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2009 ARCHITECTURE SCHOOL GUIDE





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EDITOR-IN-CHIEF
Ned Cramer
ncramer@hanleywood.com

MANAGING EDITOR
Greig O'Brien
gobrien@hanleywood.com

ART DIRECTOR
Aubrey Altmann
aaltmann@hanleywood.com

EXECUTIVE EDITOR
Amanda Kolson Hurley
ahurley@hanleywood.com

SENIOR EDITORS
Katie Gerfen
BUILDINGS
kgerfen@hanleywood.com

Braulio Agnese
DEPARTMENTS & WEBSITE
bagnese@hanleywood.com

ASSISTANT MANAGING EDITOR
Jennifer Lash
jlash@hanleywood.com

ASSOCIATE EDITOR
Kimberly R. Griffin
PRODUCTS
kgriffin@hanleywood.com

SENIOR GRAPHIC DESIGNER
Marcy Ryan
mryan@hanleywood.com

EDITORS AT LARGE
Edward Keegan, Vernon Mays,
Hannah McCann

CONTRIBUTING EDITORS
Elizabeth Evitts Dickinson, John Morris
Dixon, Thomas Fisher, Linda Hales,
Lance Hosey, Margot Carmichael Lester,
Bradford McKee, Mimi Zeiger

CONTRIBUTING ARTISTS
Ian Allen, Peter Arkle, Catalogtree,
Noah Kalina, Mike Morgan

Online

CHIEF DESIGNER
Thomas C. Scala

SENIOR WEB PRODUCER
Richard Stirba

Services

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

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ADDRESS CHANGES
ARCHITECT
P.O. Box 3494
Northbrook, IL 60065-9831

Production

DIRECTOR OF PRODUCTION AND PRODUCTION TECHNOLOGIES
Cathy Underwood

PRODUCTION MANAGER
Paige Hirsch

AD TRAFFIC MANAGER
Lauren Dobos

PREPRESS MANAGER
Fred Weisskopf

PREPRESS COORDINATOR
Betty Kerwin

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**EXECUTIVE DIRECTOR,
COMMERCIAL DESIGN AND
CONSTRUCTION**
Patrick J. Carroll
pcarroll@hanleywood.com
773.824.2411

PUBLISHER, COMMERCIAL DESIGN
Russell S. Ellis
rellis@hanleywood.com
202.736.3310

**REGIONAL SALES MANAGER, EAST,
TX, OK, AR, LA, FL**
Michael Lesko
mlesko@hanleywood.com
203.445.1484

**REGIONAL SALES MANAGER,
MID-ATLANTIC AND SOUTHEAST**
Nick Hayman
nhayman@hanleywood.com
202.736.3457

REGIONAL SALES MANAGER, WEST
Mark Weinstein
mweinstein@hanleywood.com
310.798.4030

REGIONAL SALES MANAGER, MIDWEST
Michael Gilbert
mgilbert@hanleywood.com
773.824.2435

**NATIONAL ADVERTISING MANAGER,
LIGHTING**
Cliff Smith
csmith@hanleywood.com
864.642.9598

REGIONAL SALES MANAGER, CANADA
D. John Magner
jmagner@yorkmedia.net
416.598.0101, ext. 220

ACCOUNT MANAGER, CANADA
Colleen T. Curran
ctcurran@yorkmedia.net
416.598.0101, ext. 230

GROUP PUBLISHING SUPPORT MANAGER
Angie Harris
aharris@hanleywood.com
773.824.2415

MARKETING MANAGER
Lauren Cardinet
lauren@decisioncounsel.com

**GENERAL MANAGER, ONLINE
RESIDENTIAL REMODELING
AND COMMERCIAL CONSTRUCTION**
Kim Heneghan
kheneghan@hanleywood.com
202.380.3831

**RESOURCE AND CLASSIFIED
SALES ACCOUNT MANAGER**
Erin Liddell
eliddell@hanleywood.com
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Hanley Wood Business Media

PRESIDENT/HANLEY WOOD
Peter M. Goldstone
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MARKET INTELLIGENCE/E-MEDIA**
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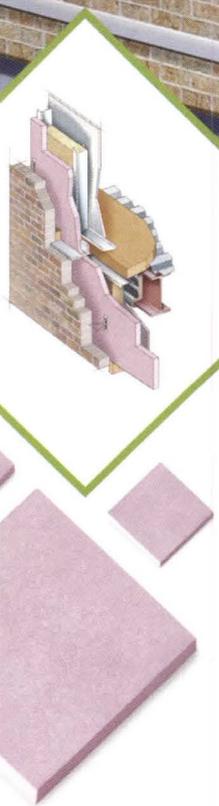
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- The resurgence of design/build. STEVE BADANES
- How to choose the right school for you. TED LANDSMARK
- Profiles of Rensselaer student Rachele Louis and Cincinnati professor Anton Harfmann. EDWARD KEEGAN
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“[EVEN] IF YOU’RE AN ATHEIST, WHEN YOU GO INTO IT, YOU FEEL REVERENT.”

PETER DELUCA, interim president of Thomas Aquinas College, about the chapel designed by Duncan Stroik in “Our Lady of the Most Holy Trinity,” page 69.

ON THE COVER
A STUDENT IN ONE OF THE GEORGIA TECH GRADUATE STUDIOS HARD AT WORK.
PHOTO BY IAN ALLEN.

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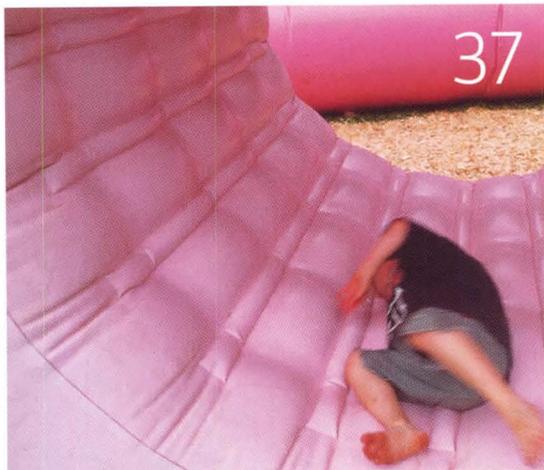


Autodesk Revit Rendering
Courtesy of SCA Consulting Engineers.
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THE 21ST
CENTURY
EQUIVALENTS
OF THE
HISTORIC
AMERICAN
BUILDINGS
SURVEY FOR
OUT-OF-WORK
ARCHITECTS?

STIMULUS FOR STUDENTS

IT DOESN'T TAKE A NEUROSURGEON to recognize that a lot of Americans are in a lot of pain. Even if Congress manages to enact a world-class healthcare system in our lifetimes, it won't cure the unemployment that's crippling the nation right now. In October, the jobless rate hit 10.2 percent—or 17.5 percent, if you include those who have quit looking for work or have taken part-time gigs for lack of full-time options. Wall Street may be on the rebound, but the rest of the country is lurching toward that infamous benchmark—the 25 percent unemployment rate of the Great Depression.

Job stats for building design and construction look even worse than the national average. A survey by AIA Nevada, for instance, reports 65 percent industry unemployment in Las Vegas. The posts on architectmagazine.com and archinect.com are rife with recession-induced tales of woe. But an exquisite kind of pain is reserved for current architecture students and recent grads, who are entering the workforce with profoundly limited prospects in their chosen profession. Forget the bustling job fairs and multiple offers from a couple of years ago. Spring 2007 was another era. Now imagine graduating straight into your parent's basement and an \$8.50-an-hour job as a barista—that is, if the local Starbucks is hiring.

Many of today's most famous architects—Zaha Hadid and Thom Mayne, for instance—suffered recession pains early in their careers. When SOM wasn't hiring, the then-popular alternative was to teach, which paid the rent and supplied a stream of cheap (i.e., free) student labor for the invention of radical forms, ruminations on post-structuralist theory, and submissions to international design competitions. That first big win must have felt fantastic, like the heady rush a hedge fund manager gets these days when the bonus check clears. Alas, the schools aren't hiring either.

Does it matter? Students and recent graduates today seem to have a different set of goals than their celebrated elders. Consider the American Institute of Architecture Students' (AIAS) admirable Freedom by Design program [*"Utilitas, Truly,"* page 22]. Denver architect Brad Buchanan founded the program five years ago for students to provide design/build services for the elderly and disabled. Already, 57 schools are participating.

The success of Freedom by Design makes me guess (and, honestly, hope) that social justice, environmental stewardship, and financial responsibility are proving as important to the class of 2009 as creative license did to its predecessors. In this month's Crit article, "Design

for (Public) Life" [page 40], newly minted University of Maryland architecture alum Dan Reed opens a window into the world of a recent graduate during this Great Recession. There were no opportunities for him at architecture firms, but Reed luckily was able to land a job with his county councilman, where he's working on planning and zoning issues. "Is this what I intended to do after college?" he asks.

Not at all. I would like to enter the design profession when the economy improves. But as local governments around the country struggle to counteract 50 years of sprawl and disinvestment, they'll need people to show them how, and I'm glad to help.

I wish every architecture school grad could have an experience like Reed's, but I fear such positive alternative career opportunities are few and far between. The stimulus act had many Americans, myself included, dreaming up WPA-style programs to get architects back to work, making an honest living by designing solutions to some of our country's most pressing problems. That hasn't happened, at least not nearly to the degree so many of us had hoped.

Where are all the commissions for new, net zero community centers, schools, libraries, post offices, and train stations? Why aren't firms hiring again, flush with government projects? Just as importantly, where are the 21st century equivalents of FDR's HABS (the Historic American Buildings Survey), which sent out-of-work architects around the country to draw up plans of national landmarks?

At this point, I'm highly doubtful that the federal government will be coming to architecture's rescue. No other power on Earth is capable of job creation on the Biblical scale that's needed right now, but the profession must do its best to bridge the gap. Our first priority should be fostering the next generation, ensuring that a lack of jobs today doesn't result in mass defections of skill and passion to other, less beleaguered professions. The talent emerging from our architecture schools is too valuable to waste. How can you help? For starters, you can read the important message from the AIAS that appears on the following page.

Dan Reed



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FROM THE AIAS: LIFE HAPPENS OUTSIDE STUDIO

IF YOU WERE ASKED your thoughts on emerging professionals in architecture today, what would you share? Nostalgia over long nights spent in studio? A desire to reclaim the innocence of design, one without budgets or timelines? Contempt for technology and the loss of an art form? Or sympathy for a generation facing a void of opportunity?

Even in today's economic climate, young leaders in architecture have the power to radically impact the built environment, and no profession is more committed to the training and assessment of its students and interns than architecture. Educators, practitioners, and regulators alike take great care to ensure theory and technical skills are taught in the classroom, reinforced on the job, and measured through exam. But there is so much more to being an architect. Especially when times are tough, students must be shown, through example, the concept of professional commitment. They must understand, through

experience, the value of leadership and communication skills. And they must be encouraged, time and time again, to contribute to the communities where they study, work, and live.

Poverty, climate change, food supply, energy shortages, healthcare pitfalls, and educational gaps are all challenges young architects will face. What students learn in the classroom must be complemented by the wisdom and experience of those who have come before them. Through the help of architects, product manufacturers, educators, and nonprofit leaders, the American Institute of Architecture Students (AIAS) has made it its mission to show students that life happens outside studio. Through its leadership conferences, advocacy work, career fairs, community service programs, and design competitions, the AIAS challenges students to move beyond their comfort zones and be the leaders the

profession wants and so desperately needs.

Over the past two years the AIAS has worked hard to raise more than \$1.1 million to support its programs and meet the challenges of today and those of the future. But the work is not done. Students need your help. Architects of all ages have an opportunity and a responsibility to reach out to the future of the profession. Hire an intern. Mentor. Volunteer. Teach. Participate. Give. Do something to ensure students of this generation are not lost, but rather equipped to be both the architects of their careers and the architects of the world we share.

To truly be successful, emerging leaders must be shown that life happens outside of studio. And that must come from you.

For more information about the organization and to learn about ways you can help, visit aias.org.

LETTERS

"Surprising Shades of Green," October 2009

With all the publicity about energy performance, few if any stories about green buildings include enough information. The designers, owners, and managers of green buildings describe their size, construction cost, and benefits from an energy, carbon, or emissions perspective. However, they almost never provide factual measured energy data to support their claims, even when those data are or can become readily available.

If the building has been in full operation for at least one year, the article [about it] should include monthly metered electricity and fuel consumption data per gross square foot for 12 consecutive months, so readers can make comparisons with their own or comparable facilities. The article should also clearly identify any rebates, subsidies, or unique circumstances that might limit broad transferability or applicability of the technologies involved and evidence that the building is providing the environmental conditions and functionality intended.

Larry Spielvogel
King of Prussia, Pa.

I thoroughly enjoyed the October issue. Architects' skepticism about climate change is understandable. Elizabeth Evitts Dickinson's follow-up article ["Shaky Foundation"], whether intentionally or not, explains why. Setting aside the glamour that green initiatives bring to buildings, what research today definitively supports design acumen toward climate change? Which design features conclusively reduce the effects of global warming? As Ms. Dickinson demonstrates, there is

very little research, and there is no compendium of knowledge. We are not first, or even secondly, scientists, and while less important matters may rely on opinion, our responses to climate change better find a more convincing base.

Allen E. Neyman
NSArchitects, Rockville, Md.

"Trust Me, I'm a (Fake) Architect," September 2009

After reading "Trust Me, I'm a (Fake) Architect," I am convinced that the real villains are overzealous architects and their accomplices, government officials, who kidnapped the word "architect" to the public's confusion. Dictionaries define an architect as a person who is engaged in the profession of architecture, with no mention of state licensing requirements. Some states have the audacity to forbid any term that may imply that an unlicensed individual is an architect, such as "designer." I strongly believe that the title of "Registered Architect" is what should be protected since it is perceived without question by the public as a licensed individual in the profession of architecture. Thank goodness priests do not lobby for the exclusive use of the title "Father."

Johnny Peralta
Capital Engineering, New York

Why do we continue to allow people in IT to use the title "architect"? Doesn't each state require a license in order to practice using this title? I certainly didn't have any questions in my exam or orals regarding IT issues.

Gale Larson
Via E-mail

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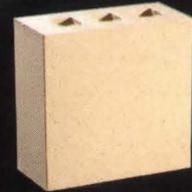
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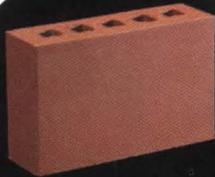
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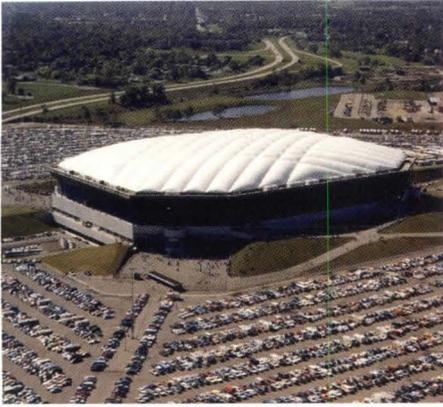
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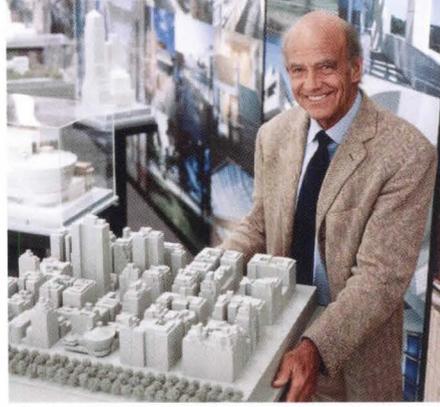
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The fate of Michigan's **Pontiac Silverdome** is in limbo. It sold at auction in November for a **staggeringly low \$583,000** to a Canadian developer, but a judge stopped the sale after a complaint was filed by a rival buyer.



A professorship in memory of **Charles Gwathmey** has been established at Yale's school of architecture by fashion king **Ralph Lauren and his wife, Ricky**. Peter Eisenman will be the first educator to fill the position.



In with the new: Seattle's **Olson Sundberg Kundig Allen Architects** announced that, beginning in January 2010, the firm will go by a name that reflects an evolving practice: **Olson Kundig Architects**.

OCTOBER 2009
ARCHITECTURE
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- ↑ 39.1 mixed practice
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SOURCE: AIA

Downturn Hits AIA

15 PERCENT OF D.C. STAFF TO BE ELIMINATED.

THE GREAT RECESSION that has left an estimated 15 percent of architects unemployed nationally has taken a toll on the AIA. On Nov. 9, the institute announced that 2009 revenue had dropped 20 percent from the previous year and that it would eliminate 33 staff positions, or 15 percent of the 203 employees in its Washington, D.C., offices. The layoffs were scheduled to occur on Nov. 30.

Most of the staff cuts are concentrated among the AIA's Knowledge Communities, which manage areas of specific practical interest for the AIA's 86,000 members. Yet the institute also announced that it would add 13 positions in 2010 and said that its reserves are "strong" while not specifying their exact levels. Separately, it announced that *AIArchitect*, the institute's weekly e-newsletter, will now publish biweekly.

A letter to members from AIA president Marvin Malecha included language that suggested programmatic cutbacks, such as "consolidated communications" to "reduce email overload" and a promise to "enhance AIA Knowledge Communities as a conduit for content through a transition to self-governance."

On online forums, some architects said they believe the \$600 in annual dues to the AIA is too much for what they receive in return; others simply said they cannot afford the cost. "I never thought that ... \$600 [in dues] would be a big deal," said one commenter on an archinect.com forum. "But it sure is a lot of money to us."

A spokesperson said there were no plans as of yet to cancel a December black-tie dinner for the AIA board at the National Portrait Gallery. **BRADFORD MCKEE**

WILLIAM TUAFIC, ALEX KALE (GWATHMEY);
ROLAND HALBE (MAXXI MUSEUM)



The Council on Tall Buildings and Urban Habitat changed its criteria for measuring height. Chicago's Trump Tower is now No. 6 on the list of tallest according to "height to architectural top." (Sorry, Jin Mao Tower.)

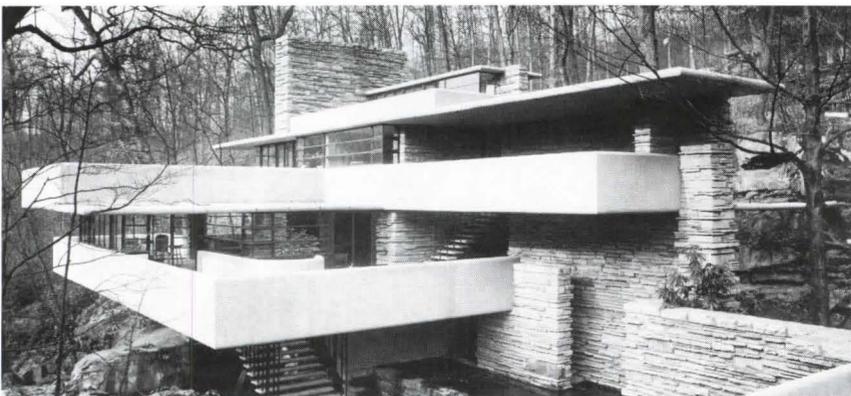


The *USS New York*, an amphibious transport dock whose bow incorporates 7.5 tons of steel from the collapsed Twin Towers, sailed into New York City in early November for its commissioning into the U.S. Navy fleet.



Critics went gaga over Zaha Hadid's MAXXI museum in Rome, which offered an early preview prior to its 2010 opening. For a slightly different take, read Aaron Betsky's thoughts on architectmagazine.com at bit.ly/37do8w.

Name That Window



HOW WOULD YOU like to own a piece of Frank Lloyd Wright's most famous residence? The Fallingwater Window Legacy Fund is looking for individuals to permanently endow the house's windows. After 74 years, the original laminated glass is beginning to fail and needs to be replaced.

Endowment opportunities range from \$500 to \$10,000 and up. Donors may select the specific window, skylight, glass door, or set of windows they want to endow. In return, they will receive a commemorative piece of the old Fallingwater glass, framed with a drawing of the house. Visit the Western Pennsylvania Conservancy's Fallingwater website (fallingwater.org) to learn more. **BRAULIO AGNESE**

Living Building Challenge 2.0 Unveiled

ON NOV. 11, the newest version of the Living Building Challenge (LBC) was unveiled at Greenbuild by the International Living Building Institute and the Cascadia Region Green Building Council. The 2.0 version of the standard creates requirements for equal access for all people, cultural interaction,

and unrestricted access to natural resources, and was expanded to include in-home, communitywide, and infrastructure projects. (For more information on the program, go to ilbi.org.)

Two notable U.S. projects are aiming for certification under the original LBC program. The Omega

Center for Sustainable Living, in Rhinebeck, N.Y., likely will become the first building to earn both LBC and LEED Platinum certifications. Designed by BNIM Architects and completed this fall, the low-slung structure features wastewater recycling and clean energy power sources. Another project,

the Oregon Sustainability Center, in Portland, Ore., is on track to become the first high-rise to meet LBC criteria. The mixed-use project, by GBD Architects, features Red List-free and locally sourced materials along with net zero energy and net zero water systems. **MARGOT CARMICHAEL LESTER**

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INTERVIEW BY EDWARD KEEGAN
PHOTO BY WILLIAM ANTHONY

→ BEST PRACTICES

The Creative Space

AT LEHRER ARCHITECTS, TIME SPENT PURSUING ART AND DESIGN FOR PERSONAL DEVELOPMENT IS AN ESSENTIAL ASPECT OF OFFICE LIFE.

MICHAEL LEHRER DECIDED to be an architect when he was eight years old. A first-generation American, he grew up in the Silver Lake neighborhood of Los Angeles where he now lives and has his studio, Lehrer Architects, and where houses by Frank Lloyd Wright, Rudolf Schindler, and Richard Neutra sit within a mile and a half of the office. Since reading Vitruvius in high school, Lehrer has believed that architects need to know how to paint, draw, and sculpt—an attitude that pervades his firm's studio culture.

How did you begin formal drawing?

I started life drawing in 10th grade, a critical formative experience for me. Understanding the human figure, understanding composition and line weight, are the rudiments of visual thinking. Drawing, painting, sculpture, architecture—you want to use the full palette of tools at your disposal. Those different eyes are always called into action solving the problems of architecture.



"Joy does not preclude an enterprise from being extremely serious," says Michael Lehrer. "For me, joy and gravitas are a necessary yin/yang."

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After college at USC and Harvard, what was your seminal professional experience?

In 1984–85, I worked for Frank Gehry. His process is that you solve everything in a straightforward way, and then you play. I'm a hot-glue-gun guy. I'm not an extreme craftsman in terms of model making. There's an appropriateness of technique: A three-minute idea deserves a three-minute model. Get shit out of your head as quickly as possible, so you can begin to have a dialogue with something outside of yourself.

How did you begin to integrate your ideas about process into your own office?

I took a sketchbook and put it on an easel. Someone in the office said, "I really appreciate that," and a light went off: I do all this stuff, and I feel like our office is a stimulating, creative environment, but maybe we have to be more explicit about what it is to have a culture of creativity.

What's the role of life drawing in the office?

About three years ago, we started having life drawing in the studio every two weeks. It's now once a month. Most people hadn't done figure drawing in a long time. Many had hardly ever done it, but those things are irrelevant. I teach, but it's about creative processes. My executive assistant was not trained as an architect, but she came several times. It's appealing, but it's work—exposing yourself to the pain and pleasure of drawing. Sometimes you think you're Leonardo, and the next time you're facing the creative abyss. You learn how to chill out a bit, loosen up, and get your other faculties at play.

What's the RaD Room?

The [Research and Development] Room is an explicit space that's part and parcel of the larger office. We have our tools and our heavy equipment there. We needed a workshop. I realized that if it depended on me, it would never be an urgent item. I told my colleagues: You take the lead, but I want it to be someplace where people can play. They do studies in carbon fiber, art pieces, furniture for their houses. Their juices are going. If you ask people to be creative, you have to give them some creative space.

Do people ever spend too much time on personal work?

They're disciplined about it. Every now and then I wonder if it's getting out of control. Pragmatically, you think: If they're here 10 hours over the weekend, wouldn't it be great if they spent eight of them on this project? But you can't always have it all.

How does this benefit the practice?

You want committed folks who are passionate about design and passionate about making. It's a continuum, from sketchbook to life drawing to the RaD Room. It's all under the aegis of architecture and practice. Making is a primal pleasure. If you provide the techniques, everybody gets giddy making something. It's being stimulated by the stuff you create, the pleasure of making it, and the ability to share. Everybody can get fortified in different ways. □

→ MARKET FORECAST

2010 Vision

TEXT BY ELIZABETH EVITTS DICKINSON

WE ASK EXPERTS TO PREDICT HOW DIFFERENT ARCHITECTURE SECTORS WILL FARE NEXT YEAR.

THIS TIME LAST YEAR, market analysts were scrambling to anticipate the realities of an economy gone haywire and to predict how 2009 would shake out in terms of construction, materials, and architectural practice. Looking back on the year that was, the numbers “are coming in well below projections, which were pretty dire to begin with,” says Kermit Baker, chief economist for the AIA. Baker echoes a common refrain among financial analysts: 2009 was a terrible year—and by the looks of things, 2010 isn’t shaping up to be much better. We spoke with five experts in various fields to get their take on the year to come. The running theme? Hunker down and wait out the nuclear winter of a deep global recession.

NONRESIDENTIAL CONSTRUCTION

With the second half of 2009 dipping well below even the worst predictions for nonresidential construction, Baker says there’s little optimism that the construction sector is going to start turning around before the second half of 2010. This year saw nonresidential activity plummet along with property values—nonresidential values are down 40 percent from their high in mid-2007, compared with 30 percent on the residential side. “What we’ve been looking for in the last six months is some evidence that we’re climbing out of this—and I have to say, those signs have been quite elusive,” he says. Design billings, for example, crept up over the summer, but then they stalled, suggesting that we haven’t seen the bottom yet.

Baker’s forecast for 2010 predicts less of a decline across market segments than in 2009, but things will still be in negative territory: retail, -12.6 percent; hotels and office buildings, -17 percent; industrial facilities, -28.4 percent. Institutional buildings will fare slightly better but will still experience negative growth. Baker’s complete market forecast for 2010 will be released in late December.

MATERIALS

The cement industry prepared for a tough 2009, but the global recession resulted in deeper losses than expected, says Ed Sullivan, chief economist for the Portland Cement Association. As construction across all sectors stalled, 16 of the 100 or so cement plants in the U.S. were shuttered just as a host of new plants (planned during the boom) came online. The result: Total domestic capacity was down by about 9 percent. There also was a serious decline in cement intensity—the amount of cement per dollar used in construction activity. “One of the surprises, and we probably should have seen it [coming], was the delay in getting stimulus money out there,” Sullivan says. He anticipates that funds will be released in time for the spring construction season but says that decimated local and state budgets will “sterilize some of that impact.”

Looking ahead to 2010, Sullivan predicts that the nonresidential construction decline will be even greater



Kermit Baker
Chief Economist
American Institute of Architects



Lenore Lucey
Executive Vice President
National Council of Architectural
Registration Boards



Ed Sullivan
Chief Economist
Portland Cement Association



ZWEIGWHITE'S STEVE GIDO EXPECTS AN UPTICK IN 2010 M&A ACTIVITY, FOR TWO REASONS: A COMING INCREASE IN THE CAPITAL GAINS TAX, AND LARGE FIRMS' INTEREST IN ACQUIRING PRACTICES WITH A STRONG PORTFOLIO IN HEALTHCARE, SCIENCE, AND LABORATORY PROJECTS.



than this year's, at -22 percent, and that construction—and the demand for raw materials such as concrete and steel—won't become significantly positive again until 2012. "Recessions clean out the excess of past boom periods," he notes, adding, "by that time, I think you will see the potential for some good growth."

INFRASTRUCTURE

The past year was a turbulent one for infrastructure in the U.S., seeing some major victories—such as the \$1 billion Miami Terminal tunnel project reaching financial close—as well as some major losses, like the demise of plans to lease Chicago's Midway Airport to private investors. In 2010, says Business Monitor International analyst Michelle Karavias, the seesaw may stop, especially if the U.S. can figure out how to get private industry into this traditionally publicly funded sector. "The private sector has the money. States don't have the money, the feds don't have the money," the London-based Karavias says, noting that stimulus spending for infrastructure is paltry compared with the whopping \$2.2 trillion needed. "The U.S. needs to get the regulations in place and the public opinion in place to make it more attractive for private industry to fund projects."

Overall, the worst may be behind us, and Karavias estimates 1.2 percent real growth in the new year. A concerted focus on high-speed rail could yield positive results in the near future. "So many international companies are keen to get into high-speed rail in the U.S.," Karavias says, but more investment is needed: the American Recovery and Reinvestment Act allots just \$8 billion toward rail (compared with \$27.5 billion for highways and bridges), when the need is closer to \$600 billion. "There's so much potential," Karavias says. "It's all about how much the private sector is going to be let in."

ARCHITECTURE REGISTRATION

Just as institutions of higher education see a spike in applications and enrollment during downturns, a recession results in an increase in individuals applying to take the Architect Registration Examination (ARE), says Lenore Lucey, executive vice president of the National Council of Architectural Registration Boards (NCARB). "What we are hearing anecdotally is that many people who are unemployed or underemployed are using the time to take the ARE to better position themselves in the workforce," she says, despite the fact that fees for the exam's seven divisions rose this summer to \$210 a pop. NCARB had an "enormous reaction" to the ARE in June

2009, Lucey says, likely the result of the organization's switch to a 4.0 version of the exam: "We had the largest number of people ever taking the exam in June, mostly people trying to finish up 3.1 before it went away." 64,000 exam units were taken in the past fiscal year. Traditionally, when NCARB releases a new version of the ARE, enrollment wanes for six months to a year, so the organization expects a decrease in registrants in 2010. The past year also saw an increase in the transmittal of records, as architects become more transient in the unstable job market, and that trend is likely to continue. (NCARB will not publicly release its exact predictions for the current fiscal year, Lucey says.)

MERGERS & ACQUISITIONS

While many architecture firms shed staff and struggled to keep the lights on in 2009, that did not translate into a dramatic increase in mergers and acquisitions (M&A), notes ZweigWhite principal Steve Gido. "There is still a lack of clarity [in] the mid-to-large-sized firms as to how long this [downturn] is going to last," he says. "Most buyers are not ready to catch the falling knife just yet." With a few exceptions—such as the midyear merger of Cannon Design and OWP/P—the bulk of M&A activity in 2009 was microdeals: firms under 30 staffers being acquired by regional competitors. Overall, the business was down 35 percent. Gido says there should be a slight increase in 2010, of about 5 percent to 10 percent. "I think a driver will be the expiration of the historically low capital gains rate tax, currently at 15 percent and set to rise back to 20 percent," Gido says. "For sellers, that's motivation to consider, even if valuations are lower."

M&A activity also will be driven by firms looking to fill specific niche needs. Gido points to two acquisitions announced in October: Granary Associates joining the infrastructure and facilities giant Stantec, and AECOM acquiring Ellerbe Becket. "These are a reflection of larger design firms wanting to acquire firms with a strong reputation and a portfolio in healthcare, science, and laboratory projects," Gido says, "which many feel will be a more resilient sector of the economy over the next five to 10 years. It can be quicker—and possibly cheaper—to buy them" than to build a practice from scratch. Another factor for 2010: aging owners ready to monetize on their business. It used to be that owners frequently passed their practice on to the next generation in-house, but increasingly, Gido observes, younger architects are not interested or in the position to buy, which could result in more acquisition activity in the coming years. □

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TEXT BY BRADFORD MCKEE



Until 2008, Josh Skoog, who has cerebral palsy, had to move between his house's kitchen and family room via a homemade ramp (above). Students from Philadelphia University (above right) designed and built an integrated ramp with a gentler slope, plus a handrail wall, enabling Josh to move about his home with greater freedom and confidence.



TROY HANNIGAN STARTED architecture school thinking he'd wind up designing "cookie-cutter suburban homes." But in 2007, during his third of five years in Philadelphia University's B.Arch. program, he joined the school's new chapter of a group called Freedom by Design (FBD). He soon found himself helping to design a wheelchair ramp inside the home of a 19-year-old named Josh Skoog, who has cerebral palsy, and he began to think about architecture quite differently.

Josh's house, in Collegeville, Pa., where he lives with his parents, Peter and Marnie Skoog, had a couple of steps between the kitchen and the family room, which Josh had been negotiating, with difficulty, via a makeshift wooden ramp. (Josh once fell off the ramp and broke his

hip.) In its place, Hannigan and other students in the FBD program built a longer, more stable ramp so Josh could move around his own house. **Still, Hannigan didn't expect what he saw while visiting the Skoogs one day after construction was done: Josh walked down the ramp by himself into the family room.** "It was a complete shock," Hannigan says. "He had total freedom on the first floor of his house. That really —." His voice trails off for a second. "Well, you know what I mean."

Hannigan has since graduated and works for Habitat for Humanity in Philadelphia through the AmeriCorps Vista program, helping to plan projects and acquire



Columbia Sportswear – Seattle, WA
Photos: Ben Schneider

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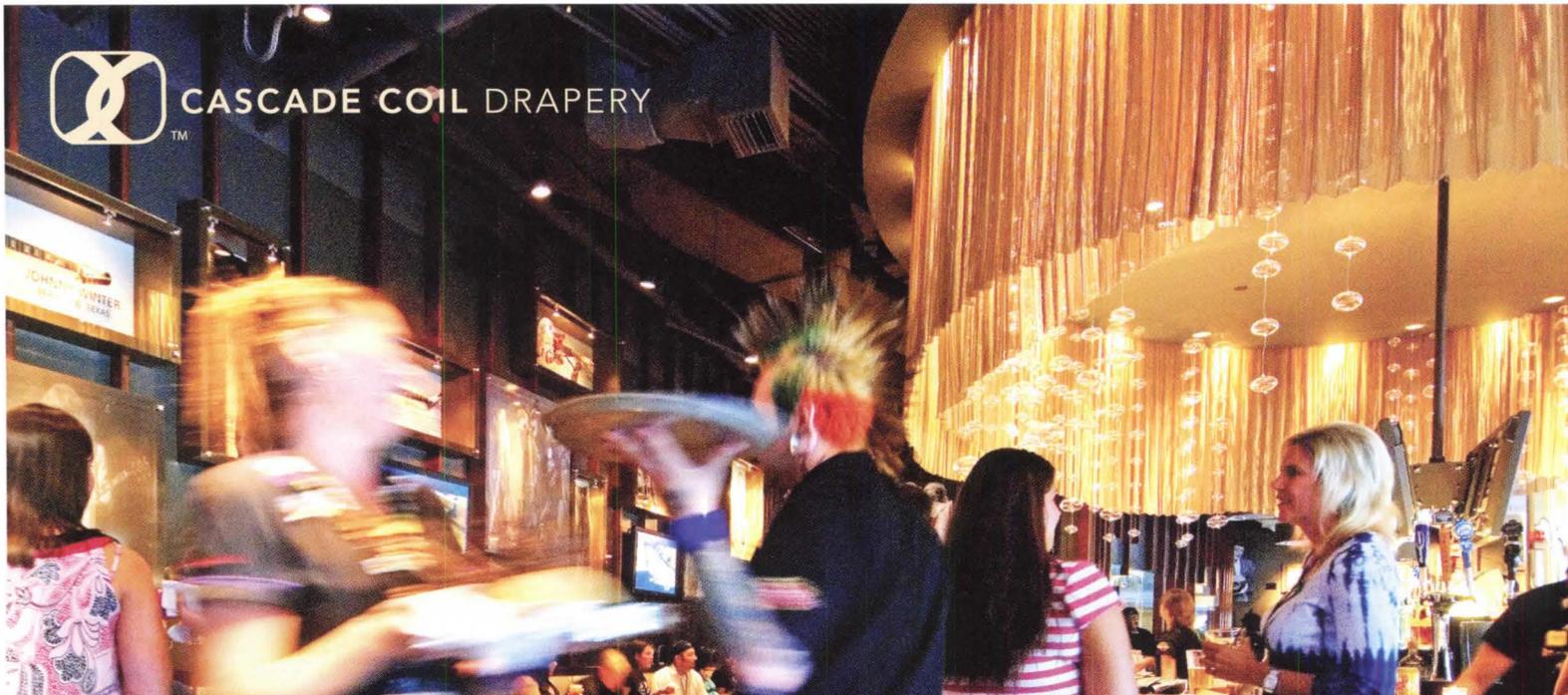
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Last year, students from Southern Polytechnic State University's Freedom by Design chapter (right) designed and built a patio extension—including retaining walls made from railroad ties and topped with planters—at the home of 11-year-old Marcella Genut, who has muscular dystrophy. Now Marcella (above right, with her younger sister, Isabelle, on the completed patio) is able to garden from her wheelchair.



DAVID WANG XU



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properties. Freedom by Design “really changed how I see architecture,” he says. “It’s not about making a cool building but about who’s inhabiting the space and how they’re living in the space.”

FBD turned five years old this year, and in that short period it has been changing the minds of many architecture students across the country. The idea started in Denver with a practicing architect, Brad Buchanan, a principal of the Buchanan Yonushewski Group. His firm’s staff had been joining volunteer days with Habitat for Humanity, and he realized that there was a huge population of older and disabled people—people that architects weren’t serving but for whom modest design improvements could make huge differences in everyday life. The firm began seeking out its own pro bono clients. Other firms in town grew interested. “Next thing you know, we had 20 projects going,” Buchanan says.

The pro bono work easily could have taken over Buchanan’s business. “I knew we needed help if we wanted to keep it going,” he says. So he found the idea a new home with the American Institute of Architecture Students (AIAS), where it took on the motto “Improving the safety, dignity, and comfort of our neighbors.” Nationwide, FBD now has 57 chapters at schools in 35 states, plus one in Toronto, says Matthew Fochs, director of design and outreach programs for the AIAS. “We fit that niche market where, even in today’s economy, contractors

and developers won’t touch the work because it’s not worth their time to commit to a handrail or something.”

FBD projects are deliberately limited in scale: difficult enough that people with disabilities or their families may not be able to get them done themselves, but not so large or so costly as to be out of college students’ reach on weekend schedules and with donated time and materials.

At Southern Polytechnic State University, in Marietta, Ga., Mandy Palasik helped run two projects in 2008 for Marcella Genut, an 11-year-old girl with muscular dystrophy. First came new carpet, to make it easier for Marcella to get around her house in her wheelchair. Then came a patio extension in the sloped backyard, where students built retaining walls topped by planters, so that Marcella could garden from her wheelchair.

In the course of their FBD projects, students learn to look for clients (the needs are great, but finding clients is harder than expected), interview them, and focus acutely on their abilities. The students typically have professors and volunteer contractors at hand to help mentor projects and make sure things run smoothly.

“It’s not just a bunch of kids,” notes Peter Skoog. “They were being overseen by professionals. That took a lot of stress off our end of the project.” And as for those kids, he says, “They were just great to work with. They still come out and visit. It’s been a positive experience, for us and for them.” □

ARCHITECT

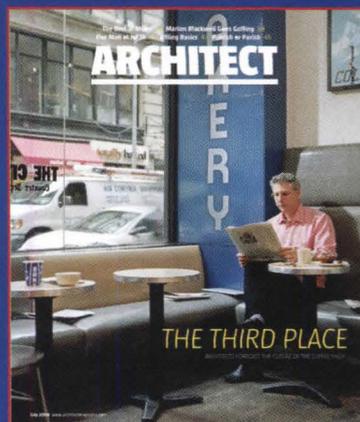
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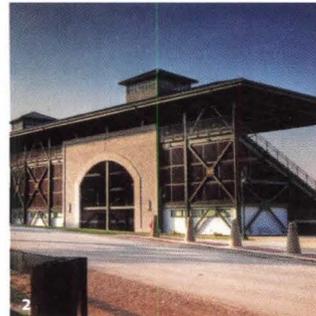
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→ LOCAL MARKET

Lexington, Ky.

TEXT BY MARGOT CARMICHAEL LESTER



A DECADE AND A HALF after its founding in 1775, Lexington, Ky., had more horses than residents, thanks in part to wide-open fields of calcium-rich bluegrass. The city is still known as the horse capital of the world, but these days people outnumber equines. The economy continues to rely on horses, but humans do a fair amount of schooling at the University of Kentucky (UK) and 14 other institutions. UK's medical campus created the local healthcare industry, and Lexington's central location is attractive to corporations—Lexmark, Valvoline, and Tempur-Pedic are headquartered there.

Like many cities, Lexington struggles to grow without destroying its past. "The compelling natural landscape of the thoroughbred farms is a treasured asset that is under constant development pressure," says Richard Polk Jr., principal at local firm EOP Architects. "Lexington is faced with both the challenge and responsibility to protect this limited and precious asset."

The city created an "urban service area" in 1957 to preserve the horse country by limiting development to about one-third of Lexington-Fayette Urban County. That put pressure on the central business district, and many historic properties were razed in the name of progress and to meet demand. Recently, however, locals pushed to preserve what was left, and the government has created a redevelopment plan that blends the old with the new.

"Over the past five years, there has been an emphasis on the redevelopment of Lexington's downtown and surrounding UK campus," says local architect Michael Jacobs, principal at Omni Architects. "These numerous infill projects have included a range of housing and small-business lifestyles with a full range of low-, middle-, and high-income residents, and student rental options via new construction and renovations of existing buildings." □

1. Downtown Streetscape Plan

ARCHITECT: Kinzelman Kline Gossman, Covington, Ky. **COMPLETION:** 2010. **BRIEF:** \$25 million for phase one, which received the 2009 International Downtown Association Award of Distinction.

2. Kentucky Horse Park Stadium

ARCHITECTS: EOP Architects, Lexington, and Ewing Cole, Philadelphia. **COMPLETION:** 2009. **BRIEF:** 14.5-acre, \$25 million facility will host the 2010 World Equestrian Games.

3. Main + Rose

ARCHITECT: EOP Architects. **COMPLETION:** 2008. **BRIEF:** \$25 million, 200,000 s.f.; winner, Lexington Board of Architectural Review/Historic Preservation Commission 2008 New Construction Award.

4. University of Kentucky Health Services Building

ARCHITECT: Omni Architects, Lexington. **COMPLETION:** 2008. **BRIEF:** \$170 million; winner, AIA Kentucky 2008 Honor Award for Design Excellence.

POPULATION

Current population: 282,114, up nearly 8% since 2000.

OFFICE MARKET

The Class A market was 13.9% vacant midyear 2009; average asking rate: \$17/s.f./year.

RESIDENTIAL MARKET

Median home sale price: \$143,000.

MARKET STRENGTHS

- Diverse economy: horses, education, corporations
- Natural resources/amenities
- Good business reputation

MARKET CONCERNS

- Limited developable land
- Development pressure on iconic farmlands
- Stalled national economy

FORECAST

"[Some] are looking towards the future and taking risks in the hope that Lexington will embrace a contemporary lifestyle and a built environment to go with it," says local architect Richard Polk Jr. "The city seems to have awakened to the value of and need for sustainable architecture. [And] there is a desire by officials and residents to grow in a smart manner."



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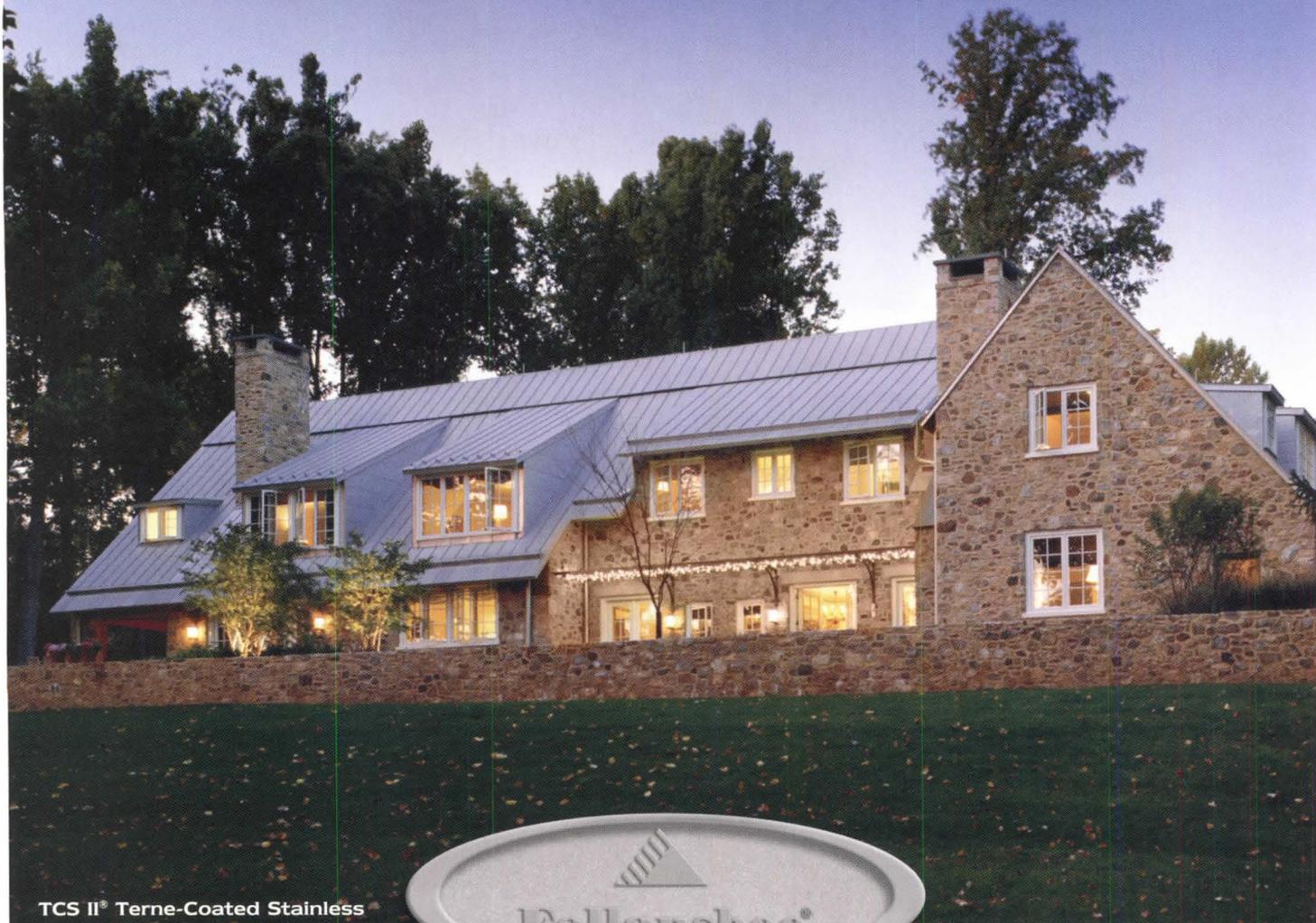
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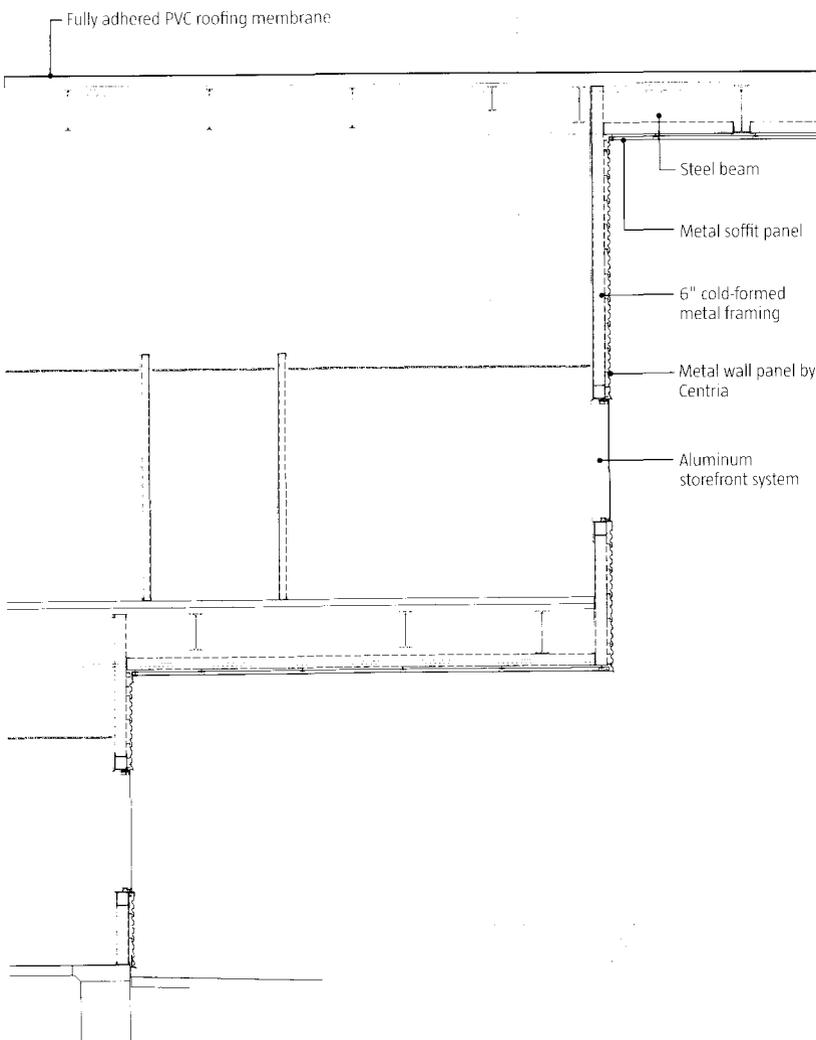
→ DETAIL

Public Safety Building Cantilevered Roof

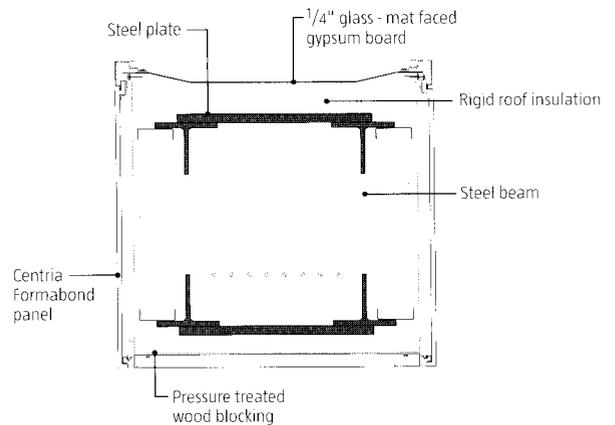
Architect: Perkins+Will, Dallas and Los Angeles
Location: Lancaster, Texas

TEXT BY KATIE GERFEN

Building Section Through Cantilever



Cantilever Section





The construction of the 50-foot-long projecting roof on the new Perkins+Will-designed Public Safety Building in Lancaster, Texas, was not without its nail-biting moments. The entire steel assembly for the double cantilever was manufactured off-site and installed using supports. Once the welds were complete and the post-tension cables secured, the supports were removed and the cantilever was allowed to settle into place.

LANCASTER, TEXAS, A SLEEPY suburb of Dallas, is hardly where one expects to find highly engineered public buildings. But the recently completed Lancaster Public Safety Building, designed by Perkins+Will, is just that, a combined fire and police station with a 50-foot roof extension that is not a single, but a double cantilever.

The design team created four schemes, all of which combined the two departments into an L-shaped building, and all exploring ways both to create a strong presence from the adjacent highway and to set the structure apart from the other public buildings on site. The winning scheme featured the signature roofline.

Luckily, the design team found a series of local allies who were determined to push the cantilever through. “We were fortunate, not only to have an ambitious city manager,” Perkins+Will design director-principal Nick Seierup says, “but we also had two guys that ran the police and fire department that very much appreciated the forward-looking building.”

Those local champions were key, because whenever a question came up about cost-cutting, the first thing people looked to was the extensive, and expensive, roof structure. “When there were budget crunches,” says Kent Pontius, an associate in Perkins+Will’s Dallas office, “the clients were extra protective of the overall design.”

The first cantilevered element is the solid piece of roof that extends out over a recessed volume along the sidewalk. This then supports the front edge of the far more extensive second cantilever—a post-tension castellated beam system—that projects 50 feet over a reflecting pool. The steel members required for this larger projection reach up to 110 feet in length, and cables anchored in the building structure keep the beams in place. The additional internal structure is fairly minimal, with the beams infilled by metal studs and sheathing that act as a substrate for the Centria Formabond panels cladding the visible areas. The top is a PVC roofing membrane over rigid insulation.

The team made the decision to create a cut-out in the overhang because it would have been impossible to support a solid structure. But the engineers at Dallas-based L.A. Fuess Partners still had to contend with the building geometry, which dictated that none of the cantilever’s connecting points formed a true right angle.

This building would be a coup for any public agency, and especially at this fire and police department, which had been operating out of a dark rehabbed autorepair shop that had been hit by both floods and tornadoes. “Without exception, they’re all just thrilled with [the new facility],” says Pontius. □

→ECO

Women Rule



TEXT BY LANCE HOSEY
ILLUSTRATION BY PETER ARKLE

IN THE OFFICE AND ON CAMPUS, A NEW GENDER GAP EMERGES.

THE BIG NEWS IN BUSINESS these days? Women. In its “Future of Work” cover story this summer, *Time* reported that “women will rule business.” The article cites a study showing that *Fortune* 500 companies with the most women in senior management had a higher return on equities—by more than a third. More women means more profit, largely because women tend to manage more cautiously and less competitively. And, as *USA Today* reported in September, for the first time women are on the verge of becoming the majority of the U.S. workforce, so new leadership styles are trickling down into companies. Business is becoming not kinder and gentler, but smarter.

As *Time* reports, these trends will accelerate over the next decade as the gap between the number of college graduates and job vacancies grows, so one key factor will make all the difference: education. **Already, women represent the majority of college students, and their enrollment continues to grow faster than that of men,** according to a September report by the Institute of Education Sciences, so if trends continue, women truly will rule business.

One field lagging behind, however, is our own. According to the latest figures from the National Architectural Accrediting Board, architecture schools are still dominated by men, though by a decreasing margin. Of all the enrolled and matriculating students of architecture, 59 percent are men and 41 percent

are women. The gender gap is much wider among faculty, however, with a split of 74 percent men, 26 percent women.

As universities and the workforce evolve, these figures will change, but architects and educators can speed things up by actively recruiting more women, and the benefits are clear. Statistically, women and girls outperform men and boys at every level of education. On mostly female campuses, both men and women get higher grades, and on those same campuses the men lean toward unusually progressive views on sociopolitical issues and the environment. In addition, growing research shows that girls actually learn differently—more through social interaction than through the simple transmission of information. Since more and more students are women, and women learn differently than men, the very nature of education inevitably will change.

The biggest benefactor of this change could be the environment. As Kira Gould and I reported two years ago in our book, *Women in Green: Voices of Sustainable Design*, studies consistently show that, by significant margins, women more than men support sustainable causes—through activism, advocacy, voting, and consumer choices. Arguably, the growing importance of sustainability in education is directly related to the rising number of women in education. When it comes to green, the gender gap is clear, and it favors women. □

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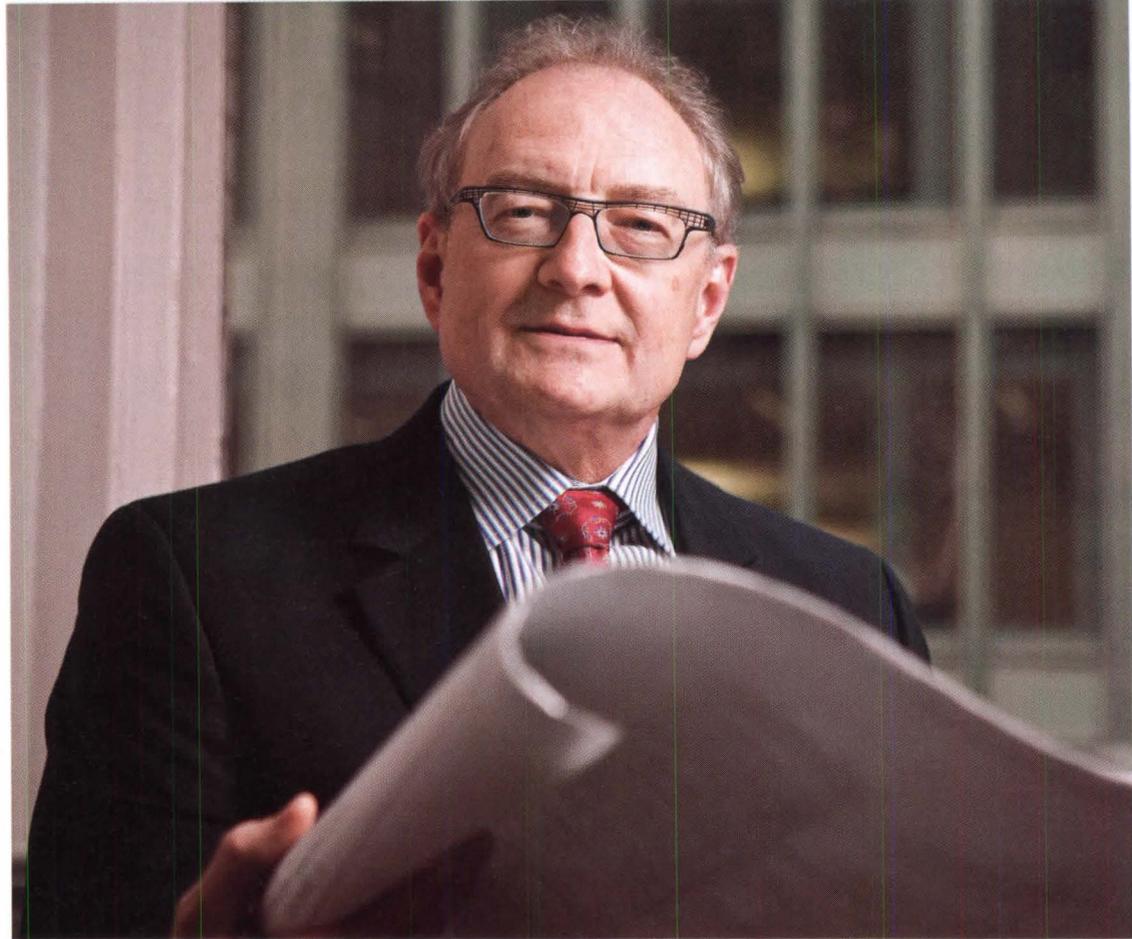


BUILDING: A NETWORK

ARCHITECT's Web site is laying the base for a premier electronic experience for practicing architects. We organize the site, you reflect on the ideas. Market intelligence, a building products database, breaking news—all established to help grow a continuing collection of inspiration. To join the network, visit architectmagazine.com.

→ SPECIALIST

Upwardly Mobile



Although he trained as an architect, **Jay Popp** has spent his three-decade career at the consultancy Lerch Bates—which has allowed him to work with designers on many buildings around the world. “That’s more interesting than working on the same building for a few years,” he says.

AS LONG AS THEY’RE IN WORKING ORDER (AND TIMELY ENOUGH), ELEVATORS GENERALLY DON’T GET MUCH CONSIDERATION FROM THEIR USERS. THAT’S BECAUSE A FIRM LIKE LERCH BATES HAS ALREADY DONE THE HARD THINKING.

FOR JAY POPP, ELEVATORS ARE a family business. He grew up in Colorado, where his father was an elevator installer, and spent many hours accompanying his dad on construction sites. He claims his career options were open. “The only thing my father didn’t want me to do was construction,” Popp says. “He lost good friends in accidents.” This led Popp to attend architecture school, but after graduation he joined the consulting firm Lerch Bates in its Littleton, Colo., headquarters. Popp has spent his entire career—some 30 years—at the company and today is its executive vice president, international.

The Denver suburb is not the firm’s home because of its plethora of tall buildings; founder Charles Lerch was

advised by his doctor in 1964 to leave Chicago for a drier climate. Lerch Bates consults on vertical and horizontal transportation, materials management and handling, and façade access, and has offices in 23 U.S. cities, plus four outposts in India, five in Europe, and one in Dubai.

Elevators, particularly in the United States, are mainstream products designed as commodities. It’s only in Class A buildings—which constitute about 20 percent of the market—that Lerch Bates’ specialized expertise is needed. “You’re looking at performance to get people to their destination in a specific time and image,” Popp says. These higher standards involve heavier finishes that demand modifications to the lifting equipment.

TEXT BY EDWARD KEEGAN
PHOTO BY TIM EVANS

Special attention is required, but it comes at a cost, he notes, and "you need to monitor the construction."

Worldwide, there are eight major elevator makers, and Popp has worked with them all: Kone, Otis, Schindler, and ThyssenKrupp, the typical players in the U.S. market; Fujitec and Mitsubishi, which have a limited stateside presence; and Hitachi and Toshiba, which work everywhere except the United States. Toshiba led the effort for Taipei 101's elevators (currently the world's fastest), one of Lerch Bates' signature projects. Others include the Burj Dubai, Shanghai's CCTV building, and the Northeast Asia Trade Tower in South Korea. Recent stateside projects include the new Dallas Cowboys stadium in Arlington, Texas, and Los Angeles' LAC+USC Medical Center. In 1999, the firm modernized the elevators of the John Hancock Tower in Boston.

Lerch Bates is typically hired by the architecture firm, although sometimes the developer or—rarer still—the general contractor may be the client. "At minimum, we get in at schematic design level," says Popp, when the number of floors, floor plate sizes, and tenancy types are known. The consultants make inferences about population (the percentages of occupants that need to be handled in a defined period of time) and what the appropriate waiting times will be for that type of occupancy. "You have to get people from the lobby to their office in a reasonable period of time," he says, which means juggling the number of elevators, capacities, and speeds to avoid lines in the lobby.

Today's most interesting elevator development, according to Popp, is destination control. "For a hundred years, you arrived in the lobby and pressed an up button," he says. "All the elevator could do was react." **Now, in hundreds of buildings around the world, visitors can register their destinations in the lobby, and an optimization algorithm determines which elevator to get in, grouping people to make fewer stops.** As a result, each elevator's handling capacity is increased, and there are more round trips in a given time. Another new approach is Twin, an engineering breakthrough by ThyssenKrupp currently in place in a handful of buildings, in which two cars travel within one shaft, independently of each other.

Working around the world, one of Popp's biggest challenges is dealing with cultural differences. In North America, speed is the most important factor—getting people to their destination floor as quickly as possible. But in Asia, especially in Japan, ride quality is paramount. People there put a lot of emphasis on that smoothness, absolute quiet, and precision in the ride—not unlike in the best Japanese automobiles. It's not that American clients aren't interested, it's that the technical requirements to achieve these qualities require additional space in each elevator shaft—which would sacrifice rentable floor area. Different attitudes toward personal space also help determine the size of elevator cabs in various markets. "Asian culture will load a car to capacity," Popp says. "In North America, we never do that." Most U.S. elevators in Class A buildings are large enough to accommodate 21 people, but Americans are seldom willing to squeeze in more than 12 or 14 people.

"I enjoy pushing the limits," says Popp of his work. Today's fastest elevators are the sky lobby shuttles at Taipei 101, which race upward at about 3,300 feet per minute.

Current technology limits shaft height to around 2,600 feet, and for now, the tallest elevators in place are two service lifts at the Burj Dubai, which travel about 1,770 feet. When working at these extremes, the physical reactions of occupants need to be considered.

But it's the bottom line that keeps the highest-flying elevators from soaring too fast or too high. Lerch Bates' schemes are limited by "the point where they're not willing to add zeroes to the check," says Popp. □

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→ PRODUCTS

Bath

The minimalist **PuraVida** bathroom suite from **Duravit**, designed in collaboration with Phoenix Design and Hansgrohe, includes wash basins, toilets, shower trays, consoles, mirrors, cabinets, and bathtubs. Fittings are colored white to blend with the ceramic.

The panel that pairs with the built-in tub features a joint that can hold an optional white LED.

Furniture pieces are available in red or black paired with high-gloss white, ebony, or aluminum. • duravit.com • Circle 101

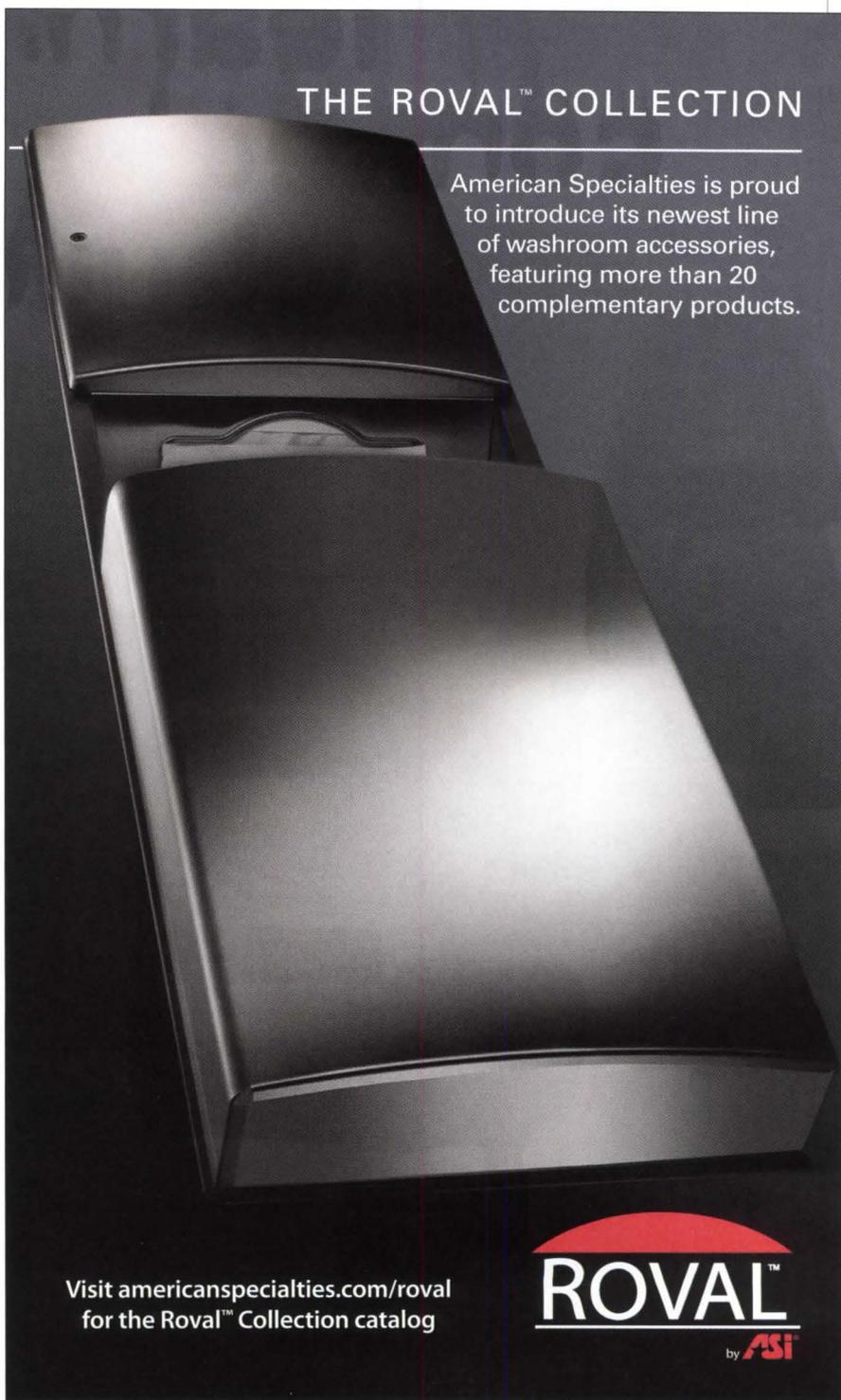




Mitsubishi Electric HVAC offers an improved version of its high-speed **Jet Towel**—an alternative to conventional hand dryers, with an ergonomic design and dual-heated jet-drying capabilities. Able to dry hands in three to six seconds, the latest Jet Towel is available with or without a heating function. An updated hyper nozzle design combines rapid drying with a noise reduction of 6 decibels from the 65 decibels of the previous version, while a new arc-shaped slit nozzle aims airflow over both sides of the hands. The heated (110- to 120-volt or 220- to 240-volt) and heatless (220- to 240-volt) models are touchless and meet the requirements of the Americans With Disabilities Act. The Jet Towel shuts off after 30 seconds and can be mounted at any height. • mitsubishijettowel.com • Circle 102

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Brondell's new **Perfect Flush** technology retrofits any toilet into a dual-flush high-efficiency toilet. According to the company, the Perfect Flush system can be installed in less than 30 minutes and reduces a toilet's water consumption by 30% to 50%. It offers a full or half flush; a half flush uses an estimated 0.8 gallons of water, compared to the 1.6 gallons used per flush by a standard toilet. • brondell.com • Circle 103

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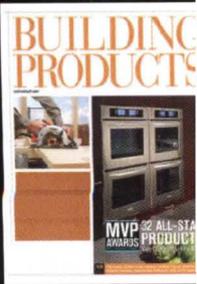
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CULTURE



→ EXHIBIT

Created by, and first shown at, the Canadian Centre for Architecture, **"What You Can Do With the City"** catalogs 99 urban interventions around the world by designers, artists, activists, and others. Now residing at the **Graham Foundation**, in Chicago, the exhibit focuses overwhelmingly on positive actions that make city life more humane—from guerrilla gardening to an inflatable playground by Berlin landscape architects Topotek 1 (above). But creativity, like any human activity, cuts both ways: Also on display are examples of designs that prevent or disrupt certain activities and behaviors. Through March 10, 2010. grahamfoundation.org; cca-actions.org

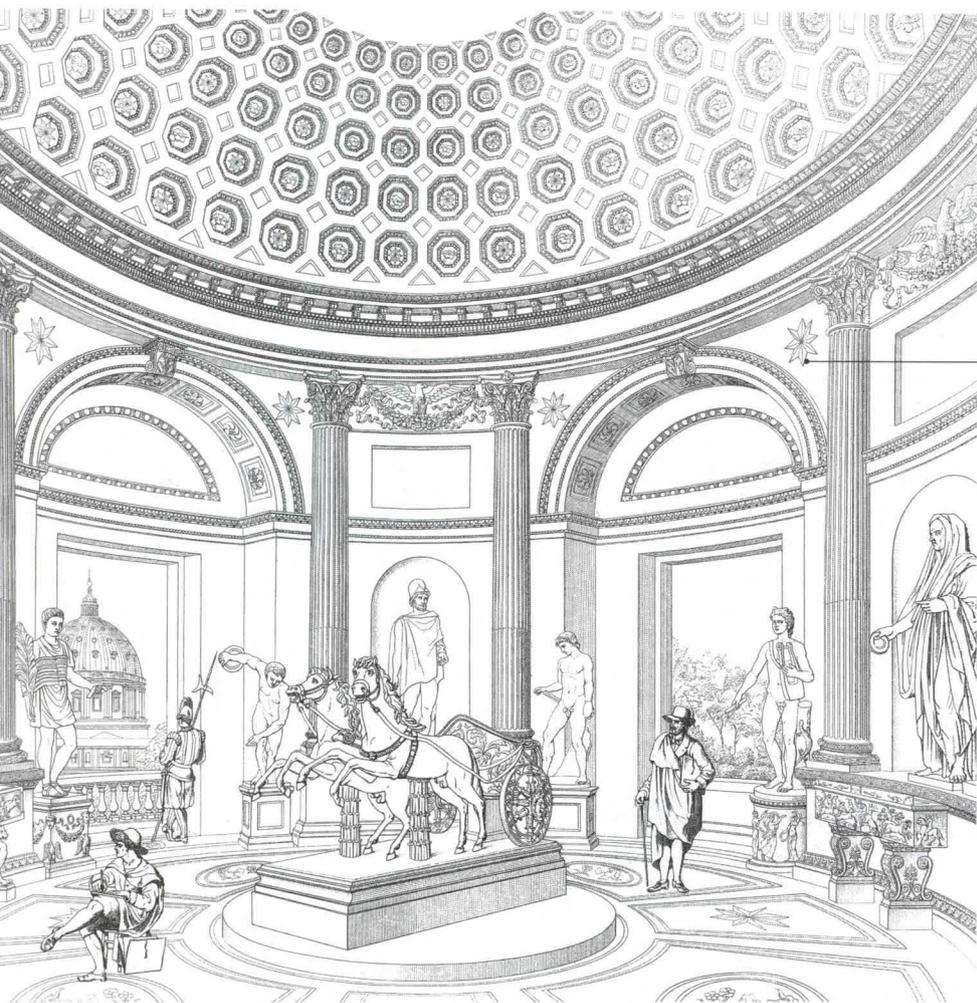


→ **FILM**

At an efficient 83 minutes long, *Visual Acoustics: The Modernism of Julius Shulman* is more a primer on the beloved photographer than a comprehensive look at someone who, over the course of six decades, created 260,000 prints, negatives, and transparencies and was the most important archiver of—and advocate for—20th-century California architecture. Completed a year before Shulman died this past July, the documentary offers commentary by scholars, architects, friends, and fans, as well as too-fleeting glimpses of the photographer's work. Its heart, however, is Shulman himself, whose joy for his life calling is manifest. At press time, the film was being screened in Chicago, San Francisco, and Washington, D.C. juliusshulmanfilm.com

→ **EXHIBIT**

After more than half a century of designing architecture (and running a highly successful development company to boot), **John Portman** has earned his exhibit at Atlanta's **High Museum of Art**. Not only did the lifelong Atlantan and winner of countless awards remake his hometown's skyline, he also redefined an entire building typology through the creation of "atrium hotels"—which, unfortunately, spawned a thousand bad knockoffs. In addition, Portman was among the first American architects to open a permanent office in Asia, way back in 1980. "John Portman: Art and Architecture" also includes examples of Portman's paintings and sculptures, versions of which appear in, on, and around his own buildings. Through April 18, 2010. high.org

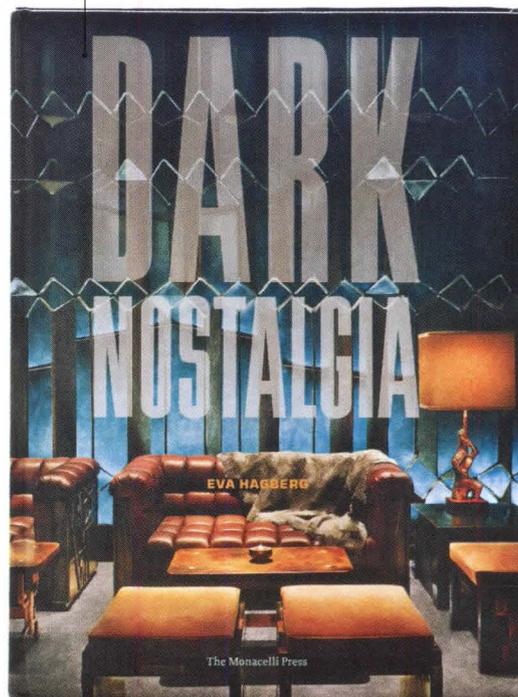


→BOOK

As part of its Classic Reprints series, which includes Stuart and Revett's *Antiquities of Athens* and the *Pencil Points Reader*, Princeton Architectural Press presents a one-volume facsimile of *Vatican* by French architect Paul Letarouilly, a meticulous sourcebook of the Vatican City that contains everything from building plans and elevations to drawings of doorframes and cornices. First published in 1882, after Letarouilly's death, *Vatican* is now credited as a catalyst for the American Renaissance style. The book is introduced by Ingrid Rowland and has 243 black-and-white and 24 color plates. \$125; Princeton Architectural Press

→BOOK

Eva Hagberg has written for just about every architecture and design magazine in the country, including this one. In *Dark Nostalgia*, she explores a design trend that started a couple of years ago: Bars, restaurants, and hotels moving from the starkly (and Starck-ly) modern to the lushly nostalgic, with deep tones and rich fabrics that, for a time, were all but verboten. Hagberg collects 26 projects from around the world—though a healthy majority are in her old stomping grounds of New York—and examines how the design and materials allude to the history of the sites, while adding their own modern twist. \$45; The Monacelli Press



CLOCKWISE FROM TOP LEFT: PHOTOGRAPHED BY JULIUS SHULMAN (1960) FROM VISUAL ACOUSTICS, AN ARTHOUSE FILMS RELEASE 2009, COPYRIGHT J. PAUL GETTY TRUST; FROM THE VATICAN AND SAINT PETER'S BASILICA OF ROME, PAUL LETAROUILLY, PRINCETON ARCHITECTURAL PRESS AND THE INSTITUTE OF CLASSICAL ARCHITECTURE & CLASSICAL AMERICA; MIKE MORGAN; MICHAEL PORTMAN

→ SCREEN GRAB

google.com/buildingmaker

THE TECHNOLOGY GIANT WANTS EVERYONE TO HELP POPULATE GOOGLE EARTH WITH 3D MODELS OF THE BUILT ENVIRONMENT.



TEXT BY BRAULIO AGNESE
PHOTO BY JASON INNES

"We're Google. We want to put things in a browser," says **Mark Limber**, product manager for Building Maker, Google's new Web-based tool for creating basic 3D models of buildings.

YOU PROBABLY DIDN'T KNOW IT, but a building boom is under way in more than 50 first- and second-tier cities across North America, Europe, and Japan—even in this global recession. The construction activity isn't occurring along urban streets, however, or out in the suburbs, or anywhere in between. Instead, it's all taking place within the hard drives of Google's massive data centers.

The technology giant, which already has fostered a wave of amateur architects through its wildly popular SketchUp software, now offers a simpler way to create 3D models of the manmade world: Building Maker. "We had this drive to give tools to people to quickly make things for Google Earth [GE], but we wanted more people to participate," says product manager Mark Limber. "We wanted a lower cost of entry." With the free, Web-based Building Maker, they've got it.

Launched in mid-October in 14 languages and with a built-in list of 50 cities (more have been added since), the tool is simplicity itself. Once the GE plug-in is installed, (1) choose a city; (2) choose a building; (3) use basic geometric blocks to create a 3D model; (4) add texture to each surface via GE and Street View images; (5) provide a title and description; and (6) upload to Google's 3D Warehouse. Although not every model will make it into GE, as there is a review process to ensure that the virtual world contains the best building representations possible, all models will remain in the 3D Warehouse for everyone to see.

Limber declines to provide a number for how many buildings have been uploaded, but he says the response "has been more than I expected"—which is something, given that he works for one of the world's most popular companies. And even though there will be upgrades to Building Maker, the goal is to keep this "simple product that's pretty powerful" just that. Best of all, says Limber, "one of the great things about a Web product is that updates are easy." □

LINKS

sightunseen.com

Design mavens Jill Singer and Monica Khemsurov—former editors at *I.D.* magazine—have launched Sight Unseen, which covers the gamut of creative endeavors and reveals "the stories, inspirations, and obsessions of people who love to make things." You also can follow them on Twitter: @designunseen.

mgerwing.wordpress.com

The "notebook" for M. Gerwing Architects, a Boulder, Colo., firm that focuses on residential, retail, and renovation projects. Keep abreast of design- and planning-related news from Boulder, as well as whatever else the firm finds of interest.

greenpearl.com

Back in July 2008, ARCHITECT wrote about a real estate networking website called mydealbook.com (bit.ly/4Dvwyv). After *The New York Times* protested the name (in an effort to protect the trademark of its own DealBook financial blog), the owners retooled and changed the site to GreenPearl—a nod to sustainability and to the fact that, as CEO Ryan Slack told *Inman News*, green pearls "are extremely rare in nature, and fruitful relationships are [too]."

ajnotebook.com

Brought to you by *The Architects' Journal*, Notebook is a user-generated, editor-curated website for learning about inspiring ideas in architecture, design, and art. You send them links, and they choose their favorites to feature on the site.

pecha-kucha.org/presentations

The folks behind Pecha Kucha—the design event that's taken the creative world by storm (read our article on it at bit.ly/3rGvz0)—are now uploading some of the best presentations from gatherings around the globe.

loudpapermag.com

At long last, *loud paper*—the zine created in 1997 by ARCHITECT contributing editor Mimi Zeiger as her SCI-Arc thesis and published in limited editions for several years after—now has a proper home on the Web. Learn what the motto "dedicated to increasing the volume of architectural discourse" was all about.

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CONSTRUCT2010

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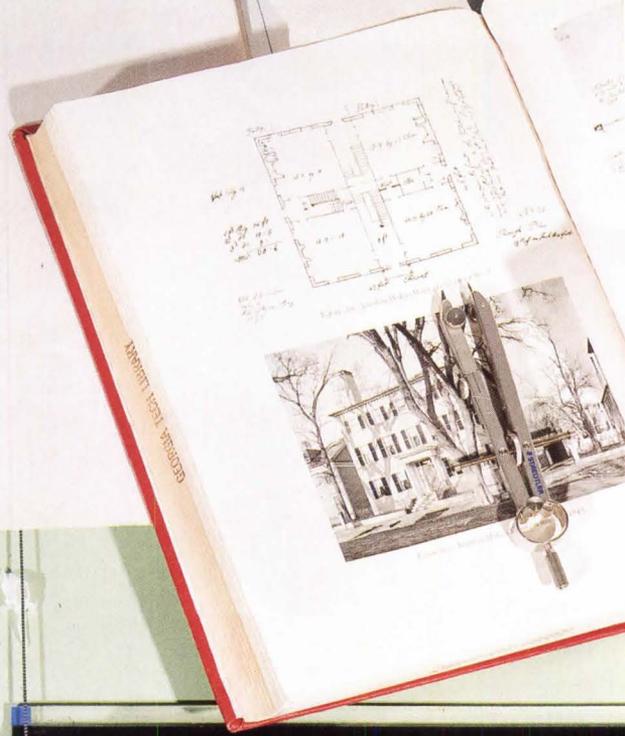


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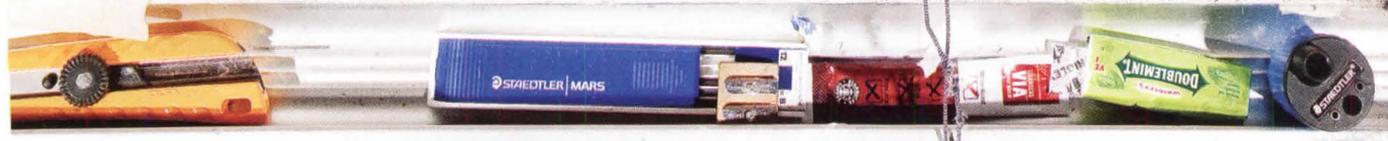
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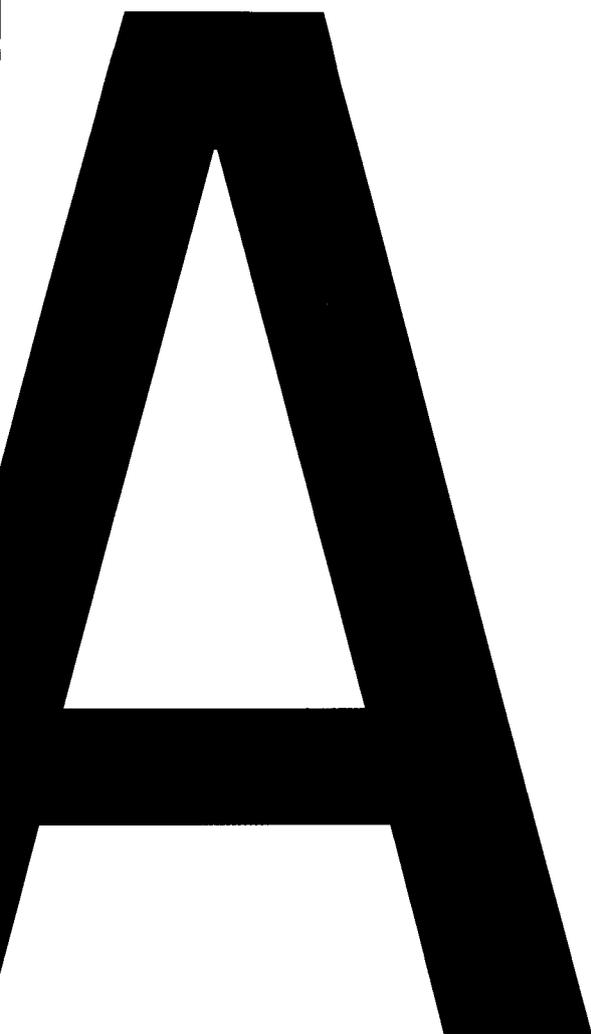
Exhibits: May 12-14, 2010 | Education: May 11-14, 2010 | Pennsylvania Convention Center | Philadelphia, PA
CONSTRUCTshow.com | TheTFMshow.com | Registration opens mid-January 2010



Handwritten notes and diagrams on a piece of paper. The notes include:

- Hand-drawn diagrams with arrows and labels: "vertical", "horizontal", "diagonal", "vertical", "horizontal", "diagonal".
- Text: "see in the", "level (level)", "line (direction)", "ce", "vertical", "horizontal", "diagonal".





RESEARCH AND TEXT BY AMANDA KOLSON HURLEY
(EXCEPT AS NOTED)
PHOTOS BY IAN ALLEN
ILLUSTRATIONS BY PETER ARKLE

RCH ED 2009

A NEW GUIDE TO INFORM (AND DEMYSTIFY) THE PROCESS OF CHOOSING AN ARCHITECTURE SCHOOL.

THOUSANDS OF E-MAILS. Hundreds of phone calls. Missing faxes; vanishing web forms. It's a lot of trouble, we learned, to produce a guide to architecture schools. But already—even before the stacks of questionnaires have been cleared from our desks—we're sure it was worth it.

Why? Say you're a high-school or college junior, and you're thinking about becoming an architect. Your first question might be, "Where should I go to school?" That's not such a simple question to answer. A Google search yields little. The Association of Collegiate Schools of Architecture's own exhaustive *Guide to Architecture Schools* doesn't come cheap (\$28.95 plus shipping) and weighs in at 352 pages. On the other hand, straight Top 10 or Top 20 lists don't reveal what makes a school distinctive, and of course, they ignore the vast majority of schools that don't make the cut. In brief, there is no accessible, applicant-oriented guide that identifies the varied teaching and research strengths of architecture schools, as well as their acceptance criteria. At least there wasn't, until now.

A portion of our guide—six out of 11 total pedagogy-based categories—appears on these pages. The whole package will be available year-round, for free, on our website, where potential applicants will be able to discover (we hope) great schools for them, and architects will be able to keep tabs on the old alma mater. So if you don't see a school here, check architectmagazine.com, where there are plenty more.

Despite our best efforts, we regrettably weren't able to reach every ACSA-member and -candidate school in the country. A few schools declined to participate, unsure of how we would use the information we requested. We hope they'll agree that this new guide fulfills a need that previously wasn't being met. Our goal for next year is to bring more schools into the fold (now 50-plus), while fine-tuning the methodology and presentation.

Readers with plaudits, gripes, or even better, suggestions for improving the guide: We're all ears. Send an e-mail to ahurley@hanleywood.com.

RACHELE LOUIS

Who Fifth-year B. Arch. student

Where Rensselaer Polytechnic Institute, Troy, N.Y.

Goal To go through the IDP process and get licensed—and then to attend graduate school in urban planning

RACHELE LOUIS WAS BORN and raised in the Crown Heights section of Brooklyn, N.Y., after her parents immigrated to the U.S. from Haiti. She was introduced to architecture in junior high, when an architect visiting her school taught some classes; she and other students got to document, draw, and build a model of the 1891 Boys High School building in Bedford-Stuyvesant.

In high school, Louis considered pursuing either architecture or computer science. She took a few courses in each and “computer science didn’t fare so well,” she says. Rensselaer Polytechnic Institute (RPI) in the upstate town of Troy was recommended by one of her teachers and set her on her current trajectory. (To see the school listing for RPI, go to our website at architectmagazine.com.)

“First year was really out there,” she recalls. The class did “dumpster diving projects” where they repurposed materials and created things out of garbage. “It’s not architecture,” she says, “but then you realize—yeah, it is.” She worked two summers for small, design-oriented offices in Manhattan, where her duties ranged from cleaning up the library to working on construction drawings. This past summer, she interned at Gensler’s New York office as a winner of the Gensler African-American Internship and Scholarship. She gained additional experience by working in the firm’s commercial building studio.

Following graduation this coming May, Louis hopes to expand her horizons by moving west, perhaps to San Francisco (where her Gensler contacts might prove useful). Three years of internship, licensure, and then graduate school for urban planning: “That’s my five-year plan,” she says. EDWARD KEEGAN



METHODOLOGY

All statistical information about these schools is self-reported, except for tuition (researched on school websites). We calculated the student-to-faculty ratio based on school statistics. Schools were categorized according to (in order of priority): 1) their own program descriptions; 2) surveys of faculty (internal & external); and 3) school websites. For more, visit architectmagazine.com.

SCHOOLS THAT EXCEL IN ... DESIGN/BUILD

AUBURN UNIVERSITY • College of Architecture, Design and Construction • School of Architecture • Auburn, Ala. • cadc.auburn.edu/soa

B.Ed., **B.Arch.**, B.Int. Arch., Master of Community Planning, Master of Landscape Architecture

Samuel Mockbee died eight years ago, and his close collaborator D.K. Ruth, sadly, passed away in August—yet the world-famous design/build studio they founded together in 1993, the Rural Studio, is still going strong. Now led by Andrew Freear, Auburn students continue to pour their smarts and sweat equity into high-quality community projects in and near rural Hale County, Ala. But Auburn isn't a one-program school: It maintains an active Urban Studio, based in Birmingham, and offers study-abroad opportunities in Rome, Florence, and Turkey.

UNDERGRADUATE ADMISSIONS: Avg. ACT: 26.8 / Min.: 18; Avg. GPA: 3.7 / Min.: 2.5; Applied: 857; Accepted: 592; Enrolled: 154* • **UNDERGRADUATE DEMOGRAPHICS:** Minority: 14%; Female: 40%; International: 2%; Financial aid: N/A • **GRADUATE ADMISSIONS:** Avg. GRE: 1018 / Min.: 750; Avg. Rural: 3.0 / Min.: 3.0; Applied: 35; Accepted: 10; Enrolled: 10 • **STUDENT/FACULTY RATIO:** 16:1 (incl. first-year students); 10:1 (minus first-year students) • **TUITION:** \$10,560 (resident), \$23,040 (nonresident)

*Acceptance into the B.Arch. takes place in the second year based on a competitive first year.

UNIVERSITY OF KANSAS • School of Architecture, Design & Planning • Lawrence, Kan. • sadb.ku.edu

B.A. Arch Studies, B.S. in Architectural Engineering, **M.Arch.**, **M.Arch./MUP**, **M.Arch./MBA**, M.A. Arch., Ph.D., graduate certificate in facility management

KU is home to Studio 804, a comprehensive, two-semester studio in which students design and build a full-scale, affordable, and sustainable project (often a single-family home). Led by Dan Rockhill, the program has garnered three AIA Honor Awards and boasts the first LEED Platinum building in the state of Kansas. The school also supports vigorous urban planning and community design studios. Fifteen study-abroad opportunities span the globe.

UNDERGRADUATE ADMISSIONS: Avg. SAT: 1203 / Min.: 1120; Avg. ACT: 27.7 / Min.: 24; Avg. GPA: 3.81 / Min.: 3.5; Applied: 592; Accepted: 241; Enrolled: 107 • **UNDERGRADUATE DEMOGRAPHICS:** Minority: 8%; Female: 42%; International: 4%; Financial aid: 67% • **GRADUATE ADMISSIONS:** GRE: not required; Avg. GPA: 3.2 / Min.: 3.0; Applied: 121; Accepted: 76; Enrolled: 38 • **STUDENT/FACULTY RATIO:** 14:1 • **TUITION:** Undergraduate, \$7,359 (resident), \$19,327.50 (nonresident) + architecture course fee of \$36.05/credit hour; Graduate, \$6,492 (resident), \$15,510 (nonresident) + architecture course fee

UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE • College of Arts + Architecture • School of Architecture • Charlotte, N.C. • soa.uncc.edu

B.A. Arch., **B.Arch.**, **M.Arch.**, Master of Urban Design

Gaining hands-on experience with traditional materials and tools doesn't preclude learning the latest technology. In addition to its three research focuses of urbanism, digital media, and sustainability, UNC Charlotte hosts four dedicated labs for making: wood lab, metal lab, laser lab, and digital fabrication lab. • **TUITION AND FEES:** Undergraduate, \$4,427 (resident), \$15,039 (nonresident); Graduate, \$4,830 (resident), \$15,237 (nonresident)

UNIVERSITY OF WASHINGTON • College of Built Environments • Department of Architecture • Seattle, Wash. • depts.washington.edu/archdept

B.A. in Arch Studies, joint B.A. in Arch Studies/B.S. in Construction Management, **M.Arch.**, M.S. in Architecture, Ph.D. in the Built Environment; various certificate programs

A faculty member cites UW's "major strengths in craft and making, in architectural history (a group of faculty with great breadth), in digital design & fabrication, in sustainability." Another says that the culture is one of "considerable respect for various points of view"—surely a rarity in academia. Activities range from a collaborative Design Machine Group and furniture studios, to a state-of-the-art daylighting research lab, to a study center in Rome.

UNDERGRADUATE ADMISSIONS: Applied: 128; Accepted: 48; Enrolled: 48 • **UNDERGRADUATE DEMOGRAPHICS:** Minority: 30%; Female: 50%; International: 10%; Financial aid: N/A • **GRADUATE ADMISSIONS:** Avg. GRE: 1205; Avg. GPA: 3.5; Applied: 483; Accepted: 117; Enrolled: 47 • **STUDENT/FACULTY RATIO:** N/A • **TUITION:** Undergraduate, \$7,692 (resident), \$24,367 (nonresident); Graduate, \$12,130 (resident), \$26,540 (nonresident)

KEY: **RED PROGRAMS** = NAAB ACCREDITED. SAT SCORES ARE ON A 1600-POINT SCALE EXCEPT WHERE NOTED. IF A SCHOOL OFFERS BOTH AN ACCREDITED AND A NONACCREDITED M.Arch., THE LATTER IS NOT LISTED SEPARATELY.

LET THEM BUILD IT, THEY WILL COME

THE AIA HAS TARGETED the teaching of how buildings are made as the weakest aspect of architectural education, and there is some merit to this charge. Because of time constraints (among other things), most traditional studios result in what can only be called schematic design. Design development, construction documents, materials and methods, and structures generally are taught as isolated subjects, and the transfer of that knowledge into studio design often is negligible.

But technology is most meaningful when integrated into the studio context, and there is no substitute for hands-on experience. Three-dimensional reality suggests solutions that are elusive or simply impossible to detect at the drawing board or computer screen. The best architects understand the logic and poetics of construction, and the best way to teach this is to build.

The design/build movement emerged out of '60s counterculture architecture, which looked to ecology, new technologies, social experimentation, and community outreach. In 1967, Charles Moore started The Yale Building Project as a way to harness student interest in social justice issues and their frustration with hypothetical "paper architecture." Storefront community design centers were started at many schools at the same time.

Students today don't look like the students of the '60s, but there's an undercurrent of the same activism, and that is fueling the resurgence of design/build studios. Students are frustrated with theory-driven virtual architecture and a profession that works at the top of the food chain. They are pushing for outreach, hands-on experiences because they want meaning in their lives and want it to be embodied in their education.

Tips for schools embarking on design/build programs: 1. Start small—be realistic about available time, money, and skills. 2. Design by consensus, to avoid creating a hierarchy within the class. 3. Keep it simple (identify core ideas and eliminate fussy details). 4. Think Globally, Act Locally—avoid the ambulance-chaser approach.

Finally, 5. Make it fun. Students love to build. Working in groups is fun, and most nonprofit clients are incredibly grateful. All the pieces are there: It's up to the instructor to keep the process as fabulous as the product.



Steve Badanes

Co-founder of the Jersey Devil design/build practice and Howard S. Wright Professor at the University of Washington

TRADITIONAL ARCHITECTURE

ANDREWS UNIVERSITY • School of Architecture • Berrien Springs, Mich. • andrews.edu/arch
B.S. Architectural Studies, B.S. Arch., **M.Arch.**

One of only two NAAB-accredited programs in a faith-based, Protestant university, Andrews' School of Architecture emphasizes vernacular and classical traditions as well as Christian service: Its students are helping to build a health center in Peru, schools in the Congo, and other projects around the world. The Urban Design Studio received the Congress for New Urbanism's Charter Award for Excellence three years in a row for its work with communities in Mississippi and Indiana.

UNDERGRADUATE ADMISSIONS: Avg. ACT: 24.3 / Min.: 19; Avg. GPA: 3.29 / Min.: 2.32; Applied: 116; Accepted: 64; Enrolled: 23 • **UNDERGRADUATE DEMOGRAPHICS:** Minority: 53%; Female: 39%; International: 13%; Financial aid: 100% • **GRADUATE ADMISSIONS:** GRE: not required; Avg. GPA: 3.14 / Min. GPA: 2.81; Applied: 19; Accepted: 14; Enrolled: 14 • **STUDENT/FACULTY RATIO:** 11:1 • **TUITION:** Undergraduate, \$27,530; Graduate, \$804 per credit hour

UNIVERSITY OF MIAMI • School of Architecture • Miami • arc.miami.edu
B.Arch., B.Arch./MBA, B.S.A.E./M.Arch., M.Arch., Master of Urban Design, Master of Real Estate Development and Urbanism

It's no surprise that, under dean Elizabeth Plater-Zyberk—one of the founders of New Urbanism—Miami has emerged as the nation's best-known center for study and research along New Urbanist lines. One instructor praised the "symbiotic relationship" between architecture and urbanism at the school. But faculty members we surveyed pointed to more: a commitment to drawing as a form of research; students who develop versatile skills; and international study. New interdisciplinary degrees have a business/development bent.

UNDERGRADUATE ADMISSIONS: Avg. SAT: 1220; Avg. ACT: 26; Applied: 493; Accepted: 197; Enrolled: 45 • **UNDERGRADUATE DEMOGRAPHICS:** Female: 46%; International: 15%; Financial aid: 81% • **GRADUATE ADMISSIONS:** Avg. GRE: 1150; Applied: 150; Accepted: 100; Enrolled: 42 • **STUDENT/FACULTY RATIO:** 10:1 • **TUITION:** Undergraduate, \$36,188; Graduate, \$1,480 per credit hour

UNIVERSITY OF NOTRE DAME • School of Architecture • Notre Dame, Ind. • architecture.nd.edu
B.Arch., M.Arch., Master of Architectural Design and Urbanism

When it comes to the study of classical architecture, Notre Dame is the *ne plus ultra*. Junior year in Rome is more than an attractive option for B. Arch. students—it's required, so they can learn from the precedents of Bernini and Palladio firsthand. (Graduate students spend one semester in Rome.) And don't think that graduates are equipped only for 17th-century practice: The program synthesizes new technology with traditional principles, as evidenced by a high-rise design studio that focuses on downtown Chicago.

UNDERGRADUATE ADMISSIONS: Avg. SAT: 1344; Avg. ACT: 32.6; Applied: 445; Accepted: 95; Enrolled: 53 • **UNDERGRADUATE DEMOGRAPHICS:** Minority: 14%; Female: 51%; International: 7%; Financial aid: 72% • **GRADUATE ADMISSIONS:** Avg. GRE: 1187; Avg. GPA: 3.53; Applied: 59; Accepted: 16; Enrolled: 16 • **STUDENT/FACULTY RATIO:** 14:1 • **TUITION:** Undergraduate, \$38,480; Graduate, \$38,335

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HE ART OF CHOOSING: A WORD OF CAUTION FOR APPLICANTS

DESIGN SCHOOLS VARY more than schools in other professions. In most law schools, contracts are taught the same way; anatomy teaching varies little from medical schools in one region to another; and accounting is taught according to nationally established guidelines.

But at professional design schools, while digital rendering may be taught similarly throughout the United States and Canada, structures courses emphasize different factors in San Francisco and Florida. Water penetration has different meanings in New Orleans and Minneapolis. Schools with engineering affiliations are distinct from schools with interior design or urban planning affiliations; and urban schools generally address community planning differently than rural schools. Then there are differences in personnel, geography, funding sources, histories, leadership, and student bodies.

The wonderful, hands-on building tradition at the University of North Carolina at Charlotte cannot be directly compared with the restorative community-building traditions at Tulane, nor with Auburn's Rural Studio or the technological focus found at MIT. Cincinnati is consistently named the best co-op program in America, yet its learning sequence is distinct from curricula at Boston Architectural College or other practice-based professional schools. Each has a distinctive way of preparing graduates for practice. Historically black and emerging Hispanic-serving schools cannot fairly be compared with programs at Ivy League schools, which, in general, fail in attracting and retaining American minority students.

Teams from the National Architectural Accrediting Board visit campuses to assess how specific learning outcomes are being achieved, and whether necessary skills are evident in student work upon graduation. What teams cannot readily assess is the extent to which evidence of these tangible, content-based learning outcomes results from a school's educational input—i.e., the actual teaching and learning in studios, classrooms, and workplaces—or from the successful work of admissions offices that screen out lower-performing applicants. SAT scores or acceptance/rejection rates are a pallid measure of a school's "quality"; such entrance factors tell little of what happens in learning environments to introduce, build, inculcate, and assess changes in what students actually learn.

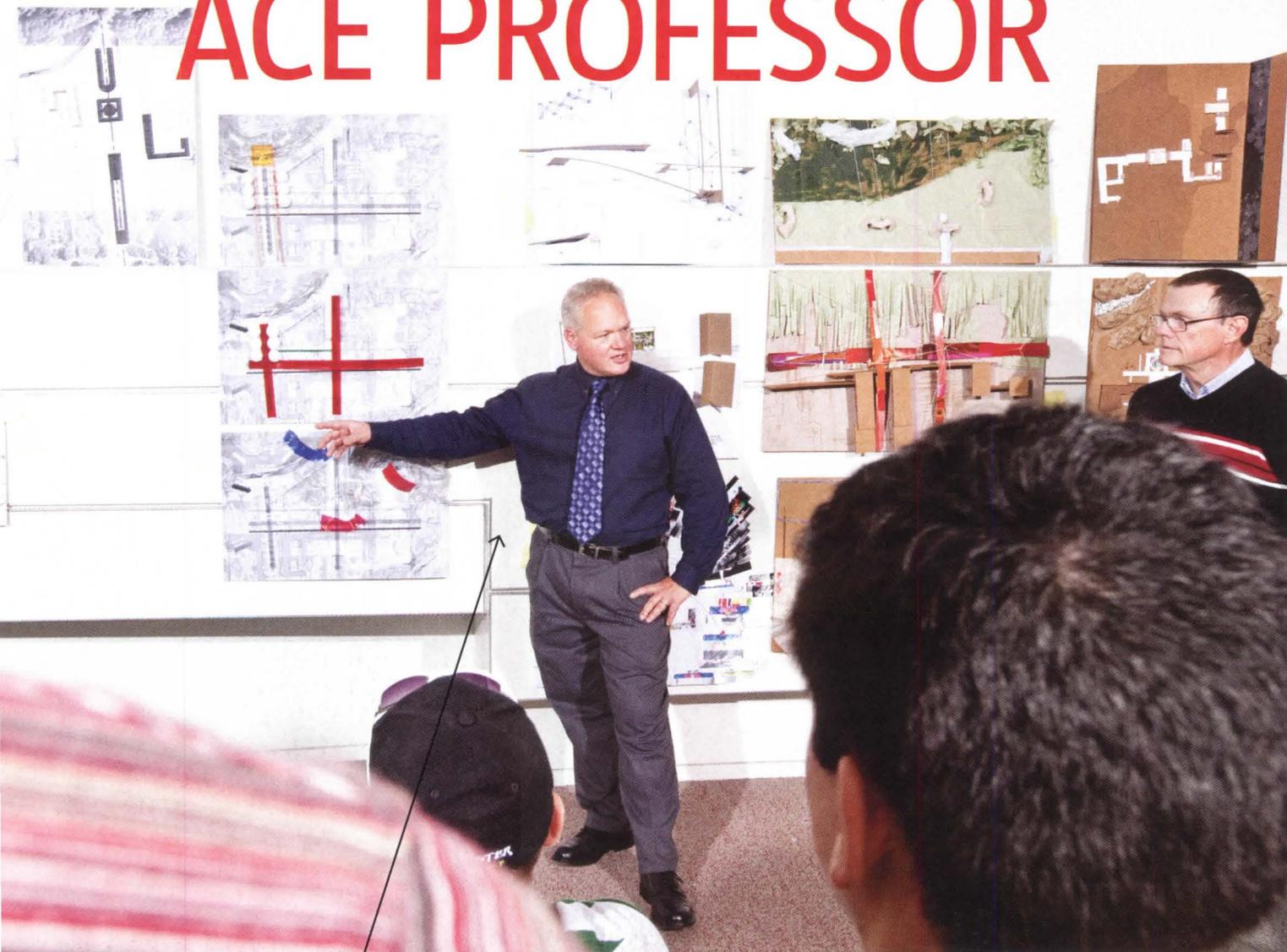
A potential design-program applicant needs to know whether the school is supportive within and outside of studio culture; whether there are opportunities to stretch one's intellect and talent; and whether the school's distinctive nature will provide an environment that is most conducive to that individual's aspirations and learning style. Quantitative data do not provide qualitative evidence of the factors that shape learning environments. Testimonials from current and recent students, faculty, and employers, and the schools' mission statements, are far more useful in differentiating among public and private, large and small institutions.

Choosing a professional design program is like the design process itself: The choice requires exploration, creative and critical thinking, discrimination, and a willingness to suspend preconceived notions in order to discern how changes in practice and innovative teaching are radically altering the design schools we once thought we knew.



Ted Landmark, M.Env.D., J.D., Ph.D.
President of Boston Architectural College and a past president of the ACSA

ACE PROFESSOR



ANTON HARFMANN

Who Associate Professor, School of Architecture and Interior Design; Associate Dean for Academic Technology and Facilities

Where College of Design, Architecture, Art, and Planning, University of Cincinnati

Career mission Joining the precision of digital technology to the messy physical reality of the construction site in a happy symbiosis.

ANTON HARFMANN teaches construction and technology classes at the University of Cincinnati (UC) while also serving as an associate dean in its College of Design, Art, Architecture, and Planning. The native of central New York state began his career close to home, receiving undergraduate and graduate degrees in architecture from the University at Buffalo–SUNY. He also pursued advanced studies in civil engineering in Buffalo, putting himself through school by building additions and remodeling houses during breaks.

That experience in the 1980s—when computer use in design and construction was in its infancy—informs Harfmann's work to this day. "My entire career has been trying to resolve that gap between the pristine and precise environment of the computer, and the

mundane, dirty, dangerous, and heavy reality of materials and construction," he says.

Harfmann initially taught at his alma mater, then moved to UC in 1992. An early class he taught at Cincinnati involved the 3D modeling of a house that was being built for Habitat for Humanity. He and the class kept track of materials and waste, accounting for every piece brought to the site and how it could be cut to maximum efficiency during the construction process. "I was using building information modeling before it was called BIM," Harfmann says of the experience. "That's the space that I've been playing in, and I take the students along for the ride."

"Being able to hit a button ... and having it produce a physical object is awesome," he says of current architectural technology. "If you can model it, you can make it." EDWARD KEEGAN

10 OF THE BEST EDUCATORS

Michelle Addington, [YALE UNIVERSITY](#)

Renee Chow, [UNIVERSITY OF CALIFORNIA, BERKELEY](#)

Thomas Fisher, [UNIVERSITY OF MINNESOTA](#)

Kenneth Frampton, [COLUMBIA UNIVERSITY](#)

Anton Harfmann, [UNIVERSITY OF CINCINNATI](#)

LISTED IN ALPHABETICAL ORDER AND SELECTED BY SURVEYED FACULTY

David Leatherbarrow, [UNIVERSITY OF PENNSYLVANIA](#)

Marvin Malecha, [NORTH CAROLINA STATE UNIVERSITY](#)

Robert McCarter, [WASHINGTON UNIVERSITY OF ST. LOUIS](#)

Doug Noble, [UNIVERSITY OF SOUTHERN CALIFORNIA](#)

Elizabeth Plater-Zyberk, [UNIVERSITY OF MIAMI](#)

INTEGRATION OF ARCHITECTURE WITH CITY AND LANDSCAPE

UNIVERSITY OF FLORIDA • College of Design, Construction & Planning • School of Architecture • Gainesville, Fla. • [dcp.ufl.edu/arch](#)

B.Des., *M.Arch.*, M.S. in Acoustics, M.S. in Architectural Pedagogy, Doctorate

Many schools have a strong urban design/planning focus, and others emphasize natural ecologies and landscape as architectural context; the University of Florida—located in a state where mass tourism meets sensitive habitats like the Everglades and climatic threats—integrates the two into a single holistic approach. Accordingly, the school's two preservation institutes, in the Caribbean and on the island of Nantucket, investigate both the cultural and ecological heritage of each place. UF also maintains the Vicenza Institute of Architecture in Italy.

UNDERGRADUATE ADMISSIONS: Avg. SAT: 1963 (out of 2400 points); Avg. ACT: 29.6; Avg. GPA: 4.1; Applied: 220; Accepted: 50; Enrolled: 50 • **UNDERGRADUATE DEMOGRAPHICS:** Minority: N/A; Female: 50%; International: 1–2%; **FINANCIAL AID:** 90% • **GRADUATE ADMISSIONS:** Avg. GRE: 1123 / Min.: 1000; Avg. GPA: 3.55 • **TUITION AND FEES:** Undergraduate, \$4,340 (resident), \$23,710 (nonresident); Graduate, \$9,470 (resident), \$26,860 (nonresident)

UNIVERSITY OF MARYLAND • School of Architecture, Planning & Preservation • College Park, Md. • [arch.umd.edu](#)
B.S. Arch., *M.Arch.*, M.S. Arch., *M. Arch./Master of Community Planning, M.Arch./Master of Historic Preservation*

“Urban Design and building craft are the two primary strengths of the architecture program, with sustainability as a theme in both areas,” comments a member of Maryland’s faculty. One of just a few architecture programs in the Washington, D.C., metro area, UMD has its policy-wonk side, in the form of the National Center for Smart Growth Research and Education, a collaboration with the schools of engineering,

public policy, and agriculture and natural resources. Students can choose from a long menu of study-abroad options.

UNDERGRADUATE ADMISSIONS: Middle 50% SAT range: 1280 to 1380; Avg. GPA: 3.93; Applied: 689; Accepted: 168; Enrolled: 56 • **UNDERGRADUATE DEMOGRAPHICS:** Minority: 27%; Female: 44%; International: <1%; **FINANCIAL AID:** 62% • **GRADUATE ADMISSIONS:** Avg. GRE: 1160; Avg. GPA: 3.5; Applied: 218; Accepted: 82; Enrolled: 39 • **STUDENT/FACULTY RATIO:** 11:1 • **TUITION:** Undergraduate, \$8,053 (resident), \$23,990 (nonresident); Graduate, \$471 (resident) per credit hour, \$1,016 (nonresident) per credit hour

LOUISIANA STATE UNIVERSITY • College of Art + Design • School of Architecture • Baton Rouge, La. • [design.lsu.edu/architecture](#)
B.Arch., M.Arch.

The name of the LSU School of Architecture’s student-run journal, *Contexture*, says it all: This is a program in which context in all its forms—historic (LSU is strong in preservation), socioeconomic (community design), and environmental (the much-admired landscape architecture school is a frequent collaborator)—really matters. Special programs include a concentration in heritage conservation, knitting together design, historic preservation, and economic development.

UNDERGRADUATE ADMISSIONS: Avg. SAT: 1175; Avg. ACT: 25.3; Avg. GPA: 2.94; Applied: 192; Accepted: 102; Enrolled: 89 • **UNDERGRADUATE DEMOGRAPHICS:** Minority: 33%; Female: 64%; International: 5%; **FINANCIAL AID:** 73% • **GRADUATE ADMISSIONS:** Applied: 37; Accepted: 10; Enrolled: 10 • **STUDENT/FACULTY RATIO:** 14:1 • **TUITION AND FEES:** Undergraduate, \$5,215.40 (resident), \$14,365.40 (nonresident); Graduate, \$5,947.40 (resident), \$15,097.40 (nonresident)

PENNSYLVANIA STATE UNIVERSITY • College of Arts and Architecture • School of Architecture & Landscape Architecture • Department of Architecture • State College, Pa. • [arch.psu.edu](#)
B.S. Arch, *B.Arch.*, *M.Arch.*

There are windfalls, and then there are windfalls. Late last year, Penn State architecture alum “Cal” Stuckeman committed \$20 million to his alma mater to enhance cross-disciplinary learning between architecture and landscape architecture. The gift will help Penn State’s SALA bolster its already strong reputation with new faculty positions and opportunities for collaborative research. Stuckeman is also the donor behind the school’s new LEED-Gold facility.

UNDERGRADUATE ADMISSIONS: Avg. SAT: 1250; Avg. ACT: 27; Avg. GPA: 3.99 / Min.: 3.16; Applied: 980; Accepted: 205; Enrolled: 70 • **UNDERGRADUATE DEMOGRAPHICS:** Minority: 16.5%; Female: 48%; International: 3%; **FINANCIAL AID:** N/A • **GRADUATE ADMISSIONS:** N/A • **STUDENT/FACULTY RATIO:** 11:1 • **TUITION:** Undergraduate, lower division, \$13,604 (resident), \$25,134 (nonresident); Undergraduate, upper division, \$14,708 (resident), \$26,412 (nonresident); Graduate, \$15,466 (resident), \$27,398 (nonresident)

UNIVERSITY OF UTAH • College of Architecture + Planning • School of Architecture • Salt Lake City • [arch.utah.edu](#)
B.S. Arch Studies, *M.Arch.*, Master of Architectural Studies, Historic Preservation Certificate

The only architecture school in Utah is joined to an ambitious, fast-growing urban planning department—a recent hire is noted Smart Growth expert Arthur C. Nelson, who is creating CA+P’s new Metropolitan Research Center. The design/build tradition is thriving here as well: DesignBuildBLUFF sees first-year M.Arch. students building an off-the-grid, net zero house for a family in the Navajo Nation in Bluff, Utah.

UNDERGRADUATE ADMISSIONS: Avg. ACT: 25.8 / Min.: 17.8; Avg. GPA: 3.5 / Min.: 2.7; Applied: 91; Accepted: 40; Enrolled: 37 • **UNDERGRADUATE DEMOGRAPHICS:** Minority: 14%; Female: 27%; International: 6%; **FINANCIAL AID:** 37% • **GRADUATE ADMISSIONS:** GRE: not required; Avg. GPA: 3.36 / Min.: 3.0; Applied: 101; Accepted: 69; Enrolled: 44 • **STUDENT/FACULTY RATIO:** 7:1 • **TUITION:** Undergraduate, lower division, \$8,339.92 (resident), \$26,840.44 (nonresident), based on 24 credit hours per semester; Undergraduate, upper division, \$8,428.08 (resident), \$27,162.88 (nonresident); Graduate, \$15,076.08 (resident), \$37,576 (nonresident) for 24 credit hours (estimated)

WOODBURY UNIVERSITY • School of Architecture • Burbank-Los Angeles and San Diego (two campuses) • [architecture.woodbury.edu](#)
B.Arch., B.F.A. Int. Arch., *M.Arch.*, *M.Arch.* in Real Estate Development

A pedagogical focus on landscape urbanism has grown out of, and reinforces, this school’s close engagement with the megalopolis of Southern California—whose ecology is the subject of research by Woodbury’s Arid Lands Institute. The school also boasts the Center for Community Research and Design and the Julius Shulman Institute; a robust study-abroad program; and expertise in design entrepreneurship, as attested by the Master’s in Real Estate Development. All this, and an impressively diverse student body.

UNDERGRADUATE ADMISSIONS: Avg. SAT: 958; Avg. ACT: 18; Avg. GPA: 3.2 / Min.: 3.0; Applied: 379; Accepted: 148; Enrolled: 140 • **UNDERGRADUATE DEMOGRAPHICS:** Minority: 60%; Female: 32%; International: 5%; **FINANCIAL AID:** 84% • **GRADUATE ADMISSIONS:** GRE: not required; Avg. GPA: 3.2 / Min.: 3.0; Applied: 43; Accepted: 33; Enrolled: 21 • **STUDENT/FACULTY RATIO:** N/A • **TUITION:** Undergraduate, \$29,086, Graduate, \$34,500

➔ FOR MORE SCHOOLS, GO TO [ARCHITECTMAGAZINE.COM](#)

BACK TO SCHOOL, SORTA

TEXT BY MIMI ZEIGER

PROGRAMS WHERE PROFESSIONALS CAN LEARN NEW SKILLS—OFF-CAMPUS

ARCOSANTI WORKSHOPS AND SEMINARS

Paolo Soleri is hands-down the granddaddy of sustainable design; he's taught "arcology," architecture plus ecology, as an alternative to urban sprawl since 1970. Participants in his conceptual and construction workshops are sure to get their hands dirty. The program is offered year-round; students live and work at his experimental town, Arcosanti, where they learn the history and philosophy behind Soleri's signature domes as well as construction techniques such as silt-casting. arcosanti.org

LOCATION: Arcosanti, Mayer, Ariz.

OPEN TO: Everyone 18 or older

COST: One-week seminar, \$485; five-week workshop, \$1,350. Fees cover tuition, meals, and accommodations.

CHICAGO ARCHITECTURE FOUNDATION DOCENT EDUCATION PROGRAM

The Chicago Architecture Foundation (CAF) is known for its walking tours led by enthusiastic docents. Every January through April the CAF Docent Education Program cultivates new guides to lead its "Historic Downtown: Rise of the Skyscraper" and "Modern Skyscrapers" tours. Students learn Windy City history from lectures by local historians, architects, and construction managers, and tackle a deep reading list, but the real test comes from on-street practice sessions. architecture.org/volunteer.html

LOCATION: Chicago Architecture Foundation, Chicago, Ill.

OPEN TO: Adult architecture enthusiasts

COST: \$15 application fee, \$175 in books and materials.

GLENN MURCUTT INTERNATIONAL ARCHITECTURE MASTER CLASS

Pritzker Prize-winning architect Glenn Murcutt leads a summer design studio in Sydney, Australia. The future of eco-minded design is at the heart of the intensive, two-week-long course. Offered to practicing architects, academics, and recent graduates, the course centers around a team design charette, with lectures and field trips to sustainably designed Murcutt works in the area. ozetecture.org

LOCATION: Sydney, Australia

OPEN TO: Architects, academics, and recent grads by application

COST: \$5,300 for 2009 (includes accommodation and most meals, but not international travel).

THE INSTITUTE OF CLASSICAL ARCHITECTURE & CLASSICAL AMERICA (ICA&CA)

At chapters across the country, the Institute of Classical Architecture & Classical America is dedicated to keeping the tradition of hand drawing alive. New York City courses include an Introduction to Linear Perspective as well as Basic Proportion. The Rocky Mountain chapter offers a class in a classic form of architectural illustration nearly lost to computer screens: the labor-intensive Beaux-Arts Ink Wash Technique. Check regional chapter listings for local course schedules. classicist.org

LOCATION: Nationwide

OPEN TO: students of art, planning, and architecture, design professionals, and the general public

COST: \$200 (\$180 for ICA&CA members) for an all-day session.

LEADING BY DESIGN FELLOWS PROGRAM

Beginning in May 2010 at the California College of the Arts, the Leading by Design Fellows Program will offer seven intensive weekend charettes—for senior professionals from all fields—that apply design thinking to global business. With an interdisciplinary and strategic approach, the program will feature notable faculty such as IDEO's Tim Brown and Saatchi & Saatchi CEO Adam Werbach. cca.edu/academics/graduate/design-mba/fellows-program

LOCATION: California College of the Arts, San Francisco

OPEN TO: Executives and senior managers from all fields

COST: \$14,500, including books, materials, and special receptions.

MODELAB PARAMETRIC DESIGN WORKSHOP

Hosted by Modelab, the research and education spin-off of Ronnie Parsons and Gil Akos's Brooklyn, N.Y.-based practice Studio Mode, the Parametric Design Workshop immerses students in the modeling software plug-in Grasshopper. Both conceptual and technical, the two-day course emphasizes constraint-based design and associative modeling techniques. modelab.nu/?p=1839

LOCATION: New York City

OPEN TO: Everyone (bring your own laptop)

COST: \$550

FIVE SCHOOLS THAT EXCEL IN PREPARING STUDENTS FOR PRACTICE

California Polytechnic State University, San Luis Obispo

University of Cincinnati

Harvard University

University of Illinois, Urbana-Champaign

University of Virginia

→ FOR MORE PROGRAM LISTINGS, GO TO ARCHITECTMAGAZINE.COM

COOL STUDIO



TRANSPOSITION/ DOUBLE SKINS

What ARCH 6053 graduate research studio

Where Georgia Institute of Technology, Atlanta

Taught by Minjung Maing, visiting assistant professor of architecture

ON A MONDAY AFTERNOON this fall, three graduate studios in Georgia Tech's College of Architecture jostled for space in the Hugh A. Stubbins Graduate Design Studio, inside the college's original 1952 building. Dane Hawthorne (shown above, center) of Lakeland, Fla., and Jessica Toal (above left) of Detroit—both second-year M.Arch. students—are part of Minjung Maing's "Transpositions|Double Skins" studio, which investigates the design and construction of high-performance building envelopes. Students are required to create enclosures for public buildings; model them digitally and physically; build half-scale prototypes; and assess the performance of their designs.

Only steps away, "Seeing and Feeling," taught by Lars Spuybroek and Daniel Baerlecken, explored the relationship between patterns of variation and building massing; it was inspired by Ruskin's concept of the "wall-veil" in *The Stones of Venice*. Within earshot of these inquiries into aesthetics and tectonics, students in the third studio—"Integrated Design and Project Delivery: Four Cross-Discipline Projects"—had formed project teams and were using Revit to learn the collaborative process that's the future of professional practice. Who said architectural education today isn't broad? (For more on Georgia Tech's program, go to architectmagazine.com.)

THE ACSA GUIDE TO SCHOOLS

FOUNDED IN 1912 to advance the quality of architectural education, the Association of Collegiate Schools of Architecture (ACSA) represents all accredited programs and their faculty across the United States and Canada, as well as nonaccredited and international affiliate members around the world. The ACSA collects detailed information from these schools for its *Guide to Architecture Schools*, which exists both as a book and as a free online searchable database at archschools.org. These publications are the only complete directories of all accredited professional architecture programs in North America and are an invaluable reference for prospective students, graduate students, educators, administrators, counselors, and practitioners. The *ACSA Guide to Architecture Schools* features detailed program descriptions, an index of specialized and related degree programs, an overview of the profession of architecture and the education process, advice on how to select the right school, and scholarship and financial aid information.



Thomas Fisher
Contributing editor for ARCHITECT, dean of the College of Design at the University of Minnesota, and current ACSA president

PRACTICE (INCLUDING WORK-STUDY)

BOSTON ARCHITECTURAL COLLEGE • School of Architecture • Boston • the-bac.edu B.Arch., M.Arch., Distance M.Arch.

This independent college in Boston's Back Bay neighborhood, founded in the 1880s as a club for local architects, has time-honored and manifold links to area practitioners, thanks to its concurrent practice curriculum: Students earn credit (and money) for working in an architectural practice setting, and complete their academic coursework in the evenings. The B.Arch. typically takes seven years to complete. A new offering is a unique, accredited distance M.Arch., a post-professional degree designed to take two years; students must be in Boston for just one week per semester.

UNDERGRADUATE ADMISSIONS: Avg. SAT: N/A; Avg. GPA: N/A; Applied: 385; Accepted: 385; Enrolled: 144 • **UNDERGRADUATE DEMOGRAPHICS:** Minority: 18%; Female: 36%; Financial aid: 82% • **GRADUATE ADMISSIONS:** GRE: not required • Applied: 231; Accepted: 231; Enrolled: 97 • **STUDENT/FACULTY RATIO:** N/A • **TUITION:** Undergraduate, \$11,448 (based on six to 10 credits per semester), Graduate, \$17,112 (six to 10 credits)

DREXEL UNIVERSITY • Antoinette Westphal College of Media Arts & Design—Department of Architecture & Interiors • Philadelphia • drexel.edu/westphal/academics/undergraduate/architecture B.Arch.

With co-op at the center of its mission, Drexel offers something that no other school can: the choice of two evening-class-heavy paths to an accredited B.Arch. That these are in high demand is attested by Drexel's selectivity. Architecture students can choose either the 2+4 program—two years of full-time study, followed by four years of full-time employment plus evening classes—or the part-time evening option, which is geared toward nontraditional students and takes a minimum of six years to complete. Last summer, Drexel students traveled to Rome and Paris on study tours.

UNDERGRADUATE ADMISSIONS: Avg. SAT: 1900 (out of 2400); Avg. GPA: 3.7; Applied: 1,100; Accepted: 140; Enrolled: 30 • **UNDERGRADUATE DEMOGRAPHICS:** Minority: 17%; Female:

38%; Financial aid: 95%; International: 0% • **STUDENT/FACULTY RATIO:** N/A • **TUITION:** \$36,700 (2+4 option), \$355 per credit + a \$120 general fee per quarter (part-time evening option)

NORTHEASTERN UNIVERSITY • School of Architecture • Boston • architecture.neu.edu B.S. Arch, M.Arch.

The baccalaureate program at Northeastern includes two mandatory, six-month co-op (i.e., work) experiences, which bump the four-year course up to five years. Add a sixth, and you can earn an NAAB-accredited M.Arch. (if you're a B.S. graduate in good standing). The school bolsters its professional training with a strong research agenda; current areas of research include urban housing and market-driven building types. A rising star on the faculty is Kiel Moe, whose research into integrated design and energy systems won him the prestigious Rome Prize for 2009–10.

UNDERGRADUATE ADMISSIONS: Avg. SAT: 1307; Avg. GPA: 3.85; Applied: 850; Accepted: 240; Enrolled: 90 • **GRADUATE ADMISSIONS:** GRE: not required; Avg. GPA: 3.3 / Min.: 3.0; Applied: 95; Accepted: 45; Enrolled: 24 • **STUDENT/FACULTY RATIO:** 17:1 • **TUITION:** Undergraduate, \$34,950; Graduate, \$1,065 per credit hour

PHILADELPHIA UNIVERSITY • School of Architecture • Philadelphia • philau.edu/architecture B.Arch., B.S. Arch Studies, B.S. Arch Studies/MBA, M.S. in Sustainable Design, M.S. in Construction Management

The School of Architecture is the largest school within this 2,500-student university on the outskirts of Philly, which is dedicated to providing professional education with a solid grounding in the liberal arts. The majority of faculty members, both part- and full-time, are practitioners, and much of the architecture curriculum is interdisciplinary, engaging students from the interior design and landscape architecture programs as well (these programs also are run in the School of Architecture). There is a strong tradition of craft, materials, and technology.

UNDERGRADUATE ADMISSIONS: Avg. SAT: 1649 (out of 2400); Avg. GPA: 3.4; Applied: 903; Accepted: 690; Enrolled: 225 •

UNDERGRADUATE DEMOGRAPHICS: Minority: <10%; Female: 51%; International: <5%; Financial aid: 30% • **GRADUATE ADMISSIONS:** GRE: not required; Avg. GPA: 3.5; Applied: 137; Accepted: 107; Enrolled: 64 • **TUITION:** Undergraduate, \$27,428; Graduate, \$806 per credit hour

UNIVERSITY OF CINCINNATI • College of Design, Architecture, Art, and Planning • School of Architecture and Interior Design • Cincinnati • daap.uc.edu/said B.S. Arch, B.S. Interior Design, M.Arch., M.S. Arch

Say "co-op," and many architects will instantly think "Cincinnati." UC was the birthplace of cooperative education back in 1906, and the program here is consistently named among the country's best for turning out graduates who are ready to grapple with real-life architecture. Undergraduates get six quarters of professional experience interspersed between periods of study; graduate students can arrange a co-op that is related to their thesis topic. The whole college—including a shop and a rapid prototyping center—is housed in the Peter Eisenman–designed Aronoff Center.

UNDERGRADUATE ADMISSIONS: Avg. SAT: 1305; Avg. ACT: 29; Applied: 654; Accepted: 171; Enrolled: 80 • **UNDERGRADUATE DEMOGRAPHICS:** Minority: 15%; Female: 39% • **GRADUATE ADMISSIONS:** GRE: minimum V-500; Q-650; A-4.5; M.S. Arch, V-500; Q-630; A-4.5; Avg. GPA: 4.0 • **STUDENT/FACULTY RATIO:** N/A • **TUITION:** Undergraduate, \$9,399 (resident), \$23,922 (nonresident); Graduate, \$12,723 (resident), \$23,055 (nonresident); M. Arch. rate, \$4,890 per term (resident) / \$9,524 (nonresident)

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Tulane University

University of California, Berkeley

University of Detroit Mercy

COMMUNITY DESIGN

MISSISSIPPI STATE UNIVERSITY • College of Architecture, Art, and Design • School of Architecture • Mississippi State, Miss. • caad.msstate.edu/caad_web/sarc/home.php
B.Arch., M.S. Arch.

At Mississippi's only NAAB-accredited program, research arises from and depends on outreach. Four different initiatives—the Carl Small Town Center, the Gulf Coast Community Design Studio in Biloxi (dedicated to rebuilding after Katrina), the Jackson Community Design Center, and the Educational Design Institute (investigating school facilities design)—place community design at the center of pedagogy. The fifth year of B. Arch. instruction takes place in the urban setting of Jackson. Following their third or fourth year, students may choose to fulfill one year of IDP requirements through a co-op experience.

UNDERGRADUATE ADMISSIONS: Avg. ACT: 26; Applied: 225; Accepted: 50; Enrolled: 45 • **UNDERGRADUATE DEMOGRAPHICS:** Minority: 11%; Female 40%; International 2%; Financial aid: N/A • **GRADUATE ADMISSIONS:** Applied: 23; Accepted: 6; Enrolled: 5 • **STUDENT/FACULTY RATIO:** 16:1 • **TUITION:** Undergraduate and graduate, \$5,151 (resident), \$13,020.50 (nonresident)

TULANE UNIVERSITY • School of Architecture • New Orleans • architecture.tulane.edu
M.Arch. (undergraduate & graduate paths),
Master of Preservation Studies

The Tulane School of Architecture has been rooted in the city of New Orleans since its founding in 1894, but the singular event of Hurricane Katrina redefined—and catalyzed—the school's mission. Since 2005, the Tulane City Center community outreach arm has completed 44 projects in the city, with 20 more under way now at various stages. The URBANBuild design/build program partners with Neighborhood Housing Services of New Orleans to provide

prototypical homes for city families. Historic preservation, long a teaching and research strength of the school, takes on a new urgency in the context of post-Katrina rehabilitation efforts.

UNDERGRADUATE ADMISSIONS: Avg. SAT: 1916 (2400-point scale) / Min.: 1420; Avg. ACT: 34; Min.: 26; Avg. GPA: 3.5; Applied: 1,101; Accepted: 319; Enrolled: 90 • **UNDERGRADUATE DEMOGRAPHICS:** Minority: 23%; Female 50%; International 5%; Financial aid: 75% • **GRADUATE ADMISSIONS:** Avg. GRE: N/A; Avg. GPA: 3.6; Applied: 180; Accepted: 70; Enrolled: 32 • **STUDENT/FACULTY RATIO:** 11:1 • **TUITION:** \$39,600; M.P.S. tuition, \$19,800

UNIVERSITY OF ARKANSAS • Fay Jones School of Architecture • Department of Architecture • Fayetteville, Ark. • architecture.uark.edu
B.Arch., B.S. Arch Studies

Named for AIA Gold Medalist and longtime professor Fay Jones, the University of Arkansas' architecture school encompasses the study of architecture and landscape architecture as well as a nationally recognized community-design center. That center, UACDC, has recently engaged in projects such as planning a light-rail system for Northwest Arkansas and rethinking the big-box store, and has won more than 40 awards since 2005. Fourth-year students at Arkansas spend a semester in Rome; incoming students are required to take the Leadership by Design course, which promotes a balance of self-care, ethics, and leadership in design education. A concentration in architectural history is offered, as are design/build opportunities.

UNDERGRADUATE ADMISSIONS: Avg. ACT: 26.4 / Min.: 20; Avg. GPA: 3.58 / Min.: 2.75; Applied: 372; Accepted: 293; Enrolled: 121 • **UNDERGRADUATE DEMOGRAPHICS:** Minority: 18%; Female 29%; International 9%; Financial aid: The school provides around \$90,000/year to students in scholarships and awards • **STUDENT/FACULTY RATIO:** 18:1 • **TUITION:** \$5,010 (resident), \$13,887.30 (nonresident)

SUSTAINABLE DESIGN

CALIFORNIA STATE POLYTECHNIC UNIVERSITY, POMONA • College of Environmental Design • Department of Architecture • Pomona, Calif. • csupomona.edu/~arc/
B.Arch., M.Arch.

Located on a rolling campus 30 miles east of downtown Los Angeles, Cal Poly Pomona remains committed to the "learn by doing" polytechnic mission, and accordingly, the Department of Architecture is known for producing workforce-ready graduates. But it's as green as it is pragmatic—housed in the College of Environmental Design, the department rubs shoulders with (and participates in) the John T. Lyle Center for Regenerative Studies, an interdisciplinary institute that researches low-energy architecture and other "regenerative" strategies. The M.Arch. has concentrations in sustainability and historic preservation; courses in these concentrations are open to undergraduates.

UNDERGRADUATE ADMISSIONS: Avg. SAT: 1179 / Min.: 920; Avg. ACT: 24 / Min.: 19; Avg. GPA: 3.83 / Min.: 3.28; Applied: 1,718; Accepted: 357; Enrolled: 107 • **UNDERGRADUATE DEMOGRAPHICS:** Minority: 40%;

Female: 42%; International: 4%; Financial aid: 61% • **GRADUATE ADMISSIONS:** GRE: not required; Avg. GPA: N/A / Min.: 3.0; Applied: 150; Accepted: 34; Enrolled: 19 • **STUDENT/FACULTY RATIO:** 21:1 • **TUITION:** Undergraduate, \$4,551 (resident); Graduate, \$5,487 (resident); nonresidents add \$288 per unit

"Preliminary numbers. Although the percentage of minority students is reported at 40%, more than 39% of students' racial/ethnic identity was reported as unknown; the Cal Poly Pomona student body as a whole is about 2/3 minority students.

UNIVERSITY OF OREGON • School of Architecture & Allied Arts • Department of Architecture • Eugene and Portland, Ore. • architecture.uoregon.edu
B.Arch., M.Arch., B. Iarc., M. Iarc., Teaching Technology Certificate, Ecological Design Certificate

It's no surprise that, in surveys, faculty nominated this university in the Pacific Northwest as a sustainable-design leader more consistently than any other. UO's Department of Architecture, located in both small-town Eugene and big-city

Portland, teaches students to become stewards of the future built environment through collaborative inquiry with practitioners; explorations of ecological urbanism; and study of cultural and vernacular traditions. Studio work is evaluated using individualized discussion and written assessments, rather than letter grades. Through the designBridge program, students can take part in design and design/build projects for local nonprofits, and they can study abroad in Italy, Japan, Germany, Finland, or Denmark.

TUITION: Undergraduate, \$7,428 (resident), \$23,718 (nonresident); Graduate, \$12,696 (resident), \$17,988 (nonresident)

UNIVERSITY OF TEXAS, AUSTIN • School of Architecture • Austin, Texas • soa.utexas.edu
B.S. Arch. Studies, B.Arch., B.Arch./B.S. Architectural Engineering, B.Arch./B.A., M.Arch., M.S. Arch Studies

One of the smaller schools in a 50,000-student-strong flagship state university, UT Austin's School of Architecture reflects the breadth

and diversity of that context, with specializations in architectural history, preservation, urban design, interior design, planning—and, yes, sustainable design. New sustainable initiatives include a full-scale thermal lab for investigating light control, ventilation, and direct and indirect use of solar energy. The Center for Sustainable Development integrates the study of design and ecology with economics, policymaking, and social justice issues. UT Austin participated in the Solar Decathlon in 2003, 2005, and 2007, and is preparing a proposal for 2011.

UNDERGRADUATE ADMISSIONS: Avg. SAT: 1355; Avg. ACT: 31; Avg. GPA: 3.7; Applied: 940; Accepted: 98; Enrolled: 55 • **UNDERGRADUATE DEMOGRAPHICS:** Minority: 34%; Female: 52%; International: N/A; Financial aid: N/A • **GRADUATE ADMISSIONS:** Avg. GRE: 1220; Avg. GPA: 3.46; Applied: 751; Accepted: 168; Enrolled: 76 • **STUDENT/FACULTY RATIO:** 19:1 • **TUITION:** Undergraduate, \$9,010 (resident), \$30,678 (nonresident); Graduate (based on 15 credit hours per semester), \$11,382 (resident), \$21,978 (nonresident)



MARC SCHILER

Who Professor and Director, Master of Building Science program

Where University of Southern California, Los Angeles

Claim to fame Led the glare analysis and remediation project at Frank Gehry's Walt Disney Concert Hall

COULD THE END of handwaving be nigh? It's how architects usually get their point across when discussing energy performance. But Marc Schiler hopes new technology—especially BIM—that allows for the precise calculation of a building's energy use and carbon footprint will make architectural handwaving a thing of the past.

Schiler (shown here, in glasses, with, from left to right, Ryan Hansanuwat, Vasudha Rathi, Goetz Schierle, and Elham Moore) directs the Master of Building Science program at the University of Southern California (USC), a two-year program with more than 20 students from around the world. The program began back in the early 1970s, when it was led by prefab pioneer Konrad Wachsmann. Subsequent directors left the imprint of their own research interests (such as solar access and structures), and Schiler is doing so as well: "My interest has been energy and climate-responsive design all along." He likes that the program includes students with varied backgrounds; about 60 percent have architecture degrees and 20 percent are engineers, but the other 20 percent is a mix ("Last year we graduated a mathematician").

"The most recent agenda," Schiler says, "is to continue on with both structures and environmental issues, but make a crossover into [USC's] design [instruction]." With other faculty supportive of efforts to, for example, bring environmental controls lessons into the studio, "we get rid of the handwaving," Schiler says. And that's progress. (For more on USC's program, see the listing online.)

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→ BUILDING



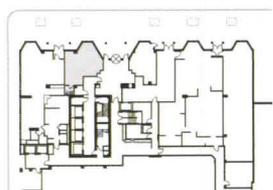
MORE CUPCAKES

CHICAGO
DAVID WOODHOUSE ARCHITECTS

TEXT BY KATIE GERFEN
PHOTOS BY CHRISTOPHER BARRETT
(EXCEPT WHERE NOTED)

At More Cupcakes, a new store in Chicago's Gold Coast neighborhood that was designed by David Woodhouse Architects, the humble cupcake is treated like the main design object of an otherwise minimal, meticulously detailed interior.

Site Plan



WHEN CHICAGO ARCHITECT David Woodhouse signed on to design a local high-end cupcake store, he had to reach far beyond his skills as a planner and designer to prepare for perhaps the best fine-print role on a project, ever: taste-tester. The self-described “odd man out in the control group,” Woodhouse, who dislikes chocolate, gravitated toward some of More Cupcakes’ unusual offerings—of which BLT, foie gras, and lemon meringue are only a few. Despite the long and motley menu, one thing all of the varieties have in common is their basic ingredients, and it is those that ultimately served as the inspiration for the 550-square-foot flagship store’s minimalist interior design. “We wanted to get the feeling of what the cupcakes were made of,” says Woodhouse, “the purity of the white flour, the creamy feeling of the butter.”

The interior is made up of a few simple materials, detailed meticulously to compose a restrained design. In the main retail space, bamboo plywood forms the

counter and custom cabinets, designed to conceal boxes, bags, and other packaging from view. The back wall is a custom installation of neon tubes behind a sheet of 3form resin designed by local artist Greg Mowery.

But without a doubt, the main focus of the space is the cupcake display stand—formed from stainless steel, routed resin, and glass, the custom installation hails each cupcake as an individual work of art. It is this element above all that drives home the point that “we didn’t want to design a bakery,” says Woodhouse. “We didn’t want the imagery of a bakery. We didn’t want to bend over and have cases in the counter. We wanted the cupcakes at eye level, like a museum, or a jewelry store.”

If the lines out the door are any indication, the team has hit upon a formula that works. Plans for other locations are in the works, as is Mobile More, a BMW van with an interior designed by Woodhouse’s firm to carry cupcakes to the masses. There might have to be a special delivery run of his favorite flavor, salted caramel.



ANDY TINUCCI

1. The main retail space is dominated by glass-topped custom bamboo plywood counters (see inset above) and cabinetry. The custom-designed cupcake stand is made from stainless steel supports; fronted by 1/2-inch glass, the cupcakes sit on custom-molded 3form resin panels, each of which has carefully routed inset circles where the cupcakes can rest, ensuring proper spacing.

2. The small storefront where More Cupcakes leased space for its flagship store has strict guidelines about signage—only a black awning with the logo is allowed. As for changes to the façade: In short, there can't be any. So the design team created a well-lit interior environment, with ambient light as well as the Greg Mowery-designed neon installation (meant to evoke swirls of butter) behind the counter to draw in customers.

3. In pursuing the strategy of a bakery that doesn't look like a bakery, one thing the team did not want to sacrifice was the cachet that each cupcake is made on-site. A frosted glass door shielding the kitchen allows customers to see shadows of chefs, smell the baking cake, and hear the whir of the mixers, without seeing spilled flour and messy pastry bags.

Project Credits

Project More Cupcakes, Chicago

Client More Cupcakes

Architect David Woodhouse Architects, Chicago—David Woodhouse (principal); Andy Tinucci (project architect); Brian Foote, Rea Koukiou (project team)

Architect of Record Huron Design Group, Chicago—Peter Erdelyi

Lighting Molly McKnight

Graphic Design Concrete Inc.

Neon Design Greg Mowery

General Contractor Tip Top Builders

Size 550 square feet (retail space)

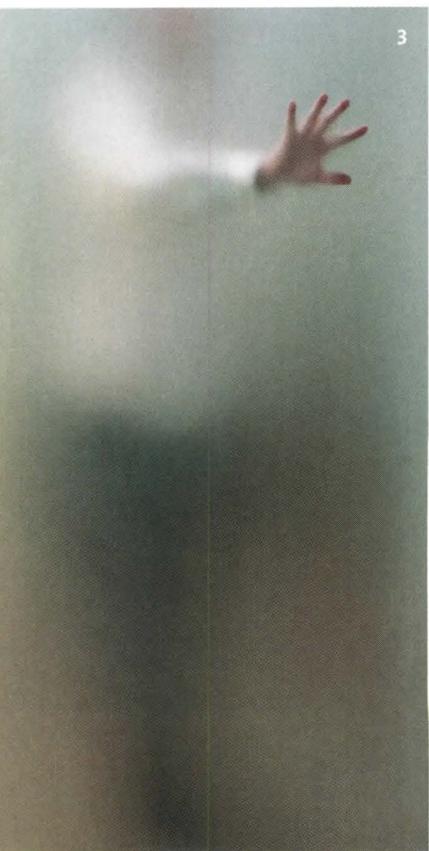
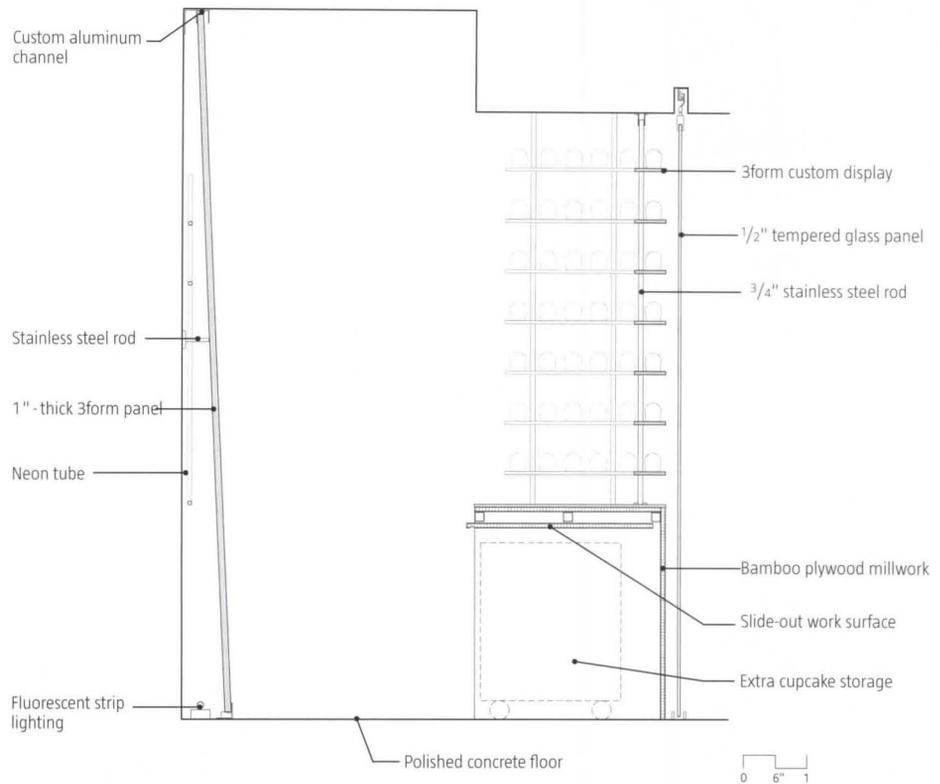
Cost \$250,000

→ For toolbox information, visit architectmagazine.com.

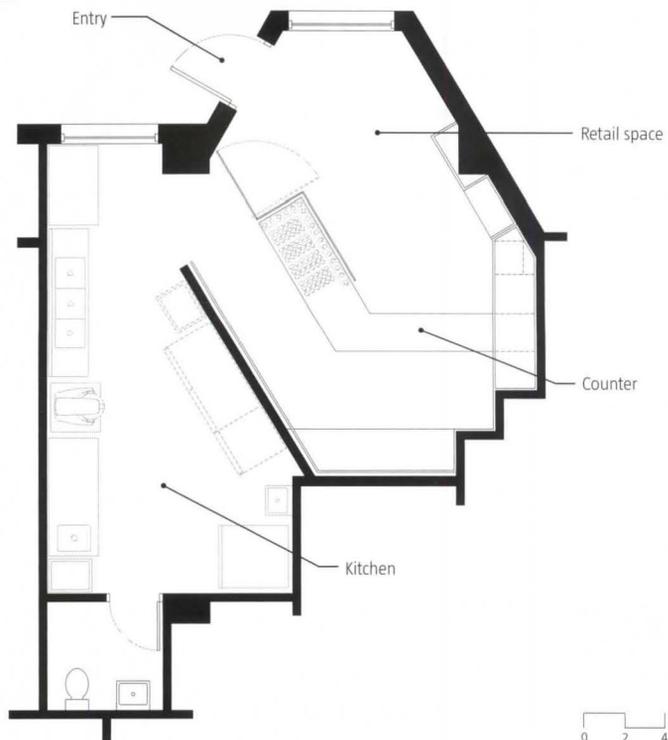




Detail Through Cupcake Display



Floor Plan



BUILDING: A COMMUNITY

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→ BUILDING
1 2 3

TEXT BY MIMI ZEIGER
PHOTOS BY BILL TIMMERMAN

HENKEL HEADQUARTERS

The Henkel Headquarters building in Scottsdale, Ariz., brings site-sensitive architecture to the edge of the Sonoran Desert. The flagship project in an as-yet-incomplete, mixed-use development is under consideration for LEED Silver certification.

SCOTTSDALE, ARIZ.
WILL BRUDER+PARTNERS, CH2M HILL

HENKEL'S U.S. CORPORATE HEADQUARTERS sits on the northernmost edge of sprawling Scottsdale, Ariz., on a site bracketed by the State Route 101 and 120 acres of ripped-up ground awaiting construction. Where the grading machines stopped, the Sonoran Desert stretches out to the foothills of the McDowell Mountains. Phoenix-based architect Will Bruder with CH2M Hill designed the four-story office and laboratory building to be a signature cornerstone for One Scottsdale, a ritzy planned mixed-use development with retail, residential, office, and entertainment. Right now, with construction of the overall project stalled until potentially 2014, Henkel's headquarters building is a flagship moored on the banks of what Bruder refers to as a "Michael Heizer earthwork."

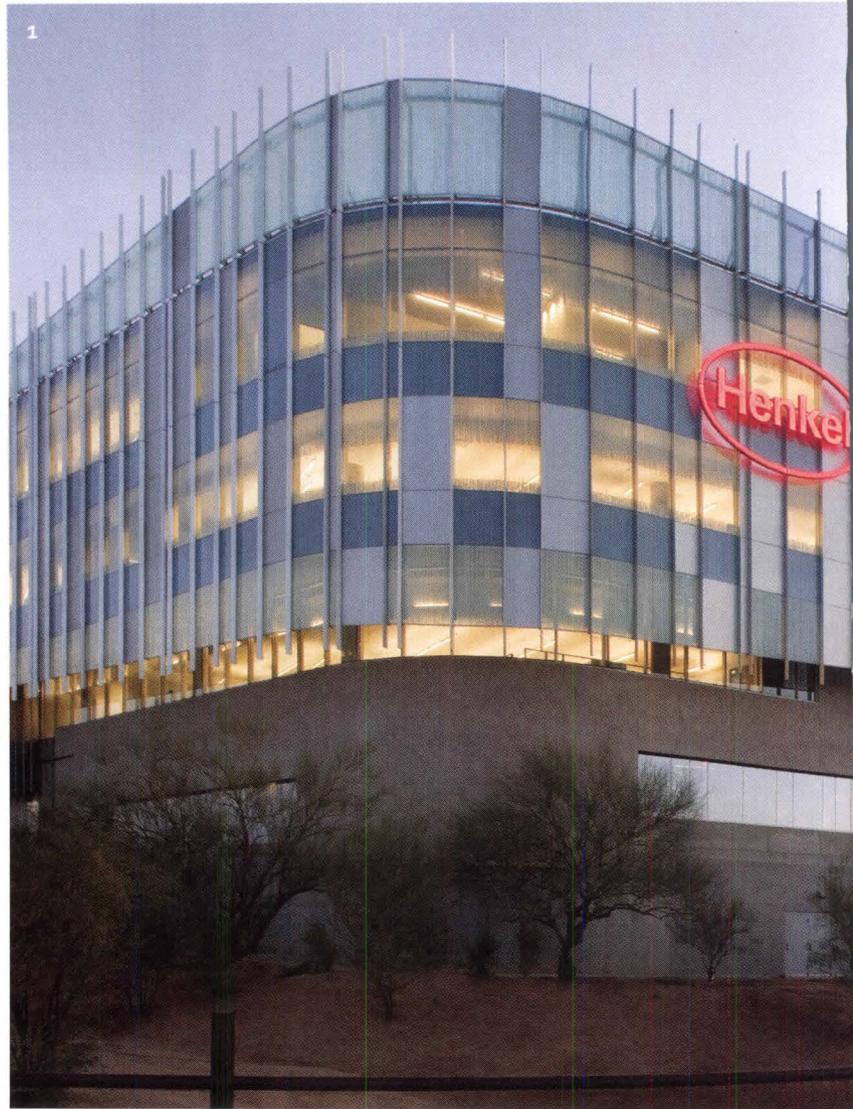
Despite its marooning, the structure fits comfortably in its context. Stands of mesquite and ironwood trees and saguaro cactuses were salvaged from the rest of the One Scottsdale site and replanted around the building. "[The building] almost looks like it grows from the desert," Bruder says. "The landscape acts as a buffer between the freeway and the façade."

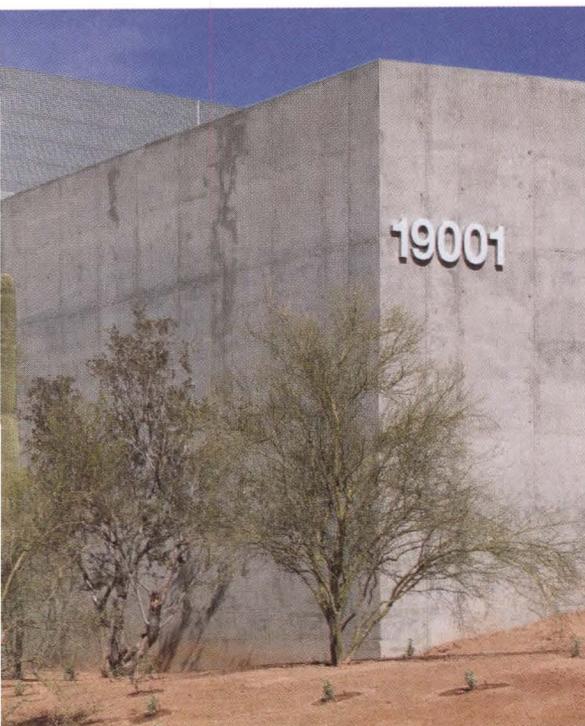
Commuters see that 200-foot-long façade from the roadway at 65 mph; it goes by in a 7.5-second streak of fritted glass and aluminum mullions. The opposite side, designed to front the streets of the forthcoming development, takes a slower pace. Attention is given to texture: Terra-cotta bricks and gray Mexican plaster contrast with the sleek curtain wall, which masks interior offices, labs, and a "cafetorium." Folds and bends in the façade allow for a covered port-cochere and accommodate access to below-grade parking. At the front entry, fiberglass column covers glow in the desert light with a brightness that matches an array of red, green, and amber neon signs advertising the Henkel brands.

Typical of suburban office employees, Henkel's begin their day in the 900-car parking garage. Bruder used graphics and both artificial and natural light to turn the three subterranean floors into memorable, functional places. "We made [the parking garage] into an art piece. It's not a forgotten space," he explains. Channeling the work of artist Dan Flavin, fluorescent strip lights are wrapped in colored gels.

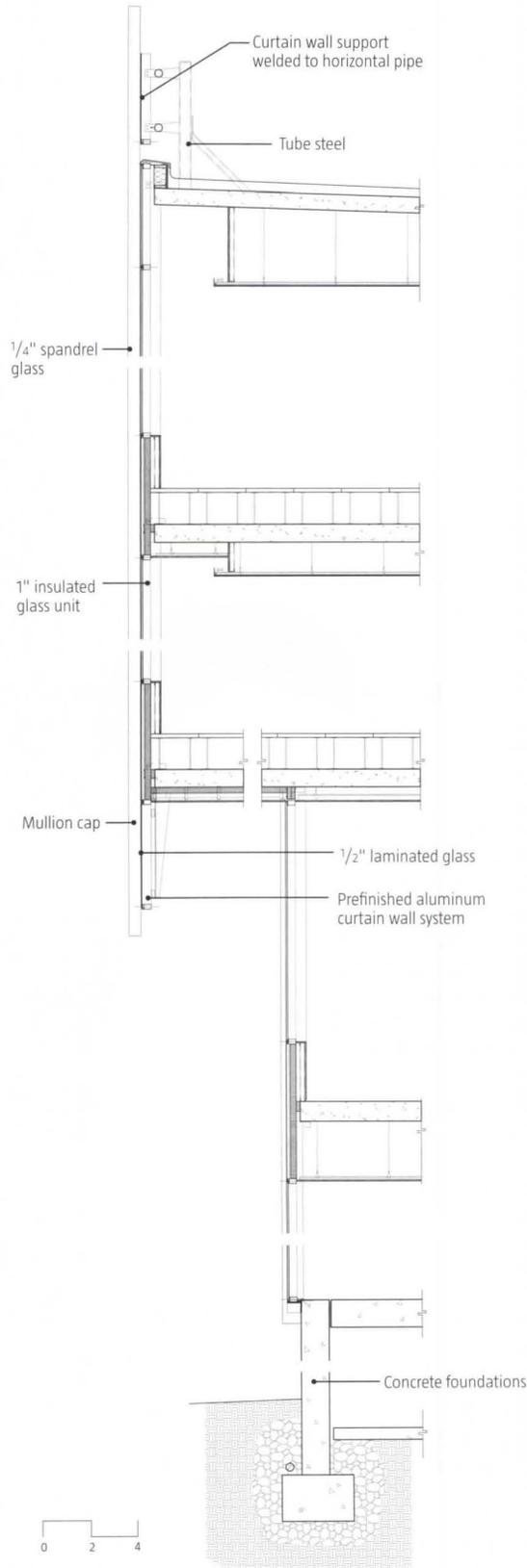
Life in the 348,000-square-foot headquarters centers around two key spaces: the atrium and the cafetorium, a grand room on the second floor, which, as the name implies, doubles as both cafeteria and assembly area. (It comfortably can hold the entire staff.) Bruder calls the 82-foot-high atrium a "vessel of light," as the skylit volume carries daylight into the surrounding office floors. An open stairwell floats in the space; with generous landings and a comfortable rise-to-run ratio, it's designed to give Henkel employees a spot to stop and chat.

The desert reasserts itself on the third floor in the form of a grand roof garden designed by landscape architect Christy Ten Eyck. Adjacent to the fitness center and cafetorium mezzanine, it provides nearly an acre and a half of outdoor space. Native shrubs and trees foreground a distant view of the McDowell Mountains. It's a powerful visual trick: From the elevated perspective the One Scottsdale construction site disappears, leaving only undisturbed desert.





Curtain Wall Section



1. The façade facing the neighboring State Route 101 is a 200-foot-long ribbon of fritted glass and aluminum mullions. Used as sunshading, the custom frit patterns are carefully positioned along the façade to limit heat gain while maximizing the penetration of daylight into the space.

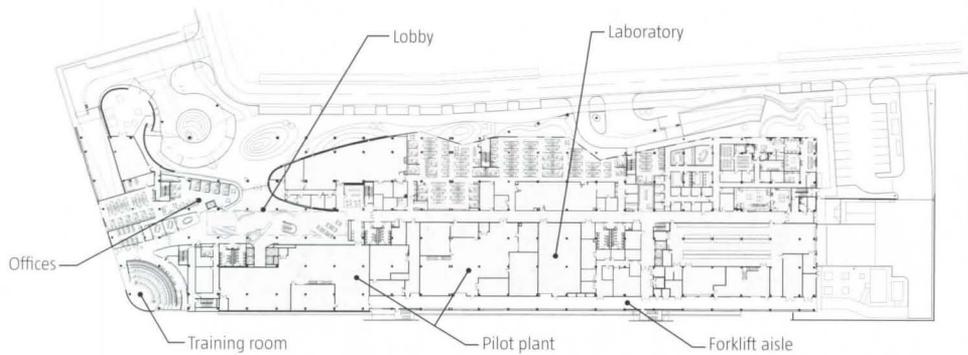
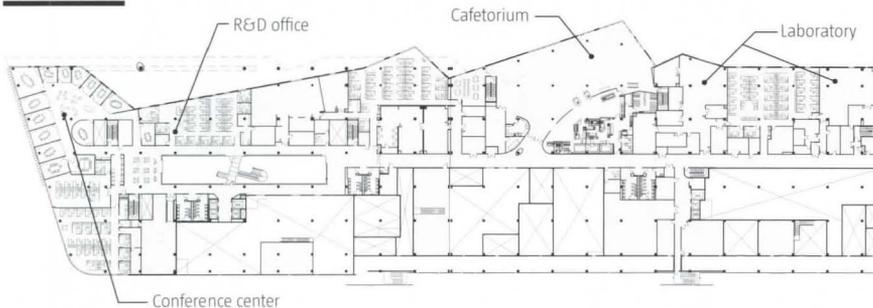
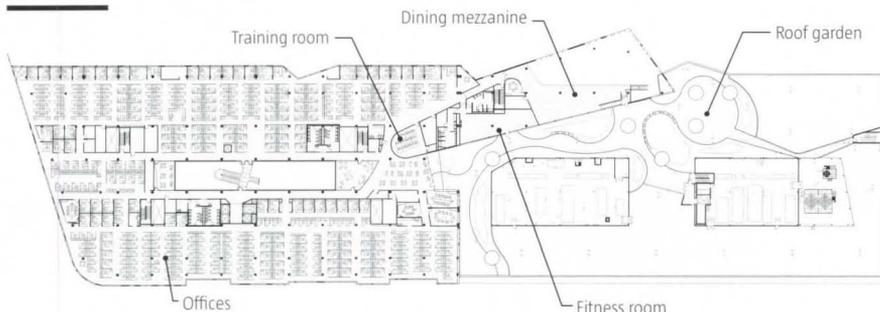
2. On the other side of the building, the sleek glass panels give way to gray Mexican plaster, terracotta, and corrugated metal. Intended to be the face of the headquarters from within the One Scottsdale development, the building is carefully massed to be broken up and less imposing in scale. For now, that massing harmonizes with the native plant species that dominate the rest of the site.

1. The glass façade extends past the northwest corner of the building, supported by a prefinished aluminum curtain wall system and supports welded to horizontal pipe and tube steel. Mullion caps extend from the top and bottom of the glass surface, creating texture that breaks up the smooth surface.

2. An expansive roof garden on the third floor—designed by Christy Ten Eyck of Ten Eyck Landscape Architects—provides outdoor space for employees to eat, have meetings, and stage events. A door connects this exterior space to the mezzanine in the cafetorium, and windows look down into that double-height space.

3. Employees enter the building from a side entrance that also leads to three levels of below-grade parking. So as not to minimize the entry experience for those commuters, careful attention was paid to landscaping the site with native plant species and using light and graphics in the underground parking area to create a meaningful arrival experience.



First Floor**Second Floor****Third Floor****Fourth Floor****TOOLBOX****Texlon ETFE Atrium Skylight System**

Vector-Foiltec
foiltec.com

The atrium, or “vessel of light,” as Bruder calls it, is topped with an 18-foot-wide by 180-foot-long multicell inflated membrane skylight. A three-layer system with shade patterns on upper and middle layers, the skylight lets in a flood of natural light while minimizing solar heat gain.

Curtain Wall and Cladding Systems

KT Fabrication
phone 480.497.3140

An aluminum curtain wall system wraps the Henkel headquarters. Spandrel glass and aluminum panels vary across the façade. Bruder specified custom mullion cap profiles. Deeper than standard, the design exploits visual phenomena, so that the metal takes on color: The topside reflects the blue sky, while the underside reflects earth brown.

Fritted Glass

Viracon
viracon.com

Frit patterns appear on all of the building's exterior glazing. More than simple ornament, the custom patterns aid in daylight control. To counter heavy sun exposure, the west and south façades employ high-density fritting, while the east and north use medium-density patterning. Opaque fritting stops heat gain before it enters the cavity of the insulated glass, while translucent white fritting diffuses daylight farther into the floorplate.

Translucent Colored Fiberglass

American Fiberglass
americanfiberglass.us

Red and amber-colored translucent column jackets greet visitors on arrival to the headquarters and mark the entry to the employee cafetorium. Jewel-toned and sculptural, the column covers are composed of glass fiber-reinforced pigmented resin over custom forms.

BUILDING 1 ② 3

1. A dip in the façade hidden beneath the monumental glass curtain wall holds a porte-cochere where visitors approach and enter the building out of the sun. Fairly quiet materials such as metal panels, fritted glass, and brick are offset by a brightly colored fiberglass-wrapped column and neon signs that showcase the different consumer brands that fall under the Henkel umbrella.

2. At the center of the building is an 82-foot-high atrium capped with an inflatable membrane skylight that has screen-printed translucent patterning to diffuse the harsh light of the desert sun. Windows into the surrounding offices and laboratories bring daylight into the middle of the floor plates, and an open staircase with large landings allows for both a central circulation point and a spot for spontaneous conversations.

3. The cafetorium is a mixed-use space in the building, serving as both a staff cafeteria and an auditorium where all of the employees can gather for meetings and events. A canted ceiling plane starts low at the windows and moves higher to accommodate a mezzanine that increases the capacity of the space.



Project Credits

Project Henkel Headquarters

Client Henkel North America

Architect and Interior Designer Will Bruder+Partners, Phoenix—Will Bruder, Ben Nesbitt, Ron Deitrick, Dan Olic, Marjorie Whitton, Joaquin Roesch, Fernando Da Col, Anthony Yozipovic, Anthony Tumminello, Dominique Price, Chris Balzano, Claudia Saunders (project team)

Architect CH2M Hill, Tempe, Ariz.—Steve Waite, Tim Allen, Thane Joyce, Ed Hemrick (project team)

Structural Engineer Paragon Structural Design

Mechanical and Electrical Engineer CH2M Hill

Landscape Architect Ten Eyck Landscape Architects

Lighting Design Francis Krahe Associates

Acoustical Consulting Tony Sola





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The design for the new chapel at Thomas Aquinas College, a theology-focused Catholic school, incorporates elements of California's Spanish Mission style, the Romanesque, the Italian Renaissance, and an Early Christian basilica. Plans for the church were blessed by Pope John Paul II before his death, and the cornerstone was blessed by his successor, Pope Benedict XVI.

TEXT BY BRADFORD MCKEE
PHOTOS BY STEPHEN SCHAFER

OUR LADY OF THE MOST HOLY TRINITY

THOMAS AQUINAS COLLEGE, SANTA PAULA, CALIF.
DUNCAN G. STROIK, ARCHITECT

AS AN ECCLESIASTICAL ARCHITECT by specialty, Duncan Stroik had no objection to giving the folks at Thomas Aquinas College, just northwest of Los Angeles, everything they wanted for their magnificent new chapel. The wish list: “Elements of Romanesque and the Spanish Mission tradition in California—and we tried to look at where it came from in Spain,” says Stroik, who is based in South Bend, Ind. “The really interesting kicker was, they liked the idea of an Early Christian basilica, with columns and arches. And then they wanted the cruciform.” And a Renaissance dome. “I said, ‘Oh, my goodness. That’s never been done—or hasn’t been done much,’” Stroik recalls.

His clients, a group of men who founded the college in 1971, wanted all the great Western religious architecture in one building, he explains: “They thought that was the most conservative thing they could do.”

No pun intended, but there is a spiritual reason behind the composite approach to the 14,000-square-foot chapel. Thomas Aquinas is a four-year coeducational college with a Catholic “great books” curriculum, similar to the secular St. John’s College in Maryland and New Mexico. As Peter DeLuca, a founder of the school and its treasurer, who has been serving as interim president, explains, “We’re aiming at an education that’s essentially theological, aimed at knowing things that are worth knowing for their own sake.” The school’s board of governors wanted a chapel for daily worship—Mass is held four times a day—that showed a similar tradition in architecture.

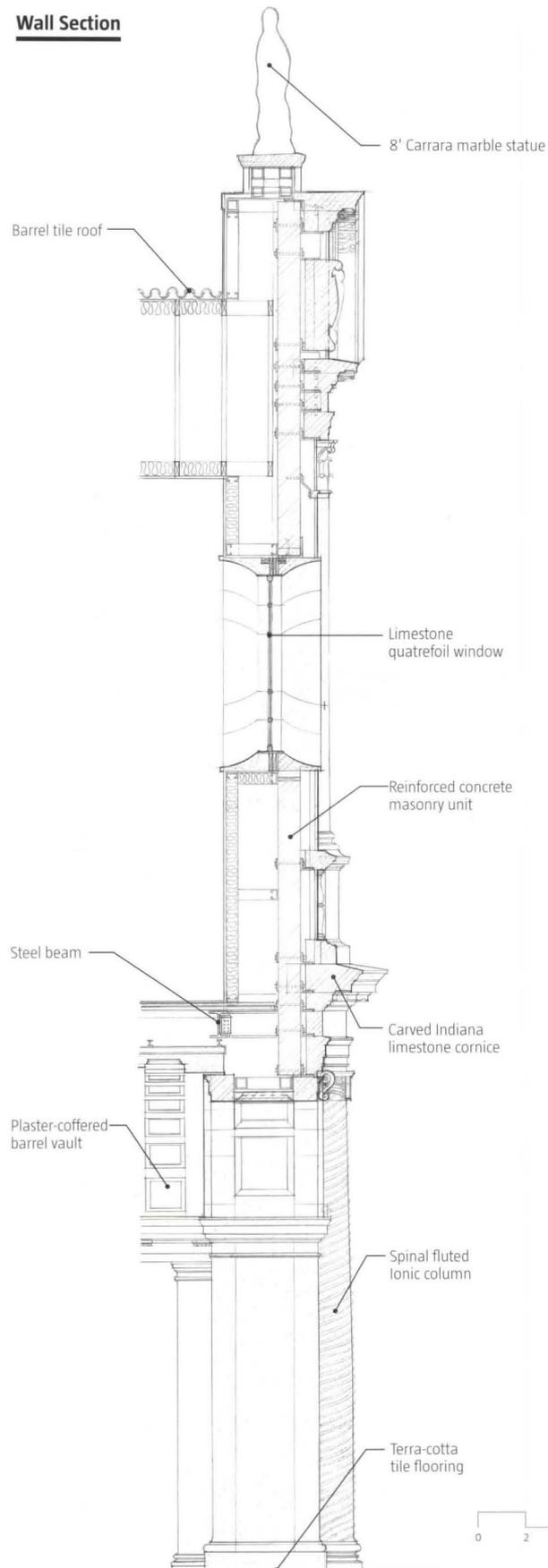
Fitting all the forms together logically and structurally would take some invention. Early Christian basilicas have one long nave and an apse, and are seldom cruciform. A dome is heavy for the columns and arches of a basilica, and it really calls for a vaulted nave. There also was a tower to consider.

The result of all this mutual inclusion is a convention-bending building dressed in a painstakingly crafted traditional guise (see Toolbox, page 76). From the façades alone, covered in white cement stucco beneath terra-cotta tile roofs, the chapel might be a well-restored house of worship from California’s early days, but in higher style. Close inspection, though, reveals carefully massed and stepped volumes of disparate origins that fit together like a puzzle.

In refining the puzzle’s pieces, Stroik garnished ideas for the chapel from several precedents, some of them European masterpieces. But a couple of his favorites are not far away in California: St. Vincent DePaul Church in Los Angeles from the 1920s, with its “over-the-top” Churrigueresque ornament and asymmetrically placed tower designed by Albert C. Martin Sr.; and the 1927 Pasadena City Hall by Bakewell and Brown of San Francisco. “It’s not a church, but it’s got a dome, the scalloped tile, and it’s concrete,” he says.

On the outside, the chapel faces a green lawn with arcades that extend off to small pavilions, a kind of “Spanish version of the University of Virginia,” Stroik says. It all makes for a sublime juxtaposition against the green hills behind the chapel. Then you enter and behold an interior where the design’s restraint and refinement amplify each other. “[Even] if you’re an atheist,” DeLuca says, “when you go into it, you feel reverent.”



Wall Section

Our Lady of the Most Holy Trinity Chapel sits at the head of Thomas Aquinas College's arcaded academic quadrangle (left). The symbolic placement, combined with the 135-foot bell tower's stature as the tallest structure on campus, reinforces the church's important role in college life. A statue of Mary surmounts the chapel's pediment.

Project Credits

Client Thomas Aquinas College, Santa Paula, Calif.—Dr. Thomas Dillon (former president); Peter DeLuca (interim president and treasurer)

Owner's Representative Stegemen and Kastner—Randy Fulton (project manager)

Designer Duncan G. Stroik Architect, South Bend, Ind.—Duncan Stroik (principal); Stefan Molina (designer); Tony Bajuyo (construction administrator)

Architect of Record Rasmussen and Associates, Ventura, Calif.—Scott Boydston (principal); Jim Hanafin (project architect)

General Contractor HMM Construction

Structural Engineers Brandow & Johnston

Civil Engineers Jensen Design & Survey
Mechanical Engineers Nibecker & Associates

Lighting Consultant George Sexton Associates

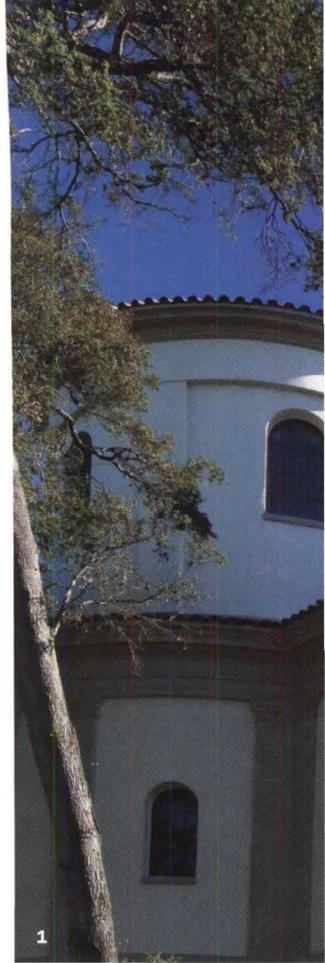
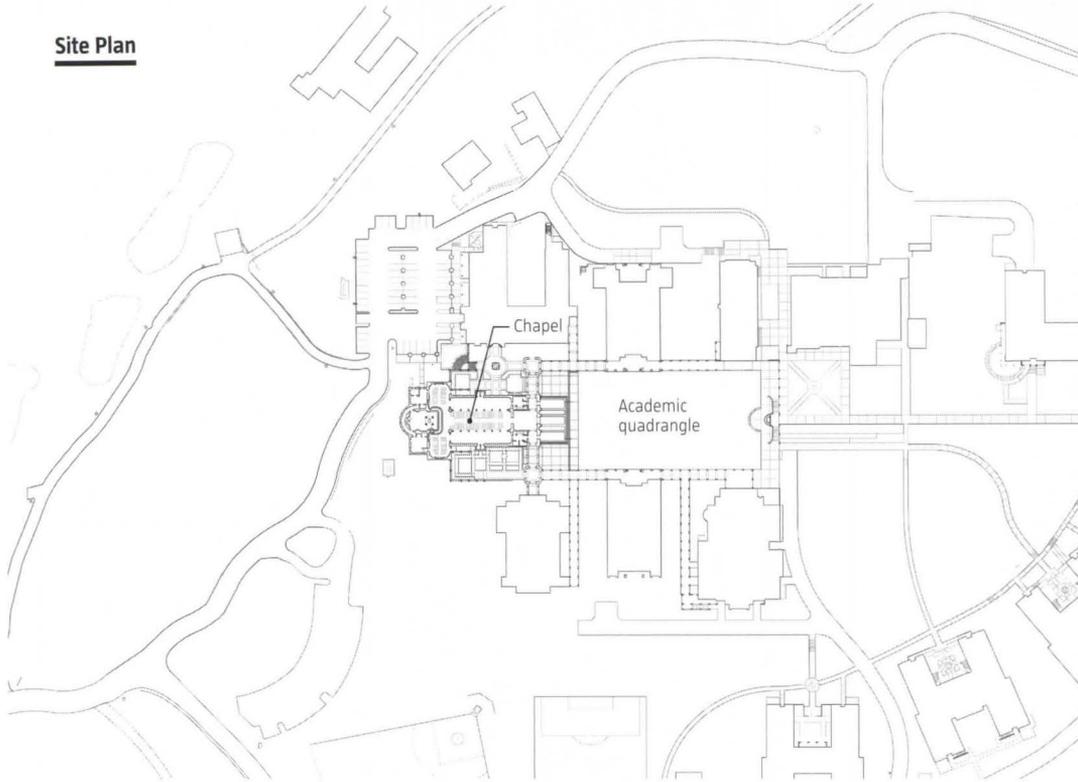
Acoustician Ewart Wetherill Acoustics

Sound System Shen Milsom & Wilke

Size 14,000 square feet

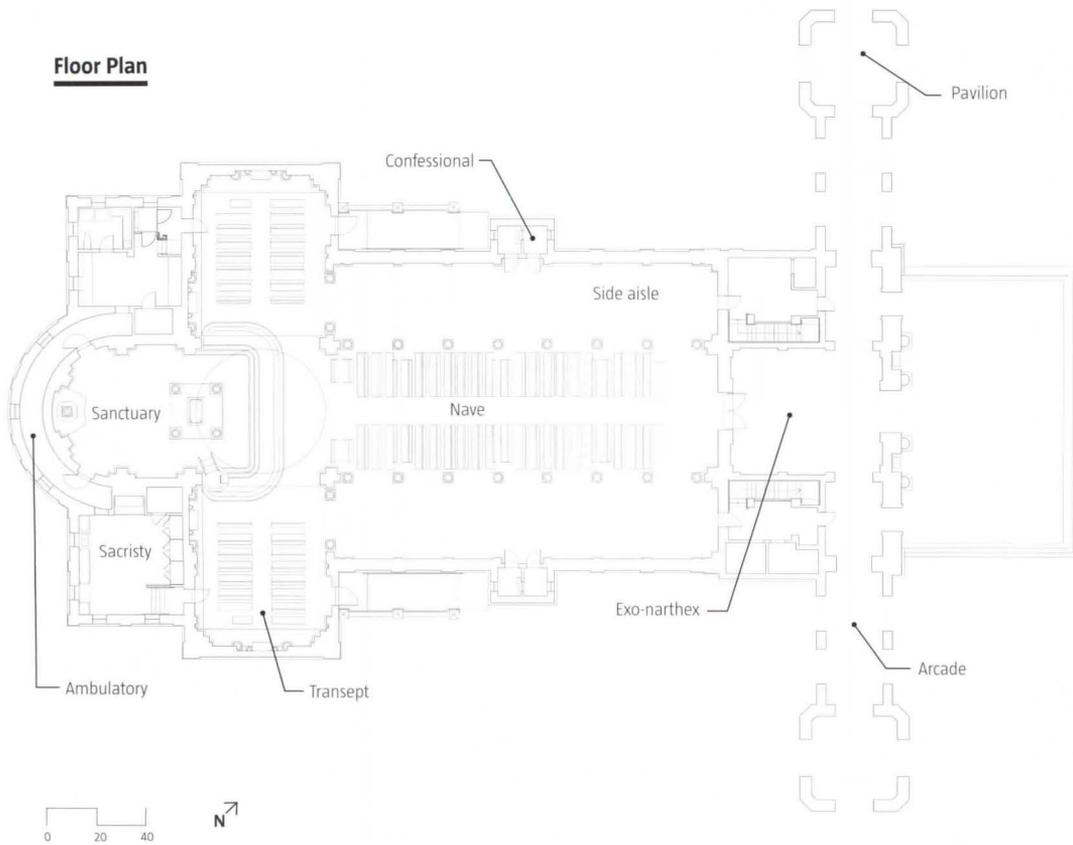
Cost \$23 million

Site Plan



1

Floor Plan



2

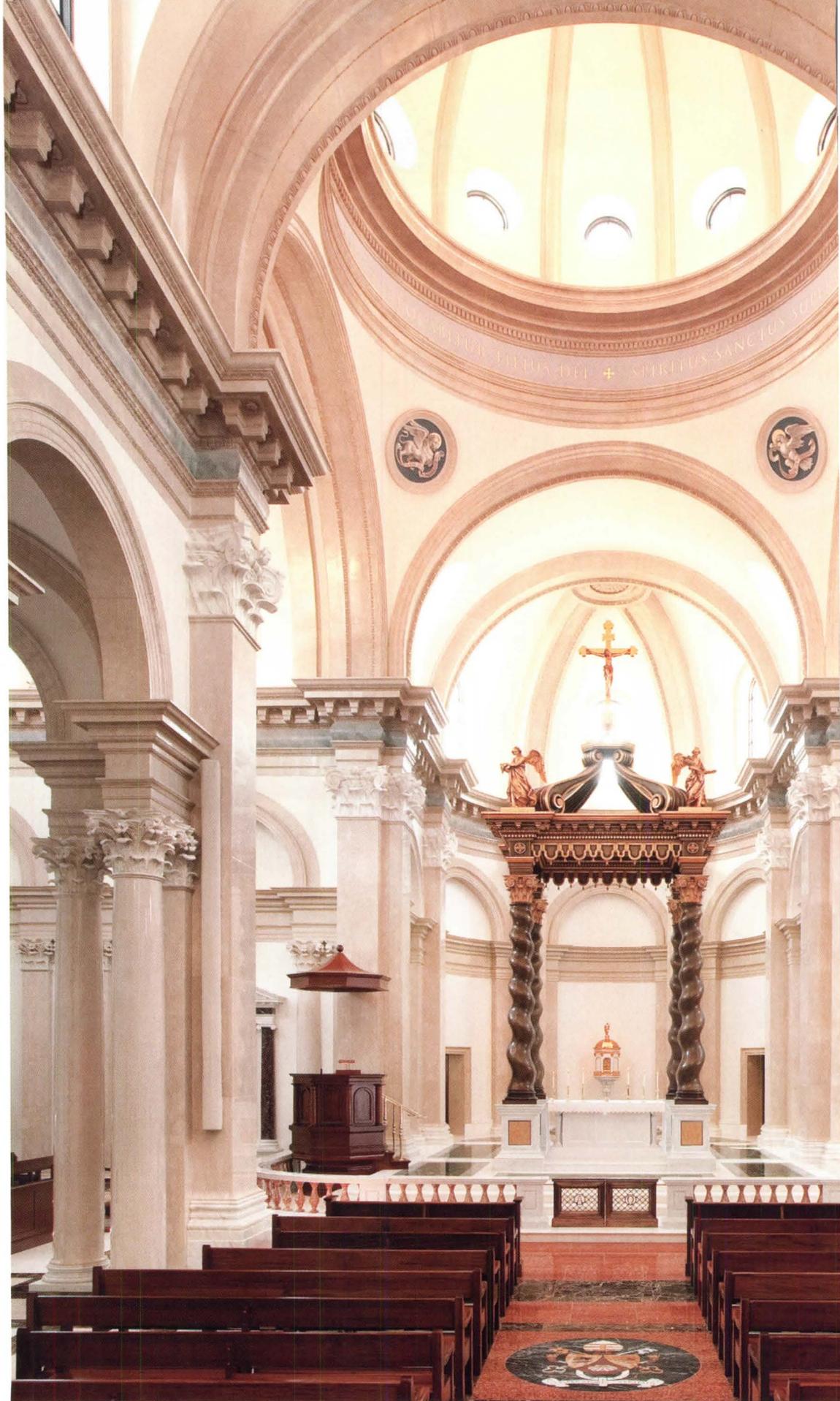


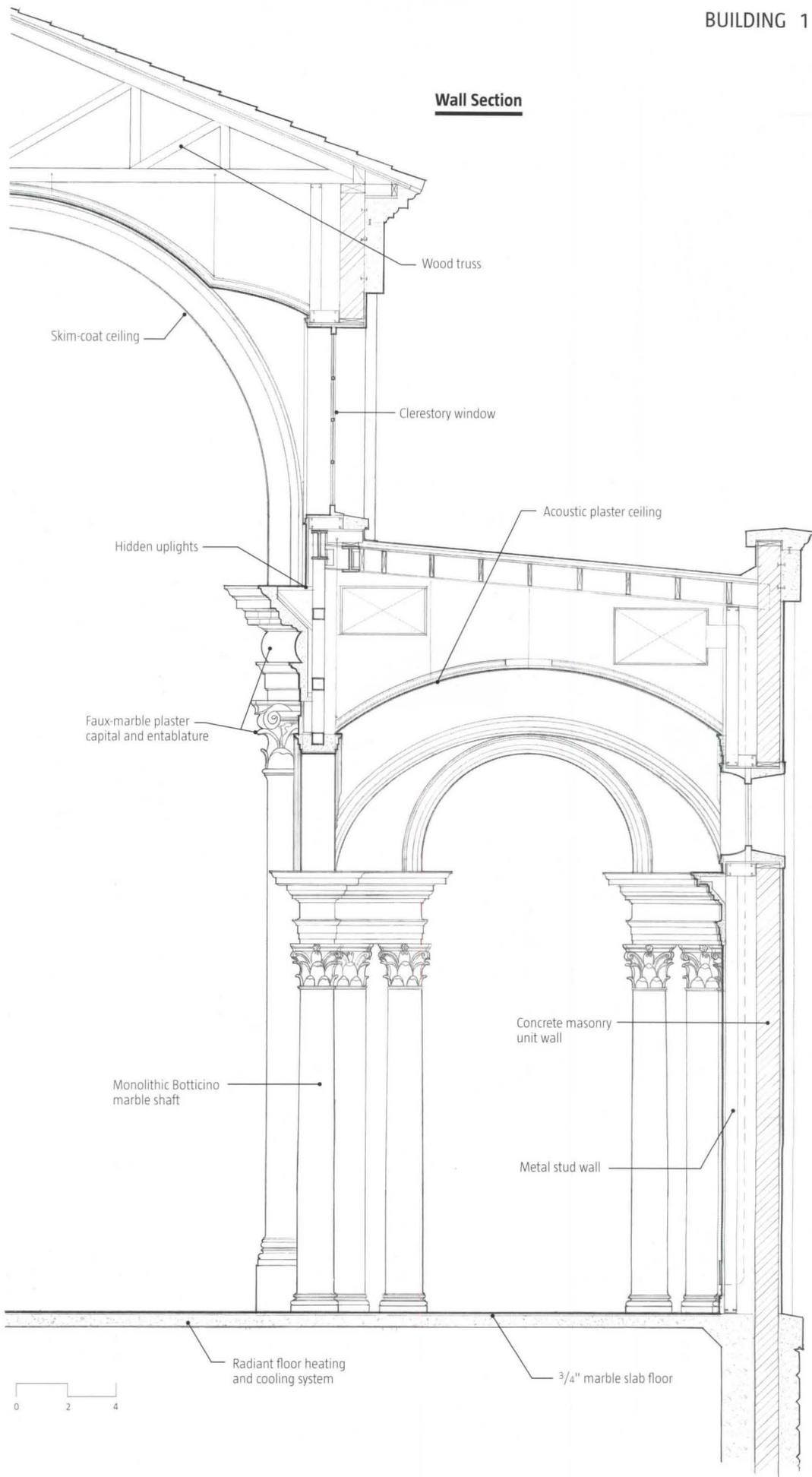
1. The building's white stucco-clad façade and terracotta roof tiles fit in with the aesthetic of the other campus buildings. However, for the chapel, the quality of materials was higher—for example, the roof tiles are handmade in 38 different sizes. In addition, exterior details such as moldings and engaged columns are carved out of limestone rather than cast in plaster or stucco.

2. The chapel arcades enclose small gardens that are open to students for quiet study and reflection. Landscaping for the gardens was a collaboration between Scott Boydston, a principal at architect of record Rasmussen and Associates, and Dave Gaston, the college's landscaper. Craftsmen created benches, urns, and statuary that were commissioned by or gifted to the college.



Laid out in a cruciform plan, the chapel interior boasts classical details carved by hand from marble and cast from plaster. A seven-arch colonnade—with Corinthian columns designed by Stroik and an entablature of faux blue marble—runs down either side of the nave, framing relief sculptures depicting the 14 Stations of the Cross in the side aisles. Light filters in through clerestory windows and oculi in the large Brunelleschi-esque dome that precedes the chapel's centerpiece: a 34-foot-tall baldachino inspired by Bernini's baroque masterpiece at St. Peter's in Rome.



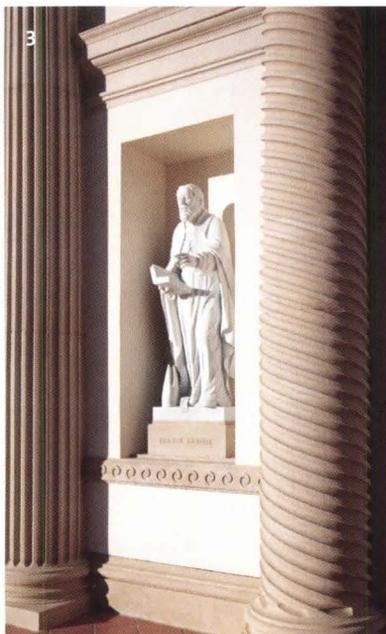




1



2



3

TOOLBOX

In this edition of Toolbox, we focus on aspects of the craftwork employed at the chapel of Thomas Aquinas College:

1. Colonnade

In the chapel's nave are 20 freestanding columns, each 13 feet high, from which arches spring to support the vaulted clerestories. Each column rests on a 10.25-inch-high base of white Apuano marble. The shafts are Botticino marble cut from blocks and turned on a lathe by Savema Marble in Pietrasanta, Italy (www.savema.com). Nine-inch-diameter cavities were drilled into the shafts to slide over circular steel columns that support the clerestory, necessary to meet seismic codes.

2. Plaster

A great amount of ornamental plaster designed by the architect was fabricated by EverGreene Studios (evergreene.com) for Corinthian column capitals, entablatures, arches, loggia bas reliefs, and the likeness of the Madonna above the doorway in the nave. EverGreene also furnished faux marble for the tondi in the dome's pendentives and in shrines in the two transepts, as well as original paintings taken from historical examples.

3. Statuary

On either side of the entrance to the chapel are Carrara marble statues. To the left of the door when entering is a bearded figure of St. Augustine; to the right is the college's namesake, St. Thomas Aquinas. Atop the pediment above the entrance is an 8-foot figure of Mary. Clay models for these statues were carved by Italian sculptor Giancarlo Burati, and the final figures were carved in marble by Cervietti Studio in Pietrasanta, Italy.

Baldachino (see page 74)

The baldachino, an elaborate 34-foot-high canopy over the altar, was made by the liturgical arts company Talleres de Arte, in Madrid, Spain (artegrandia.com). Its Solomonic columns are hollow bronze shafts fabricated in a lost-wax method, with a separate steel frame inside. The canopy and statues are made of painted and gilded wood.

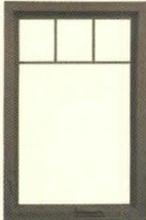
Limestone (see page 73)

On the façade are numerous Indiana limestone details and ornaments, including engaged fluted and spiral-fluted Ionic columns measuring 22 feet high; Corinthian pilasters measuring 18 feet high; inscribed friezes; and bas reliefs bearing the college's coat of arms, flanked by large angels. All limestone details were designed by the architect at full or half scale and hand-carved by craftspeople at Bybee Stone Co., of Ellettsville, Ind. (bybeestone.com)

Dome Tiles (see page 73)

The structure of the chapel's dome is made of curved steel beams set on a masonry base. Outside are custom-made scalloped terracotta tiles made by Boston Valley Terra Cotta in Orchard Park, N.Y. (terraclad.com/bvtc). There are 38 sizes of tile on the dome; they become narrower toward the dome's center, though their 16-inch length remains constant.

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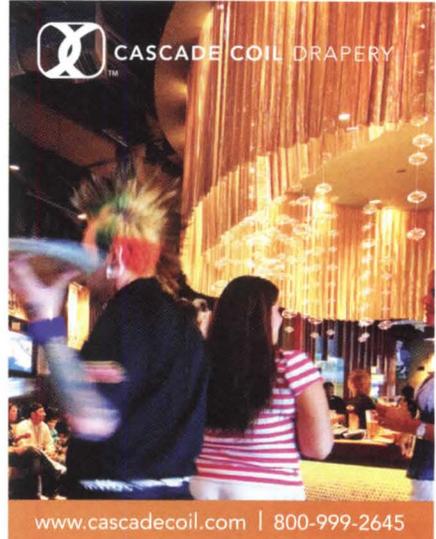
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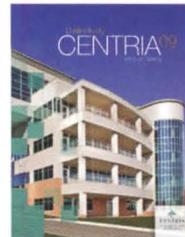


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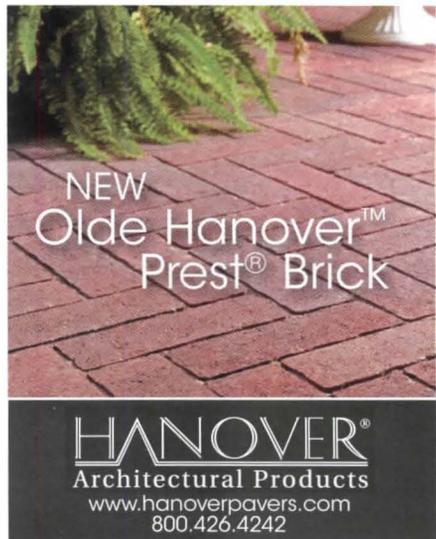


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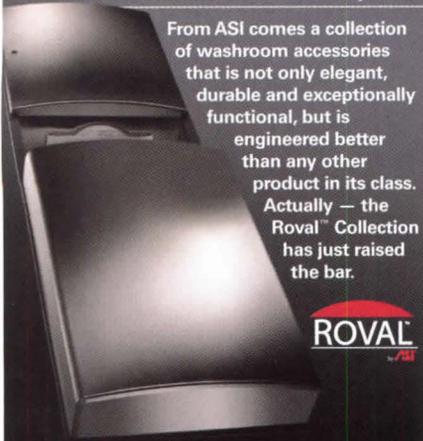
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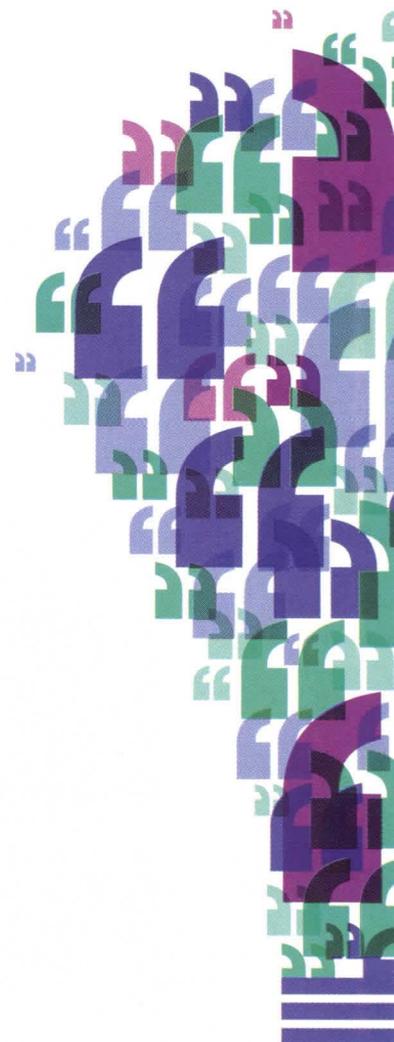
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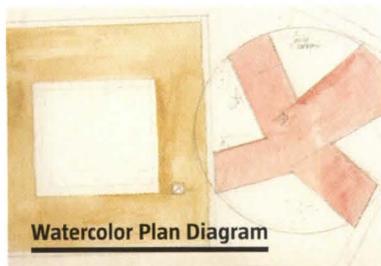


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→1990 P/A AWARD

THE ZERO BECOMES A PLUS



Watercolor Plan Diagram

THE DESIGN FOR THE **SCHOOL OF ARCHITECTURE ADDITION AT THE UNIVERSITY OF MINNESOTA** BECAME A TEXTBOOK EXAMPLE OF THE FLUIDITY OF ARCHITECTURAL SCHEMES.



TEXT BY THOMAS FISHER

1990 P/A Awards Jury

William Fain
Helmut Jahn
Min Kantrowitz
Fred Koetter
Peter Rose
Mack Scogin
Stephen Selkowitz
Daniel Solomon

MANY P/A AWARD-WINNING projects get built, although not always as originally designed. The addition to the School of Architecture at the University of Minnesota, designed by Steven Holl Architects and Ellerbe Becket, won an award in 1990 and received praise for its “discipline ... rigor ... (and) spark of spontaneity,” as juror Mack Scogin put it. The proposed 90,000-square-foot structure added an auditorium, library, offices, and studios to the existing 100,000-square-foot building, with four new towers containing jury rooms and studios that terminated axes on the campus, capturing different light conditions during the day and glowing like lanterns at night. The plan, made up of two arcs around a central garden, contrasted with the square plan and interior courtyard of the original.

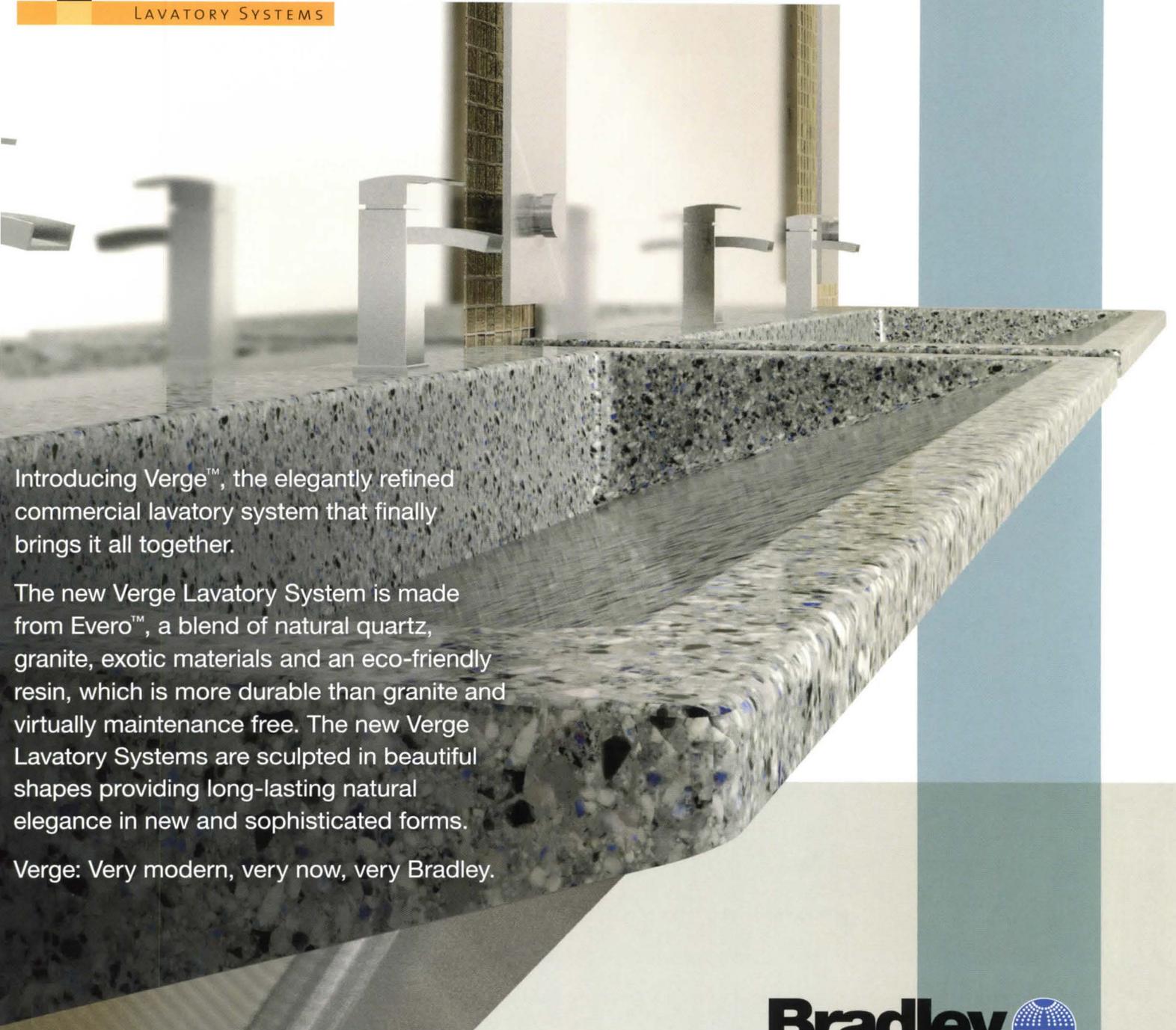
It took almost a decade to get funded, however, and the same amount of money 10 years later afforded an addition roughly half its original size. After realizing that he could not simply shrink the previous design, Steven Holl started over, designing a cruciform addition with many of the same features as the previous scheme: exterior gardens, metal cladding, and tower-like end walls that glow at night. At the same time, two aspects of the original that disturbed Scogin during the jury deliberations—the curved auditorium and library—became more straightforward in the final design. When speaking about the development of the project, Holl joked at how “the zero became a plus”—referring to the shift from two arcs to a cruciform plan—but his design process shows how much architecture remains an evolutionary process, never completely finished.

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