IPD in Play 18 The Acropolis Museum 48 Changes at the GSA 52 Hardware for Hard Times 26 Architect Impostors at Large 42

ARCHITECT





Beautiful. And smart.

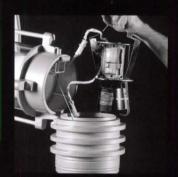
Eclipse fixtures have it all. They're designed to look good, with practically hands-free maintenance.

A complete site lighting solution for your LEED projects with its full cutoff dark sky certification.

It's time to make a change for the better, to **Eclipse**.











LUMINIS

USA - CANADA - UAE - KOREA

METALWrap

Distinctively INNOVATIVE.

Distinctively CENTRIA.

Introducing MetalWrap™ an innovative building product that can shorten construction time, reduce the number of construction steps, improve a building's thermal performance, and provide superior moisture resistance. Created specifically for CENTRIA's non-insulated metal wall systems, MetalWrap's unique design brings superior energy efficiency and high performance to metal wall backup systems. With more than a century of knowledge and experience, CENTRIA is where building teams turn for solutions, support and a distinct advantage.

We are...Distinctively CENTRIA.



Architectural Metal Wall and Roof Systems

Call us or visit our Website for more information.

800.250.7897

MetalWrap.CENTRIA.com

Circle no. 25 or http://architect.hotims.com



ARCAT BIM Objects, Systems, Materials

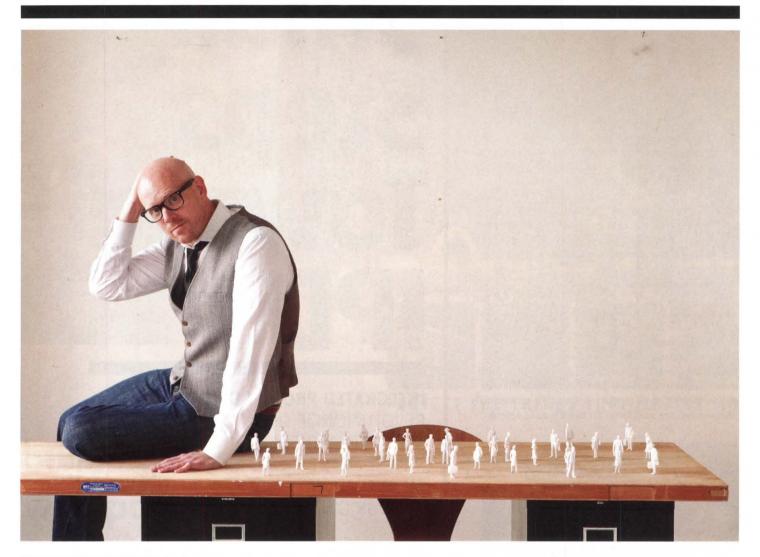
Developed by ARCAT BIM experts, so you can rely on them as you do for ARCAT specs and SpecWizards. These 3D objects are packed with all the data you need, and are free of charge like all of ARCAT services!



NHO NHO

www.arcat.com

BUSINESS



TEXT BY EDWARD KEEGAN PHOTO BY KAREN MOSKOWIT

Although a portfolio should provide a look at your abilities and experience, it can also reflect your personality, says longtime recruiter David Brown. "You don't want it to be as dry as your résumé," he notes. "That's not its purpose."

 \rightarrow BEST PRACTICES

Picture Perfect

PART 2 IN OUR SERIES FOR JOB HUNTERS CONSIDERS **THE PORTFOLIO**. MAKE SURE THERE'S CONTEXT FOR EACH IMAGE—AND THAT THE PRINT VERSION IS USER FRIENDLY.

MORE THAN A VISUAL COMPLEMENT to the text-only résumé, the portfolio needs to communicate a designer's experience and skills on its own. Recruiter David Brown runs his own business placing people in architecture, engineering, interior design, and planning firms across the country, and has also worked in this capacity for Callison and for Starbucks' in-house architectural department. So he's seen enough of these picture books cross his desk to offer good advice on the best ways of telling the story of you.

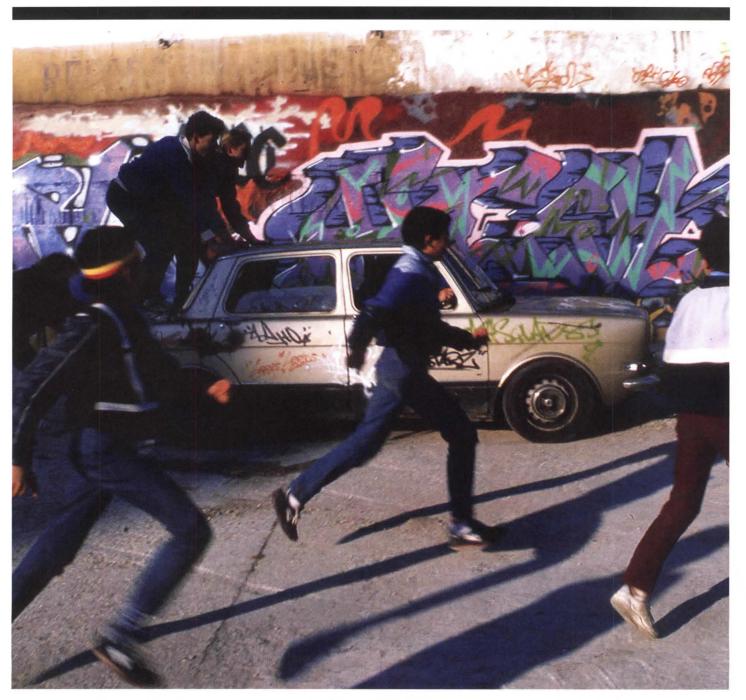
What's a recruiter looking for in a portfolio?

It's not just that it makes sense, but that it stands out. When someone's looking at 20, 30, or more, what goes in the review pile? Only 2 percent of firms are large enough to have a human resources department. The rest have an office manager, who buys paper and reviews résumés. That person, skilled or not, is the gatekeeper. They check off the boxes on the job description. But





CULTURE



→ EXHIBIT

Graffiti has become a part of urban life over the last few decades—a silent but vivid accompaniment to one's subway ride or sidewalk stroll. Born in the Streets, an exhibition at the Fondation Cartier in Paris, traces the timeline of an art form that started in the 1970s with tags and murals around New York City and has now won quasi-mainstream acceptance around the globe. Featuring new work from graffiti pioneers Phase 2, Part 1, and Seen, the show runs through Nov. 29. fondation.cartier.com

WWW.ARCHITECTMAGAZINE.COM

Bringing Urbanism



Firefighters parade through Hudson, N.Y., in 2001.

TEXT BY MATTHEW FREDERICK



Matthew Frederick is an architect, urban designer, author of the best-selling book 101 Things I Learned in Architecture School, and editor of the 101 Things I Learned book series, to be released by Grand Central Publishing in spring 2010. He is currently working on a new book, Radical Urbanism. He lives and works in Cambridge, Mass

I LOVE BIG CITIES, but I often find small cities more compelling. The dispiriting and encouraging aspects of urbanism are more immediately juxtaposed, often heart-rendingly so, but the disparity between them seems bridgeable. Surely, this place can be made to work, if only.

Hudson, N.Y., a settlement of 8,000 residents two hours north of Manhattan, is a two-square-mile snapshot of America's urban disparity. Its main avenue, Warren Street, is a stunner; it looks as if eight very charming blocks of Brooklyn left the big city a century ago and moved to Columbia County. It has its rough spots, but Warren Street has been experiencing a revival, thanks to gentrification, historic preservation, an influx of antique dealers and tourists, and the helping hand of government.

In the blocks immediately to either side of Warren Street, one finds the other Hudson: comparatively poor, nonwhite, disconnected, and underemployed. The crime rate is higher, and the rough spots in the urban fabric are rougher. The industrial base is nearly gone, as are innumerable mom-and-pop shoe stores, food marts, and repair services that once made Hudson, Hudson.

What has happened in Hudson, as elsewhere, is that the middle has dropped out. But before blaming its vanishing middle class on the global economy, look closer to home. In fact, look in the home, for this is where American businesses - and

American urbanism—used to get started. Before we became enamored of top-down urbanism—funded by government, propped up by feasibility studies, packaged by city hall, guarded by aesthetic review boards, and delivered by developers—urbanism arose

through an organic process of small entrepreneurs opening home-based businesses to the sidewalk. Their one-of-a-kind shops and industries were the starting point for innumerable mixed-use streets, districts, and downtowns that we love today.

In the late 1800s, modern zoning, building, and health codes sought to mitigate the problems inherent in this model by removing the slaughterhouse and the smelting plant from the residential neighborhood. These were good ideas at the time. But these codes have since become problematic themselves, for they effectively forbid a poor person from making a living serving muffins and coffee in her dining room, or selling and repairing shoes out of a living room.

The unavoidable outcome, many decades later, is fewer one-of-a-kind businesses in Hudson and the rest of America, suffocating dominance by chain stores, a dearth of new industries to replace what America has lost, and a lot of poor city residents in residential-only neighborhoods sitting on their hands, waiting for city administrations to attract a major employer.

It's no wonder such disparity mars our cities: Warren Street became a fully urban street when

Home



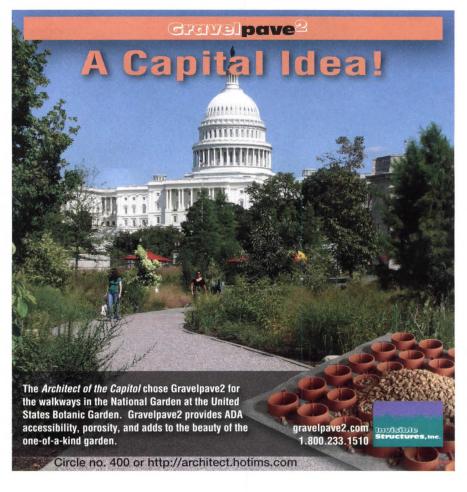
urbanism was allowed to occur naturally and spontaneously. But the poor residential neighborhoods of Hudson are forbidden from attaining that same level of urban fullness today. And meanwhile, Warren Street increasingly becomes the province of a class of people who can afford to buy into urbanism in a near-fully formed state.

If there is one thing we know well as architects, it is that all ideas have a shelf life. An idea for one building rarely works in the next; in fact, most of the ideas we come up with only serve to get us to the idea after that. This is where America now stands in regard to the urban problem. The ideas that once made our cities more livable are now the biggest obstacles to their betterment. I include among them that most sacred of cows, the historic preservation movement.

Unquestionably, historic preservationists kept many buildings and neighborhoods standing for years until others reawakened to their value. But today, historic preservation strictures stultify the imaginative, entrepreneurial spirit—the urban spirit. This is why Warren and streets like it are becoming museums of themselves: what was once put in place to safeguard urbanism now prevents real urbanism from happening.

We've accomplished some good in our cities with some once-good ideas. It's time to find a different set of ideas that will span the disparity. \Box





→ SCREEN GRAB

drawingvault.com

BUSINESS-SAVVY SELF-STORAGE FOR CONSTRUCTION DOCUMENTS.



TEXT BY BRAULIO AGNESE PHOTO BY WILLIAM ANTHONY

A decade ago, Peter Stevenson (left) and Nathaniel Olson were swimming in construction documents. They contained the flood and developed the Drawing Vault, a CD-management service for developers and property management companies.

IT'S FAIR TO SAY construction is not the most efficient U.S. industry. There have been improvements in how buildings go up—witness the (slow) growth of BIM and integrated project delivery. But once something's open for business? Not so much. Maintenance, tenant turnover, and new management mean construction documents (CDs) are constantly in use and, likely, scattered across offices and professions. "Property management folks are always scrambling for drawings," says Drawing Vault president Peter Stevenson, and thus wasting time and money.

He should know. For more than 20 years he's run Stevenson Systems Inc. (SSI), a premier building space management firm in Laguna Niguel, Calif. A decade ago, awash in drawings, SSI developed its own archiving protocol after talking with property owners, architects, and others about their CD-management needs and wishes. The first time it demonstrated the system, Stevenson says, "two clients signed up." Thus was born the Drawing Vault (drawingvault.com).

When a structure's base building drawings, improvement drawings, and related documents are turned over, Drawing Vault scans the paper items—there's a full-time archivist on staff—and puts the images, along with any other digital files (.dwg, .dxf, .rvt, etc.) on its servers, where they are available to clients. A self-storage space, as it were, but one that's wired for business. (And home to 3,000 buildings.) CAD files can be downloaded for use, and an online viewing tool keeps printing to a minimum. A return on investment, says marketing director Nathaniel Olson, can be realized in as little as three months. In 2007, he adds, one multibuilding owner saved \$400,000 in printing costs.

This year, the Drawing Vault is looking to grow. After renting its first booth at an AIA convention last May, the company had inquiries from the U.S. General Services Administration. Even Uncle Sam, it seems, needs help with his portfolio.

LINKS

pimpingarchitects.blogspot.com

Peter Eisenman may think the use of unpaid architectural interns is "fabulous" (bit.ly /12/3Eb), but the fact is that, with few exceptions, doing so is unethical and, frequently, illegal. Architects Who Eat Their Young hopes to bring an end to this practice by, as the blog's motto explains, "exposing intern exploitation one firm at a time."

colorsuckr.com

Do you like to use photographs as color inspiration for your designs? Feed the images into this site and extract the 12 most common color schemes in each photo. ColorSuckr will provide the hexadecimal, Web-safe, and RGB information for every hue.

canopycanopycanopy.com

Megachurches-places of worship that house 2,000 to 50,000 congregants each weekend-may seem like a recent phenomenon, but as New York architecture critic Joseph Clarke explains in "Infrastructure for Souls," they have their roots in 19th century British and American Protestantism. This essay, published in issue six of the online cultural magazine Triple Canopy, shows how their "architectural and organizational tropes ... are best compared to those of the modern white-collar workplace." · bit.ly/WalAh

bldgsim.wordpress.com

Run by University of Stuttgart—educated architects Jens
Voshage and Kertin Mueller, now located in Vancouver, bldgsim is all about the variety of digital tools that can help create better-designed, more-sustainable architecture.

cmuarch2013.wordpress.com

The official blog of the Carnegie Mellon School of Architecture class of 2013. Not just an archive of academic activity, but a place for professors and students to post on all things architectural—including, this past school break, road trips and travels abroad, museum visits, and other highlights of off-campus life.

xplanes.tumblr.com

The tagline to this image-heavy blog says it all: "experimental aircraft. exotic aeromachines. oddities. sleek silver cigars. pedal-o-trons. soviet hive-mind bombers. aerial joy." Indeed.



THIS IS ONE VERY RESPONSIVE FAUCET.





Proximity™ Sensing Technology is the next generation in responsive hands-free functionality that contributes to water efficiency. This revolutionary technology transforms the entire faucet into a sensor, automatically responding when approached. There are no optics or infrared to maintain. All backed by the industry's best 5-year limited warranty. Another way that Delta is more than just a faucet.

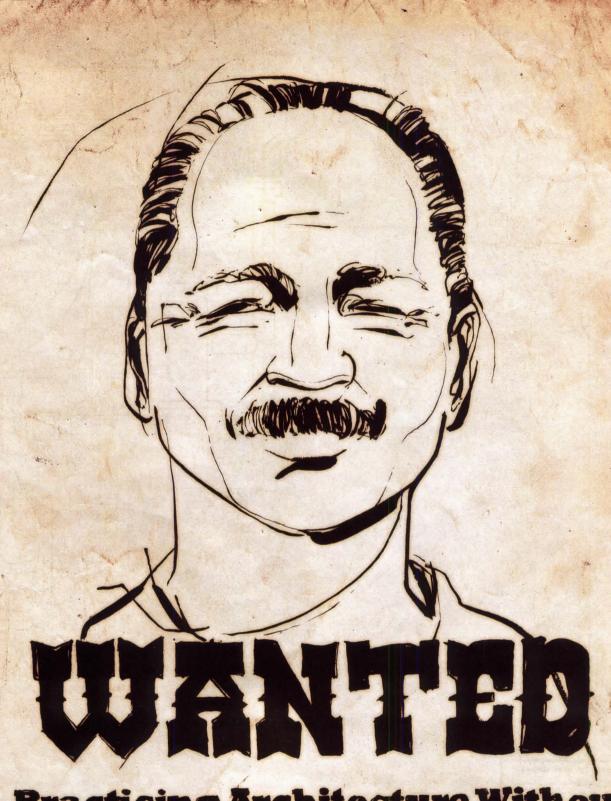
deltafaucet.com/commercial/proximity



see what Delta can do

Circle no. 27 or http://architect.hotims.com





Practicing Architecture Without A License, Forgery, Fraud.

ARCHITECT SEPTEMBER 2009

WWW.ARCHITECTMAGAZINE.COM

TRUST ME, I'M A (FAKE) ARCHITECT

TEXT BY AMANDA KOLSON HURLEY ADDITIONAL RESEARCH BY JOHN SCAPPINI ILLUSTRATIONS BY PJ LOUGHRAN

IF YOU DON'T HAVE AN ARCHITECTURAL LICENSE, IT'S ILLEGAL TO CALL YOURSELF AN ARCHITECT

OR PERFORM ARCHITECTURAL SERVICES—BUT PEOPLE STILL DO. WHO ARE THEY, WHO'S POLICING THEM, AND CAN THEY BE STOPPED?

MICHAEL ANGELO GIDEO owns a small business in Plano, Texas, that specializes in custom-designed backyards. His company installs swimming pools, builds outdoor fireplaces and patios, puts up decks, and tackles landscaping projects. The company, Backyard Architect, has a website at backyardarchitect.com.

A fitting name, right? The Texas Board of Architectural Examiners doesn't think so: Gideo is not, and has never been, a registered architect in the state of Texas; nor is his company affiliated with a registered architect. By Texas law, one of these conditions must be met if the term "architect" or "architectural services" is used in a business name.

Early this year, after Backyard Architect came to their attention, board staff sent Gideo warning letters, notifying him that he was violating both the state Architects' Practice Act and the Landscape Architects' Practice Act. He didn't respond. In March, board staff met informally with Gideo to tell him that his continued use of the term "architect" in his business name was illegal. "He gave us no legal reason why he was [still using the term]," recounts Michael Shirk, the board's managing litigator. Gideo's website stayed live, the name unchanged.

So in July, an administrative law judge advised the board to impose a penalty against Gideo of \$200,000. That's \$5,000 a day—the highest penalty the board is authorized to assess—for each of the 40 days (or longer) that Gideo had violated the law.

Rule-Breakers and Fakers

If Texas Board of Architectural Examiners v. Mike Gideo stands out, it's for the jaw-dropping penalty recommendation, not for the fact that someone without a license to practice architecture touted himself as an architect or offered architectural services. That part is all too common. Unlicensed practice is nothing new, and neither are attempts to curtail it. Many states have had laws on the books for decades stipulating that architects stamp drawings of all structures above a certain square footage. The intent is to safeguard the health and welfare of the public: An office building or day care center with major design flaws poses an obvious risk to the people inside, as

In any given year, hundreds of complaints about unlicensed practitioners are filed with state boards by members of the public; by bona fide licensed architects; and by building officials (alerted, perhaps, by a set of unstamped drawings). Who are the offenders?

does an unsound or barely habitable home.

They include an architecture school professor who used the phrase, "as an architect, I ... " in a newspaper article she wrote (Iowa, 1997, cease-and-desist order, no penalty), and a licensed architect who was found to have published his business website—with multiple variations on the verboten title "architect"—before he had obtained his license (California, 2006, \$500 civil penalty). There are respected architects, already licensed in one or more states, who obtain a license in another—but only after starting work on a project there. At the other end of the ethical spectrum are the people who steal dead architects' seals and fraudulently stamp drawings with them.

In between the shoulda-known-betters and the downright crooks are a lot of overreaching drafters and builders like Gideo. Almost always, a state board's first step after investigating a complaint is to send a letter explaining the protected nature of the terms "architect" and "architectural."

Do the violators really not know that what they're

→ Clarification: The duties and structures of state boards vary tremendously. (For instance, some regulate architecture alone, while others oversee architecture and interior design, or architecture and landscape architecture.) For simplicity's sake, this article uses the catchall term "board" throughout.

← James Madison Jackson

Jackson served two years in a Texas prison for theft and is currently awaiting trial for writing worthless checks in North Carolina. But his "gateway crime" was the unlicensed practice of architecture. Once employed as an architect by Dallas firm Gromatzky Dupree & Associates (he was dismissed when they discovered that he wasn't licensed, despite his claims to the contrary), Jackson has received felony indictments for illegal practice in both Texas and South Carolina, More recently, operating various construction businesses, he racked up liens totaling more than \$1 million-not to mention criminal charges and a trail of angry victims.



SETTLED

Issuing Architectural Plans And Specifications Without A License.

doing is illegal? "A decent number" of cases are due to ignorance, confirms Douglas McCauley, executive officer of the California board: "Folks are genuinely not knowledgeable" about the law. However, he adds, "You also get a fair number who know the law, and ... are operating on the edge." Joseph Vincent, administrator of Washington state's board, estimates "right off the top of [his] head" that about 75 percent of these violators don't understand the legal protection of the title or how they've infringed on it. The other 25 percent "are more deliberate - and then we pursue appropriate actions."

Under the laws of numerous states, single-family homes or structures of less than a certain square footage are exempt from the requirement that an architect be involved in the design. So the line between houses and townhouses, or between 4,000 and 4,500 square feet, can start to look blurry. "When you [i.e., a contractor] ... do a residential design for a doctor's house, and the doctor comes back and says he wants you to do his office—that's where [unlicensed people] cross the line," says David Minacci, a lawyer whose firm investigates and prosecutes cases of unlicensed practice in Florida on behalf of the state board there.

Cease and Desist

The letter of warning, or a sterner cease-and-desist order, is usually enough to prompt voluntary compliance, the common goal of all state boards. The board officials interviewed for this article emphasize public outreach as an essential tool, and a few can point to full-fledged education campaigns. California's board "subscribes to a philosophy of ... preventative rather than remedial," says McCauley. He rents a booth at the statewide conference of buildings officials and cultivates a relationship with the American Institute of Building Design (AIBD). New York director Robert Lopez has visited Pratt Institute, City College, and other schools to talk about the importance of licensure.

But all the outreach in the world can't stop someone who's intent on misrepresenting him- or herself or committing fraud, and in such cases, boards get tough. How tough depends on the state. Texas's \$5,000-per-day maximum penalty is not typical, and some boards are essentially toothless—West Virginia's, for instance, has authority only over licensed architects, so it doesn't even track cases of unlicensed practice, let alone prosecute them, says the board's executive director, Lexa Lewis. Among the states with the most enforcement muscle are Texas, Illinois, Florida, Nevada, and California; those with the least include Wyoming, New Hampshire, and Idaho, as well as the District of Columbia.

Law-abiding architects should be encouraged by one trend: A number of state legislatures have recently conferred more power on boards of architecture. Washington's board did not have the authority to send

← Sullivan, Stevens, Henry, Oggero & Associates

As a firm composed of non-architects, Houston's Sullivan, Stevens is well within its rights to design single-family homes in Texas, thanks to a legal exemption. However, that exemption doesn't apply to multifamily dwellings or commercial structures above a certain size or height. Texas' board learned that not only had Sullivan, Stevens drafted plans for two townhouse communities and a sales office (all nonexempt), but the City of Houston had permitted them—satisfied by an American Institute of Building Design stamp where an architect's should have been. The board ordered Sullivan, Stevens to cease and desist from the practice of architecture and recommended a fine of \$25,000; the case was settled before a hearing was held.

slump it's in, there has been an increase in building design occurring without the use of architects when [they] should have been involved." A particular problem in his state is the design of nonexempt structures by either unlicensed building designers or by engineers, who may claim to be qualified to perform

ENFORCEMENT ACTIONS: A ROUGH TALLY

Neither NCARB nor the AIA tracks cases of unlicensed practice and individuals holding themselves out as architects—so we combed through state board newsletters and reports. The numbers below represent our best estimate of such cases, based on data that was often incomplete and difficult to interpret. While not precise, the numbers convey a sense of the level of tracking and enforcement—and perhaps the scope of the problem of illegal practice—in each state.

| | | 2008 | 2007 | 2006 | 2005 | 2004 | 2003 |
|-----------------|------|------|------|------|------|------|------|
| | CA | 13 | 15 | 7 | 6 | 11 | 4 |
| | NY | 0 | 1 | 1 | 0 | 0 | 0 |
| | IL | 6 | 8 | 1 | 0 | 6 | 8 |
| | TX | 12 | 11 | 11 | 4 | 3 | 28 |
| | NC | 23 | 9 | 1 | 15 | 3 | 7 |
| | MD | 1 | 1 | 3 | 0 | 0 | 0 |
| _ | VA | 0 | 0 | 0 | 0 | 0 | 0 |
| | NE | 0 | 1 | 0 | 0 | 2 | 0 |
| 1 1 | мо | 9 | 15 | 8 | 9 | 9 | 10 |
| ביוער דרוב סקום | PA | 2 | 1 | 0 | 1 | 4 | 1 |
| ر | TN | 0 | 4 | 2 | 4 | 3 | 6 |
| | AZ | 1 | 1 | 2 | 1 | 1 | 1 |
| | со | 1 | 0 | 2 | 1 | 1 | 0 |
| | ME | 0 | 0 | 0 | 0 | 0 | 0 |
| | IA | 0 | 1 | 0 | 2 | 0 | 3 |
| | NV | 23 | 20 | 10 | 23 | 20 | 23 |
| | AK | 0 | 0 | 1 | 0 | 0 | 3 |
| | AL | | 0 | 3 | | | |
| | LA | 0 | | 0 | 25 | 20 | 0 |
| | AR | | 1 | 2 | 8 | 14 | 5 |
| I | FL | 82 | 90 | 89 | | | |
| E DAI | MN | 3 | 8 | | | | |
| NCOMPLETE DATA | ОН | 8 | 9 | 11 | 17 | 12 | 7 |
| COIN | OR | | 3 | 6 | 2 | 7 | |
| = | SC | 12 | 7 | 6 | 0 | 0 | |
| | VT | | | 2 | | 1 | |
| | WA | 6 | | | 1 | | |
| | WI | | | 1 | | | |
| СТІ | IONS | 202 | 206 | 169 | 119 | 117 | 106 |
| ITH DATA | | 23 | 24 | 26 | 23 | 23 | 20 |

Data unavail./no data: DC, ID, OK, IN, WV, NH, NM, ND, KY, DE, MA, MI, NJ, RI, KS, CT, HI, SD, UT, WY Data not sorted by type or year of violation: MS, GA, MT

Architects whose licenses had recently lapsed were excluded from this count, when possible.

WHAT YOU CAN DO TO STOP ILLEGAL PRACTICE

Keep your eyes and ears open

If a friend or family member has hired a supposed architect who seems less than competent, check him or her out. Scan the ads in your local paper; do a Google search for "architect" + "[your town or city]" to see what names and websites turn up.

Report, report, report

STATES W

If you suspect that someone is practicing architecture without a license, take your concerns straight to your state board. Many board websites now allow you to verify a person's licensure by means of a quick name search. Be sure to follow through on your sleuthing and, if warranted, lodge a complaint: After all, it's stipulated in the AIA's code of ethics and professional conduct.

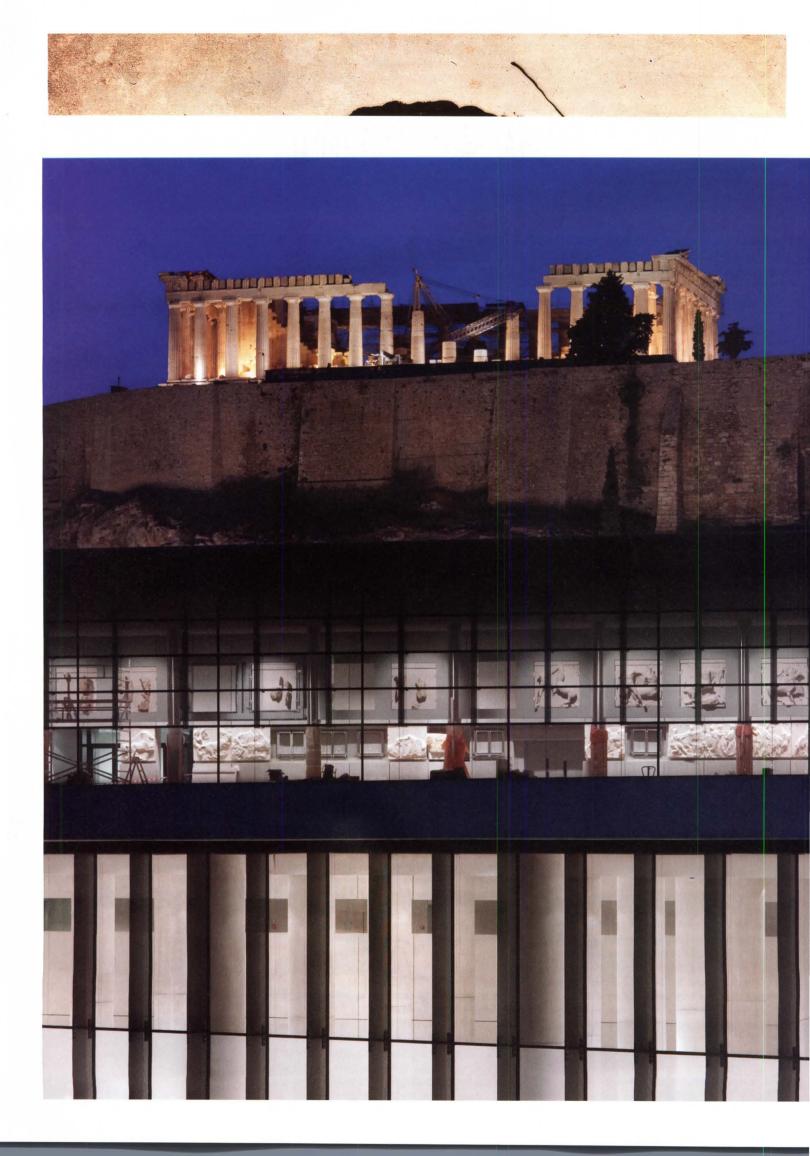
Contact your local AIA component

If you think illegal practice is a problem in your state, let your AIA chapter know. It may have enough lobbying power to make your state government sit up and take notice.

No doubt Gideo's behavior was "extremely serious," as the board found, but \$200,000—that's a lot of money. In response to this observation, Shirk e-mailed, "Big State-Big Penalty." The e-mail had a photo of the Texas state flag, with a legend in large-point, red type:

"Don't Mess With Texas Architects." 🗆

to four months of weekends in jail and five years' probation, and was ordered to make reparations to the city in the amount of \$10,000. Needless to say, he was required to resign from his government job.



ACROPOLIS NOW

AT BERNARD TSCHUMI'S NEW ACROPOLIS MUSEUM,

GREECE DISPLAYS REMNANTS OF ITS PAST—AND BIDS TO RECLAIM THOSE IT LOST—ALL IN THE SHADOW OF ARCHITECTURE'S MOST CELEBRATED LANDMARK.

AS ONE OF THE MOST ESTEEMED monuments of Western civilization, the Parthenon has both inspired and cast its shadow over many an architect. Visiting the Athenian Acropolis for 12 days straight in 1911, Le Corbusier was by turns exhilarated and oppressed by the glory of its buildings. He pronounced himself "stupefied by this gigantic apparition" which provoked "heartrending doubt" in his own abilities. "It crushes you until you're ground to dust," he lamented.

Karl Friedrich Schinkel was less intimidated. After Bavarian Prince Otto became king of Greece in 1834, the Prussian architect boldly drew up a royal palace that would have partly surrounded the Parthenon's ruins, but it was never built. More recently, Walter Gropius attempted a modernist reimagining of the temple to Athena when he designed a white marble U.S. Embassy in the Greek capital in 1956.

There are a number of 20th century high-rises in Athens—Vincent Scully denounced the 14-story Hilton designed by a trio of Greek architects as "vandalism" when it opened in 1963—but the primacy of the Acropolis on the skyline has been largely preserved. Still, building anywhere in its proximity can be a vexed task.

With his long-awaited New Acropolis Museum, which opened in June at the base of the once-sacred plateau, Bernard Tschumi becomes the latest to wrestle with the Parthenon's daunting precedent. The former dean of Columbia University's architecture school has had mixed success in creating a showcase worthy of the sculptures of the Acropolis and what remains in Greece of the Parthenon frieze, after half was removed with saws and crowbars at the behest of Britain's Lord Elgin two centuries ago.

Swiss-born Tschumi had no interest in overtly miming the Parthenon's form. Instead, the museum pays subtle homage to the Doric landmark and landscape through a monolithic minimalism. From the outside, the building's façade of black fritted glass inserts a massive, inky rectangular box into the cityscape, which provoked intense controversy among many Athenians for being overscaled. This was, for sure, a supersized commission with a double-pronged task—diplomatic as well as archaeological. It aims

not only to preserve the remnants of Acropolis sculpture that can no longer be left out in the open air due to pollution, but also to convince the British government to return the Athenian artworks to their place of origin.

Demands for Britain to give back the sculptures emerged almost as soon as the so-called Elgin Marbles were first removed in the early 1800s. The dispute over what Greece prefers to call the Parthenon sculptures has been waged by scores of politicians and in poetry and prose by Thomas Hardy, Lord Byron, Constantine Cavafy, and John Keats. But the calls for their return gained renewed fervor in the 1970s after the sculptures became increasingly identified with Greek democracy after the fall of military rule in Athens.

When fiery actress Melina Mercouri gave up her film career to become culture

Preceding spread: The New Acropolis Museum sits in the shadow of the Parthenon, its uppermost gallery set parallel to the ancient temple.

This spread, clockwise from bottom left: As exemplified by a gallery of archaic sculpture, with its forest of columns, Tschumi's design is a distillation of ancient Greek architectural principles. The base of the museum hovers over ongoing archaeological excavations, which visitors can view from balconies and through glass flooring. The caryatids look across Tschumi's central atrium to pediment sculptures from the Parthenon. Angled walls of stainless steel on the east and west facades block out the harshest sunlight. The Parthenon frieze remnants, metopes, and pediment sculptures occupy the light-filled top floor gallery.







ALL PHOTOS COURTESY PETER MAUSS/ESTO, EXCEPT TOP RIGHT: CHRISTIAN RICHTERS

minister in 1981, she brought renewed attention to the issue. High on her agenda was dispelling Britain's doubt that the Greeks could be trusted as custodians of their own heritage by creating a purpose-built museum to spotlight and safeguard the sculptures—something to outshine the British Museum's imposing Neo-Classical Parthenon gallery, designed by American architect John Russell Pope and completed in 1938.

Tschumi's design, realized with Greek architect Michael Photiadis, won the fourth in a succession of competitions held to come up with a concept for the new museum. Arguments over excavations repeatedly delayed construction of the museum, originally due to open in time for the 2004 Summer Olympics in Athens. "Polemic is a Greek word," noted Tschumi as he walked around the finished building, adding that 104 lawsuits sought to halt the \$180 million project.

At 46,000 square feet and containing some 4,000 artifacts, the museum is nearly 10 times as big as the cramped, 19th century Acropolis Museum just behind the Parthenon. From the outside, Tschumi's trilevel composition is clearly visible, but the façade mutates from side to side, with individual segments consisting variously of precast concrete panels, corrugated steel, and long expanses of dark glass. By placing the top segment off-kilter from the rest, Tschumi attempted to give a sense of movement to the behemoth that he has wedged in among low-rise modern apartment blocks and 19th century Neo-Classical buildings.

The structure hovers over the now nearly completed excavations, held aloft by 43 concrete columns placed in consultation with

archaeologists as well as engineers. Glass pavers give views of the archaeological finds below, revealing multiple layers of Athenian history, including homes, bathhouses, and workshops dating from periods after the creation of the Parthenon in the fifth century B.C.

The interior of the building is far better than its bulky exterior, and circulation through it is intended to recall the experience of mounting the Acropolis itself. After entering beneath a grand cantilevered concrete overhang, visitors amble up a glass ramp toward the displayed fragments of an ancient temple, ransacked by the Persians in 480 B.C. on what became the site of the Parthenon.

Turning to the right, visitors enter a vast, triangular gallery filled with an astounding collection of archaic sculpture arranged as if in an agora. Natural light has been deployed here to maximum effect, pouring through south-facing windows into the white marble-floored room with its forest of sandblasted concrete pillars. Because sunlight from the east and west is so intense, at these ends of the building Tschumi has created louvered walls of corrugated stainless steel panels.

From here there is another ascent, to the uppermost gallery, a huge glass rectangle containing the remains of the Parthenon frieze, metope reliefs, and pediment sculptures. This dazzling gallery has been shifted from the lower portion of the museum to bring it in parallel alignment with the Parthenon outside. The room has roughly the same footprint as the Athenian temple, which can be seen 300 yards away by visitors as they review the Parthenon frieze and the metopes.









Rather than leave voids where the pieces taken by Lord Elgin once stood, the museum inserted white plaster casts among the original honey colored segments. The casts were given to the Greeks by the British Museum in 1845 and are being exhibited here for the first time. Each one is clearly labeled, and the entire exhibit can't help but suggest an accusatory finger, particularly when one sees fragments like a figure of Poseidon, whose torso is in Athens, but whose shoulders are in London. An added bonus comes at night, when the entire sculptural assemblage can be seen from outside the illuminated building and the unwieldy bulk of the exterior fades into the darkness.

At both ends of the top floor stand the remaining sculptures from the pediments, held aloft on prongs of titanium and stainless steel. The overall display is effective; but the metopes are inelegantly encased between pieces of gray cement board that are attached to brushed stainless steel columns. Tschumi's office oversaw the museum installation in conjunction with curators, without help from an outside exhibition design team, and in other areas as well, the architecture falls short of an optimal backdrop to the apogee of classical art.

After viewing the Parthenon gallery, visitors descend by way of a mezzanine showcasing the Porch of the Caryatids, once part of the temple of the Erechtheion, near the Parthenon. There were originally six of these tunic-clad stone maidens, but Elgin took one. The remaining five were moved from the Erechtheion to the old Acropolis Museum in 1977 and replaced with plaster replicas to halt erosion due to acid rain.

The caryatids no longer loom against the blue sky but stand sentry in the new museum's atrium core, its concrete walls perforated to dampen sound in a hard-surfaced space. Skylights don't prevent the precast gray slabs from resembling colossal dominoes, and the concrete grid overhead makes the atrium feel like a birthing chamber for a 21st century Frankenstein's monster instead of an exalted setting for some of the most beautiful statuary ever made.

Yet the bulk of the minimalist museum cedes the foreground to the treasures of the Periclean Golden Age and meets numerous structural and technical challenges. The entire structure stands atop sliding bearings of Teflon steel to enable it to withstand severe earthquakes, and according to Tschumi, it has already endured two minor ones. Special gaskets in the glass window panels also allow movement in the event of seismic activity, while marble stands for the sculptures are crafted to prevent the masterpieces themselves from crashing to the floor. Working with glass consultant Hugh Dutton, Tschumi also devised a means of keeping the top floor temperate in the often scorching sun. Warm air is evacuated through the ceiling, and a cooling system combined with double-layered glass recycles the air through the gallery.

Building in the immediate shadow of the temple that made Le Corbusier and countless others tremble, Tschumi has deftly harnessed Attic light and supplied an architectural argument that, at least in the opinion of his Greek clients, has the power to loosen Britain's grip on its hoard of the Parthenon statues. \square



BIG CHANGES ARE UNDER WAY AT THE **U.S. GENERAL SERVICES ADMINISTRATION**. CHIEF ARCHITECT LES SHEPHERD HAS A NEW BOSS IN COMMISSIONER ROBERT PECK, WHO HELD THE SAME POST UNDER PRESIDENT CLINTON. ANOTHER GSA VETERAN, **CASEY JONES**, IS JOINING SHEPHERD'S TEAM AS HEAD OF THE 14-YEAR-OLD DESIGN EXCELLENCE PROGRAM, AFTER A HIGHLY SUCCESSFUL RUN AS A PRIVATE COMPETITION ADVISER. JONES SPEAKS WITH EDITOR IN CHIEF NED CRAMER ABOUT HIS ROLE IN THE SELECTION OF ARCHITECTS FOR FEDERAL BUILDINGS, THE STATE OF STIMULUS-FUNDED PROJECTS, AND THE OVERALL FUTURE OF FEDERAL ARCHITECTURE.

INTERVIEW BY NED CRAMER

THE NEW ADMINISTRATION

Congratulations on your new gig. What's on your to-do list?

I've been getting up to speed on the ways in which the agency has been reorganized to deal with the tremendous number of projects that are going to be done through the Recovery Act. We need to ensure that the Design Excellence Program is continuing to perform, to see if there are ways that the system needs to be tweaked.

We're under new leadership. Bob Peck has just returned, and it was Bob Peck who—working with Ed Feiner, Marilyn Farley, Tom Grooms, and Les Shepherd—put together the Design Excellence Program and established the Office of the Chief Architect, which is now the Office of Design and Construction. I suspect that Bob may do some rearranging.

Will you make changes to the group of peer reviewers?

In theory, the peers serve for two years, although there are so many projects in the pipeline that we're going to rely on people's commitment just to cover the workload. My goal would be to see a younger group of designers come into that process.

What about the kinds of firms that are ultimately getting selected? It seems like there has been less innovation in the past few years.

Of course, I'm concerned about who pursues our projects. That's the cornerstone of our program. You want good designers involved from the beginning, and you want to challenge them to do their best work.

In the early days we were aggressively working with the courts to upgrade the quality of federal courthouses. They were prominent

commissions—they had a stature to them. During the later Bush years, there was a tremendous backlog of federal buildings that were in need of renovation. My guess is that these jobs were not as appealing for architects in an era when the private sector was going like gangbusters.

And now architects are looking to the Recovery Act for work.

The design and construction piece of the pie is several billion dollars. Congress wants all the money appropriated by the end of September 2011—that means the designs have to be at a point where you can award construction contracts. The agency is scrambling so that firms have the most time possible to do their design work.

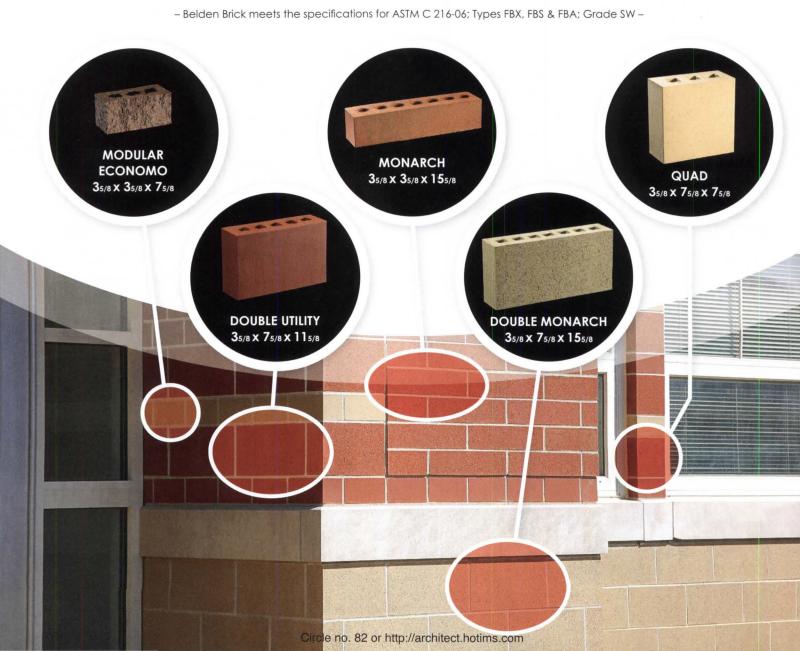
What lessons will you take forward from your time working with [past Design Excellence directors] Tom Grooms and Marilyn Farley?

Oh my God, everything I know. They remain my mentors.

Where will federal architecture be in 10 years?

Civic buildings are the complete embodiment of what we stand for as a nation, what we strive for, what we hope to achieve. The Guiding Principles [a Kennedy administration executive order for federal architecture drafted by Sen. Daniel Patrick Moynihan] talks about "the finest contemporary American thought"—to connect the issues and ideas that are driving the profession back into federal work. My hope is that in 10 years' time we will look back at a set of truly extraordinary buildings and artworks that perfectly encapsulate this time in history.







TEXT BY VERNON MAYS PHOTOS BY IAN ALLEN

STORAGE BARN

WASHINGTON, CONN. GRAY ORGANSCHI ARCHITECTURE

Pallets of landscaping materials create a mosaic of natural textures on the side of a storage barn in western Connecticut, enhancing the design of the compact structure while cleaning up the previously littered site.

UNTIL RECENTLY, the McGarry property outside Washington, Conn., was cluttered with stockpiles of materials and wooden pallets. Typical for the hub of a landscape maintenance business, yes, but not exactly the picture that state and local environmental staff had in mind for the site's other classification as a sensitive watershed. Their instructions for protecting the nearby stream were direct: tidy up the site and reduce the footprint of the whole operation.

The task was right up the alley of New Haven, Conn.—based Gray Organschi Architecture, which designed a compact workshop/storage barn that reduced industrial sprawl on the old gravel quarry site and produced a green building that runs entirely on solar and geothermal energy. "It seems to be what we do a lot of in our work," says principal Alan Organschi,





whose firm was recognized this year as an Emerging Voice by the Architectural League of New York. "We get these rural brownfield sites—beat up, dug out, with demolished old buildings—and we go back and try to do a really minimal installation."

Essentially, the building is a utilitarian storage rack wrapped around an 800-square-foot workshop and storage barn for riding mowers, power washers, compressors, and the like. Tightly packed and palletized stone and wood are stored on flexible external shelves that allow easy access to each pallet without having to disturb the others around it. Sheltering the entire structure is a lightweight, translucent, 72-by-28-foot roof canopy that provides an evenly daylit interior workspace and weather-protected storage for stockpiles of loose sand and loam.

Organschi and partner Elizabeth Gray based the plan of the building on a 4-foot-wide module that accommodates several key demands: the standard dimension of a pallet of stone and the wheelbase, turning radius, and reach of the articulated loader that moves and manages the material. The loader is parked inside the building when not in use, so overhead clearances were important as well.

Tubular steel columns form the basic structure, which is supported by diagonal bracing and a continuous steel frame located at the bay door. Cantilevered from the columns on the building's exterior are a series of beefy shelf standards (akin to the lumber racking systems found in commercial lumberyards) holding galvanized steel grates that support the pallets of materials.

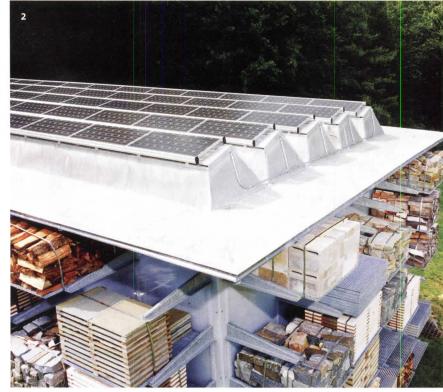
Seen from the outside, the barn is a rough and intriguing mosaic of wood and stone, which contrasts with the bright, smooth polycarbonate panel walls. A perforated-steel stair leads down to a basement-level storage/mechanical room.

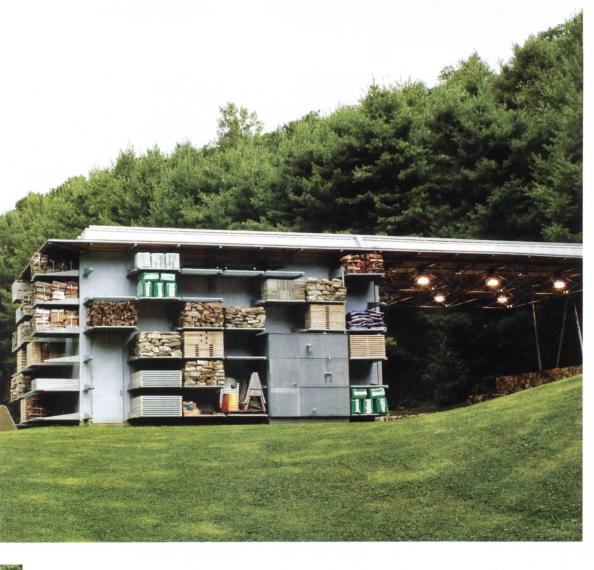
The client was willing to pay more up front to include sustainable systems that will recoup the principal investment over time. The entire building is heated and cooled by a ground-source geothermal system consisting of three wells, each between 350 and 400 feet deep. The geothermal system is combined with a rooftop photovoltaic array that powers the heat pump system, work lights, and power tools.

The solar panels are translucent and integrated into skylights in the roof—admitting daylight into the workspace below. The building produces more electrical energy than it consumes, allowing the owner to sell surplus electricity back to the regional utility company. It is a progressive system for such an unassuming building, says Organschi, who notes that "everything else about this building is very basic."

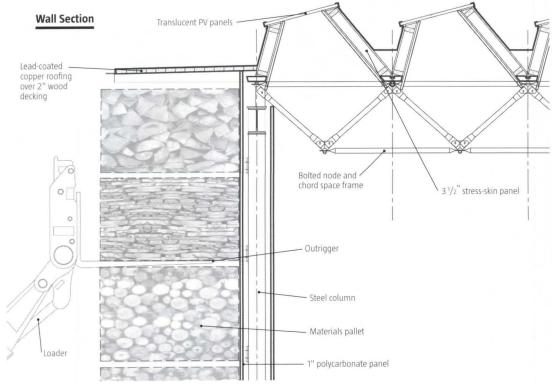
The materials may be basic, but the result is a stunning object that elevates landscaping materials to a decorative level. And the incredibly compact footprint allayed the concerns of local officials. They signed off on the project without objection.







- 1. The barn's space-frame roof projects out over a paved area, providing a shelter for the storage of sand and other materials. An outdoor shower is a water source for wetting materials and a place for the owner's family to rinse off after taking a dip in the nearby lake.
- 2. Translucent photovoltaic panels are integrated into skylights on the building's roof. The system produces more than enough energy to power the building, allowing the client to recoup principal costs for the system more quickly by selling the excess electricity back to the local utility company.



Project Credits

Project Storage Barn, Washington,

Client Kevin McGarry, Catalpa Land Management

Architect Gray Organschi Architecture, New Haven, Conn.—Elizabeth Gray, Alan Organschi (principals); Thomas Sawyer (project architect)

Structural Engineer Edward Stanley Engineers

Mechanical and Geothermal Engineer

Beacon Mechanical Service

Solar Energy Design Spire Solar **Construction** Catalpa Land

Management

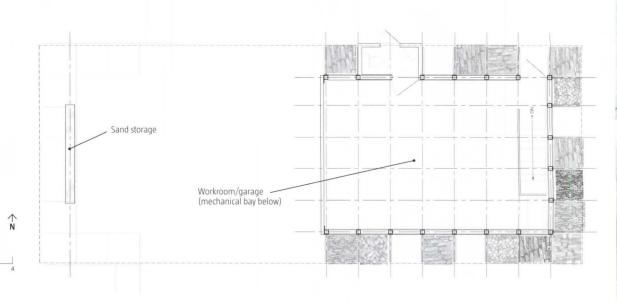
Size 1,200 square feet (including basement)

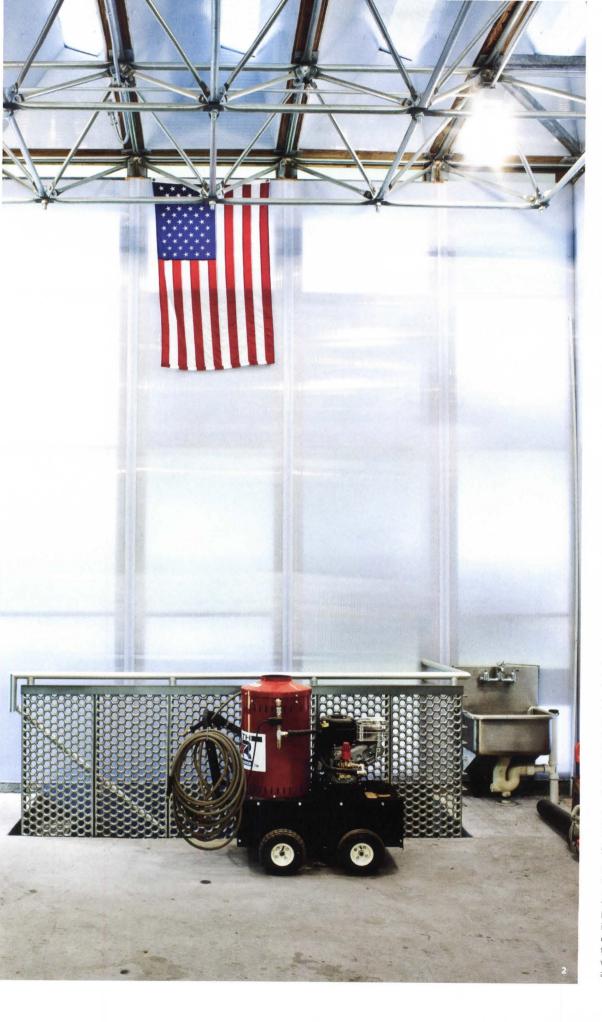
- 1. The building was designed around the proportions of the 4-foot-wide pallets and around the turning radius and width of the loader used to move them. A bi-fold door can close to keep the loader secure and out of the elements.
- 2. The main interior space is an 800-square-foot ground level garage and workroom. Daylight filters in through the skylights and the white polycarbonate walls, reducing the need for interior lighting. A staircase leads down to the 400-square-foot basement level that houses the heat pumps and other mechanical systems.





Floor Plan





TOOLBOX

Photovoltaic Panels

Spire Solar spiresolarchicago.com For the rooftop array, Gray Organschi specified the Spire Solar Chicago SS85 photovoltaic system because the silicon cells are integrated with the glazing panel, combining the daylighting function of the skylights with the energy production of the photovoltaic cells. The translucent PV panels allow even, natural illumination of the building's workspaces while reducing solar heat gain by removing energy from the sunlight.

Bi-Fold Door

Wilson Doors wilsondoors.com The horizontal bi-fold garage door by Wilson Doors eliminates the interference of interior overhead support structure and the operating mechanisms of more conventional garage door systems. By lifting outside the building, the door also does not block the skylights inside. A winch mounted at the top of the door assembly lifts the bottom edge of the lower door panel, which rides against a steel track that frames the door opening.

Space Frame

Delta Structures deltastructures.com The roof structure over the building is a lightweight, structural space frame by Delta Structures. Gray Organschi wanted to minimize the presence of the building so that the stacks of material read as the primary architecture. The space frame achieves the necessary span in both directions without requiring deep rim beams at the building edge. The Delta Structures bolted node and chord system was assembled on the ground and then lifted into place.

Polycarbonate Panels

Polygal polygal-northamerica.com
The architects selected Polygal's 25-mm polycarbonate Thermogal sheet in ice white as a sheathing material for a few reasons. It is translucent—allowing 55 percent light transmission for even illumination of workspaces. It is durable—with low susceptibility to ultraviolet deterioration—while being extremely flexible and impact-resistant.

MASTERFORMAT™ 2004 EDITION

www.masterformat.com

We've converted – how about you?













Benefits of Making the Change to MasterFormat[™] 2004:

- All the major publishers of construction data, many government agencies and leading private organizations have made the switch to MasterFormat 2004
- BIM systems rely on interoperability standards such as OmniClass and the National BIM Standard, which use the latest MasterFormat 2004 numbers
- The work results basis of MasterFormat 2004 makes it easier to assign Section Numbers and Titles to new components and assemblies



The Construction Specifications Institute 110 South Union Street, Suite 100 Alexandria, VA 22314

800-689-2900 • FAX 703-684-0465 csi@csinet.org



Construction Specifications Canada

120 Carlton Street, Suite 312
Toronto, ON, M5A 4K2
416-777-2198 • rax 416-777-2197
EMAIL info@csc-dcc.ca
csc-dcc.ca



TEXT BY NATE BERG
PHOTOS BY TIMOTHY HURSLEY
(EXCEPT WHERE NOTED)

A family walks through the community plaza in front of the new Hollenbeck Police Station, in the Boyle Heights neighborhood of East Los Angeles.

HOLLENBECK POLICE STATION

LOS ANGELES AC MARTIN

BUILDING 1 (2) 3

- 1. A glass façade is the trademark of the new Hollenbeck Police Station. In an effort to convey a more welcoming presence and foster better relationships with community members, the façade lends a transparency to the building during the day and acts as a lantern at night, discouraging crime in the immediate area and increasing the station's street presence after dark.
- 2. Across the river from the skyscrapers of downtown Los Angeles, Boyle Heights is a culturally vibrant part of crime-ridden East Los Angeles. The area is full of brightly colored murals and houses, and small local businesses that cater to residents.
- 3. Large windows and bright colors dot the exterior of the building in contrast to the impermeable exterior of the old station. In front of the glass façade, a community plaza provides a space for local events and for the officers to interact with area residents.

Project Credits

Project Hollenbeck Police Station, Los Angeles

Client City of Los Angeles

Architect AC Martin, Los Angeles-Carey McLeod (principal-in-charge), David C. Martin (design principal), Rana Makarem (project manager), Christopher King (senior designer), Elizabeth Eshel (interior designer), Norm Title (production)

Construction Manager/Contractor FTR International

Structural/Civil Engineer AC Martin M/E/P Engineer TMAD

Landscape Architect Melendrez Design Partner

Programming Jay Farbstein & Associates

Security/Data/Telcom EASI Glass Consultant Curtain Wall Design & Consulting

Glass Installer Delta Structure Specifications CSI

QA/QC Miralles Associates **Estimating** Iskander Associates Signage Selbert Perkins Design

Size 54,000 square feet (plus 124,000 square feet for vehicle facility and

Cost \$17 million (station building), additional \$14.1 million for parking structures







Glass Entry Wall Section Aluminum bracket Exposed steel member Aluminum and glass curtain wall sytem Translucent laminated bent glass Bulletproof glass Δluminum bracket clips

WHEN THE CITY of Los Angeles announced it wanted to redesign 13 of the city's aging police stations, architect David Martin set his sights on a station in one of the most dangerous neighborhoods in town: Boyle Heights. "It's a rough, tough area," says Martin, principal at local architecture and planning firm AC Martin. "So we thought, of all the sites, we might really be able to make a difference on this one."

The Hollenbeck Police Station routinely responds to gang violence and drug problems in the neighborhood, and the brutal design of the old building matched the area's toughness with a hard, unwelcoming exterior. With the replacement station, AC Martin sought to change that.

"We asked ourselves: 'What if we did the opposite of what you're supposed to do?'" says Martin. Instead of unyielding brick walls, the design team made liberal use of glass. "The idea is transparency—literal transparency—to have it be more of an interesting and welcoming sort of place, rather than a fortress."

The entrance is located in an undulated glass façade featuring roughly 70 bent frosted-glass panels. Each panel consists of two pieces of bent clear glass laminated together with a translucent interlayer, creating a semiopacity that obscures what's going on inside, but still allows light to filter through. The pieces attach to a curtain wall system with a custom aluminum bracket designed in-house at AC Martin, and then further engineered by Dallas-based Curtain Wall Design & Consulting. The effect is a sculptural, staccato display that serves Martin's idea of literal and figurative transparency, an important tool in building trust with the community.

The façade is oriented toward the street, with a fronting plaza area that looks onto a nearby park. The intent was to make a deliberately open area that could be used by the community—and become part of it. A publicly available multipurpose room is designed into the building, so local groups can hold events there. Double doors open the community room up into the plaza, allowing events to spill out into the neighborhood.

Martin says it was important to both his firm and the LAPD to create a space that intertwined with the neighborhood and its people. But because this community asset is also a police station, there were some distinct security criteria that ultimately guided the design. "Their patterns and adjacencies of how you lay out a police station are fixed—because it's survival," Martin says.

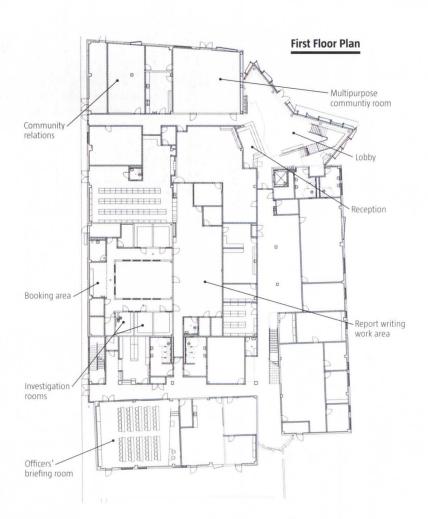
Ensuring the security of police personnel was a top priority in determining the location of windows, holding cells, and detainee processing areas. And while the glass panels on the façade are not bulletproof, the glass behind them is. Just to be certain, officers took the material to the LAPD's firing range to verify the manufacturer's claims.

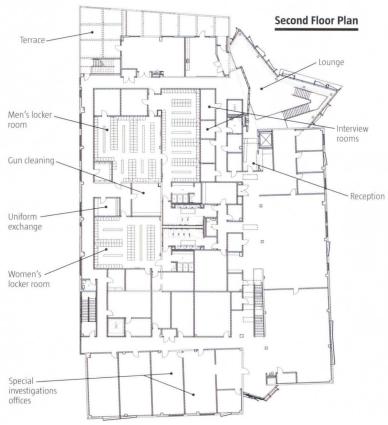
Also important was how the building worked for the officers. Wide hallways make it easier to maneuver with heavy equipment, and recycled rubber floors ease the impact of a long day of standing.

Fully operational since July, the station is on its way to earning LEED Gold certification—another type of community leadership. With its inclusive design, the station has already made an impact and become, the architects hope, a welcoming neighborhood landmark.

BUILDING 1 (2) 3

- 1. The glass entrance façade allows ample daylight into the lobby, a major factor in the station's bid for LEED Gold certification.
- 2. The lobby serves multiple functions: reception, waiting area, and home to impromptu gatherings of officers and neighborhood residents. The glass-enclosed space gains additional security from the canted curtain wall, which is made up of large panes of bulletproof glass.
- 3. The holding cells are located in the booking area on the first floor. Here, in one of the few interior spaces that doesn't feature colored rubber flooring or natural light, security and durability are at a premium.





 \leftarrow N











TOOLBOX

Eco Earth & Eco Stone **Color Lines**

Eco Surfaces ecosurfaces.com Recycled rubber floors fill most of the station's internal areas. The floors have four color schemes, each corresponding to a different programmatic use of space—from break rooms to the watch commander's area to detainee processing. In addition, the soft feel of the rubber provides some relief for officers throughout their highly mobile workday.

Bullet-Resistant Glazing

California Glass Bending calglassbending.com The glass façade of the Hollenbeck replacement station would seem to be a security risk, but with a 13/16"-thick bulletproof glass curtain wall behind the sculptural glass panels, the station can be both safe and attractive. About 1 1/4" thick, the glass carries a Level 1 bullet-resistant glazing on all surfaces up to 6' above the floor line.

Suspended Indirect Linear T₅HO Fixture

Prudential Lighting prulite.com Prudential Lighting provided the suspended linear lighting panels that illuminate all of the office and work areas within the station. Because these hang from the ceiling and shine light upward, the rooms in the station do not suffer from harsh direct overhead lighting and are able to stay bright with just two or three panels per room.

Single-Ply Thermoplastic **Roofing Membrane**

Sarnafil sarnafilus.com A white single-ply thermoplastic membrane coats the roof of the building, reflecting sunlight and reducing the costs of cooling the structure. Produced by Sarnafil, the coating's white color also helps to reduce the urban heat island effect and complies with California's Title 24.



Earn **FREE** AIA Credits Online—Anytime!

For a complete list of available courses and access to FREE online exams, visit architectCES.com.



Welcome to Hanley Wood University, our continuing education program.

This free program—both in print and online—has been developed to help architects meet the AIA's annual 18-credit continuing education requirements. Courses are easily accessible on a centralized continuing education portal—architectCES.com—and can also be found in the pages of Architect, Architectural Lighting, eco-structure, metalmag and residential architect magazines, through dedicated Continuing Education sections of their Web sites and featured in each issue of their editorial e-newsletters.

Whether in print or online, architects can use these sponsored courses to gain the background necessary to successfully complete AIA exams.

To learn more, contact Jennifer Pearce at jpearce@hanleywood.com

Current course materials can be found online from the following companies:

31/1

Cambridge Architectural

Delta Faucets

Eagle Windows and Doors

Eldorado Stone

EnergyPeak

Follansbe

Evpon

areenscreeen

James Hardie

JELD-WEN, Inc.

Kolbe Windows & Doors

Lafarne

Lasco Bathware

Lightweight Structures Association

Maple Flooring Manufacturers Association

Marble Institute of America

MFMA

Monierl ifetile

MTI Whirlpools

NCFI Polyurethanes

Nichiha USA, Inc.

OSI Green Series

OSI WINTeQ

Poggenpohl

PPG Industries

Propane Education and Research Council

Rheem Water Heating

S-5!

Se'Lux

Sherwin Williams

Silver Line Windows Doors

Technical Glass Products

Temple-Inland

The Hardwood Council

VT Industries

W.R. Meadows, Inc.

Weather Shield Windows and Doors

White River Hardwoods

Woodharbor Doors & Cabinetry





TEXT BY KATIE GERFEN
PHOTOS BY ANDREW METTER (EXTERIORS)
AND MARK BALLOGG (INTERIORS)

The Serta International Center seems to float above the wetlands on its suburban Chicago site.

SERTA CENTER

HOFFMAN ESTATES, ILL. EPSTEIN | METTER STUDIO **ARCHITECT** SEPTEMBER 2009

THE COMMISSION for Serta International's new Chicagoarea corporate headquarters didn't begin with a lengthy RFP process. It started when a Serta executive walked into another office in a commercial development in Hoffman Estates, Ill., and asked the receptionist: "Who designed your building?"

The answer was Andrew Metter, of the Chicago firm Epstein | Metter Studio. He worked with the mattress manufacturer to create a structure iconic enough to serve as a world headquarters but pragmatic enough to address the day-to-day needs of a major corporation. The building houses operations and sales staff, showrooms, and the R&D facility where the company's products are created.

Located on a sloping wetlands site in the Prairie Stone Office Park near Chicago's O'Hare Airport, the Serta headquarters is a suitably Midwestern exercise in horizontality—along the historical lines of Ludwig Mies van der Rohe and Frank Lloyd Wright. The bulk of the building is an S-shaped, single-story, post-tensioned concrete volume that seems to float on its recessed base. "We wanted to play with the idea of sleep being a world apart," Metter says. To that end, the lobby is reached by walking up a ramp. The south end of the building rests on piers to maintain the horizontal baseline where the site slopes sharply down to a water detention pond.

The building façade is demarcated by a projecting lip of concrete at the top and another at the base; both run the length of the structure. The area within these "brows" is glazed to allow maximum views out and daylight in. Interrupting the glass expanse are five projecting bays, which add texture to the façade and create additional space within the narrow floor plate for executive offices and conference rooms. The largest bay houses a training room and cantilevers out 14 feet from the building's base.

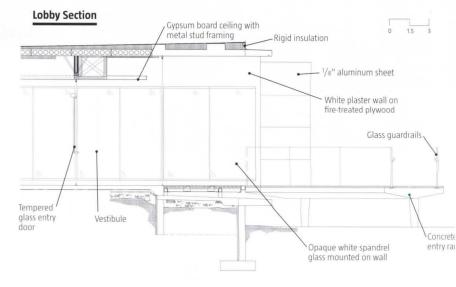
A two-story steel-framed structure on the east side of the building houses the R&D facility. Metter opted for steel over concrete here because "we wanted to achieve the aesthetic affect, and there were very functional considerations about efficiency and layout," he says. "We needed large spans across big distances and a large height and volume, and that can really only be achieved with steel in any kind of efficient way." Clad in channel glass to obscure the industrial interior, the structure features a roof canopy that covers the sole second-story element on the main building—a cafeteria and sunshaded roof deck.

The main building's interior is split into two zones public and private—by a frosted glass interior wall along the eastern edge. Most enclosed spaces are ganged up along the wall, leaving the rest of the floor for open office space. And open it is - post-tensioned concrete beams allowed for 47-foot clear spans, limiting the number of columns in the space. The finishes show a hyper-attention to detail, with Metter designing some of the drawer hardware himself to maintain the minimalist aesthetic.

A walk through the building sees the enthusiastic client updating the architect on maintenance effortslike power-washing the roof deck to return the sunbleached ipe to its original reddish hue—and how the building systems are running. The receptionists know Metter by sight, too, which - if past precedent holds true-might just lead to another project.

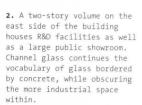












3. Because of the rugged nature of the site, the building was constructed on a platform, which allowed the long, thin main floor to remain level without requiring any excavation. This gave rise to an interesting, Brasilia-like treatment for the building's two entry ramps (one of which is seen here).





Project Credits

Project Serta International Center **Client** Serta International, Hoffman Estates, III.

Architect Epstein | Metter Studio, Chicago—Andrew Metter (principal designer); Daesun Park (design architect); Doug Fullick (project manager)

Landscape Architect Jacobs/Ryan Associates Landscape Architects— Terry Warriner Ryan

Engineers Epstein Engineering— Bernardo Remo (structural); David Hilty (civil); Tod Soukup, Joe Romano, Paul Valente (M/E/P)

Interior Epstein Interior— Stella Volkman A/V Allen Visual Security Engineering Plus

Contractor G.A. Johnson & Sons Size 90,000 square feet

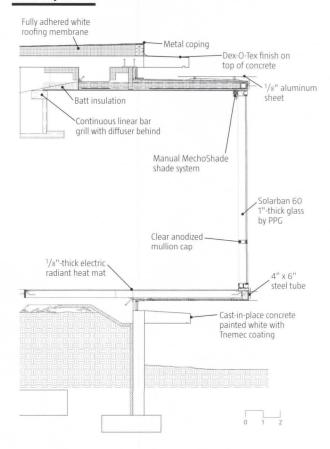
- 1. The building's west façade is interrupted by a series of projecting bays that house private offices, training rooms, and conference spaces. An ipe deck runs in front, providing outdoor space for employees. Glass guardrails prevent someone from stepping off the edge but don't interrupt sight lines.
- 2. The building's S shape and ample glazing mean that not only do employees get views of the wetlands, they can also see into other parts of the workspace, creating a visual sense of community throughout the long, thin building. At the center of the structure, a roof deck-connected to a second-story employee lunch room-is covered with a metalgrate awning that provides some shading and contributes to the building's horizontal aesthetic.
- 3. A hallmark of this building is its meticulous detailing. A concrete plate projects from the building's base and forms the lower edge of the horizontal façade, but instead of resting on that slab, the projecting bays hover above, clad in differentiating aluminum panels. The panels were exactingly installed and wrap under the bottom lip of the bay with the same careful assembly as on the visible surfaces.





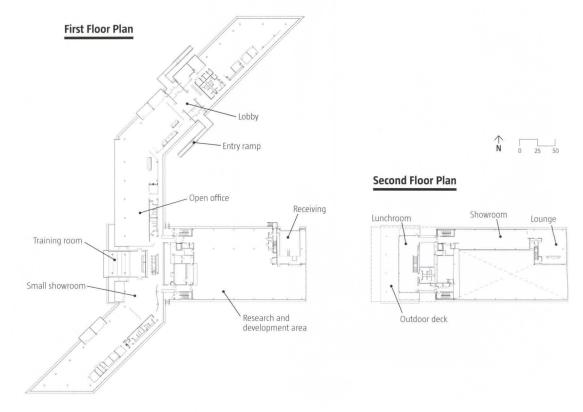


Office Bay Section



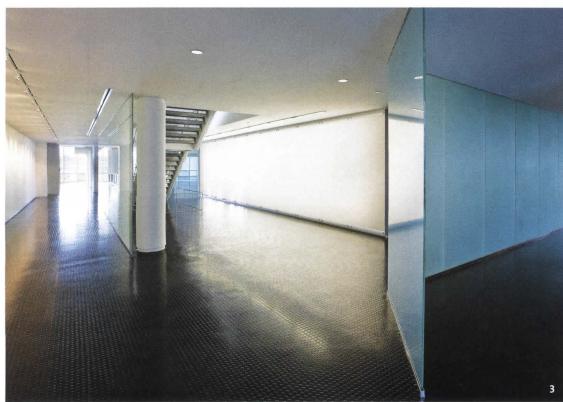
- 1. The Serta R&D facility is a double-height space for the study of new and existing products. Raw materials for mattresses, such as springs, padding, and fabric, are stacked on shelves on the south wall, and machinery to construct and run tests on mattresses takes up most of the open floor. The main showroom on the second floor overlooks the work area so that visitors trying out and buying mattresses upstairs can see the product development process.
- 2. The open office space in the single-story portion of the building has cubicles with translucent partitions to allow daylight from the floor-to-ceiling windows to penetrate into the space. Circulation paths hug the glazed perimeter walls, with their operable windows to promote air circulation. Lighting and HVAC needs are centralized in an Armstrong TechZone ceiling system over the cubicles.
- 3. Running the length of the building is a frosted glass wall that serves as the barrier between the public and private zones of the building. Since much of the information being discussed in the office areas is proprietary, the glass serves as a means of obscuring visual and aural information without cutting off daylight. Here, the wall begins to separate an open office space (at right) from a small showroom (at left). The staircase leads to the second floor cafeteria and outdoor roof deck.











TOOLBOX

Spancrete Concrete Plank

Spancrete spancrete.com Architect Andrew Metter specified precast planks from Spancrete as infill between the roof's cast-in-place posttensioned concrete beams. He chose concrete because it could give a much sleeker profile at the perimeter roof overhang than a steel structure would have allowed, and Spancrete panels helped to finish the structure in a cost-effective manner. The roof is strong enough to support the additional weight of a green roof—an idea that was discussed but did not make the final design.

Channel Glass

Bendheim Wall Systems bendheim.com To conceal the industrial R&D works without minimizing daylight, Metter's team turned to channel glass from Bendheim Wall Systems. The glass allows the space to operate largely without artificial lighting but hides the piles of materials and machinery from public view. The glass channels are one of the few vertically oriented elements on a very horizontal building, emphasizing the relative height of the two-story volume.

Aluminum Panel

Nic Solutions nicsolutions.biz
The projecting bays on the west side of the building are clad in %"-thick brushed aluminum panels. Careful detailing ensures that each of the square panels—assembled in a grid, almost like tiles—is the correct distance from its neighbor and is installed properly along the top, sides, and bottom of the cantilevered volumes.

Frosted Glass Wall

Glass & Mirror Craft glassandmirrorcraft.com
A frosted glass wall runs nearly the whole length of the east side of the building, creating a public hallway cut off from the sounds and sights of the open office area—while keeping proprietary information from getting into the wrong hands. The wall is also an organizing element in the space, with private offices and bathrooms placed up against it to allow maximum daylight into the cubicles on the other side.



Commercial / Cultural / Educational / Governmental / Multifamily Housing / Health-Related / Single-Family House / Industrial / Recreational / Religious / Urban Design

Call for Entries

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

57th Annual P/A Awards

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

Jury

Stan Allen Stan Allen Architect, Brooklyn, N.Y. Adele Chatfield-Taylor American Academy in Rome, New York Sarah Dunn UrbanLab, Chicago Diane Hoskins Gensler, Washington, D.C.

John Peterson Public Architecture, San Francisco James Richärd Richärd+Bauer, Phoenix

Eligibility

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

Fees

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

Deadlines

Regular: September 28, 2009 (registration and postmark deadline)

Late: October 5, 2009 (registration and postmark deadline, additional \$50 fee per entry)

Register at paawards.com

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



TUFF-WALL® INSULATED WALL PANEL

Metl-Span's Tuff-Wall®, an exceptionally attractive stucco-like insulated wall panel, exhibits natural beauty combined with the thermal efficiency of an insulated metal panel. The exterior surface is highlighted by the Tuff-Cote® coating which is heat cured under factory-controlled conditions ensuring maximum bond to the metal surface.

www.metlspan.com

Circle no. 309 or http://architect.hotims.com



Global Polymer Toilet Partitions

- Now Available in 100% Post Consumer Recycled Material
- · Vandal and Moisture Resistant
- · Strong and Durable
- Low Maintenance
- Contemporary Colors
- · LEED Credits
- 15-Year Warranty

Now with 8" Hinges

Visit globalpartitions.com

for our complete line of partitions

Circle no. 310 or http://architect.hotims.com

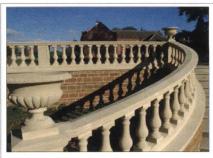


Sherwin-Williams

Duration Home™ keeps walls looking fresh and clean longer. Its improved formulation provides a smoother, more uniform finish in matte and satin sheens, faster curing block resistance in its semi-gloss sheen and improved washability to resist tough stains. It also boasts antimicrobial properties and a low-odor, low-VOC formula that meets environmental standards.

1-800-321-8194

sherwin-williams.com



Haddonstone

Haddonstone's stunning range of balustrading can be used to add elegance to architectural and landscape projects. The company's extensive collection also includes porticos, window and door surrounds, columns, copings, quoins and many other architectural features. Inspirational 200-page catalog and CD-ROM available. I-856-931-7011 www.haddonstone.com

Circle no. 312 or http://architect.hotims.com



Circle no. 313 or http://architect.hotims.com



ARCAT is also the creator of SpecWizard, the automated online specwriting tool. All this and more is available free of charge at www.arcat.com

Circle no. 314 or http://architect.hotims.com

Resource



Kalwall 100™ is the latest innovation in Kalwall's high-performance, super-insulating Wall and Skylight Systems. The Kalwall 100 exterior panel, which has a U-value of .08 (R-13), is 4 inches thick and meets the worldwide demands of new building regulations for stiffer, stronger cladding. Sustainable and LEED®.

Kalwall Corporation 800-258-9777 www.kalwall.com

Circle no. 315 or http://architect.hotims.com

New Architect Series® double-hung window with impactresistant glass

The newly redesigned Architect Series HurricaneShield® double-hung window allows customers the full extent of impact-resistant protection without sacrificing aesthetics. Eliminating the need for



brace clips and other visible reinforcement enables customers the chance to enjoy the beauty of the natural wood interiors. All HurricaneShield double-hung products offer Missile D, Wind Zone 3 performance as the standard.

Contact Pella or visit their website.

866-70-PELLA pellacommercial.com

Circle no. 316 or http://architect.hotims.com

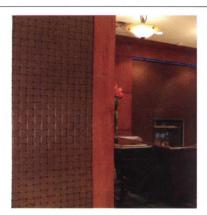


Innovation, versatility, durability. Products from Tile of Spain branded manufacturers are at the forefront of high-performance design and low lifecycle cost. A superior material for interiors and exteriors, ceramic tile is one of the most high performance materials in the construction industry today.

Contact Tile of Spain, 305-446-4387 or www.spaintiles.info

Circle no. 317 or http://architect.hotims.com

Resource



Gagecast®
Gage Corporation, Int.

Gagecast® is a cast metal wall surfacing material suitable for a variety of interior architectural applications where patterns that feature high luster, relief, durability, and cost effective installation are a requirement. Twenty designs are standard; however, custom collaboration is encouraged. Gagecast® is one component of Gage Vertical Surfacing. Contact the factory for product literature and sample requests.

800-786-4243 gage@centurytel.net www.gagecorp.net

Circle no. 300 or http://architect.hotims.com

GlassFilm Enterprises

We have designs on your glass



NOW OFFERING CUSTOM GRADIENT FILM

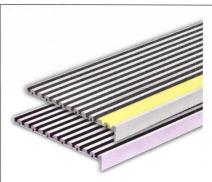
GFE offers a variety of film-to-glass applications designed to enhance the appearance of glass. LUMISTY, pictured above, makes glass change from transparent to translucent depending on the angle of view. Also available is DECOLITE, a series of translucent films with or without patterns, that simulate etched glass. Recent product introductions include DICHRO-MIST, a dichroic film that changes the color of glass depending on the angle of view, GFE COLORS, a series of transparent colored films, and CUSTOM DESIGNS.



CALL FOR FREE SAMPLES: 978-263-9333;

JF@GLASSFILMENTERPRISES.COM

WWW.GLASSFILMENTERPRISES.COM



TRACTION TREAD

Traction Tread aluminum thresholds and nosings are available with non-slip epoxy abrasive particles bonded into the grooves or with formulated rubber inserts. Attractive, smooth and extremely durable, they are perfect for schools, hospitals and commercial applications. Traction Tread provides a detectable warning for stairs and ramps and can also be integrated with photoluminescent edges for power failure emergency exits.

For more information:

ZERO INTERNATIONAL 718-585-3230

www.zerointernational.com

Circle no. 302 or http://architect.hotims.com



Model 220

City Bollard Line

FAAC now offers two versatile styles of bollards for effective traffic control and parking deterrent solutions.

- •Automatic, semi-automatic and fixed versions
- Master slave capabilities
- •Model 275 hydraulic version has a duty cycle of up to 5,000 cycles a day
- •Finishing options to compliment surrounding architecture

Learn more at: www.faacusa.com



Circle no. 303 or http://architect.hotims.com



Fire-Rated Aluminum Doors & Windows

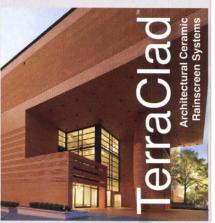
www.aluflam-usa.com

Imagine being able to specify a fire-rated system that looks so good you wouldn't know it's fire-rated. Imagine the clean, rich lines of true extruded aluminum frames and large panels of clear glass. With ALUFLAMTM storefront and curtainwall systems and Glass from VETROTECH SAINT-GOBAIN, this is reality.

Contact us for further information – 714-899-3990. Email info@aluflam-usa.com

Circle no. 304 or http://architect.hotims.com





Bechtler Museum, Charlotte, NC ©2009 Brett Drury

Manufacturer of Architectural Terra Cotta, Roof Tile and TerraClad™ Ceramic Rainscreen Systems®

888.214.3655 www.bostonvalley.com

Resource/Classifieds

BUILDING: A COMMUNITY

ARCHITECT'S Web site is laying the foundation for a premier online experience for practicing architects. We build the site, you weigh in on the content. Industry news, technology solutions, continuing education, galleries, a product database—all designed to encourage discussion and interaction. To get involved, visit architectmagazine.com.



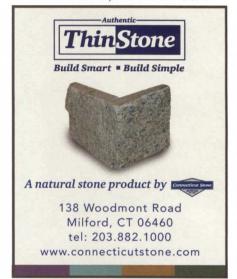


Magnet for Talent

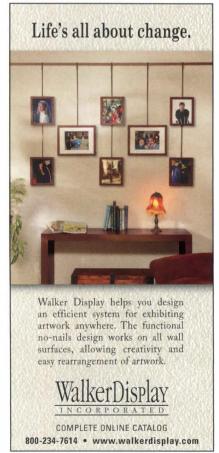
JR Walters Resources, premier A/E/C recruiting firm, can help you grow your company and your career. Review current opportunities at

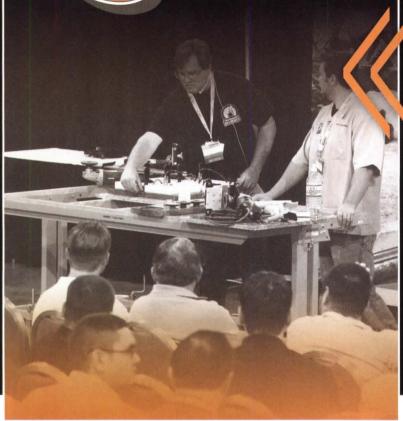
www.jrwalters.com or call 269 925 3940

Circle no. 306 or http://architect.hotims.com



Circle no. 307 or http://architect.hotims.com





NORTH AMERICA'S PREMIER STONE EVENT.

If you're like us, you eat, breathe and sleep stone. From Botticino Florito Marble to Kadappa Black Slate. you know your stuff. And chances are you know a lot aboutStonExpo/Marmomacc Americas, too.

In the spotlight this year is a new level of education. Taught by the industry leaders for the industry's leaders, StonExpo/ Marmomacc Americas 40 educational sessions and live hands-on demonstrations have been developed with your success in mind. Learn everything from methods to diversify your business to cutting edge financial strategies, and maintenance & repair techniques to kitchen and bath design tips. And don't forget about the nearly 300 companies exhibiting at the show this year.

StonExpo/Marmomacc Americas 2009

is proud to announce that Architect Magazine is the Official Media Sponsor of the Architect & Design Communities for the show as well as the sponsor of the Building/ Design track of our Educational Program!





www.stonexpo.com

THIS OCTOBER, JOIN US AND THOUSANDS OF YOUR PEERS FOR FOUR DAYS OF TRAINING, TECHNIQUES AND NETWORKING AT STONEXPO/MARMOMACC AMERICAS 2009 IN LAS VEGAS.

REGISTRATION IS NOW OPEN!



CONFERENCE October 21-24 | EXPO October 22-24 Las Vegas Convention Center | Las Vegas NV USA

Official Sponsors:





Canadian Stone Association Elberton Granite Association



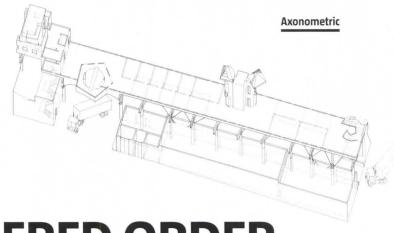


| 4 | ς | S |
|---|----------------------|--|
| • | ς, | ÷ |
| : | 5 | S |
| | 2 | 5 |
| - 2 | > | • |
| | _ | • |
| 1 | ¢ | > |
| | 'n | 7 |
| i | = | ₹ |
| : | _ | _ |
| | - | - |
| | | 7 |
| ř | = | 3 |
| | | |
| | • | |
| 1 | ÷ | į |
| 1 | _ | į |
| 1 | | |
| | 3 | |
| 0 | × | 7 4 4 7 |
| 0 | VA | 7 4 4 7 7 |
| 0.000 | V 40 6 | 7117 |
| 0.000 | VIALIA | |
| 0.00000 | V(A) | |
| 0.0000000000000000000000000000000000000 | VIAI.6/11 | |
| 0.0000000000000000000000000000000000000 | VIA. A | |
| 0.0000000000000000000000000000000000000 | VIALAZIN | CTANACAZINIC |
| CONTRACTOR | V A L A L | 7 1 1 1 7 7 7 1 1 7 |
| CHARACTER | - VIALA/11VI | 77 77 77 77 77 77 77 77 77 77 77 77 77 |
| 0.000 | VA | CT * 4 * C * 7 * F C C C |
| CHARACTER | - WALLEY W. W. W. W. | |

| Advertiser | Page | Circle | Website | Phone |
|--------------------------------------|------|-----------------|--|---------------|
| Accurate Partitions Corp. | 28 | 236 | www.accuratepartitions.com | |
| American Express | C4 | 234 | www.plumcard.com/who | 866.992.PLUM |
| ARCAT | 16 | 430 | www.arcat.com | |
| ASI Storage Solutions, Inc. | 26 | 229 | www.asilockers.com | |
| Autodesk | 7 | 220 | www.autodesk.com/PowerofBIM | |
| Belden Brick | 54 | 82 | www.beldenbrick.com | 330.456.0031 |
| Cascade Coil Drapery | 25 | 81 | www.cascadecoil.com | 800.999.2645 |
| CENTRIA | 1 | 25 | www.MetalWrap.CENTRIA.com | 800.250.7897 |
| Connecticut Stone Supplies | 39 | 214 | www.connecticutstone.com | 203.876.7625 |
| Creative Form Liners | 34 | 161 | www.Fotera.net | 301.864.3676 |
| CSI | 60 | 31 | www.masterformat.com | |
| Delta | 41 | 27 | www.deltafaucet.com/commercial/proximity | |
| DORMA | 33 | 189 | www.dorma-usa.com | 866.401.6063 |
| DORMA Glas | 11 | 235 | www.dorma-usa.com | 800.451.0649 |
| Follansbee | C3 | 32 | www.follansbeeroofing.com | 800.624.6906 |
| Generac | 19 | 225 | www.generac.com | 888.GENERAC |
| Hanley Wood University | 66 | | www.architectCES.com | |
| Hanover Architectural Products | 21 | 480 | www.hanoverpavers.com | 800.426.4242 |
| HDI Railings | 30 | 481 | www.hdirailings.com | 717.285.4088 |
| Invisible Structures, Inc. | 39 | 400 | www.gravelpave2.com | 800.233.1510 |
| Luminis | C2 | 237 | www.luminis.com/smart | |
| MBCI | 32 | 402 | www.mbci.com/arch | 877.713.6224 |
| Metl Span | 13 | 208 | www.metlspan.com | 877.585.9969 |
| Nichiha | 24 | 380 | www.nichiha.com | 866.424.4421 |
| Oldcastle Glass | 3 | 52 | www.oldcastleglass.com | 866.OLDCASTLE |
| Owens Corning | 5 | 413, 232 | www.owenscorningfoam.com | 800.GET.PINK |
| P/A Awards | 74 | - | www.paawards.com | |
| Petersen Aluminum | 9 | 470 | www.PAC-CLAD.com | 800.PAC.CLAD |
| Pine Hall Brick | 14 | 173 | wwww.americaspremierpaver.com | 800.334.8689 |
| Pittsburgh Corning | 15 | 216 | www.possibilitiesbegin.com | |
| Steel Stud Manufacturing Association | 27 | 230 | www.ssma.com | 630.942.6592 |
| Stone Expo | 78 | Accounts — 1971 | www.stonexpo.com | |
| Tile of Spain | 22 | 385 | | 305.446.4387 |
| Western Red Cedar | 29 | 416 | www.wrcla.org | 866.778.9096 |







Eric Owen Moss

1992 P/A Awards Jury John Archea Gregory S. Baldwin Steven Holl Diane Legge Kemp Tom F. Peters Wolf D. Prix Jorge Silvetti Stanley Saitowitz →1992 P/A AWARD WINNER

DISORDERED ORDER IN CULVER CITY

LIFTED ABOVE AN EXISTING LIGHT-INDUSTRIAL COMPLEX, ERIC MOSS' SAMITAUR OFFICES EXEMPLIFY HIS ONGOING TRANSFORMATION OF AN L.A. FRINGE AREA.

TEXT BY JOHN MORRIS DIXON

ERIC OWEN MOSS' Samitaur Offices project embodies unconventional ideas that resonated with the 1992 P/A Awards jurors—and remain timely today. It initiated the revitalization of a low-density, urban-fringe area of Culver City, Calif., through the careful insertion of a new and prominent element. Essentially a box of offices lifted above a roadway that serves the one-story loft structures along it, the new airborne structure and much of the space below are linked for use by the same tenant. Samitaur is an early example of a design approach Moss has evolved that juxtaposes volumes of rather ordinary, repetitive design with boldly sculptural incidents. This strategy was appraised by juror Steven Holl as "a question of order and disorder; where the order is extreme, the disorder is a real joy."

The project was one of two 1992 P/A Award wins for Moss, whose work was already known to most readers. He had won an award in 1978 (with James Stafford) and has won two more since Samitaur.

This was the first of Moss' collaborations with the developers Frederick and Laurie Smith. Winning the award encouraged this architect-client team to undertake numerous other notable projects in the same vicinity, a collaboration that continues to the present—and may soon yield a high-rise building adjoining this one. A light-rail station soon to open nearby is in part a response to the revitalization accomplished by Moss and the Smiths. Together they have made this formerly low-rent, low-visibility area an economic and architectural object lesson. \Box



It took five years and \$5 million to preserve Thomas Jefferson's Declaration of Independence. But it only took one call to Follansbee to preserve Jefferson's Virginia State Capitol Building.

Thanks to a new, historically accurate Follansbee TCS II roof, the 216 year-old Virginia State Capitol continues to maintain Jefferson's distinct architectural vision.

Learn more about this project at follansbeeroofing.com/VirginiaStateCapitol.

Follansbee - for those who demand the very best.

Call or visit Follansbee online today to learn more.

800.624.6906 follansbeeroofing.com



40% of businesses pay their cards off in full each month. Now they may have a better reason to.

According to a National Small Business Association poll, 40% of businesses with credit cards pay them off in full each month. The Plum Card® from American Express OPEN can reward them with a 1.5% early pay discount just for doing business as usual.

The savings are automatic and in addition to whatever discount you negotiate on your own. Plus the Plum Card lets you defer payment for up to 60 days, interest-free. That kind of flexibility can be useful when cash flow is less than predictable.

Does that make the Plum Card right for you? We can't say for sure. What we can say is that all kinds of business owners are using it to get better terms — no matter who they do business with. Find out how at plumcard.com/who or call 1-866-992 -PLUM.

"If I can knock off a point and a half off my bill, that's a huge benefit over a lot of dollars."

Chris Zane

Zane's Cycles

Member Since 2000



ZANES CYCLES

Is the Plum Card right for you?



Pay your balance in full within 10 days of the statement closing date and get a 1.5% discount on eligible purchases made that month. The discount will appear as a credit on the following billing statement. Pay 10% of the balance from new activity on your billing statement plus the entire amount of any previously deferred payment or amounts past due by the "Please Pay By Date" on that statement and you can extend payment on the rest until the closing date of your next billing cycle without penalty. Visit plumcard.com for details. ©2009 American Express Bank, FSB. All rights reserved.