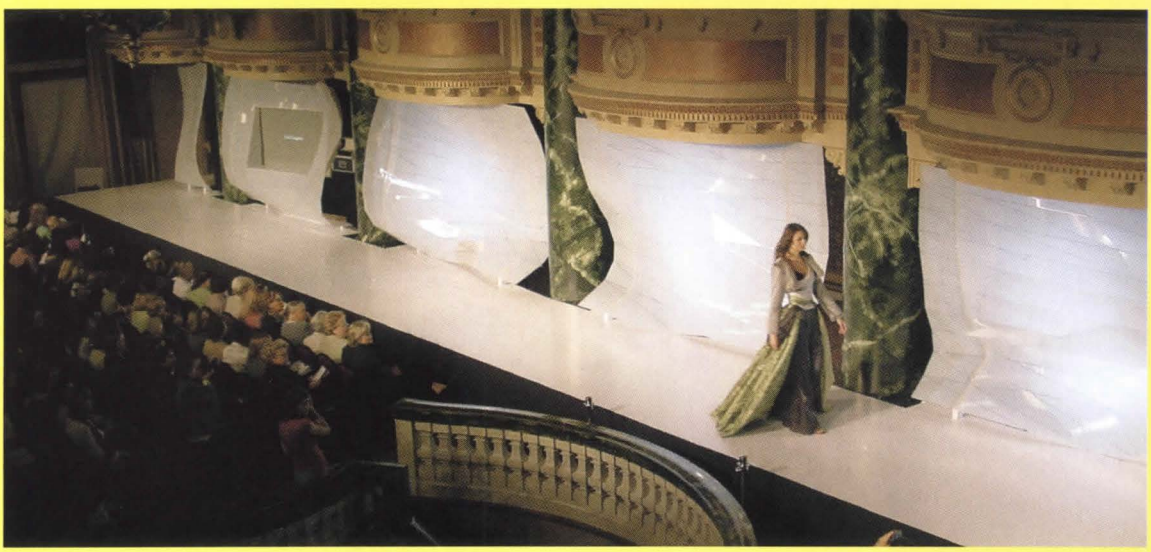


E

PROJECT: FASHION SHOW, SCHOOL OF THE ART INSTITUTE, CHICAGO

The School of the Art Institute of Chicago commissioned Eloueini to design the stage set for its fashion department's 71st annual fashion show in May 2005. To maximize seating capacity in the school's elegant ballroom, Eloueini placed the runway off to one side, along a colonnade. The runway was backlit by luminescent polycarbonate surfaces placed between the columns. At each end, the panels incorporated a flat-screen TV.

A

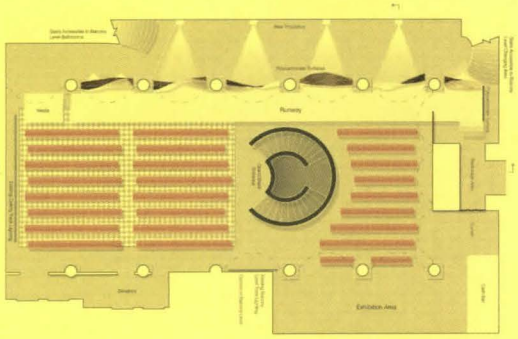


A The fleeting use and large amount of material needed for the stage set prompted Eloueini to specify a less expensive polycarbonate.

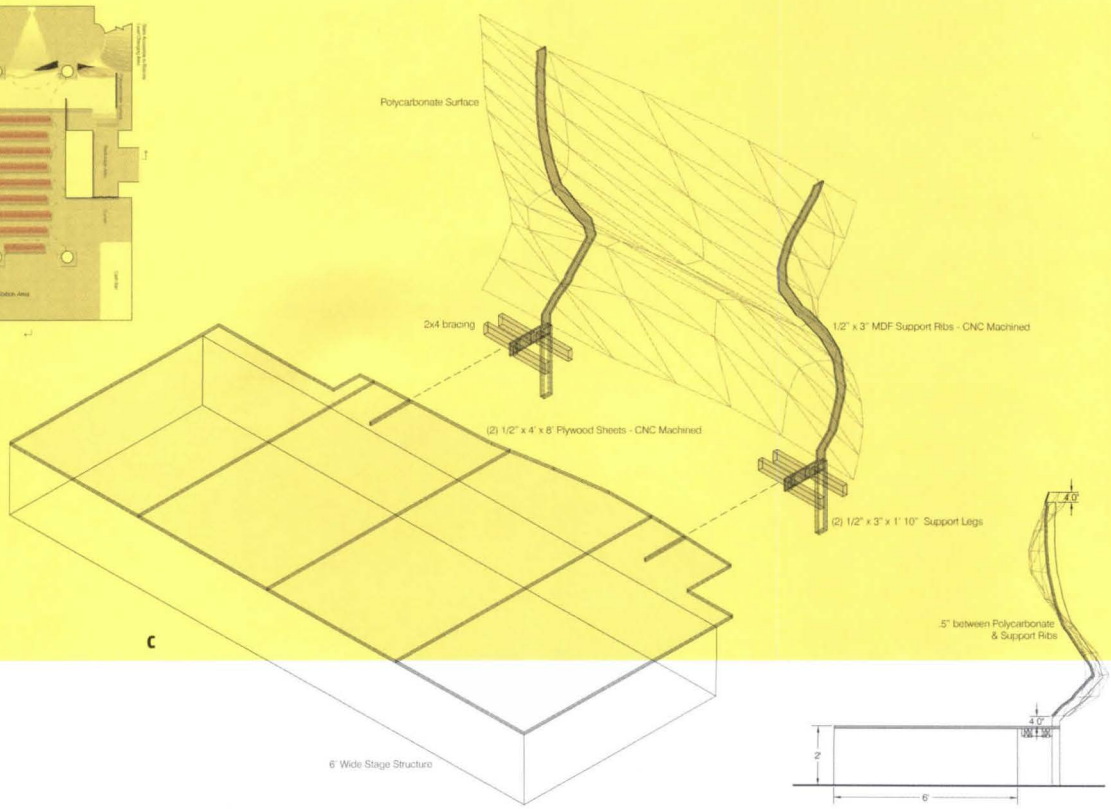
B The fashion show occurred in a beaux-arts ballroom on Chicago's Michigan Avenue. Eloueini wove the polycarbonate surfaces through an existing colonnade and lit them from behind.

C Eloueini used plywood for the structural ribs because it could be cut for a much lower cost on a CNC router, as opposed to the waterjet cutting machine required to cut aluminum.

B



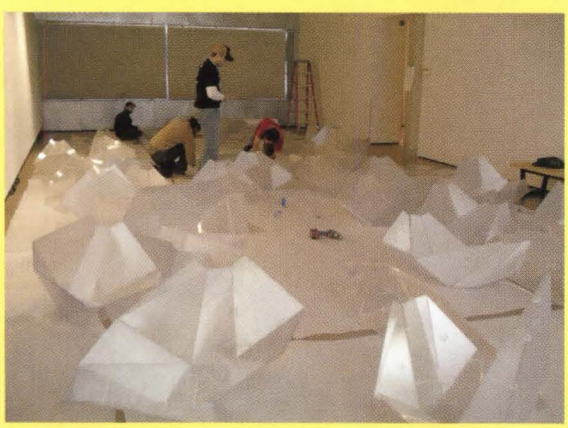
C



PROJECT: *NUBIK*, GRAND ARTS GALLERY, KANSAS CITY

Nubik, a site-specific piece installed in March 2005, created the context for a series of changing exhibitions featuring more than two dozen artists, architects, musicians, and thinkers. Made from a series of nine folded strands suspended from the gallery ceiling by cables, the composition was formed by discrete pods of varying size. By day, the strands diffused direct sunlight passing through skylights overhead. At night, the illuminated form gave the space an otherworldly quality.

A

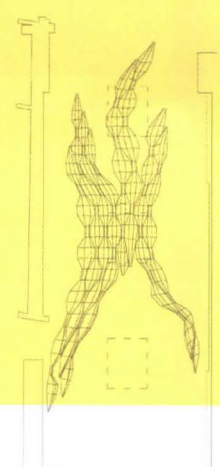


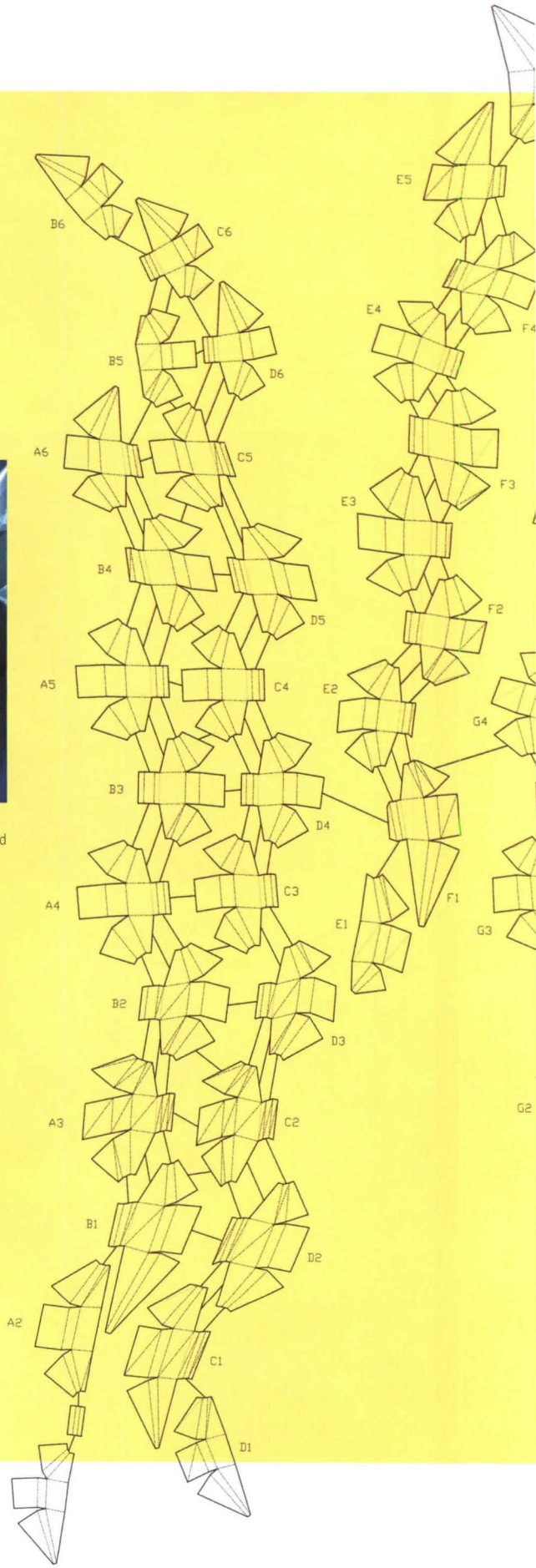
C

A At opening night festivities, a crowd gathered beneath the installation, which glowed in blue light.

B The design for the strands of podlike forms creates a dynamic pattern when flattened.

C Pods were assembled on the gallery floor prior to installation on the ceiling.

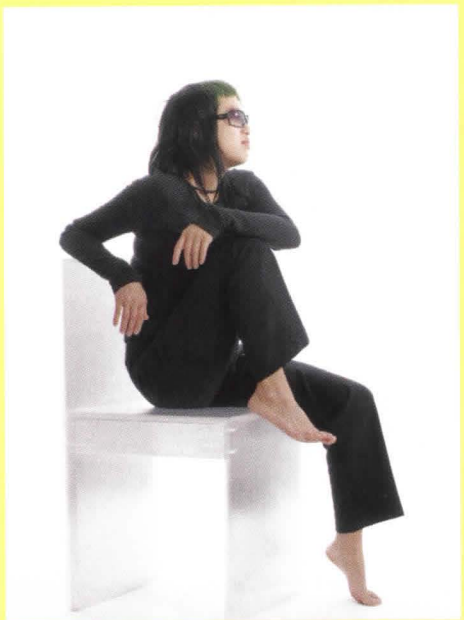




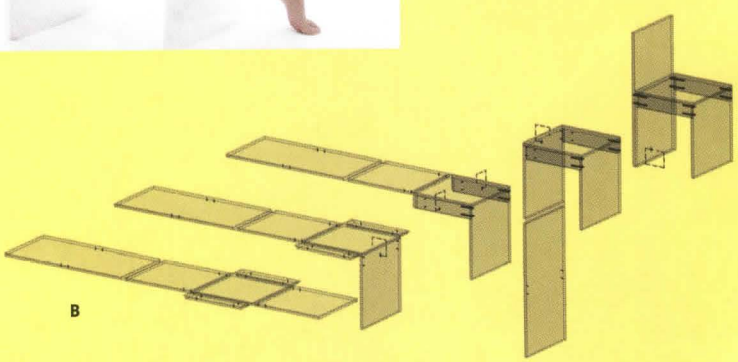
B

PROJECT: MU CHAIR

The lightweight and inherent structural characteristics of polycarbonate make it an interesting material for furniture design, says Eloueini. The MU chair is made from a single 2-foot-by-8-foot panel of 100-percent recycled polycarbonate.



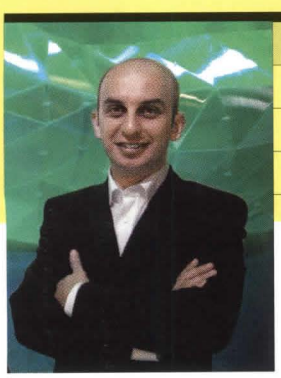
A



B

A This minimalist chair is designed for economy and ease of fabrication and assembly.

B After machining, the panel can be folded, connected with zip-ties, and assembled in minutes.



THE ARCHITECT

Name: Ammar Eloueini

Age: 38

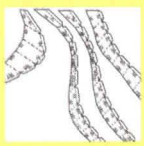
Firm: Digit-All Studio

Education: Ecole d'Architecture, Paris; Columbia University

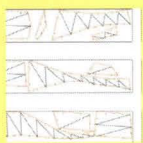
TOOLBOX

Eloueini's grounding in architecture at Columbia's paperless studio has led to projects that are designed—and fabricated—using digital technology. The complex, many-faceted surfaces he creates emerge from a sequence of proprietary software, modeling, and fabrication techniques. To get the job done, these implements are found in his toolbox.

Softimage / www.softimage.com
One of the first investments Eloueini made after launching his practice was to purchase Softimage, a program that incorporates animation. Eloueini compliments how the program "applies force to geometry." He calls it the ideal software to initiate design. The software's 3-D component is powerful, and 3-D modeling is easy to execute in comparison to other animation programs, he adds. "And Softimage has one of the best rendering engines available."



Pepakura / www.tamasoft.co.jp/pepakura-en
Eloueini swears by this inexpensive product as the best software for unfolding surfaces. In the case of the polycarbonate projects, the 3-D geometries are flattened by this program so they can be fabricated with the CNC router.



AutoCAD / www.autocad.com
After the geometric forms are flattened in Pepakura, the drawings are imported into AutoCAD for production of the CNC-compatible files. "It's kind of an industry standard," says Eloueini.

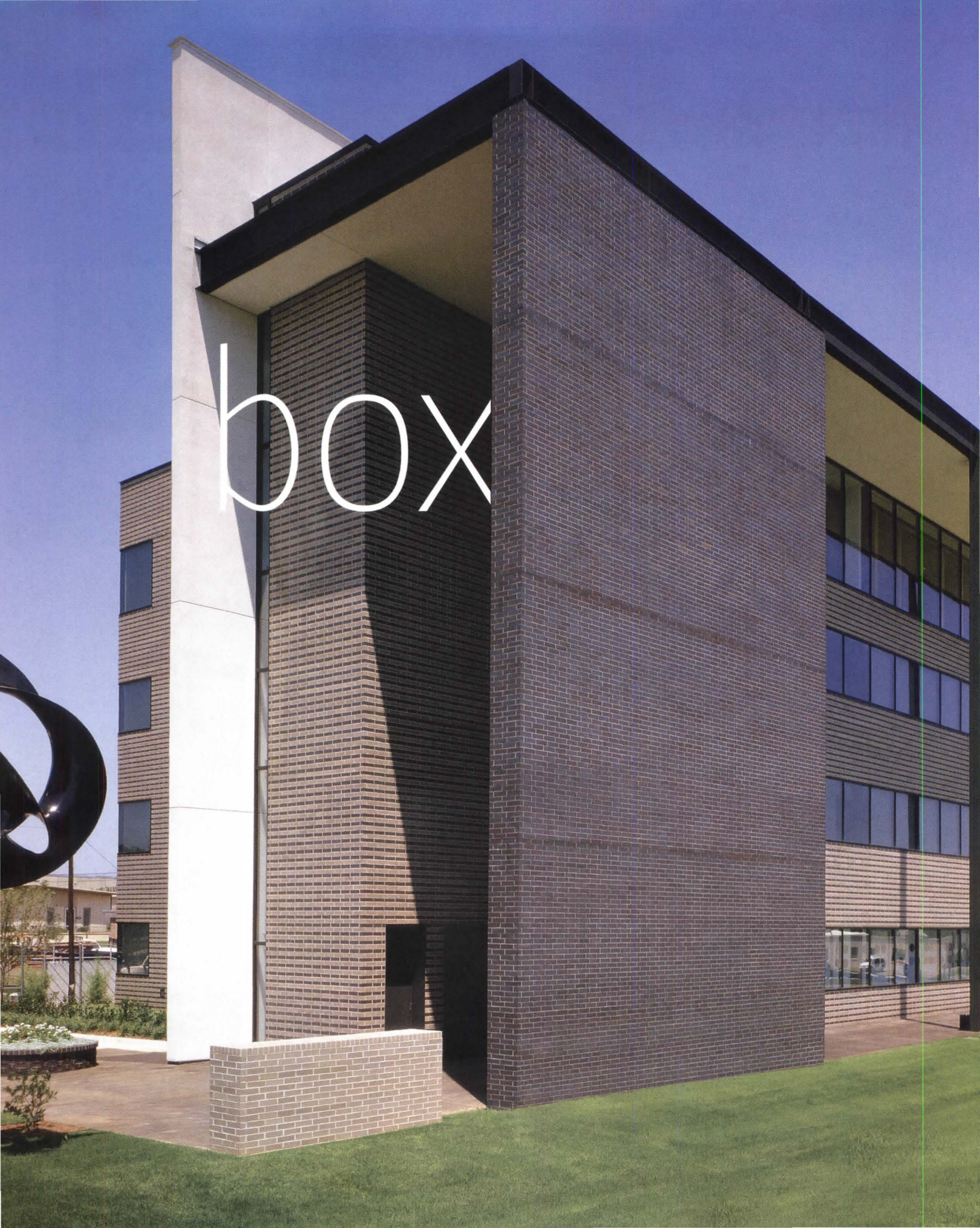
Chicago Scenic Studios / www.chicagoscenic.com
When Eloueini began his polycarbonate odyssey for choreographer John Jasperse, Chicago Scenic Studios was his source for a CNC routing machine—one of the few available in Chicago at the time. Using the same router, the company also produced the plywood rib structure for the School of the Art Institute of Chicago's fashion show stage set.

Industrial Models / www.indmod.com
This precision machine shop in Wauconda, Ill., has CNC milling and water-jet cutting machines. Starting with half-inch-thick aluminum plate, the machines produced the rib structure, racks, and table frame for the Miyake project in Berlin. The same shop also provided the drilling and tapping of the pieces for later screw assembly.

CPI Daylighting / www.cpidaylighting.com
For the high-end Pleats Please showroom, Eloueini purchased stock 12mm polycarbonate glazing panels from CPI Daylighting in Lake Forest, Ill. He tested several available thicknesses before determining that the 12mm product provided the best balance of minimalism and strength. CPI polycarbonate comes only in 2-foot widths.

Green-Tek / www.green-tek.com
Polycarbonate from Green-Tek is about one-fifth the cost of CPI's product, and it is far less substantial. Eloueini specified its use for the backdrop at the School of the Art Institute of Chicago fashion show, which remained in place for only a few days and was not installed where the public had access to it. The product comes in 4-foot widths.

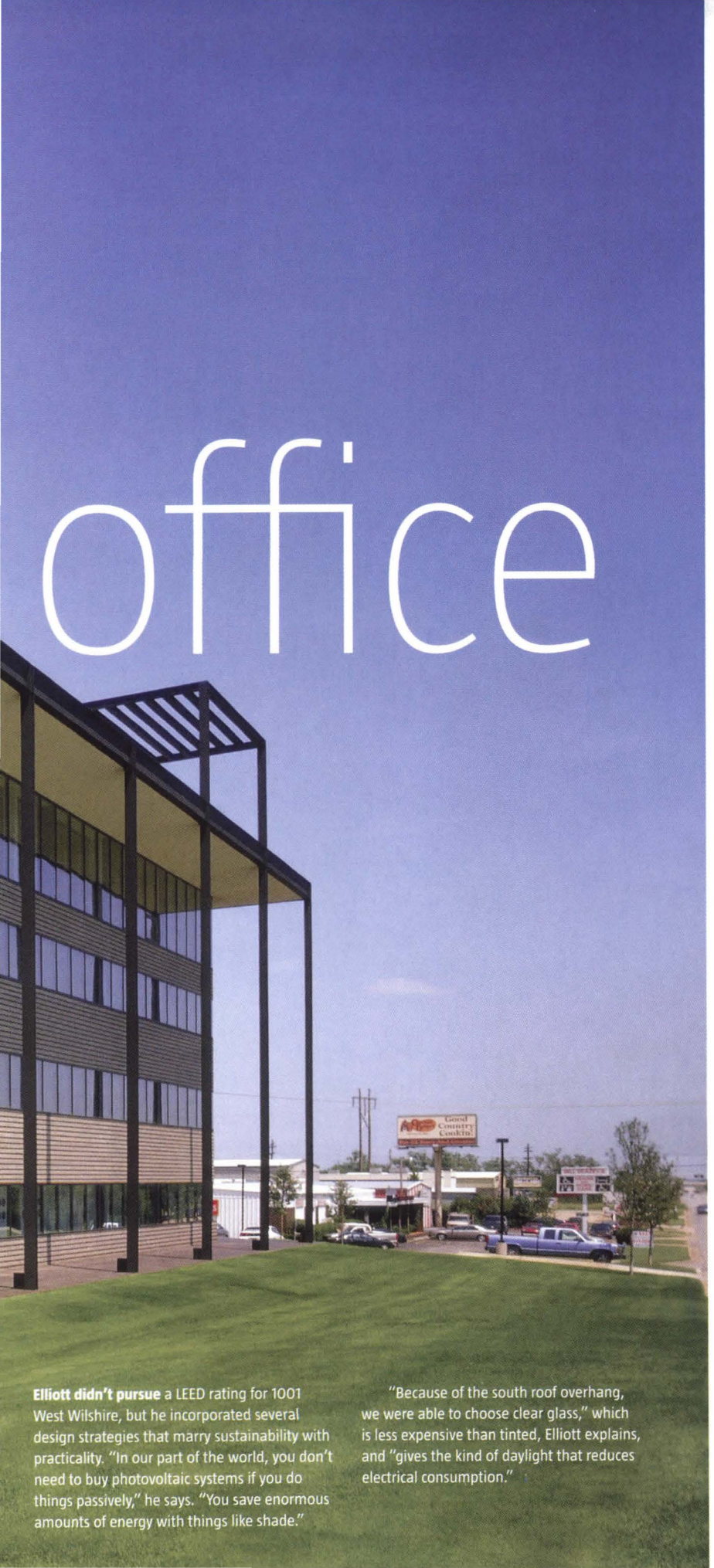
Zip-ties / www.homedepot.com
For all the state-of-the-art technologies that converge to makes Eloueini's dreams a reality, the fundamental tool of the final assembly is the humble zip-tie. His source: Home Depot, where a bag of 7-inch zip-ties sells for about $17 per thousand.


box

Story Kathryn Jenson White

RAND ELLIOTT RETHINKS THE OFFICE BOX IN **OKLAHOMA CITY**

office



Elliott didn't pursue a LEED rating for 1001 West Wilshire, but he incorporated several design strategies that marry sustainability with practicality. "In our part of the world, you don't need to buy photovoltaic systems if you do things passively," he says. "You save enormous amounts of energy with things like shade."

"Because of the south roof overhang, we were able to choose clear glass," which is less expensive than tinted, Elliott explains, and "gives the kind of daylight that reduces electrical consumption."

THE 3-BY-5 CARD contained fewer than 50 words to guide Rand Elliott, Oklahoma City architect and owner of Elliott + Associates Architects, in designing 1001 West Wilshire, a four-story, 48,000-square-foot office building in the Sooner State's capital.

Client Christian Keesee had penned a mixture of evocative nouns like "stone, wood, light, texture" and more directive remarks like "protection from the sun," "favor light from the north," and "simple lines and materials." While Keesee respected classical architecture, he thought modern seemed more appropriate in a relatively young state that just next year will be celebrating its centennial.

Modern architecture "is new, vibrant, and strong, like our state," Keesee said later at the building's groundbreaking in February 2002. "My hope is that our efforts beginning today will produce a modern masterpiece."

Elliott was neither fazed by his client's lofty goal nor surprised.

"Christian is an art collector and a philanthropist as well as the chairman of an oil company and a banker," Elliott says. "He is cognizant of what goes on in the architecture world and of what buildings should give back. He provided his criteria, and that's where the process began."

What started with a few written words ended with a building Keesee likens to an Armani suit in a world of off-the-rack, J.C. Penney–variety office buildings.

Completed in 2003, the building houses the headquarters—on the second and third floors—of Kirkpatrick Oil, a family-owned company that Keesee's grandfather, Oklahoma businessman and civic leader John E. Kirkpatrick, founded in 1950. The fourth floor provides offices for Kirkpatrick Bank. The first floor contains limited rental space.

As is often true of areas in transition, a visual cacophony surrounds 1001 West Wilshire. To its west lies an affluent residential neighborhood. To its south rises a small, standard-issue, two-story office building. Discordant industrial areas flank it north and east. To bring a note of order, the design of 1001 incorporates quiet references to its residential, commercial, and industrial neighbors.

Elliott describes the building's placement on the site as a "delicate balance between the amount of parking that code requires and the building's footprint."

"The site was a rather difficult L-shape with some setback requirements on the west end because of the residential neighborhood," he says. "Literally, the building is at its furthest point west to meet those criteria."

THE ARCHITECT

Name: Rand Elliott

Age: 56

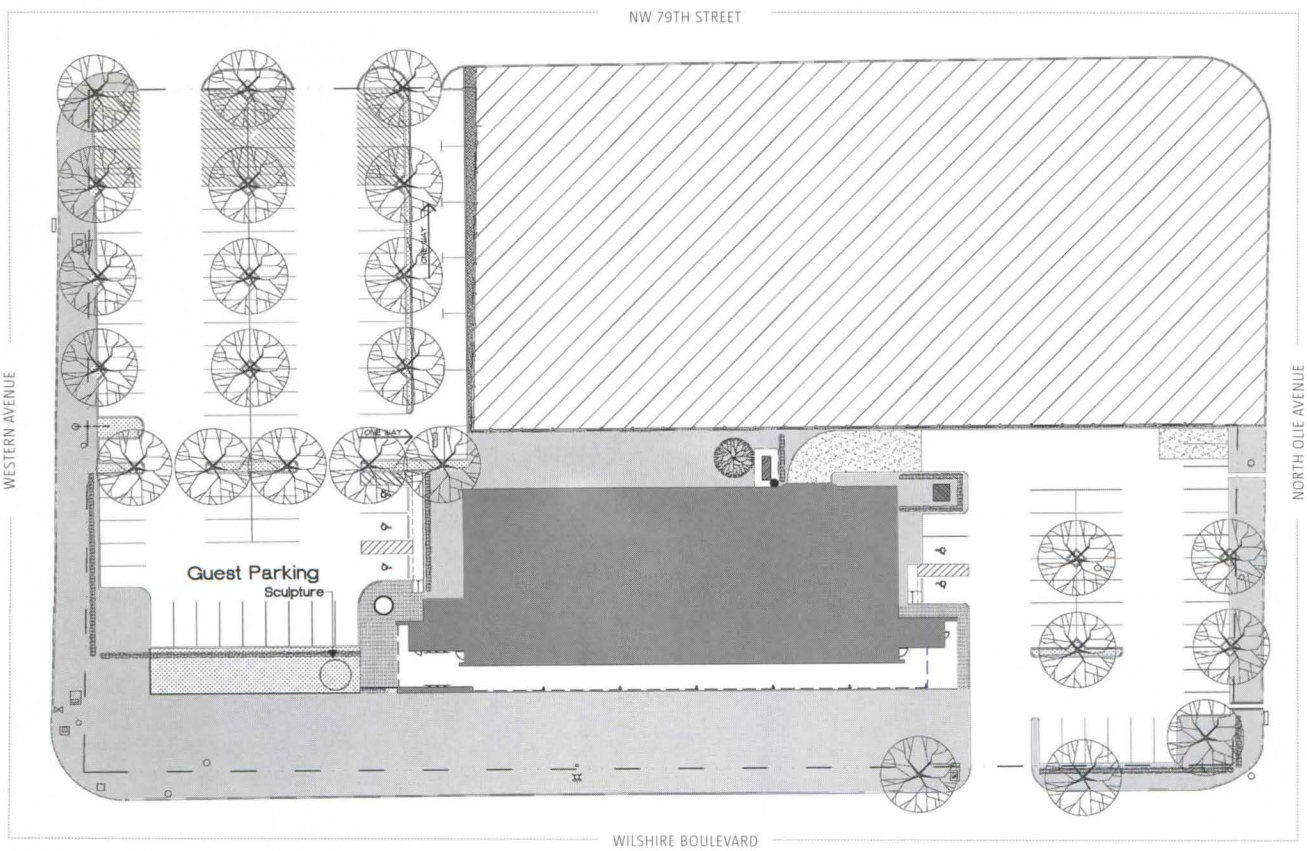
Firm: Elliott + Associates Architects, Oklahoma City

Employees: 17 people

Education: Oklahoma State University

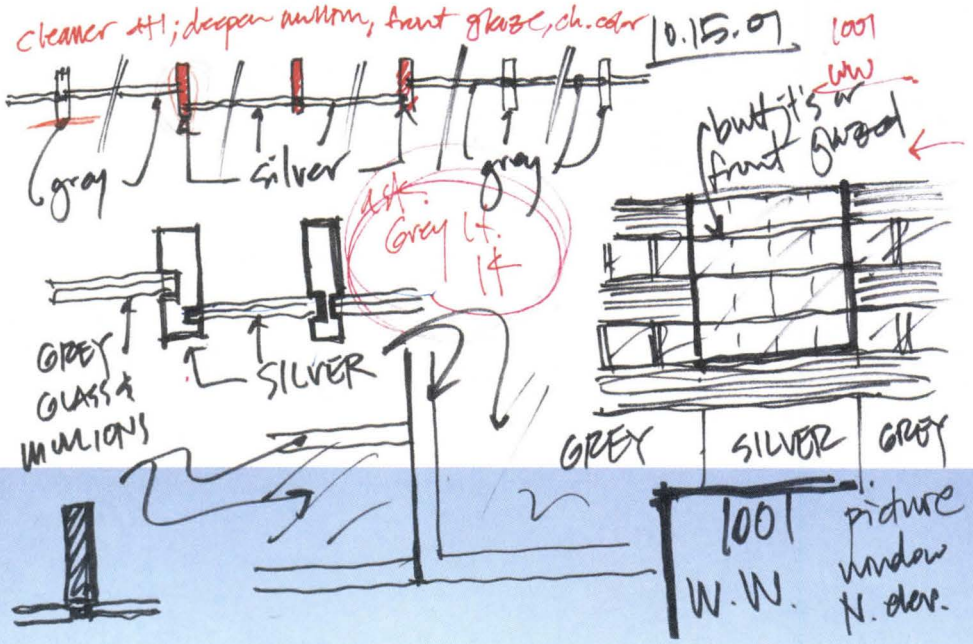
View looking east

View looking northeast



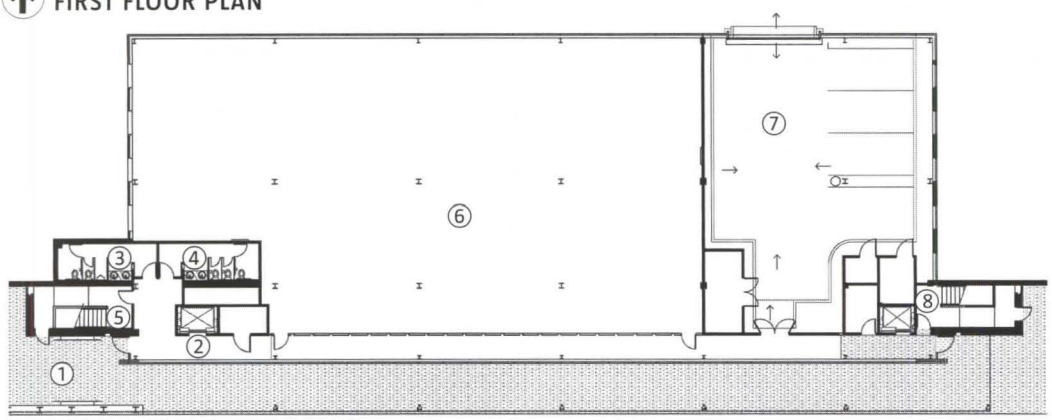
SITE PLAN

0 15' 30' 60'



"I had some fun with the north side of the building," Elliott says. On that side, 1001 faces a roofing company (below) that unavoidably roughens its context. In early sketches, the architect articulated the elevation as simple horizontal bands of brick and glass. Then he revised (left), adding a 20-foot-square plane of HGP glass in a Kawneer frame that projects slightly from the banded façade.

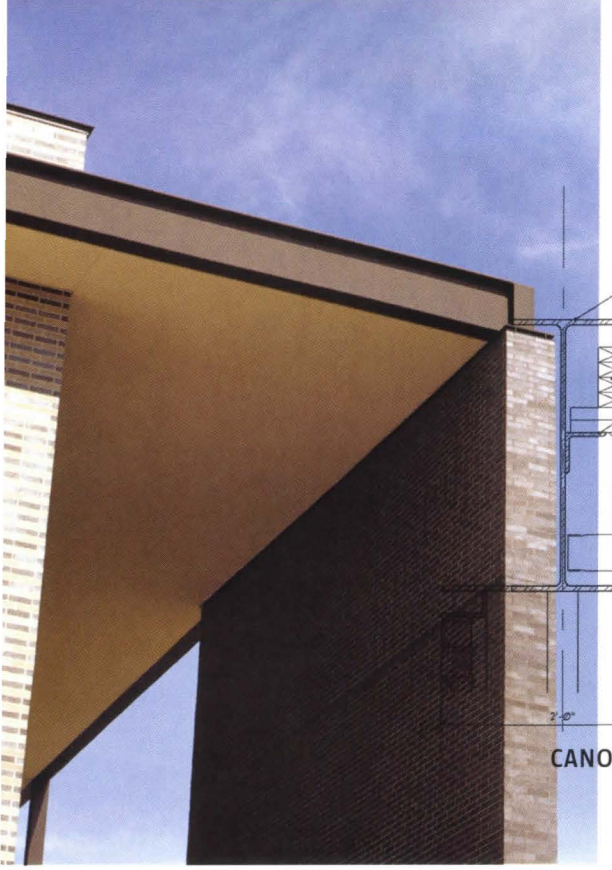
FIRST FLOOR PLAN



① Covered Main Entry
② Lobby/Gallery
③ Men
④ Women
⑤ Stair
⑥ Tenant Space
⑦ Private Garage
⑧ Stair

Elliott traded a conventional lobby for a hallway along the south side of the ground floor (left), anchored by fire stairs at either end. "You look out the rows of windows and have a sense of the activity and movement along the street," Elliott says. "You aren't in some interior lobby where you have no sense of orientation."

Elliott treated the hallway (below, left) and the stairwells (below) as a suite of linear and vertical galleries. Renee Van Helm's *100 Years of Color* (facing page, bottom) lines the hallway; each disc represents the most popular color from a year of the 20th century.



CANOPY EDGE @ WALL

Sensitive to budget and to allying the building with its residential neighbors, Elliott chose a masonry skin (far left). "From a distance, you think it's just a really soft kind of gray-brown, but as you get closer, you see these fabulous little pinstripes," he says. "We did a dozen variations on combining brick colors to create the horizontal animation. It not only adds a very tailored layer of materiality but also suggests the notion of strata. Kirkpatrick Oil drills into strata, so there is this connection between the material and the company."

The detail drawing (left) illustrates the connection between the roof of the south-facing porch and a freestanding brick wall. A 2¼-inch reveal separates the standard wide-flange I-beams from the masonry. "Where these two materials would come slamming together, this reveal provides a soft connection," Elliott says. "The reveal leaves enough tension for the two materials to connect but separates them with some air."

1001 West Wilshire Blvd.
Oklahoma City

Client: Kirkpatrick Oil Co.

Architect: Elliott + Associates Architects

Project Team: Rand Elliott, Jay Yowell

Engineers: Grossman & Keith Engineering Co. (civil), Eudaley & Associates (structural), United Mechanical (MEP), Lemke Land Surveying (surveyors); Terracon (soils)

General Contractor: Smith & Pickel Construction

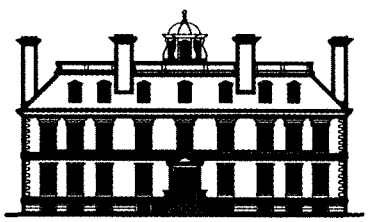
Consultants: Brian Dougherty, Landscape Architect

Cost: Withheld at owner's request

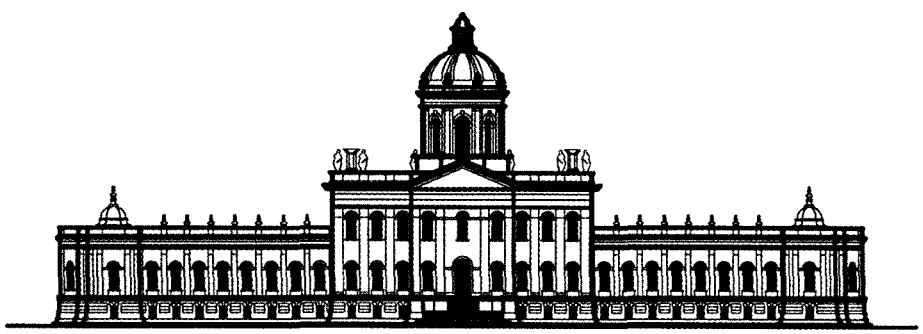
Photographer: Robert Shimer, Hedrich Blessing

Townhouse (1720–1750), Wilmington, Del.

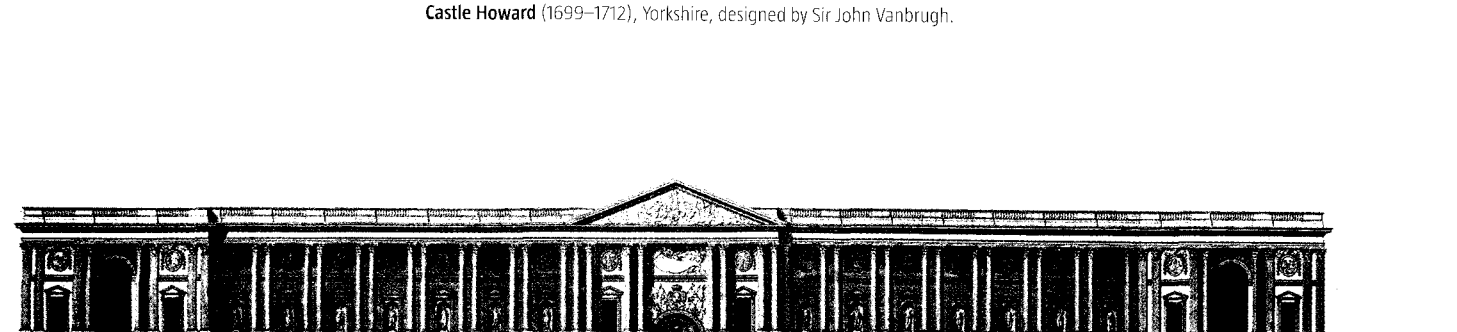
President's House (1732) at the College of William & Mary, Williamsburg, Va.



Coleshill (1650–1662), Berkshire, designed by Sir Roger Pratt.



Castle Howard (1699–1712), Yorkshire, designed by Sir John Vanbrugh.



East Façade of the Louvre (1667–1674), Paris, designed by Claude Perrault, and the **Octagon House** (1798–1800), Washington, D.C., designed by Dr. William Thornton.

★★★

BECAUSE "WE, THE PEOPLE" CONSTITUTED THE GOVERNMENT,

ARCHITECTURE

THE CITIZEN'S HOUSE BECAME THE EQUIVALENT OF THE KING'S PALACE,

OF

WHICH MADE THE PRIVATE HOUSE OUR PRIMARY

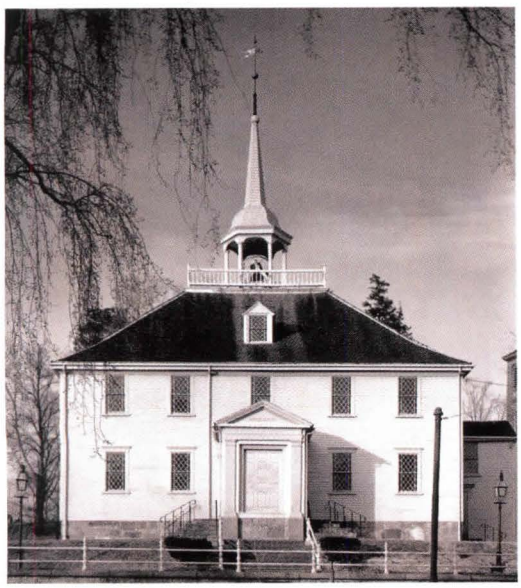
DEMOCRACY

SYMBOLIC EXPRESSION OF CIVIC ARCHITECTURE.

Allan Greenberg

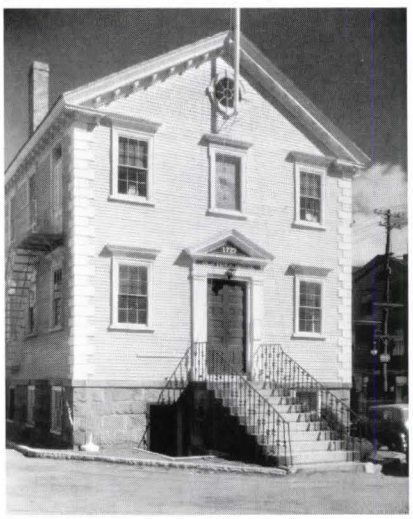
1681, Old Ship Meetinghouse, *Hingham, Mass.*

PHOTO: G.E. KIDDER SMITH/CORBIS



1727, Townhouse, *Marblehead, Mass.*

PHOTO: HISTORIC AMERICAN BUILDINGS SURVEY [REPRO. NO. HABS MASS, 5, MARB, 2-2]



1730, Northampton County Courthouse, *Northampton, Va.*

PHOTO: HISTORIC AMERICAN BUILDINGS SURVEY [REPRO. NO. HABS VA, 66, EAST, 1-1]

That led to a second, equally radical idea: affixing the suffix public buildings serve as the government's—

GREAT ARCHITECTURE makes great ideas visible. What are the ideas expressed in great American architecture? The answer is simple: American architecture embodies the ideals of democracy for which our revolution was fought and our Constitution created.

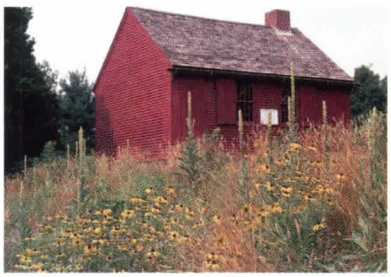
What is the significance of this revolutionary idea? A scene in John Ford's masterful 1962 western *The Man Who Shot Liberty Valance* suggests the answer. In a small frontier settlement, a class of children and adults is learning to read. It is a diverse group, including immigrants from Europe and Mexico and a former slave. Their teacher is a lawyer from the East played by James Stewart. Using the Declaration of Independence as the class text, he asks, "What kind of government do we have?" This is a question many teachers in classrooms throughout the United States ask every day. Nora, a Swedish immigrant, answers that "the United States is a republic and a republic is a state in which the people are the bosses. And that means us." [1]

Nora understands that the American Revolution created a new nation and a new form of government. In order for this endeavor to succeed, the Constitutional Convention intentionally turned upside-down the political ideology of European monarchies, in which the king was the government. Under this arrangement, the monarch is chosen by God and rules by divine right; the people are the king's subjects and have no function other than a source of revenue and service.

King James I of England asserted that his role was to sit "upon GOD's ... throne in earth," and that "even by GOD himselfe [kings] are called Gods." [2] The people were the king's subjects. Louis XIV of France aptly defined this role when he said, "L'Etat, c'est moi"—"I am the state." The U.S. Constitution subverted these claims by defining "We the People" as the government, giving ordinary citizens the responsibility to determine their own destiny as well as that of the nation. The president, the cabinet, and the congress, as well as governors and mayors, became servants of the people. Herman Melville distinguished the status of the citizens of the new nation from that accorded to kings:

1749, Courthouse,
Plymouth, Mass.
PHOTO: 1749 PLYMOUTH COURTHOUSE MUSEUM

1750, Nathan Hale Schoolhouse,
East Haddam, Conn.
PHOTO: LEE SNIDER/PHOTO IMAGES/CORBIS



1767, John Pierpont House,
New Haven, Conn.
PHOTO: DAVID OTTENSTEIN

-house **to public buildings, which suggests that our that is the citizens'—symbolic home.** *ARCHITECTURE OF DEMOCRACY*, PAGE 72

This august dignity I treat of, is not the dignity of kings and robes, but that abounding dignity which has no robed investiture. Thou shalt see it shining in the arm that wields a pick or drives a spike; that democratic dignity which, on all hands, radiates without end from God; Himself! The great God absolute! The center and circumference of all democracy. [3]

As they forged the components of democratic government, the founders also created a new architecture to express their revolutionary vision of society. We see this in two radical aspects of the architecture that developed out of the American Revolution:

First, the basic building block of this new architecture is not the king's palace or the church, as in England and Europe, but is instead the modest single-family house. Because the government is the People, citizens' houses—the homes of members of the government—become the architectural equivalent of the royal palace. For the first time in history, the ordinary person's house became a work of architecture.

Second, because the idea of the citizen's house is so fundamental to our national identity, to our sense of who we are and how we live, we identify our public buildings by the suffix *house*. Thus, we have state*houses*, court*houses*, fire*houses*, school*houses*, police station *houses*, and even jail *houses*. The United States Capitol in Washington, D.C. was originally called the Congress *House;* early city halls in New England and Pennsylvania were town *houses*. The familiar suffix *-house* tells us that a state*house* is the collective home of all the citizens of that particular state—that is, of the state's government; a court*house* is the home of citizens seeking justice; and school*houses* are the homes of children seeking education.

From ***Architecture of Democracy****, by Allan Greenberg, Rizzoli New York, 2006.*

Notes

1 *The Man Who Shot Liberty Valance*, 1962 (Ford Productions-Paramount), directed by John Ford, produced by Willis Goldbeck, script written by James Warner Bellah and Willis Goldbeck from a story by Dorothy M. Johnson.

2 King James I, "A Speech to the Lords and Commons of the Parliament at White-Hall, on Wednesday the XXI, of March, anno 1609."

3 Herman Melville, *Moby-Dick, or, the Whale* (New York: Modern Library, 2000), p. 166.

1767, Chowan County Courthouse,
Edenton, N.C.

PHOTO: LEE SNIDER/PHOTO IMAGES/CORBIS

1770, Meetinghouse,
Germantown, Pa.

PHOTO: TASHYA LEYMAN

1771, Townhouse,
Windham, Conn.

PHOTO: HISTORIC AMERICAN BUILDINGS SURVEY
[REPRO. NO. HABS CONN, 8, BROOK, 3-1]

I believe that the endurance of American democracy is the creative masterwork
who wrote the Declaration of Independence, the Constitution, and the Bill of
people will always deserve architecture worthy of the

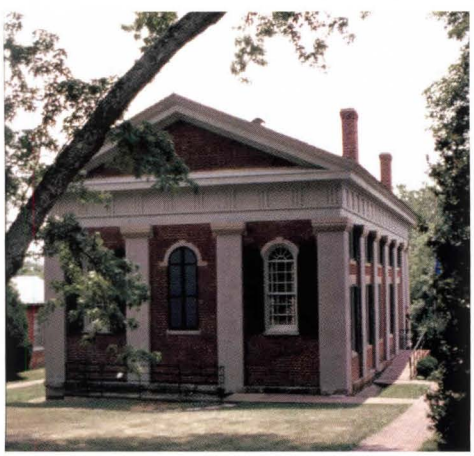


PHOTO: WWW.CONSULTWEBS.COM

1831, Rear view, Fluvanna County Courthouse, *Palmyra, Va.*

PHOTO: BERRY COLLEGE, OFFICE OF PUBLIC RELATIONS

1850, Schoolhouse,
Rome, Ga.

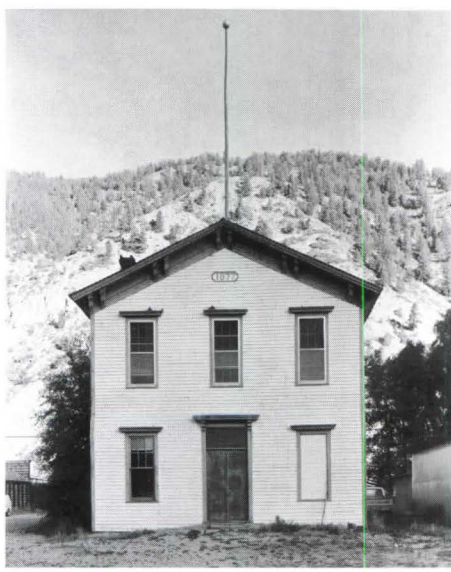
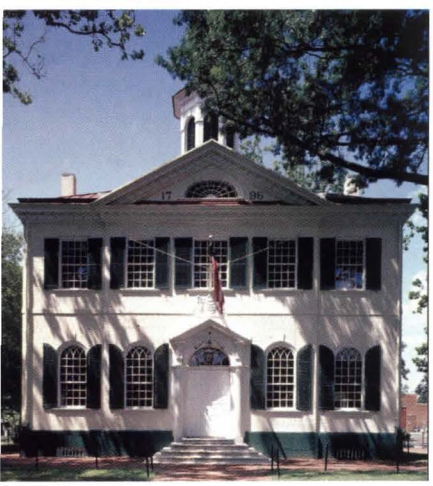


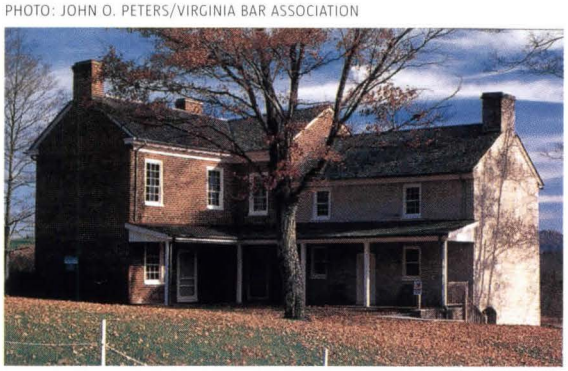
PHOTO: WILLIAM CLIFT, SEAGRAM COUNTY COURT HOUSE
ARCHIVES, LIBRARY OF CONGRESS [LC-S35-WC24-3]

1877, Hinsdale County Courthouse,
Lake City, Colo.

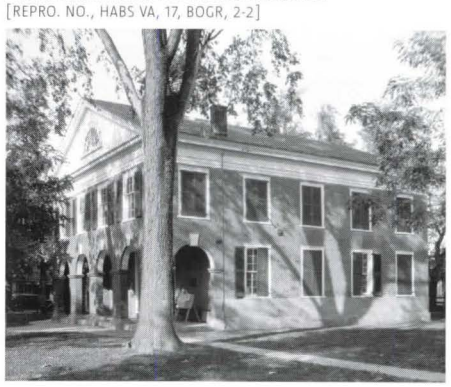
796, Burlington County
ourthouse, *Mount Holly, N.J.*
HOTO: WADE ZIMMERMAN



1799, Russell County Courthouse,
Dickensonville, Va.
PHOTO: JOHN O. PETERS/VIRGINIA BAR ASSOCIATION



1830, Caroline County Courthouse,
Bowling Green, Va.
PHOTO: HISTORIC AMERICAN BUILDINGS SURVEY
[REPRO. NO., HABS VA, 17, BOGR, 2-2]



of the American people. The architecture that was created by the same founders Rights embodies the ideals of that democracy. And I believe that the American noble ideals on which their nation was founded. *ARCHITECTURE OF DEMOCRACY*, PAGE 26

HOTO: HISTORIC AMERICAN BUILDINGS SURVEY
REPRO. NO. HABS UTAH, 20, SPRICI, 4-1]

893, City Hall,
pring City, Utah

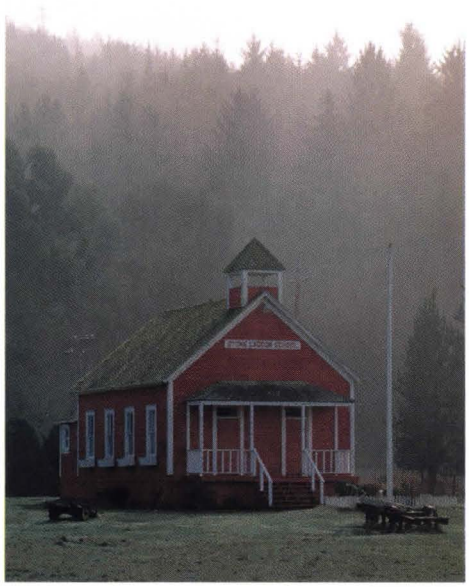


PHOTO: WILLIAM BOYCE/CORBIS

1894, Schoolhouse,
Stone Lagoon, Calif.

PHOTO: HISTORIC AMERICAN BUILDINGS SURVEY [REPRO. NO. HABS AK, 19-EGL, 1-E-3]

1901, Courthouse,
Eagle, Alaska

ON STEEL

Lagrange

Lucien Lagrange. Principal. Lucien Lagrange Architects. Born in France, he moved to Montreal in 1959. He interned at Skidmore, Owings & Merrill, tasted Chicago, and couldn't stay away. Now one of the most creative classic designers Chicago has ever seen, he is busy leaving his imprint on the City with Big Shoulders, designing with steel.

GETTING STARTED "In 1968, I was lucky enough to get a job at SOM in Chicago. They were just finishing the Hancock, which is an incredible steel structure. Beginning my second week in Chicago, I worked with Bruce Graham and Fazlur Khan, and I really started to understand steel through their teaching. They were incredible people with visions of buildings and structures."

DESIGN "You have to understand structure. You have to feel in your body how the structure behaves. You have to think one way about concrete, and then another about steel. There are elements of a structure which are similar; but with tall buildings, you have to understand how – and why – they stand up. You almost have to feel the structure yourself. Once you do that, you'll find that steel behaves very differently than concrete. Steel allows you more flexibility than concrete."

WORK "You have to get emotional, otherwise a project becomes just a job. You have to have passion for your work."

VALUE "Efficiency lends value, and steel is highly efficient. Steel offers longer spans than concrete and steel sections have narrower profiles than their concrete equivalents. Therefore, steel lends itself to utilizing the ceiling space to run mechanicals through members, which typically results in higher ceilings. The span capabilities allow us to create setbacks in the building more easily, and these are used for balconies and terraces, which add value to the building."

COMMITMENT "During the design phase, we changed from a concrete structure to a steel structure. After this decision was made, my client wanted me to resign. I was moving too slow. I said, 'You cannot fire me. You don't understand the complexity of steel. Later on, if you want to fire me, you can. But I have to finish what I started.' He didn't fire me. Steel is different. It puts a different layer of complexity on the project that you do not have with concrete. With steel, it's more of a challenge, and you must make a commitment in order to succeed. I understand steel, but how do you really explain it? I was convinced in the end that my client would get a better building because of my belief in steel and my principles."

CREATIVITY "If you want to be creative, use steel. Steel requires a bit more work from the designer, because you have to put together a ceiling, exterior wall...more pieces come together. When concrete is up, you're almost done. The opportunities for building transparency presented by steel structures are exceptional. This transparency lends an ephemeral quality to the buildings."

FLEXIBILITY "There's a lot you can create with steel because it's steel. Steel is more straightforward. You can mold concrete, for example. But steel comes in pre-designed pieces, out of the mill. At Erie on the Park, a gentlemen bought two units on top of each other and wanted to connect them. We put a stairway next to the exterior wall. That would have been impossible in concrete. When you design a condo building structured in concrete, you have to deal with interior columns in the units. Because we used steel for Erie on the Park, the advantage was we didn't have any interior columns. We had full design freedom, with clear, open space from the core to the exterior wall."

TEAMWORK "A creative structural engineer is an integral member of the team when designing with steel. At 175 W. Jackson, we wanted to do something more creative than simply span the space with a large member as we inserted a skylight into an atrium. Our vision was to have the glass appear to float freely above a poetic, light, minimal structure. This could only be done in steel, and our structural engineer helped us realize our vision."

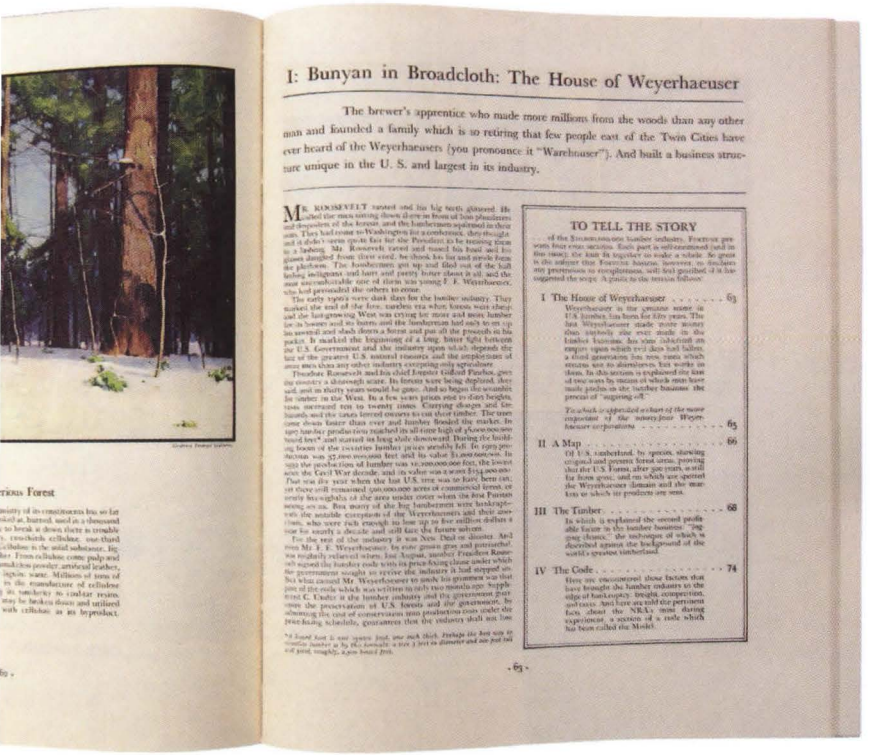
DETAILS "Designing with steel requires that we pay more attention to details. The integration of the structure with the enclosure, the placement and integration of the glazing, the mechanical coordination – this all requires thoughtful and judicious detailing to execute the building."

CLIENTS "You have to challenge your clients. That's what designing – especially in steel – allows you to do. Convince the client to do it. They will get excited about getting a better building. They'll make more money. Our clients make money through our designs."

STEEL "When you start with steel, it's very different. In my mind, when I look at steel, it creates a different emotion. It's exciting because it relates to tall structures, light material. When you think of concrete, you think about shape, heaviness. Intuitively, one usually doesn't relate high-rises with concrete. Steel makes you feel you can build as high as you want because it's light and strong. You can express the structure and it becomes part of your statement. There's so much emotion attached to doing a steel building. It's like a mechanical set...you build up in pieces, and it's exhilarating to follow the forces of the building to the ground. Major buildings – if not the major building of this century – can only be done in steel."

CULTURE

OBJECT LESSON
FILM
EXHIBITS
BOOKS
EVENTS



rious Forest

I: Bunyan in Broadcloth: The House of Weyerhaeuser

The brewer's apprentice who made more millions from the woods than any other man and founded a family which is so retiring that few people east of the Twin Cities have ever heard of the Weyerhaeusers (you pronounce it "Warehouser"). And built a business structure unique in the U. S. and largest in its industry.

MR. ROOSEVELT rasped and his big teeth glistened. He called the men sitting down there in front of him pluralistic and dependent of the forests and the lumbermen scattered in their seats. They had come to Washington for a conference, they thought, and it didn't seem quite fair for the President to be training guns on a lumberjack. Mr. Roosevelt raised and waved his hand and his glasses dangled from three cord, he shook his fist and strode from the platform. The lumbermen got up and filed out of the hall looking indignant and hurt and pretty bitter about it all, and the most uncomfortable one of them was young F. K. Weyerhaeuser, who had persuaded the others to come.

The early 1900's were dark days for the lumber industry. They marked the end of the line, timeless era when forests were there and the fast-growing West was crying for more and more lumber for its booms and its booms, and the lumberman had only to set up his sawmill and slash down a forest and put all the proceeds in his pocket. It marked the beginning of a long, bitter fight between the U. S. Government and the industry upon which depends the life of the greatest U.S. natural resource and the employment of more men than any other industry excepting only agriculture.

Theodore Roosevelt and his chief Forester Gifford Pinchot, gave the country a thorough scare. Its forests were being depleted, they said, and in thirty years would be gone. And so began the scramble for timber in the West. In a few years prices rose to sixty heights, taxes increased ten to twenty times. Carrying charges and fire hazards and the taxes forced owners to cut their timber. The ones came down faster than ever and lumber flooded the market. In 1910 lumber production reached its all-time high of 45,000,000,000 board feet* and started its long slide downward. During the building boom of the twenties lumber prices steadily fell. In 1929 production was 35,000,000,000 feet and its value $1,000,000,000. In 1932 the production of lumber was 10,000,000,000 feet, the lowest since the Civil War decade, and its value was a mere $345,000,000. That was the year when the last U.S. tree was to have been cut, yet there still remained 500,000,000 acres of commercial forest, or nearly five-eighths of the area under cover when the first Pilgrim sawing set in. But many of the big lumbermen were bankrupt—with the notable exception of the Weyerhaeusers and their associates, who were rich enough to lose up to five million dollars a year for nearly a decade and still face the future solvent.

For the rest of the industry it was New Deal or disaster. And then Mr. F. K. Weyerhaeuser, by every genius gray and patriarchal, was mightily relieved when, last August, lumber President Roosevelt signed the lumber code with its price-fixing clause under which the government sought to revive the industry it had stepped on. But what caused Mr. Weyerhaeuser to smile his grimmest was that part of the code which was written in only two months ago. Supplement C. Under it the lumber industry and the government guarantee the preservation of U.S. forests and the government, by subsidizing the cost of conservation into production costs under the price-fixing schedules, guarantees that the industry shall not lose price-fixing schedules, guarantees that the industry shall not lose

TO TELL THE STORY

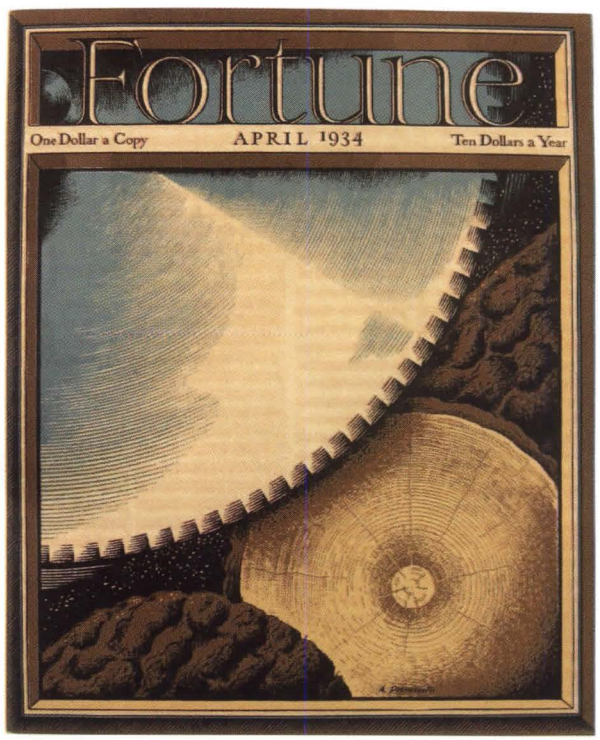
I The House of Weyerhaeuser 63
Weyerhaeuser is the genuine name of U.S. lumber. Its born for fifty years. The first Weyerhaeuser made more money than anybody else ever made in the lumber business. His sons inherited an empire upon which two dads had fallen, a third generation has two sons which means not to skimmers, but works in them. In this section is explained the kind of two men by means of which men have made profits in the lumber business the process of "sugaring off."

To which is appended a chart of the more important of the ninety-four Weyerhaeuser corporations 65

II A Map 66
Of U.S. timberland, by species, showing original and present forest areas, proving that the U.S. Forest, after 300 years, is still far from gone, and on which are spotted the Weyerhaeuser domain and the mar kets to which its products are sent.

III The Timber 68
In which is explained the second profitable factor in the lumber business "jag gang chance," the technique of which is described against the background of the world's greatest timberland.

IV The Code 74
How the environment these factors that have brought the lumber industry to the edge of bankruptcy: freight, competition, substitutes, have not told the pertinent facts about the NRA's mine during experience, a section of a code which has been called the Model.



OBJECT LESSON

Fortune's Bold Forecast

Stocks may have crashed, but industry soared on the magazine's covers.

OBJECT: *Fortune* magazine
DATE: April 1934
PRICE: $85
SOURCE: www.oldimprints.com

Fortune, America's first serious business journal, debuted in February 1930, four months after the stock market had crashed. But founder Henry R. Luce believed that entrepreneurs' hopes (and dollars) would be buoyed by a smart publication, one that celebrated the new economy of industry and machines. His genius was to make the magazine a work of art.

Luce positioned *Fortune* at the intersection of commerce and culture. He hired world-class writers and commissioned artists to illustrate the covers. Their fine lithographs captured the transition from agrarian to urban America and put a spotlight on architecture, just as tall buildings began to rise.

Skyscrapers, smokestacks, and machine-shop gears take on the elegant geometries and abstractions of art deco, the prevailing art movement of the time. Some artists, such as Antonio Petruccelli (1907–1994), were regulars. Petruccelli contributed 25 *Fortune* covers including the April 1934 issue, which shows a composition of sawmill blade and cut log that raises lumber to a new aesthetic. (The cover story, "Bunyan in Broadcloth," focused on the Weyerhaeuser empire.) *Fortune*'s December 1937 issue portrayed Manhattan's high-rise temples of business as ornaments on a pyramidal Christmas tree.

By May 1941, front-cover celebrations of architecture made way for the depiction of a tent city for troops. Then, as now, the nation was at war. With the benefit of hindsight, the orderly rows of canvas shelters foreshadowed the coming of suburbia and a peacetime housing boom.

The price of architectural history: Vintage issues of *Fortune* are available for $35 and up from an online dealer such as www.oldimprints.com, or $8 to a recent bidder on eBay. LINDA HALES

Visual Futurist: The Art and Life of Syd Mead

ILLUSTRATION: SYD MEAD, OBLAGON INC., WWW.SYDMEAD.COM

FOR LEGENDARY ILLUSTRATOR SYD MEAD, science fiction is "reality ahead of schedule."

That should give architects pause. Mead is responsible for the intense settings of the 1982 sci-fi film *Blade Runner*. His brilliant, disturbing vision of Los Angeles, circa 2019 (above), defined for a generation the look and feel of civilization's imminent collapse.

Mead didn't conjure his future L.A. from scratch. He blew up a Manhattan skyline by 300 percent and made a few modifications. He figured that stretching the skyscrapers to 3,000 feet would mean accommodating many more people, so he redesigned the bases as pyramids to provide more entryways. He mixed a stew of historical styles into what he calls "retro deco." The darkly glorious results are preserved in the book *Oblagon: Concepts of Syd Mead*. A quarter-century later, we're still not there. But the fantasy looks strangely plausible.

At 73, Mead is in his element. His work was recognized in October with a special jury commendation from the Smithsonian's National Design Awards. A director's cut of *Blade Runner* is due for release next year, on the film's 25th anniversary. And a documentary, *Visual Futurist: The Art and Life of Syd Mead*, is making the rounds. Writer/director Joaquin Montalvan captures Mead as a bespectacled genius at the drawing table, tweaking elements of industrial engineering into the stuff of dreams.

Mead, who lives in Pasadena, Calif., began making his mark on Hollywood with the *V'ger* spaceship for *Star Trek: The Motion Picture* (1979). He created the electronic netherworld of *Tron* (1982), the *Sulaco* spacecraft for *Aliens* (1986), the *Leonov* ship in *2010* (1984), and a mask-making machine for this year's *Mission: Impossible III*.

Mead has designed superyachts, nightclubs, theme parks, hotels, video games, snowboard graphics, and an $87-million flying palace for the late King Fahd of Saudi Arabia. Current projects include a tower for a client in the Middle East, which springs from a base that looks suspiciously like a flying saucer.

Mead describes himself as "disturbingly rational," but is willing to concede that others might see him as "carefully crazy."

He sees little mystery in his method, which involves painting meticulous scenarios that bring scripts to life and provide the basis for prop and set construction. The scale is inevitably larger than life, the silence deafening, the scenes—trucks marching across a moonscape on robotic legs—bizarre.

"The premise is based more on science than on fiction," Mead says. "You can't imagine something you can't imagine."

Blade Runner remains his monument. Unlike *Metropolis* (1927), which portrayed the city of the future as clean and smoothly functional, Mead made *Blade Runner* chaotic and technical "in an almost punitive way."

Mead personally doesn't subscribe to that bleak view, and as proof he points to an illustration in *Oblagon* showing a utopian city in full sun. That's his way of saying the future might yet bring "Elysian gardens, at least in pockets," if we get our act together. *(107 minutes; www.withoutabox.com)*

Sketches of Frank Gehry

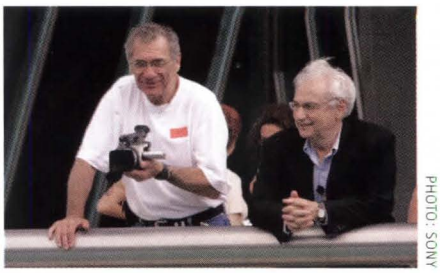


PHOTO: SONY

THE WORLD'S BEST-KNOWN ARCHITECT comes across as cheery, if complicated, in director Sydney Pollack's warmly appealing bio-documentary. But the plot never twists far enough to explain where Gehry's radical vision comes from or how he persuades clients to test the limits of probability, as his masterworks such as the Guggenheim Bilbao do. For illumination on that talent, seek out Jeffrey Kipnis' 2003 film, *A Constructive Madness: Wherein Frank Gehry & Peter Lewis Spend a Fortune and a Decade, End Up With Nothing and Change the World. (83 minutes; www.amazon.com)*

Building for Democracy: The Small Town Banks of Louis Sullivan

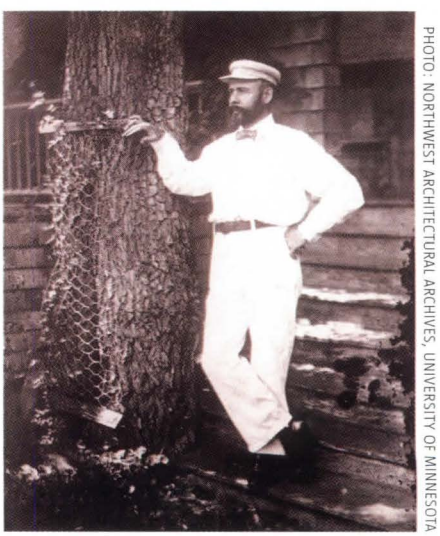


PHOTO: NORTHWEST ARCHITECTURAL ARCHIVES, UNIVERSITY OF MINNESOTA

LOUIS SULLIVAN (1856–1924) was past his peak when he accepted commissions for eight banks across the Midwest. The buildings remembered in this Siena Workshop documentary would never steal the limelight from his skyscrapers, but they prove that originality never eluded the architect. *(35 minutes; www.fedvid.com/siena)*

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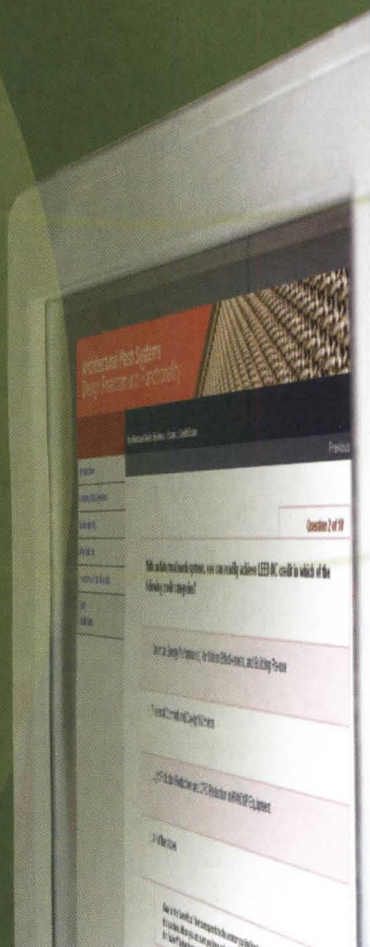

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Modernism in American Silver: 20th Century Design

The Wolfsonian, Miami Beach, Fla.
Nov. 10, 2006–March 25, 2007

PHOTO: THE WOLFSONIAN

More than 200 works of American silver convey the rich aesthetic possibilities of a timeless material. From the 1920s forward, craftsmen and industrial designers experimented in Art Moderne, avant-garde, and "machine age" styles. After World War II, silversmiths adopted the freeform profiles of space-age art and fashion. This traveling exhibition, organized by the Dallas Museum of Art, shows that despite the gloss of celebrity designers like Robert Venturi, Michael Graves, and Richard Meier, contemporary silver has yet to regain the glow it enjoyed before the decline of formal dining. *Above: A tumbler and pitcher from a water service that Tiffany exhibited at the 1939 New York World's Fair.*

Simply Droog: 10+3 Years of Creating Innovation and Discussion

Museum of Arts & Design
New York
Through Jan. 14, 2007

Deconstructivism never looked so dishevelled as in Tejo Remy's reconstituted chest of old drawers, one of the widely admired provocations from Droog, the Dutch design collaborative founded by Gijs Bakker and Renny Ramakers in the early 1990s. The group takes its name from the Dutch word for "dry," as in wit, introducing modest, environmentally conscious designs as an antidote to the mindless consumerism of the 1980s. A traveling retrospective includes 150 pieces that turned the tide of style.

Breaking the Mode: Contemporary Fashion from the Permanent Collection

Los Angeles County Museum of Art
Los Angeles
Through Jan. 7, 2007

Over 100 examples of subversive dress show how 40 fashion designers revolutionized the structure, materials, and technology of contemporary clothing. Just as architects designed their way out of the box, fashion designers such as Jean-Paul Gaultier, Issey Miyake, and Rei Kawakubo of Comme des Garçons have moved beyond the hourglass as an ideal female form.

Sustainable Architecture in Chicago: Works in Progress

Museum of Contemporary Art, Chicago
Through Jan. 6, 2007

This companion exhibition to *Massive Change: The Future of Global Design* provides a real-world anchor to the traveling exhibition curated by Canadian designer Bruce Mau. Taken together, the shows describe how design may take the world to a better future, and how some Chicago architects are pushing beyond convention today.

Solar and wind-powered energy systems, greenhouses, and nest-like porches marry technology and aesthetics in such projects as the Ford Calumet Environmental Center, designed by Studio Gang Architects; the Pacific Garden Mission, designed by Tigerman McCurry Architects; Gensler's Hyatt Regency Lower Wacker Exhibition Hall and Riverwalk Renovation project; and Farr Associates' office building and adjacent eco-park for Greenworks.

Seven works in progress show environmentally responsible approaches to land use, materials, and energy consciousness in support of Mayor Richard Daley's vision for "the greenest city in America."

Skin + Bones: Parallel Practices in Fashion and Architecture

The Museum of Contemporary Art
Los Angeles
Nov. 19, 2006–March 5, 2007

PHOTO: CHRIS MOORE

Architectonic garments and clothing stores are the starting points for the latest exhibition by MOCA's curator of architecture and design, Brooke Hodge. The show includes some 300 objects by fashion-forward architects and designers such as Herzog & de Meuron and Viktor & Rolf. *Above: A skirt that doubles as a coffee table, from designer Hussein Chalayan's Spring 2000 Living Room collection.*

Connections: West End Bridge Competition

Heinz Architectural Center
Carnegie Museum of Art, Pittsburgh
Through Dec. 10

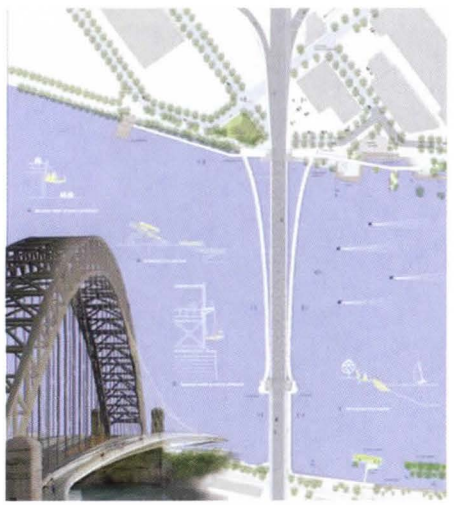

PHOTO: CARNEGIE MUSEUM OF ART

On display are the winners and finalists in a contest to design a pedestrian bridge on the Pittsburgh riverfront.

The Green House: New Directions in Sustainable Architecture and Design

National Building Museum
Washington, D.C.
Through June 3, 2007

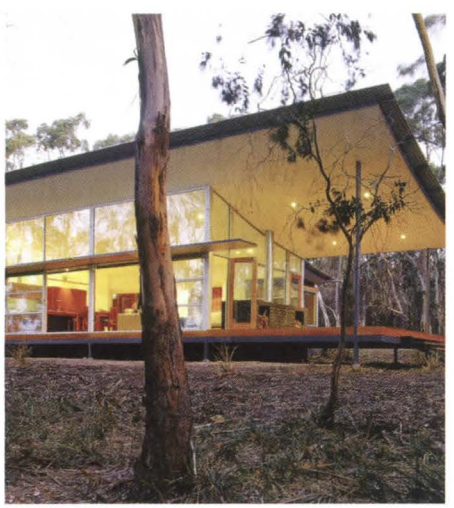

PHOTO: PETER HYATT, COURTESY NATIONAL BUILDING MUSEUM

Innovative green residences from around the world and a furnished modular house by California modernist architect Michelle Kaufmann provide a consumer-friendly picture of eco-friendly design. *Above: A house in Australia, by 1 + 2 Architecture.*

Charles Sheeler: Across Media

The Art Institute of Chicago
Through Jan. 7, 2007

Equally adept with brush and camera, artist Charles Sheeler (1883–1965) helped introduce America to the beauty of the machine. Organized by the National Gallery of Art, the exhibit includes iconic Sheeler works such as *Criss-Crossed Conveyors*, from a 1927 photo essay of Ford's River Rouge plant.

National Design Triennial: Design Life Now

Cooper-Hewitt National Design Museum, New York
Dec. 8, 2006–July 29, 2007

For the third time since 2000, a team of curators assesses contemporary design culture at the front lines. Leading artists and practitioners point the way forward in disciplines as diverse as architecture, animation, and medicine. Only the prosaic will be left behind.

Biedermeier: The Invention of Simplicity

Milwaukee Art Museum, Milwaukee
Through Jan. 1, 2007

The first comprehensive exhibition of Biedermeier in North America and Europe offers 300 furnishings from early 19th century Germany, Austria, and Bohemia. From Milwaukee, the exhibit will move to Vienna, Berlin, and Paris.

Made to Scale: Staircase Masterpieces, The Eugene & Clare Thaw Gift

Cooper-Hewitt National Design Museum, New York
Through June 3, 2007

A rare sighting of 19th century French staircase models offers technical virtuosity and design fancy on an intimate tabletop scale.

Some Assembly Required: Contemporary Prefabricated Houses

Yale University School of Architecture
New Haven, Conn.
Through Feb. 2, 2007

Eight studios, including Resolution: 4 Architecture, Steven Holl, and Michelle Kaufmann, take prefabricated dwellings to the next level.

Looking Back From Ground Zero

The Brooklyn Museum, Brooklyn, N.Y.
Through Jan. 7, 2007

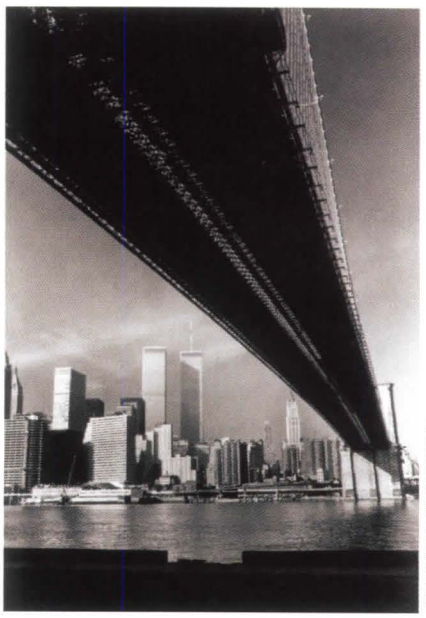

PHOTO: ALFRED EISENSTAEDT

Images of lower Manhattan, from the museum's permanent collection, mark the five-year anniversary of Sept. 11, 2001. *Above: An Alfred Eisenstaedt photo of the Brooklyn Bridge in 1983.*

New American City: Artists Look Forward

Arizona State University Art Museum
Tempe, Ariz.
Through Jan. 27, 2007

Local artists weigh in on the future of Phoenix, a city beset by astronomical growth despite the supposed limits of its desert setting. Best in show: Matthew Moore's field of not-so-sweet dreams. This fourth-generation farmer trimmed his sorghum and black-bearded wheat crops to resemble the suburban development likely to rise as his family sells out.

Streamline Design: The Essence of Speed

Minneapolis Institute of Art
Minneapolis
Through Sept. 28, 2007

The acquisition of a 1936 Tatra T87 automobile inspired this display of aerodynamicism in objects by 20th century design superstars Norman Bel Geddes, Raymond Loewy, and Henry Dreyfuss. Also on view is the Minneapolis Institute's new wing, by Michael Graves.

PORTLAND CEMENT ASSOCIATION PRESENTS

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DESIGN AND CONSTRUCTION WITH GROUTED REINFORCED MASONRY

Gain the skills to specify architecturally dynamic, strong, non-combustible masonry structures

By Jennifer G. Prokopy

Air Rescue and Fire Fighting Station at Phoenix Sky Harbor Int'l Airport. *Photo: Courtesy of National Concrete Masonry Association* (For complete photo description, see online material).

CONTINUING EDUCATION AIA

ARCHITECT MAGAZINE CONTINUING EDUCATION

To take the quiz and earn one AIA/CES Learning Unit (LU), go to www.architectmagazine.com, and click on "Design and Construction With Grouted Reinforced Masonry". You must answer 80% of the questions correctly to receive credit for this course. This course requires online reading in addition to the following article in order to be able to take the quiz. See page 129 for details.

Masonry construction boasts a long tradition of strong, durable, aesthetically flexible design. Through the years, architects have taken advantage of its thermal mass to increase energy efficiency, its acoustical properties to create quiet retreats, and its fire resistance to keep occupants safe. The materials used to craft masonry structures are friendly neither to mold, nor to vandals, and they offer design possibilities from classic to contemporary.

Grouted reinforced masonry offers expanded structural possibilities in masonry design. Used in the U.S. since the mid-1800s, it is most common in single-story and low-rise construction, but can also be employed in high-rise design. The concept is simple: Masonry walls are constructed, horizontal and vertical steel reinforcing bars are placed in some of the cores, and grout is poured in to fill the voids.

Though traditional unreinforced masonry is strong, reinforced masonry walls are even stronger, allowing for the construction of taller, thinner walls. The versatility of the technique allows architects to design masonry structures in every location, even in high-wind and seismic zones. Grouted reinforced masonry can create strong, safe, and beautiful churches, hospitals, hotels, schools, prisons, warehouses, condominiums, and other residences...the possibilities are endless.

CHOOSING AND SPECIFYING MATERIALS

There are several key standard specifications and codes that designers should use to correctly specify components of grouted reinforced masonry, plus a

LEARNING OBJECTIVES

By reviewing the content of this article and the supplemental online reading, architects and engineers will gain the skills to specify dynamic, strong, non-combustible masonry structures. Key points include:

- **Learn the benefits and design possibilities of grouted reinforced masonry construction**
- **Possess a greater knowledge of component materials**
- **Gain the skills needed to successfully choose and specify project materials**

number of useful supplementary documents. Each is described in detail in the supplemental online reading material.

Concrete masonry units – In addition to standard sizes and shapes, concrete masonry units (CMUs) are available in a variety of shapes and configurations that accommodate reinforcing steel, and can function as either – or both – structure and skin. These include "A" and "H" shapes; pilaster, lintel, and open core units; and bond beam units with reduced or "knock-out" webs that are removed before placement. Use ASTM C 90 Standard Specification for Loadbearing Concrete Masonry Units to specify CMUs.

Clay masonry units – Clay units can also be made in a variety of shapes and sizes to accommodate reinforcement. ASTM C 652 Standard Specification for Hollow Brick (Hollow Masonry Units Made From Clay or Shale) covers hollow building brick and hollow facing brick made from clay, shale, fire clay, or mixtures thereof, fired in a kiln to form hard units. Like their C 90 counterparts, when reinforced and grouted, clay masonry units can be used for structure, skin, or both.

Mortar – Conventional mortars for masonry are made with cementitious materials, sand, and water, and are specified using ASTM C 270 Specification for Mortar for Unit Masonry. Cementitious materials can include masonry cements, mortar cements, portland cement, blended cements, and lime. Mortars (which can be Type N, S, or M) should be specified using either proportion specifications or property specifications—not both.

Grout – Specification of grout is covered under ASTM C 476 Standard Specification for Grout for Masonry. Grout is a very fluid combination of water, aggregates, portland cement, blended cements (as specified under ASTM C 595 and ASTM C 1157), and sometimes fly ash and admixtures. Depending on the size of aggregates used, grout is classified as either fine (using only fine aggregates) or coarse (using a combination of both fine and coarse aggregates). Selection is based on the size of the space to be grouted.

Grout is specified using either proportion specifications or strength requirements. When using proportion specifications, material volumes should be measured throughout the job to ensure consistency. When using strength requirements, the minimum compressive strength is 2,000 psi (about 14 MPa).

To ensure the proper consistency, grout should be mechanically mixed for at least 5 minutes, and have a slump of between 8 and 11 inches (about 200 to 280 mm).

Admixtures may be used with care, but those with chlorides can cause steel corrosion and are not recommended. Plasticizing admixtures may be used to add fluidity to the grout mix.

Reinforcement – The two key types of reinforcement used in grouted reinforced masonry are deformed steel bars and horizontal joint reinforcement. There are multiple specifications that address steel reinforcement materials; the standard most commonly used is ASTM A 615/A 615M Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.

For the best success in specifying grouted reinforced masonry, architects should have a working knowledge of pertinent standards and codes, and should familiarize themselves with the appropriate masonry "TEK" design briefs offered at no charge online by the National Concrete Masonry Association (www.ncma.org).

DESIGN AND CONSTRUCTION

Reinforced masonry enables the designer to optimize the properties of masonry (strong in compression) and steel (strong in tension) in combination with one another. Structural engineers who design grouted reinforced masonry use one of two methods: Allowable Stress Design or Strength Design (see sidebar below). Either method is acceptable, and criteria for both are included in the MSJC Code (see online reading material).

Good construction technique starts when materials are delivered to the job site—CMUs, cementitious materials, aggregate stockpiles, and other materials should always be properly stored and protected from the elements. Once construction begins, correct alignment of CMUs is a must to ensure proper placement of reinforcement and good grout flow. When grout pour heights exceed 5 feet (1.5 m), cleanout openings are required so excess material can be removed from cavities to be grouted. Mortar protrusions may need to be removed to avoid interference with grout flow.

When installing vertical reinforcement, bars can be placed before the CMUs, or can be positioned afterward. Horizontal steel is laid in the appropriate course of masonry before additional courses are placed above. Once

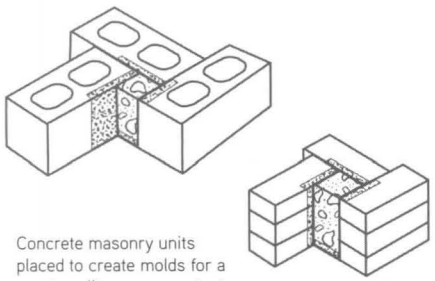
ALLOWABLE STRESS AND STRENGTH DESIGN: ALTERNATE PATHS TO DESIGN SOLUTIONS

Two equally acceptable approaches used for masonry design are Allowable Stress Design and Strength Design. Differences in the two design methodologies include the following:

ALLOWABLE STRESS DESIGN	STRENGTH DESIGN
Use service (actual) loads to determine stress in element	Use factored loads to determine required strength of element
Compare computed stress to an allowable stress	Compare design strength to required strength
Allowable stresses are a fraction of specified strength to provide conservative factors of safety in design	Design strength is nominal strength (actual capacity) reduced by strength reduction factor to ensure acceptable performance

Allowable stress and strength design procedures enable the designer to efficiently design safe masonry structures. While allowable stress has a longer history of use in the design of masonry structures, strength design may be more familiar to some engineers and architects because it is also used in concrete construction. The choice of either design methodology may be based on personal preference, or in some instances, a designer may try both methods and choose the one that results in the most efficient design.

DESIGN AND CONSTRUCTION WITH **GROUTED REINFORCED MASONRY**



Concrete masonry units placed to create molds for a grout quality assurance test.

GROUT QUALITY ASSURANCE

ACI 530-05/ASCE 5-05/TMS 402-05, Building Code Requirements for Masonry Structures (Reported by the Masonry Standards Joint Committee), offers guidance on crafting a solid quality assurance program. There are two kinds of field tests routinely used to evaluate conventional grout: slump and compressive strength. Grout samples should always be taken by a qualified technician, who will ensure the correct amount is collected, transported, and examined according to appropriate standards.

Slump – A slump test determines the consistency, or stiffness, of grout. This test is the same as a conventional concrete slump test, but results should be higher, typically between 8 and 11 inches (about 200 to 280 mm). Follow ASTM C 143, Standard Test Method for Slump of Hydraulic Cement Concrete.

Compressive Strength – In a compressive strength test for grout, 4 concrete masonry units like those used on the job site are placed in a "pinwheel" to form a rectangular mold, in which grout is placed and allowed to set for 24 to 48 hours. A pervious bond breaker is included between the grout and the absorptive masonry units to allow for water absorption and for ease of sample removal. The resulting samples are then tested for strength following ASTM C 1019, Standard Test Method for Sampling and Testing Grout.

reinforcement and units are in place and the mortar has cured for at least 4 hours, grouting can begin, using low-lift or high-lift grouting methods, described below. Following grouting, vertically reinforced cores with grout are called columns, and courses containing horizontal reinforcement are called bond beams.

GROUTING TECHNIQUES

Grout placement is measured in lifts (the amount of grout placed in a single continuous operation) and pours (the entire height of masonry to be grouted prior to the construction of additional masonry). A pour may be one lift, or several successively placed grout lifts.

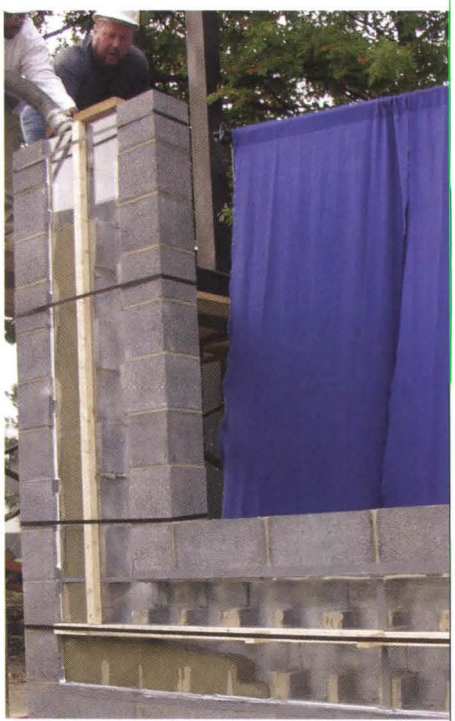
In low-lift grouting, masonry height is limited to 5 feet (1.5 m) before grout is placed. Hand buckets, pumps, or concrete buckets with spouts can be used to deliver the grout, which must also be consolidated by vibrating or puddling each lift.

High-lift grouting is suited to larger projects; masonry walls are built to story-height (or the full wall height) and then grout is placed. Lifts are limited to a maximum of 12.67 feet (3.86 m) as long as three conditions are met: masonry has cured for at least 4 hours; grout slump is 10 to 11 inches (254 to 279 mm); and there are no reinforced bond beams between the top and bottom of the pour height. Otherwise the lift height can't exceed 5 feet (1.52 m). Alternate grout placement strategies – taller lift heights and other consolidation methods – can be approved through the use of successful demonstration panels. Grout can be transit-mixed and, as in low-lift grouting, delivered quickly through pumps or spouted concrete buckets. Cleanout openings are required at the base of the wall for any vertical core including reinforcement.

Conventional grout must be placed within 90 minutes of introducing water to the mix, but extended set grout—containing admixtures that delay the onset of hydration—can remain in the mixer for longer periods of time, a useful option for out-of-the-way jobsites.

RISING STAR: SELF-CONSOLIDATING GROUT

In recent years, self-consolidating concrete advancements have led to the development of self-consolidating grout (SCG). While conventional grouts contain large amounts of water



Self-consolidating grout (SCG) moves freely in tight spaces, as seen through the clear plastic face on this demonstration panel.

to provide flowability during placement, SCGs have lower water contents, instead taking advantage of superplasticizing admixtures, called polycarboxylates, to increase workability. SCGs have the same basic ingredients as self-consolidating concretes, but with slightly smaller coarse aggregate size.

SCGs offer some clear benefits: They provide excellent workability and flowability, filling the tiniest crevices without needing any vibration or consolidation. Smaller crews can place the material faster than conventional grout, saving time and allowing workers to focus on other tasks.

When working with SCGs, it is important to quantify both fresh and hardened properties. Instead of an in-field slump test, ready-mix producers will perform a slump flow (or spread) test before sending the material to the site; spread should be 22 to 30 inches (about 560 to 760 mm). Also, the mix must demonstrate that it is cohesive and free from segregation. Compressive strength testing on the mix should also be performed, with a minimum of 2,000 psi (about 14 MPa) at 28 days.

The following quiz includes questions derived from online material not included in this printed article. You are required to read the additional online material in order to take the quiz and complete this continuing education unit. Please go to www.architectmagazine.com, click on "Design and Construction With Grouted Reinforced Masonry" for the additional information.

TEST QUESTIONS

1. When using self-consolidating grout, which test results are desirable?
a. Slump flow (or spread) of 22 to 30 inches (about 560 to 760 mm)
b. Slump of 8 to 11 inches (about 200 to 280 mm)
c. Compressive strength of at least 1,000 psi (7 MPa) at 28 days
d. Slump flow (or spread) of 8 to 11 inches (about 200 to 280 mm)

2. Grouted reinforced masonry walls can be:
a. Stronger than traditional masonry walls
b. Designed for high wind and seismic zones
c. Taller and thinner than unreinforced masonry
d. All of the above

3. Which of these statements is true?
a. In traditional high-lift grouting, speed of placement is slower than in low-lift grouting
b. When using self-consolidating grout, larger crews are needed
c. Consolidation is required when using traditional low-lift grouting
d. Extended set grouts are best suited to small volume grouting jobs

4. Allowable stress design uses:
a. Service (actual loads)
b. Specified compressive strength of masonry
c. Comparison of computed stress to an allowable stress
d. All of the above

5. In ASTM C 476 Standard Specification for Grout for Masonry, grout is classified as:
a. Fine (containing mostly fine aggregates) or coarse (containing mostly coarse aggregates)
b. Fine (containing only fine aggregates) or coarse (containing both fine and coarse aggregates)
c. Fine (containing only fine aggregates) or coarse (containing only coarse aggregates)
d. None of the above

6. Cleanout openings are required when:
a. Self-consolidating grout is used
b. On every grouting job
c. When grout pour heights exceed 5 feet (1.5 m)
d. Only when performing low-lift grouting

7. Which is true of concrete masonry units used in grouted reinforced masonry?
a. They are available in a variety of shapes and sizes, and some styles have reduced or "knock-out" webs
b. Many styles come in "I" and "F" shapes
c. Pilaster, lintel, and open core shapes are available
d. Both a and c are correct

8. ACI 530-05/ASCE 5-05/TMS 402-05 is a:
a. Building code requirement examining masonry design and construction
b. Essential document for designers specifying masonry construction
c. Both
d. Neither

9. Grout:
a. Is specified using either proportion specifications or strength requirements
b. Can include any type of admixture, including those containing chlorides
c. Is specified using both proportion specifications and strength requirements
d. Should never include admixtures, all of which can cause corrosion

10. Which statement is true?
a. ASTM C 595 examines only performance of blended hydraulic cements
b. ASTM A 615 is the only standard used to specify steel reinforcement for concrete
c. Neither are true
d. Both are true

Design and Construction with Grouted Reinforced Masonry
Successful completion of this test (a score of 80% or higher) will earn 1 AIA/CES LU hour of health, safety, and welfare. Non-members will receive a certificate of completion upon request.

To take the test, go to www.architectmagazine.com and click on "Design and Construction with Grouted Reinforced Masonry" to download a PDF of this unit, supplemental information and register to take the test online.

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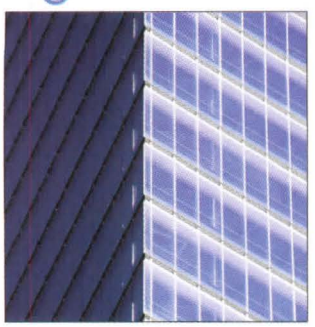

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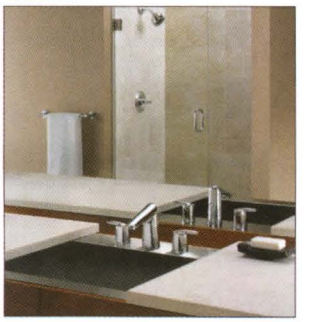

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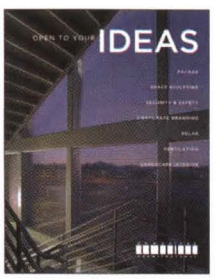

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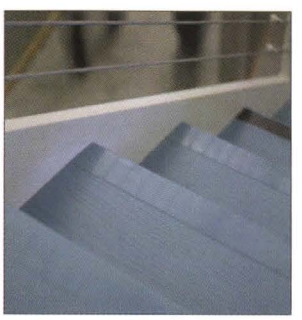

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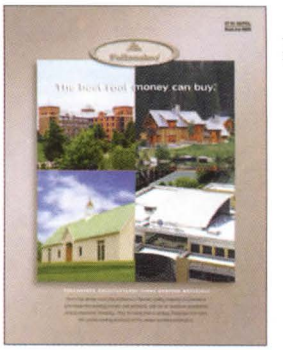

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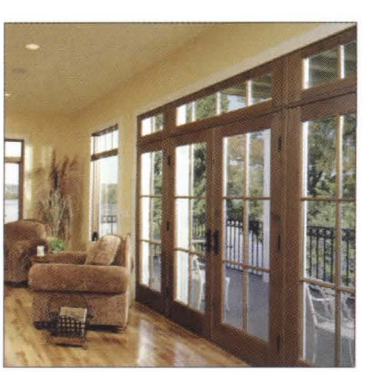

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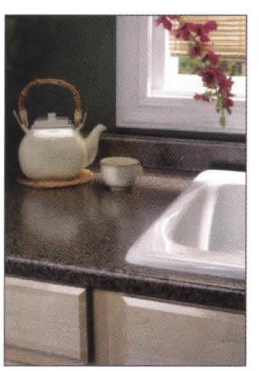

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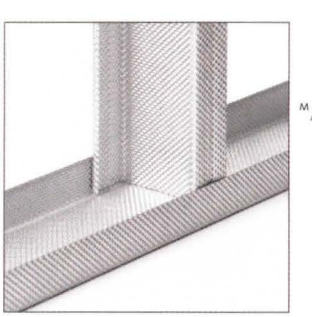

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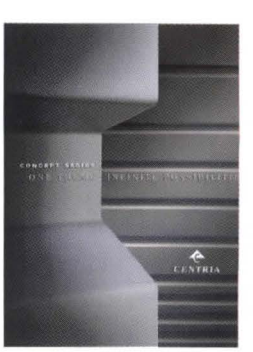

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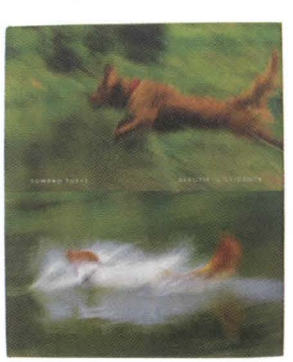
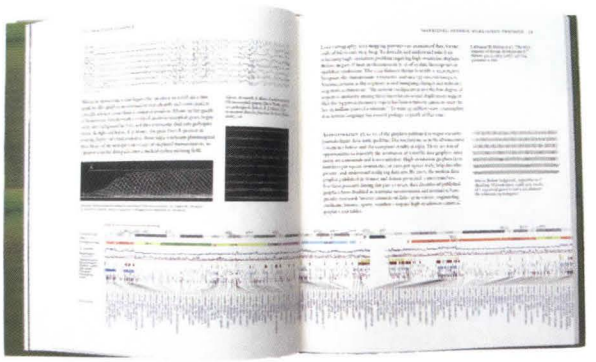
Beautiful Evidence By Edward Tufte





Graphics Press, Cheshire, Conn.
This latest work from the Leonardo da Vinci of information display takes aim at ubiquitous but inadequate PowerPoint presentations and low-resolution graphics. Science and art share a requirement for "wide-eyed observing," in the words of Tufte, professor emeritus of statistics, graphic design, and political economy at Yale University. *$52*

Ely Jacques Kahn, Architect: Beaux-Arts to Modernism in New York
By Jewel Stern and John A. Stuart

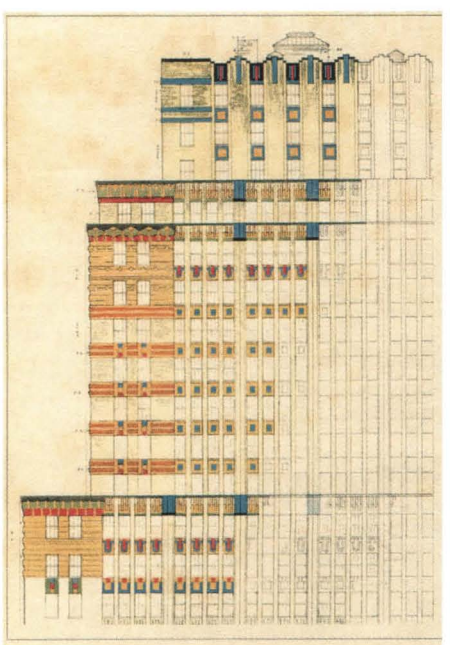


PHOTO: LISELOTTE KAHN AND *ARCHITECTURAL RECORD* 63

W.W. Norton & Company, New York
A first critical study of Ely Jacques Kahn (1884–1972), pre-eminent architect of commercial buildings in 1920s New York City and well beyond. *$60*

Yearning for Beauty: The Weiner Werkstatte and the Stoclet House
Edited by Peter Noever, Etienne Davignon, Paul Dujardin, and Anne Mommens
Distributed Art Publishers, New York/ Jatke Camtz Publishers
An authoritative history of the Viennese movement and its "total concept" for architecture, art, and design. *$95*

Metropolitan World Atlas
By Arjen van Susteren
Design by Joost Grootens
010 Publishers, Rotterdam
After globalization comes the era of the megacity. Just in time, a book has arrived that allows comparative analysis of such bellwether metropolitan areas as Beijing, Lagos, London, Los Angeles, Rio de Janeiro, and Tokyo. Plans, key indices, and tables add value to this 21st century atlas for the urban age. *$45*

The Universitas Project: Solutions for a Post-Technological Society
Directed by Emilio Ambasz
Foreword by Terence Riley
Distributed Art Publishers/Museum of Modern Art, New York
The landmark 1972 Museum of Modern Art symposium on the future of design, recaptured word for word to inspire a new generation of architects and designers. *$34.95*

American Gardens 1890–1930: Northeast, Mid-Atlantic and Midwest Regions
Edited by Sam Watters

PHOTO: ACANTHUS PRESS

Acanthus Press, New York
First of three volumes evoking the American melting pot of landscape design by its great practitioners: Marian Coffin, Beatrix Jones Farrand, Rose Standish Nichols, Charles Platt, Frederick Law Olmsted, Charles Freeman Gillette, and Jens Jensen. *$75*

Typography and Graphic Design
By Roxane Jubert, Ellen Lupton, and Serge Lemoine
Flammarion, Paris
The glories of graphics from antiquity to the digital age, filtered through the demanding eye of art historian Roxane Jubert. Forewords by Ellen Lupton, curator at the Smithsonian's Cooper-Hewitt National Design Museum, and Serge Lemoine, director of the Musee d'Orsay in Paris, make this an indispensable guidebook to fonts. *$95*

Classic English Design and Antiques: Period Styles and Furnishings Masterpieces of the 18th and 19th Centuries from the Hyde Park Antiques Collection
By Emily Eerdmans
Foreword by Mario Buatta
Introduction by Rachel Karr
Rizzoli, New York
English period interiors deciphered, from Queen Anne and Georgian to Palladian, Rococo, Neoclassic, and Regency. *$60*

CULTURE EVENTS

Healthcare Design 2006, Chicago
Nov. 4–7
The fourth conference devoted to the design, construction, and renovation of health care facilities.
www.healthcaredesignmagazine.com

Building Conversations: Fall Conference of the AIA Committee on Architecture for Education
Austin, Texas
Nov. 9–11
A collaborative conference devoted to educating decision-makers in the planning of schools.
www.aia.org /ev_cae_fall06_conf

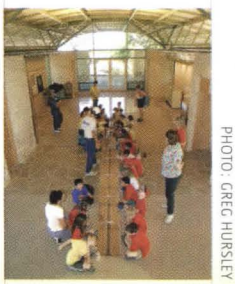


PHOTO: GREG HURSLEY

NOVEMBER	sun	mon	tue	wed	thu	fri	sat
	29	30	31	01	02	03	04
	05	06	07	08	09	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30	01	02

The Planning and Design of Public Libraries
Sacramento, Calif.
Nov. 6–9
A four-day immersion in the innovation required for 21st century libraries, conducted by the Harvard Graduate School of Design, with site visits, virtual tours, and interactive planning drills.
www.gsd.harvard.edu /professional/exec_ed /seminars

PHOTO: SAM SWEEZY

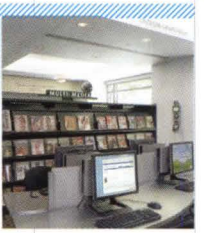


PHOTO: ROY WRIGHT PHOTOGRAPHY

Massive Change and the City: Global Visionaries Symposium
Chicago
Nov. 18
The Museum of Contemporary Art and designer Bruce Mau will engage in a day of intellectual debate on the city as a place for change. The event spins off the museum's presentation of Mau's traveling show, *Massive Change*. Futurists, biologists, and other visionaries weigh in, along with Chicago's elected agent of change, Mayor Richard M. Daley.
www.mcachicago.org

PHOTO: PETER VANDERWARKER

Greenbuild International Conference & Expo
Denver
Nov. 15–17
The U.S. Green Building Council's fifth annual conference dedicated to greening the built environment.
www.greenbuildexpo.org

Plan Ahead ...

Dec. 5–7
Ecobuild Federal, Washington, D.C.
An annual event that covers green building strategies and products.
www.ecobuildfederal.com

Jan. 20–21, 2007
The Big Zigzag, Seattle
The Seattle Art Museum opens its Weiss/Manfredi-designed path to Puget Sound. *www.seattleartmuseum.org*

Feb. 9, 2007
AIA Accent on Architecture, Washington, D.C.
The institute presents its top honors.
www.aia.org

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Belden Brick	64	82	www.beldenbrick.com	330.456.0031
Building Systems Design	34	23	www.bsdsoftlink.com	888.BSD.SOFT
Bulthaup	81	60	www.bulthaup.com	800.808.2923
Cambridge Architectural	35	24	www.cambridgearchitectural.com	866.806.2385
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Duron	135	78		800.635.0038
Eagle Windows and Doors	31	30	www.eagleWindow.com	888.74.EAGLE
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ERCO	2–3	87	www.erco.com	
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Fypon	80	55	www.specifypon.com	800.446.3040
Haddonstone	56	59	www.haddonstone.com	856.931.7011
Hansgrohe	21	34	www.hansgrohe-usa.com	800.334.0455
High Concrete	10–11	35	www.highconcrete.com	800.PRECAST
Hohmann and Barnard	26–27	36	www.h-b.com/spec25	800.645.0616
Italian Trade Commission	66–67	37	www.italtrade.com	
Johnsonite	55	38	www.johnsonite.com	800.899.8916
Kohler	48a–b	39	www.kohler.com/dtvinfo	800.4.KOHLER Ext. EFX
Kolbe and Kolbe	79	40	www.kolbe-kolbe.com	800.955.8177
Kraftmaid	17	41	www.kraftmaidspec.com	800.581.4484
LG Hi-Macs	7	42	www.lgvolcanics.com	866.LGHIMACS
LG Viatera	77	43	www.lgviatera.com	877.VIATERA
Marble Institute of America	58	44	www.marble-institute.com	440.250.9222
Marvin Windows and Doors	122–123	57	www.marvin.com	800.236.9690
Pilkington	13	45	www.pilkington.com	419.247.3731
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PPG Industries	C2–1	46	www.ppgideascapes.com	888.PPG.IDEA
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Roppe	73	47	www.roppe.com	800.537.9527
Sage Electro	9	48	www.sage-ec.com	877.724.3321
Schneider Electric	45 47	75 76	www.us.schneider-electric.com	
Sharp	29	83	www.sharpusa.com/microwavedrawer	866.RANGE99
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Q&A

THE PROPOSED CULVER HOUSE DEVELOPMENT ISN'T JUST ONE OF *CHICAGO'S MOST* INNOVATIVE MULTIFAMILY PROJECTS; IT'S ALSO ARCHITECT DIRK DENISON'S FIRST FORAY AS A DEVELOPER. HE DISCUSSES THE PROS AND CONS OF DOUBLE DUTY WITH **ARCHITECT**.

INTERVIEW Edward Keegan PHOTO Peter Rad

DIRK DENISON

Why did you decide to develop Culver House yourself?
I wanted a sense of place to be the guiding energy of the project. The typical developer's motivation is get in, build some vehicle for making a profit, and then get out.

What drove the project's aesthetics?
We started with the environment. A double-skinned wall allows for heat gain in the winter and heat expulsion in the summer. Greenhouse-like buffer spaces will have trees planted throughout the entire height of the building—interspersed throughout the composition of the façade. It will read very clearly as a building that's about the ecosystem.

What has this design gained from having an architect as its developer?
I was in control of the timing and expense of the design process. Rather than squeezing the architect into expedient design, as developers do, I put that effort into making a better building.

How did you determine your market?
I have an MBA. I've taken real estate development classes. Market analysis is very important. We surveyed about 40 properties under development and up for resale. I set a price point within the top 10 percent.

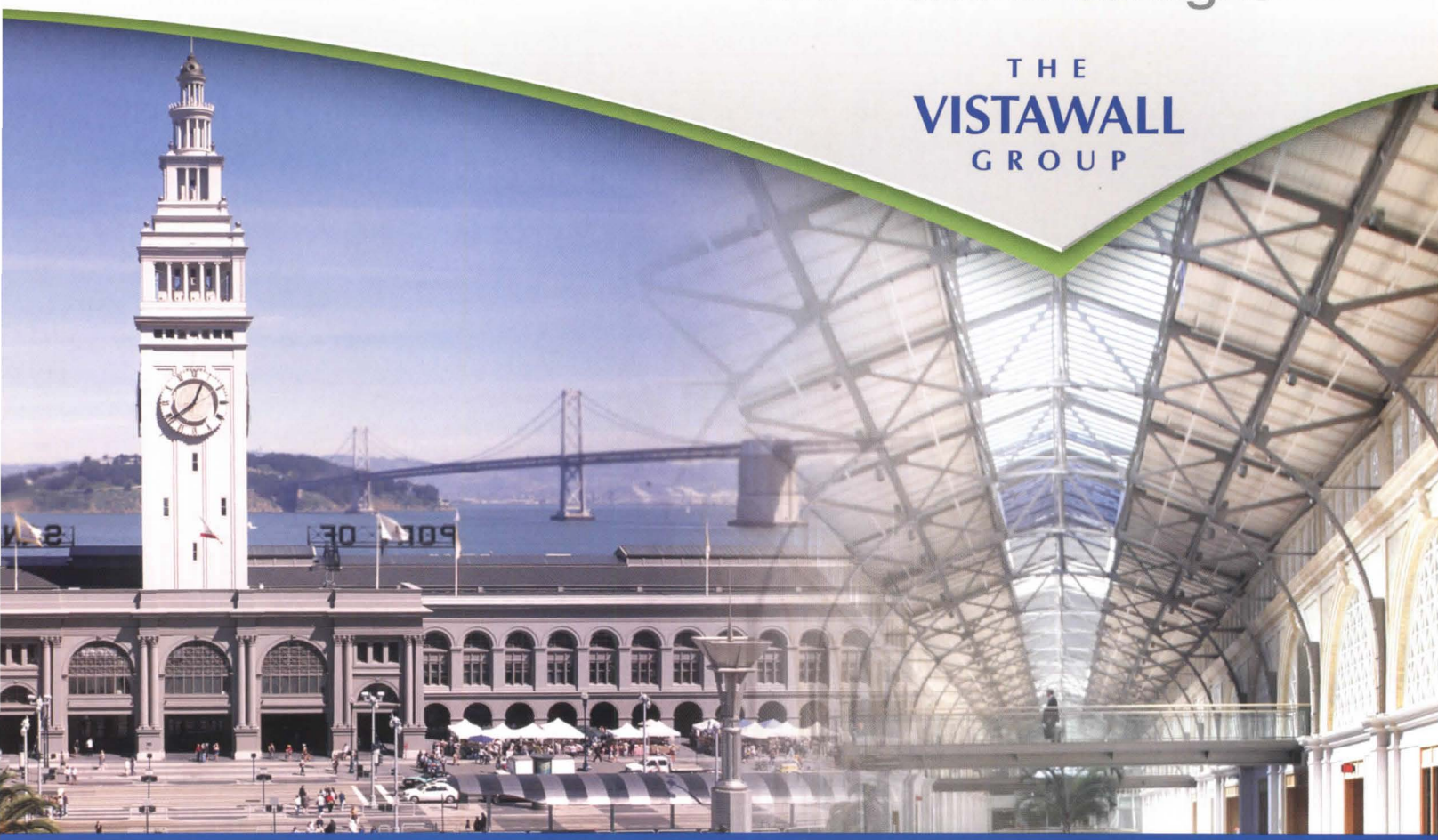
So how did you get financing?
I found some very motivated banks, like MB Financial and LaSalle Bank, that were interested in opportunities to participate in a niche market.

Have politics affected the process?
In Chicago, aldermen have power over what happens in their neighborhood. It's not a legislated process. In other municipalities, I'm typically going to someone who's trained in urban design, planning. In Chicago, you're going to somebody who will wait for consensus. He said, "Take two floors off," because he's used to asking that all the time. Make it smaller and make the neighbors happy.

What was the biggest lesson you learned in developing the project?
Bankers look at the world differently than architects. It's about the bottom line. There's nothing about what you're contributing to society. A

Flooding the waterfront ... with natural sunlight.

THE VISTAWALL GROUP



erry Building restoration project
an Francisco, CA
rchitects: SMWM; Page & Turnbull
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stawall narrow stile entrances,
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