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ROBERT POLIDORI

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FEATURES

CATALOGTREE

Salary Survey 2010: Less = The New More

2009 was a bad year for architects. How bad? We've got the numbers on salaries across the country at firms large and small. How does yours stack up? AMANDA KOLSON HURLEY, WITH KARLIN ASSOCIATES

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BUILDINGS

63 Marriott Hall, St. Albans School

Nestled on the grounds of the National Cathedral in Washington, D.C., Skidmore, Owings & Merrill's building is half renovation, half new construction, and, despite being unabashedly modern, fits perfectly into the 100-year-old campus. KATIE GERFEN

71 Illinois Holocaust Museum

Stanley Tigerman won the commission for the new Holocaust Museum in Skokie, Ill., on the power of a napkin sketch, showing a building that combined respect for history with hope for the future. EDWARD KEEGAN

79 Joukowsky Institute for Archaeology & the Ancient World

Inside the simulated-limestone Rhode Island Hall, prominently located at the edge of the Brown University campus in Providence, R.I., Anmahian Winton Architects was asked to reinvent an interior—and update the image of an academic discipline in the process. JOSEPH GIOVANNINI

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WARREN JAGGER

\$88,800

CONTRIBUTOR



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"The Tax Man Deducteth" page 17

Editor-at-large Edward Keegan is a busy man, supplementing his architectural practice as a writer, broadcaster, and teacher. To this diverse résumé he can now add creator of an iPhone app. "Chicago Architecture: A Critical Guide" (\$2.99) has 80 entries on Chi-Town architecture, each of which gives historical information and critical commentary in addition to slide shows and GPS-enabled maps. The app runs on the iPhone, iPod Touch, and iPad.

ON THE COVER WHAT IS YOUR SALARY? 2010 VS. 2009. INFOGRAPHIC BY CATALOGTREE.



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REGARDLESS OF THEIR PERSONAL POLITICS, ALL ARCHITECTS HAVE A RESPONSIBILITY TO SERVE THE LESS FORTUNATE.

CARE-MONGERING

YOU DON'T HAVE TO LIVE ON CAPITOL HILL, like I do, to have caught wind of the antics that occurred there in the hours before Congress passed the healthcare reform bill. The media was all over the situation, and I'm not talking about the legislative process. I'm talking about reports of protestors spitting on one congressman, lobbing racist and homophobic slurs at several, and—now that President Obama has signed the bill into law—making death threats against its supporters.

On second thought, "antics" is far too gentle a word for such behavior. I'm all for peaceful protest, passive resistance, and civil disobedience, à la Gandhi, but disobedience loses any claim on civility when the perpetrators shout the N-word at a leader of the civil rights movement, Rep. John Lewis, who, as a young man, was beaten and suffered a skull fracture at the hands of state police during a 1965 march in Selma, Ala. Why would anyone want to repeat that particular moment in history?

The day before the healthcare vote, I moderated a symposium in Richmond, Va., called "The Architecture of Necessity." The event was organized by the Virginia Society AIA, but even Oliver Stone couldn't have scripted a more extreme contrast with the next day's Tea Party on the Hill, 100 miles north and worlds apart.

Compare the ugly slur against Lewis with Phil Freelon's presentation of the design for the National Museum of African American History and Culture, Teddy Cruz's analysis of social and spatial tensions on the San Diego–Tijuana border, Julie Eizenberg's strategies for affordable housing, and Andrew Freear and the Rural Studio's latest works in impoverished Hale County, Ala. Architects can take pride in having such caring, committed people in their ranks.

Another thing architects can be proud of—all AIA members, at least—is the Code of Ethics and Professional Conduct, architecture's version of the Hippocratic Oath. In view of the healthcare demonstrations and the symposium in Richmond, I think it's worth recalling a few of the obligations (the AIA's word, not mine) stated therein:

Ethical Standard 1.4 Human Rights: Members should uphold human rights in all their professional endeavors.

Rule 1.401 Members shall not discriminate in their professional activities on the basis of race, religion, gender, national origin, age, disability, or sexual orientation.

Ethical Standard 2.2 Public Interest Services: Members should render public interest professional services, including pro bono services, and encourage their employees to render such services. Pro bono services are those rendered without expecting compensation, including those rendered for indigent persons, after disasters, or in other emergencies.

In other words, regardless of their personal politics, all architects have a concrete professional responsibility to serve the less fortunate and to uphold their basic human rights. This spirit of altruism runs even more deeply than the AIA Code of Ethics. It is embedded in the profession's DNA.

Our system of architectural education is still based in large part on the Bauhaus model. We learn in architecture school that the early Modernists were reformers, intent on rationalizing architectural form and construction to reflect the latest technological advances. And as the Great War made possible, in fits and starts, the democratization of Europe, giants of the field such as Marcel Breuer and Le Corbusier made no distinction between architectural reform and social reform. They wrote manifestos, they designed workers' housing, they founded schools—all to improve the lot of the individual and build a more egalitarian society.

Today's profession is the inheritor of this legacy. Programs like the Rural Studio recall for us—as architects, and as Americans—what Abraham Lincoln called "the better angels of our nature." Every architect has the capacity to be an angel.

It's not necessary to dedicate your career to designing hospitals in Rwanda (though that would be a lovely gesture). And you don't have to be happy about the prospect of a tax hike to help pay some stranger's medical bill. Nonetheless, architects have the opportunity—and the obligation—to do good, to volunteer, to provide pro bono services, to contribute to the commonweal. It comes with the job.

In 1920, in *Vers une Architecture*, Le Corbusier wrote, "It is a question of building which is at the root of social unrest today: architecture or revolution." The early Modernists lived through a time of great social upheaval, and they believed that architecture could be part of the solution.

The very last line of *Vers une Architecture* reads, "Revolution can be avoided." It's a lesson worth taking to heart.

Reel Grame

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Thanks to efforts by various parties, the **archives of Yamasaki Inc.**—Twin Towers architect Minoru Yamasaki's Troy, Mich., firm—were saved from shredding and will be maintained by Michigan's state archives. The firm shut down in January, unable to overcome debt problems.

Urban planner **Toni Griffin**—who has assisted Newark, N.J.; Washington, D.C.; and New York City with revitalization projects—has been hired to help Detroit downsize. Griffin's salary will be paid for by the Kresge Foundation.

The International Green Construction Code, which includes the recently published ASHRAE Standard 189.1 and is a joint effort by six industry groups, was released for public comment.

Architectural historian Renata Hejduk and others are **protesting "unsympathetic alterations" to the Kreuzberg Tower** in Berlin, designed by Hejduk's late father, John. More than 2,000 people have signed an online petition to stop the work until the Hejduk estate has been consulted.

Bruce Graham, SOM Designer of Hancock and Willis Towers, Dies at 84



BRUCE GRAHAM, the Skidmore, Owings & Merrill (SOM) principal behind legendary 20th century designs such as Chicago's Inland Steel Building, Hancock Center, and Sears (now Willis) Tower, died on March 6 at his home in Hobe Sound, Fla. He was 84 years old.

Born in Colombia in 1925, Graham grew up in Peru and Puerto Rico. He first visited Chicago for naval training while serving during World War II. Following architecture school at the University of Pennsylvania, he worked at SOM from 1951 until his retirement in 1989.

Graham led many designs for the Chicago office during its heyday in the mid-20th century. In theory, the corporate model that the founders had established was one of equal partners. Differentiation came from credits accrued through work that individual partners brought to the firm. Graham realized that about 80 percent of the firm's commissions came from the street, through SOM's excellent reputation in corporate America, and he made sure

IN MEMORIAM

Raimund Abraham, 76, architect and professor, Cooper Union School of Architecture; Paul Devrouax Jr., 67, co-founder and managing principal, Devrouax + Purnell Architects; Harold Kemp, 88, University of Florida School of Architecture professor emeritus; Der Scutt, 75, architect; Frank Williams, 73, architect

NBBJ and Chan Krieger Sieniewicz to Merge

ONE OF THE NATION'S largest multioffice architecture firms, NBBJ, based in Seattle, is merging with the far smaller architecture and urban design office of Chan Krieger Sieniewicz (CKS), of Cambridge, Mass.

It is not a shotgun marriage, says Scott Wyatt, managing partner of NBBJ. The two firms have been discussing a merger for the past six months or so, having collaborated for three years on a large project for Massachusetts General Hospital in Boston. "The culture of our firms is incredibly close," Wyatt says, "and the complementary strengths made us say, 'Wow, this would be pretty great.' "Wyatt says that NBBJ was especially drawn to the strengths of CKS's urban design and planning practice. "Their dedication to creating great urban environments is a tremendous boost to us," he says, "and it opens up more of the Northeast to NBBJ."

The combined firm will have about 700 employees. For now, the CKS office will take the name Chan Krieger NBBJ. Alex Krieger, who co-founded CKS in the mid-1980s with Lawrence Chan, says that other large firms have tried in the past to merge with their office. "We've resisted all those advances," he says. In this case, however, "both sides see advantages." BRADFORD MCKEE



that his assistant was assigned to

the phones so that all such projects

among associates for his ability to

calculate floor-area ratios and struc-

tural bays in his head while sitting

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into the "bundled tube" system

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The architect was known

could be credited to his account.

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BUSINESS



INTERVIEW BY EDWARD KEEGAN PHOTO BY MIKE MORGAN

If your 2009 portfolio included a government project eligible for the 179D deduction, says the Reznick Group's Lorraine Reale, it's not too late to apply it to your tax return. "Amended returns can be costly," she notes, "but you might be in that sweet spot where you want to bulk up your deductions."

ightarrowbest practices

The Tax Man Deducteth

ENERGY-EFFICIENT ARCHITECTURE ISN'T JUST GOOD FOR THE ENVIRONMENT—IT ALSO CAN BE GOOD FOR YOUR FIRM'S BOTTOM LINE, THANKS TO THE 179D TAX WRITE-OFF.

THE ENERGY POLICY ACT of 2005 added section 179D which allows a tax deduction for the cost of building energy-efficient commercial property—to the Internal Revenue Code. Originally scheduled to sunset at the end of 2009, 179D was extended through 2013 two years ago. Who can claim the deduction? How does it work? ARCHITECT learned the basics from Lorraine Reale, a certified public accountant and a Reznick Group principal in the company's Bethesda, Md., office. Reale, who is also a member of the National Association of Real Estate Investment Trusts and the treasurer for both Commercial Real Estate Women and Professional Women in Construction, has focused on commercial real estate throughout her entire career.

How did you get interested in taxes?

I took some classes in college, and one day the clouds parted, the light shone down, and I said, "I get it!" This

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stuff is fun for me. I like solving puzzles. I like helping people figure out the legalese, how to compromise and make a transaction work.

What's your interest in 179D?

It's irrational, but I love certain code sections, and this is one of them. It provides such a benefit for architects and engineers.

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What is the benefit?

Depending on the square footage of the building you've designed, there is a maximum of a \$1.80 per square foot deduction available if there is certification that what has been crafted has reduced the annual energy and power costs by at least 50 percent.

How is the benefit determined?

You need to have the plans looked at by a certified professional—an engineer. They need to run it through the software and provide you with a report. You take the square footage and multiply the applicable dollar amount, and that's your deduction.

How does 179D relate to LEED certification?

They should go hand in hand. When you're doing LEED certification and you have designated certain improvements as being energy efficient, those are the same standards that would qualify for 179D. But you might not be going for LEED certification, and you might be doing something where this would apply.

Who can take the deduction?

It's owned by the owner of building, and they have the right to allocate it to someone else. You can make the deduction part of your negotiations when you're executing a contract for a commercial deal. Bringing it up should have some value that they'd be willing to split with you.

When you're dealing with a governmental agency, you have a better bargaining position. [Because it doesn't pay taxes,] a government agency—local, state, federal is not worried about deductions. They are probably going to be favorably inclined to provide that deduction to the architect, the engineer, the contractor, or the environmental consultant.

Why is it worth the effort?

If it's a 250,000-square-foot building, it's a potential deduction of about \$450,000. It's serious money.

What about energy-efficient projects that are already completed?

If you worked on a government building in 2009, didn't do this, and realize it now, you can go back to the governmental agency and have them sign the documentation. You can amend your tax return and get back money—assuming you made money in 2009.

So an architect could find that some additional paperwork and accounting could be lucrative during these recessionary times?

If you're in a fallow period, it's the perfect project that would benefit you.

How can knowing about 179D be marketable?

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The Many Faces of IDDD

TEXT BY VERNON MAYS

FOUR FIRMS SHARE THEIR STRATEGIES FOR USHERING THE NEXT GENERATION OF ARCHITECTS TOWARD LICENSURE.

IT'S BEHIND HIM NOW, but Daryl Bray recalls how he struggled to learn the ropes of the architecture profession as an unlicensed intern. Twelve years ago, when Bray arrived at Tulsa, Okla.'s Scott & Goble Architects, there was little guidance to keep recent grads moving toward completing their Intern Development Program (IDP) requirements. "I felt kind of lost," Bray says.

Like many of his peers, Bray followed a bumpy road to reach the goal of licensure. Once he did, he resolved to make things easier for the next generation. He spearheaded a program at Scott & Goble Architects that provides comprehensive training to interns—a bestpractice model for how firms can propel their young charges to professional status.

At Scott & Goble today, the nurturing of interns hinges on a "single project manager" philosophy. While interns do not formally manage a project—that remains the role of a licensed architect—they are assigned to follow one job from concept to completion. This exposes them to everything from site analysis to project close-out.

The approach's success rests heavily on a proactive mentoring system. Each intern is paired with a senior architect, and together they sign a pledge committing to a schedule for completing the IDP and Architect Registration Examination (ARE). Who makes a good mentor? "Somebody who is seasoned, and somebody who is interested in the intern's goals," says Bray.

"More and more, we encourage firms to participate in this process [of IDP mentorship]," says Harry Falconer, director of IDP at the National Council of Architectural Registration Boards (NCARB). "We absolutely see a correlation between the intern's rate of success and the level of the firm's involvement."

Educating young employees is a high priority at **Payette Associates**. Nine years ago, the Boston firm created its Young Designers Core (YDC) for the mutual benefit of interns and the firm. Structured around IDP training categories and core competencies, each YDC event is geared for intern-level employees and has a specific learning purpose.

Interns Tom Sherman and Nicole Lecuivre currently co-chair Payette's YDC. The pair meets monthly to plan the schedule of weekly events. "We try to hit on IDP hours that are hard for young designers to achieve," says Lecuivre. But they mix it up, too. Site visits to major Boston projects are frequent, and the group also tours workshops and factories.

At the Richmond, Va., firm **Baskervill**, newly licensed coordinators with fresh memories of the IDP oversee the development program. Close supervision is key. Each intern is assigned a coordinator, who acts as an adviser; the coordinators meet regularly with the interns' supervisors to track their charges' progress, says Jay Woodburn, one of two firmwide IDP coordinators at Baskervill. "We keep a matrix of what experience they are getting. If somebody falls behind, we address it."

At San Diego's **Carrier Johnson + Culture**, expectations are set when new hires arrive: Participation in the IDP

"WE ABSOLUTELY SEE A CORRELATION BETWEEN THE INTERN'S RATE OF SUCCESS AND THE LEVEL OF THE FIRM'S INVOLVEMENT."

HARRY FALCONER, DIRECTOR OF IDP, NCARB

is not optional. "We try to be very active in advocating a path to licensure," says Corinne Lloyd Moody, who serves on the firm's IDP Task Force. The target timeline for completing the IDP is two and a half to three years, with two additional years allotted to pass the ARE.

The firm provides ample support to make it happen. Staff members post events on an "Intern Opportunities Calendar"—maintained on the firm's intranet—that highlights in-house lectures, meetings with construction managers, site visits, and more. Like many firms, Carrier Johnson also provides critical financial support to help cash-strapped interns attain licensure, including reimbursement for items such as conference registrations and professional-accreditation test fees.

Of course, not all interns are so fortunate. Many firms pay little attention to their needs, and the recession has left thousands on the IDP path without work or with a checkered employment history. For these people, NCARB's Falconer points to the Emerging Professional's Companion (epcompanion.org), an online initiative created by NCARB and the AIA. Rebooted last year with overhauled content, the site, Falconer says, is "a supplementary [IDP] education tool." He also explicitly encourages firms to continue mentoring when they have to let somebody go, and he tells interns to ask their former bosses for help. "It's hard not to lash out," Falconer admits, "[but] try to keep those ties."

Payette's president, James Collins, says that it requires a leap of faith that the cumulative effect of pushing young people to be smarter, more skilled, and socially more connected will be improved project work. It makes them better professionals, he adds, "and our justification has to be on that merit." □





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→LOCAL MARKET Manchester, N.H.

TEXT BY MARGOT CARMICHAEL LESTER









CHARTERED AS DERRYFIELD in 1751, a decade after New Hampshire separated from Massachusetts, the small town at the Amoskeag Falls on the Merrimack River was renamed in 1810 after Manchester, England, the first industrialized city. As a manufacturing center—it was home to, among other businesses, Mill No. 11, the largest cotton mill in the world—the city attracted immigrants from around the globe. Even today, 70 languages are spoken in the local school district.

Manchester's industrial roots remain evident in the city's Victorian-style mill buildings, but its economy has moved away from manufacturing. As the largest city north of Boston, and with a central location in northern New England, Manchester has become a regional healthcare and education hub. In 2009, CNNMoney.com ranked it the 13th best U.S. city to live and launch a business in, and *Kiplinger* named it the nation's second-most-tax-friendly city.

The recession has slowed development somewhat, but for the most part, the city has fared well during the downturn. "I think it is in part due to our [economic] diversity and Yankee conservatism," says Chris Wellington, a marketing specialist in the city's economic development office. Manchester officials urge public-private partnerships to fund large developments, keeping most projects such as the multiphase River's Edge development (No. 4, above) manageable and on track.

"In order for development to happen, it must be a project that can stand on its own financially," notes Barry Brensinger, CEO of local firm Lavallee Brensinger Architects. "That can be a good thing, but it's a challenge right now." With all levels of government cutting back, fewer projects are under way. But there also are fewer in financial trouble, meaning that "ManchVegas," as locals call it, has largely avoided the fate of Las Vegas and other cities that saw numerous speculative developments die on the vine. \Box

1. Hillsborough County North Superior Court

ARCHITECT: Lavallee Brensinger Architects, Manchester, N.H. COMPLETION: 2011. BRIEF: \$13.7 million expansion and renovation of existing building to current court standards; LEED Silver status pending.

2. New Hampshire Institute of Art ARCHITECT: Dennis Mires,

ARCHITECT: Definits Mires, The Architects, Manchester. COMPLETION: 2009. BRIEF: \$7.3 million rehab of city's first high school (ca. 1891) includes dormitory and teaching spaces, geothermal HVAC, rainwater harvesting, and vegetated roof.

3. Pandora Mill

ARCHITECT: John S. Jordan Design, Canterbury, N.H. COMPLETION: 2010. BRIEF: \$11 million redevelopment of a historic mill into a LEED Silver (pending) office building.

4. River's Edge

ARCHITECT: Cube 3 Studio, Lawrence, Mass. COMPLETION: 2011. BRIEF: Project includes a 238,000-s.f. ambulatory care center and a 125,000-s.f. medical office building; phase 1: \$105 million; remaining phases: \$63.7 million.

POPULATION/EMPLOYMENT

2009 population: 110,000, with 73,389 employed in-town.

OFFICE MARKET

February 2010 vacancy: 17.7%; average asking rate: \$16.84/s.f.

RESIDENTIAL MARKET

Median home sale price, December 2009: \$208,000.

MARKET STRENGTHS

Proximity to New England

- hub cities
- No sales or income tax
- Educated workforce

MARKET CONCERNS

- Depressed housing market
 Potential glut of commercial
- Potential glut of commercial space
- General economic malaise

FORECAST

"Manchester has a lot of self-confidence, despite the times," says Lavallee Brensinger Architects' Barry Brensinger. "Improvements bring confidence in the future, and there's a general sense of optimism. A number of people are working on some interesting projects."



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The Yas Hotel's grid shell comes alive at night, thanks to 5,800 programmable LED luminaires, one at each vertex of the latticework. The structure has an equal number of glass panels, each unique in size, shape, and angle of tilt. Frits in the panels reflect the LED light outward without affecting hotel occupants' visibility. **"FOR A LONG TIME,** I wanted to see if I could make a building move fast," says Hani Rashid, co-principal with Lise Anne Couture of Asymptote Architecture. The firm's recently completed Yas Hotel, in Abu Dhabi, with its hovering carapace of glass scales, appears to flutter in the wind like a high-tech veil. Especially if you happen to be driving a racecar on the Formula 1 track that bisects the hotel.

The 500-room hotel, comprising a pair of elliptical, 12-story buildings, has two skins: The inner curtain wall is conventional, save for its airlinerlike acoustical insulation (which muffles the roar of the racecars), while the outer "grid shell" breaks the sunlight and generates a stack cooling effect. Visually, this undulating canopy creates an instant landmark.

Rashid says the meshwork of diamond-shaped panels evokes the tessellated patterns found in traditional Islamic architecture. It also embodies Asymptote's ongoing efforts to realize abstract mathematical models as physical structures. The New York firm's pursuit of "technological elegance" — Rashid's term for the harmony of speed, computation, and movement exemplified by sleek aircraft and car bodies—dates to its Fluxspace objects and architectural installations of the late 1990s and early 2000s.

In the original design proposal, all 5,800 glass panels, conceived as a responsive or intelligent skin, would have been able to pivot via electronic triggers. The idea, says Rashid, was to "create a shiver across the surface." Prohibitive costs required the glazing to remain stationary, but each panel is unique in size (ranging from 5 feet to 14 feet wide), shape, and angle of tilt. Optimizing the grid's corner angles with CATIA software, Asymptote collaborated with Gehry Technologies and the Vienna University of Technology as well as Arup project engineers to streamline the design and fabrication of this intricate exoskeleton.

Starting at dusk, the grid shell becomes a light source of its own. LED luminaires—5,800 of them, each containing 144 bulbs—mounted in the vertices of the lattice function in unison as a wraparound screen, turning the Yas Hotel into something of a lava lamp, or a phosphorescent sea creature. Frits in the glass panels reflect the light sources outward, according to Rashid, without compromising transparency from within.

Rashid and Couture are wary of comparisons with Las Vegas and its flashy color displays. Instead, Asymptote designed seven digital scripts for the lighting-control system based on more "ambient" and "ethereal" phenomena, such as slow-moving ocean waves. Nevertheless, the client, Aldar Properties, can reprogram the façade lighting as it sees fit—to play up holidays or racing events, for example.

"Veiling and draping is a local aesthetic," observes Rashid. But for the Yas Hotel, which straddles a racetrack and is sited by a marina, the local idiom also includes sculpted boat hulls and tapering car fuselages. This, for Asymptote, is context at its most congenial. □





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TEXT BY BRADFORD MCKEE ILLUSTRATION BY NIK SCHULZ

LOOKING FOR AN ENVIRONMENTALLY FRIENDLY WAY TO WARM YOUR BUILDINGS? A GASIFIER JUST MIGHT BE THE TICKET TO A CLEANER— AND CHEAPER—HEATING SYSTEM.

THE NEW HEATING SYSTEM housed in the neat little building at Hartford Central School, in Hartford, N.Y., works a lot like the standard natural-gas boilers in millions of American homes. Except it's different. Rather than using natural gas piped in from afar, the system makes its own gas—from wood. And it's a lot cheaper than the heating oil the school consumed exclusively until this past winter.

Gas from wood? Let's back up. A few years ago, voters in the Hartford School District, a rural area north of Albany, N.Y., voted for a nearly \$16 million renovation and addition to their K–12 school. Part of the plan was to start using renewable plant or organic waste material, also known as biomass, for fuel and to cut consumption of fossil fuel. The district bosses asked their architects at CSArch Architecture/Construction Management of Albany to help figure out how.

"They didn't have to twist our arm," says Daniel Langer, a CSArch principal and the project's manager. There are several methods for turning wood or various crops or organic waste into fuel, but not all of them are right for every situation. The point is to find a fuel source that's relatively local and plentiful. The architects and district officials decided against burning cow manure or corn carcasses because they weren't impressed with the technology's ability to meet state emissions rules. "We eventually came across wood chips," Langer says.

Up in those northerly forests, there is a lot of wood to chip from paper mills and tree farms. The system the school district chose relies on what is called wood gasification. (The basic technology of gasification dates to the 1800s, when the fuel source was primarily coal.) Wood chips arrive from a local supplier and are put into a bunker inside the 2,000-square-foot plant. They're fed up an auger and into a "gasifier," a large oven in which the wood is burned at 2,000 F. At that temperature, the wood gives off flammable gases, which are drawn out by induction fans and combusted beneath a huge and otherwise conventional boiler full of water. From there, the water goes off in a closed loop of metal radiator

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ARCHITECTS ARE INCREASINGLY BEING ASKED BY CLIENTS TO HELP SPECIFY BIOMASS FUEL SYSTEMS OF VARIOUS TYPES.

pipes to heat buildings and provide hot water.

The Hartford school's wood gasifier burns quite cleanly—nearly all particulates are removed from the exhaust by a cyclonic fan. "You basically see nothing" coming out of the flue, Langer says, "and we passed all our [environmental] requirements with a one-page document." All that remains of the wood is potash, which is distributed to local farms as fertilizer. And the clincher is the cost to the district, which typically paid \$110,000 a year for heating oil and now plans to spend \$40,000, at most, for wood chips (the gasifier consumes up to 36 tons of them per week in cold weather).

The school still uses some heating oil, however. State education rules require a fully redundant system alongside the gasifier. Also, the gasifier is too efficient it works best at full throttle, so during "shoulder seasons" (late spring and early fall) Hartford Central turns it off and heats with oil.

Even when the gasifier isn't operating, it's always on view in its small building near the school's driveway, with large windows so people can see the process in action. "We decided to make it an attraction," says Tina Ceas, the architect at CSArch who designed the structure.

Architects are increasingly being asked by clients to help specify biomass fuel systems of various types. Nick Salmon, an architect at CTA Architects Engineers in Billings, Mont., has worked on nearly two dozen biomass boilers, many of them for schools. In Montana, the systems commonly burn wood removed from forests to reduce the threat of fire. And one, in Bismarck, N.D., uses "urban wood" collected during municipal tree trimming.

A major consideration for biomass burners is air quality—not all systems burn as cleanly as others, Salmon says. "Local air quality is always a concern, and determining what rules apply is important to what technology might work best." Gasifiers are among the cleanest, while other biomass systems require costly devices to scrub particulates from the exhaust. "We've learned the hard way that there are a wide variety of fuels" used in biomass energy systems, Salmon says.

To educate future engineers and others interested in biomass boilers, Minneapolis-based HGA Architects and Engineers recently completed a research and demonstration facility at the University of Minnesota's Morris campus that will burn corn stalks and leaves to heat 1.2 million square feet of school buildings. (The plant has not yet begun operating.) "They can source all the fuel this plant needs within a 10-mile radius" of campus, says HGA principal Doug Maust. An addition to the school's existing power plant, the facility received a 2009 Honor Award from AIA Minnesota.

For a 19th century technology that's gaining wider acceptance in a world increasingly focused on renewable energy, it's tough to beat a calling card like that. \Box

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IF BUILDINGS' ENVIRONMENTAL IMPACT WERE CLEARER, WOULD WE DEMAND GREATER CHANGE?

TEXT BY LANCE HOSEY ILLUSTRATION BY PETER ARKLE

"GLOBAL WARMING IS BAD, but it doesn't make us feel nauseated or angry or disgraced," wrote Harvard psychologist Daniel Gilbert in a 2006 *Los Angeles Times* op-ed piece. The environmental crisis doesn't conspicuously threaten us in the course of everyday life, so we're not as motivated to act, since we form stronger feelings around more-tangible things, like food and sex. "Moral emotions are the brain's call to action," Gilbert explains. "If climate change were caused by gay sex, or by the practice of eating kittens, millions of protesters would be massing in the streets."

Buildings produce 40 percent of U.S. greenhouse gas emissions and use 75 percent of our electricity. As a dramatic contributor to climate change, they pose a serious threat to public health, especially among children who, according to the American Academy of Pediatrics, are particularly vulnerable to environmental hazards because their immune systems aren't fully developed. As a "call to action," harming kids certainly rivals eating kittens. Where's the outrage?

Since buildings' consumption isn't conspicuous, we can't actually witness them sucking down electrons and coughing up carbon. Consequently, according to a 2007 AIA poll, a mere 7 percent of Americans identify buildings as a top source of emissions. (Only aerosol cans, banned 30 years ago, ranked lower in the list of choices.) Architecture is like the picture of Dorian Gray: It can look beautiful in public, while somewhere out of sight its true soul withers and rots.

If the impact of architecture weren't

hidden, how would the public react? A 2007 study at Arizona State University found that people use less electricity when they think their neighbors are doing the same. But what if we were told our neighbors were using more than their fair share? If overconsumers, like sex offenders, had to register with the authorities, would angry mobs take up torches and pitchforks?

With Energy Star's Portfolio Manager program, you can compare your building's performance with that of others across the country. Imagine requiring these stats to be publicized, even prominently displayed. Picture mandatory ticker-tape marquees with the number of BTUs burned (or children getting asthma, or species dying out, or forest acres shrinking) constantly ticking upward, like dollars on national debt clocks. Would PETA douse building façades with fake polar-bear blood?

What if buildings signaled their environmental damage with some kind of punitive eco-alarm system? Flip on too many lights, and you hear the screams of spotted owls over the PA. Turn up the heat too high, and the ductwork emits the stench of methane from legions of termites snacking on felled rain forest timber. Would we feel "nauseated" then?

If the evidence of damage from construction were visible, even visceral, would Gilbert's protesters mass in the streets then? What will it take for more than 7 percent of us to feel "angry or disgraced" about the sorry state of our buildings? \Box

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CULTURE

43



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Roy McMakin designs furniture, objects, and environments that teeter brilliantly on the brink of the everyday. If only he could get as creative with his pricing. McMakin's collection of Vases About Language & Redemption (above), manufactured by Heath Ceramics, retails for \$3,800. Fortunately, his new monograph, Roy McMakin, When Is a Chair Not a Chair, is much more affordable, and no less desirable. \$65; Rizzoli

ARCHITECT APRIL 2010





From the U.K.'s oldest surviving building plan to Sir Christopher Wren's drawings for St. Paul's Cathedral in London, the exhibit Compass and Rule: Architecture as Mathematical Practice in England, 1500-1750 at the Yale Center for British Art traces the parallel development of geometry and architectural rendering. If math's not your best subject, no worries. Instead, feast your eyes on William Vertue's 1518 elevation of a chapel at Winchester Cathedral (right). Through May 30. ycba.yale.edu

ightarrowbook

Edwin Lutyens' most famous building is probably the Viceroy's House in colonial New Delhi. But his most moving work may be the 140 cemeteries in Belgium and France that he designed for soldiers killed in World War I. *Cemeteries of the Great War by Edwin Lutyens*, by Dutch architect Jeroen Geurst, includes plans, photographs, and directions for all of them. \$53; 010 Publishers











ightarrowexhibit

What happens to New York City when the polar ice caps have melted and the surface of the ocean starts rising to a threatening level? For the exhibition **Rising Currents: Projects for New York's Waterfront**, Museum of Modern Art curator Barry Bergdoll tasked five teams of designersincluding Architecture Research Office (whose scheme is shown above), LTL Architects, Matthew Baird Architects, nArchitects, and SCAPE-to envision solutions for an ostensibly apocalyptic situation. Through Oct. 11. moma.org

ightarrowbook

Cross a clock and a map, and what do you get? *Cartographies of Time: A History of the Timeline* has the answer. Authors Daniel Rosenberg and Anthony Grafton chart the surprisingly nonlinear course of graphic depictions of time. \$50; Princeton Architectural Press

CLOCKWISE FROM TOP LEFT: COURTESY RIBA LIBRARY DRAWINGS COLLECTION; COURTESY ARCHITECTURE RESEARCH OFFICE AND DLANDSTUDIO; COURTESY PRINCETON ARCHITECTURAL PRESS; PREVIOUS PAGE: MARK WOODS

Tough Love: In Defense of Brutalism

THE CONCRETE ARCHITECTURE OF A FEW DECADES AGO, ONCE LAUDED, IS NOW MOSTLY VIEWED WITH SCORN. BEFORE WE TEAR IT DOWN, WE SHOULD CONSIDER WHAT WILL BE LOST.



TEXT BY MICHAEL KUBO, MARK PASNIK, AND CHRIS GRIMLEY

Boston-area concrete:

(clockwise from top left) Christian Science Church Center; Boston City Hall; Madison Park High School; Government Center Garage; Government Services Center; State Street Bank; Carpenter Center for the Visual Arts, Harvard University; Boston Public Library, Charlestown Branch.





THERE WAS A TIME when architecture could be Heroic. It wasn't so long ago—half a century, give or take; the years before the decorated shed, the starchitect, the post-critical, the box and the blob, the supermodern, and all the rest. If today's architects have often leapfrogged back to the roots of modernity, it has been from the shoulders of the Cold War era, a time when designers struggled with architectural problems that grew from the directions set by Modernism's early masters.

After midcentury, Modernist U.S. architecture largely fell into two camps: glass-and-steel boxes (many of them corporate) that followed the legacy of the Miesian grid, or the so-called Brutalist concrete buildings (many of them civic) that were influenced by Le Corbusier's late work. While the laconic qualities of the former have gained wide acceptance, the general public—and even many architects—routinely disparages the latter's blunt physicality as socially and urbanistically aggressive.

Today, major examples of Brutalism—or what the three of us prefer to call Heroic architecture—are under



threat of demolition or disfigurement, including Boston City Hall; Washington, D.C.'s Third Church of Christ, Scientist; and works by Paul Rudolph, Marcel Breuer, and Eero Saarinen. We feel the need to defend these buildings, to insist on their quality and value to all of us today. Here are our reasons.

They're often misunderstood: "Brutalism" was a terrible label—an all-too-easy pejorative that suggests these buildings were designed with bad intentions. As the late critic Reyner Banham noted, at its best, Brutalism did have an ethic, one meant to reveal the messy realities of construction and building systems, and to forge a new honesty about architecture and its role within the postwar era's broader social and urban transformations. Brutalist buildings tried to be rugged and direct—more Marlboro Man than *Mad Men*—in opposition to the graysuited slickness of glass-and-steel Modernism. Concrete,

46

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Boston-based Michael Kubo, Mark Pasnik, and Chris Grimley (l-r) curated the 2009 exhibit "Heroic"-about late-Modernist concrete buildings in the Boston area-at pinkcomma (overcommaunder.com/heroic). Kubo is pursuing a Ph.D. in history, theory, and criticism of architecture at the Massachusetts Institute of Technology. Pasnik and Grimley are the gallery's directors and principals of the architecture firm over, under.

the style's preferred material, was used to create dramatic forms that were singular rather than generic, sculpted and heavy rather than thin and light, and, frequently, civic and institutional rather than corporate. It is for their ambitions that we label these buildings Heroic.

They're examples of an era's urban ideals: Heroic architecture represents a different cultural and political context. At the time they were built, these buildings were called authentic, noble, dignified—words that are hard to interpret today. They were authoritatively civic in the time of Kennedy-era optimism and the Great Society, before U.S. attitudes toward the public realm changed so dramatically that it has become hard to evaluate the aesthetics on their original terms. What was once regarded as positively monumental is now seen as bureaucratic, overbearing. Through their very durability, Heroic buildings remind us of our changing attitudes, for better and for worse.

They're important parts of our built heritage: Cultures and tastes change. Just as New York's Penn Station, originally lauded, was later seen as outmoded and then, tragically, demolished, many Heroic buildings have gone from praise to vilification in a generation. Why repeat the cycle of destroying what we might appreciate with a longer historical lens? Moreover, today's

criticisms of Heroic structures often lie less with their architecture than with their connection to the troubled legacy of urban renewal, something better remedied by sensitive urban design than by further demolition and rebuilding. Cities should be layered with the intentions of different eras; erasure is nearly always a mistake.

Heroic buildings can be tough to love. Fairly or not, many are perceived as hubristic or cold-sometimes literally—or overly aggressive. They're not always cozy. And not all examples are of equal value or quality. But the best ones deserve careful re-evaluation. We believe that sensitive modifications could help make them loved once again.

The most meaningful examples of Heroic architecture have a richness and vitality that reward close study. I.M. Pei's Christian Science Church Center in Boston, for instance, shows how, with proper care and stewardship, these buildings can be wonderful participants in an active urban setting. At their best, they are powerful monuments of an ethic inspired by, but critical of, its Modernist past-an ethic that sought authenticity for its time and embraced the future wholeheartedly. It would be a shame if such qualities fell victim to a throwaway culture before these buildings hit their second stride. By learning to appreciate them, maybe, just maybe, we can be Heroic again. □



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TEXT BY JOHN GENDALL PHOTO BY SIOUX NESI

"Ultimately, our mission is to push architectural work out into the world," says Architizer's Marc Kushner (right), seen here with fellow co-founders Benjamin Prosky (left) and Matthias Hollwich. (Not pictured: Alex Diehl.) **FOR ARCHITECTS LOOKING** to network online in a serious way, the options have been limited. LinkedIn consigns designers to text-based profiles, making it difficult to convey a firm's essence. Pictures can be posted on Twitter and Facebook, but they vie with updates about what someone had for breakfast. Now, with Architizer.com, the landscape is radically different. The image-based site gives architects a platform to connect with other designers and, its founders hope, an interested public.

Architizer began in late 2009 with 25 firms; it has since grown into a global network of, at press time, 1,300 firms and 7,000 individuals, and it gets an impressive 100,000 unique visitors per month. "We've been a lot busier than we [expected]," admits co-founder Marc Kushner. The founders — Kushner, Matthias Hollwich, Alex Diehl, and Benjamin Prosky — are otherwise employed: Kushner and Hollwich run HWKN, a New York architecture firm; Diehl is CEO of media agency KreativeKonzeption, in Berlin; and Prosky directs special events and external affairs at the Columbia Graduate School of Architecture, Preservation, and Planning. The Architizer idea is a few years old, but the quartet saw a chance to make it a reality in the recession with pooled resources and sweat equity. These days, they juggle work schedules with the site's growing demands. Prosky says they've been successful in raising capital for site improvements aimed at audience growth.

Regular competitions are among the new features. An initial one, which reexamined losing designs from 2009 competitions, generated substantial Web traffic. "If your work is on Architizer, you don't really even need a site," says Diehl, who optimized the search function. A project that sits dormant on a firm's site may, on Architizer, get hundreds of views in a day; if it's a featured project, bump that figure to 4,000. "Once it's out there," Kushner says, "the work takes on a life of its own." \Box

LINKS

greenguard.org

The Greenguard Environmental Institute — whose certification programs maintain air-quality standards for building materials and products — recently overhauled its website. Among the upgrades is a more userfriendly product guide, which now allows searches by keyword, product type, manufacturer, sustainability credits, and certification type.

plantingacorns.com

Written by Merill Stewart, co-founder of the Birmingham, Ala., commercial construction company Stewart Perry, Planting Acorns combines industry insights with informal business philosophy, all centered on the idea that people—whether employees, business partners, or clients—are the ultimate asset.

paris-26-gigapixels.com

A project by two French photographers and Kolor, developer of the photo-stitching software Autopano: 2,346 pics of the Paris skyline assembled into a single image 354,159 pixels wide by 75,570 pixels tall.

8bitnyc.com

At the other end of the digital spectrum, so to speak, is a searchable map of New York City rendered in the "8-bit" format, which will be familiar to fans of '80s-era computer games. The mapmaker, Brett Camper, also created one for Austin, Texas—just in time for the SXSW festival—and is soliciting donations to help fund the development of 15 more.

aestheticsofjoy.com

Designer Ingrid Fetell—see her work at ingridfetell.com—tries to answer the question: How does design contribute to, or detract from, our feelings of happiness?

2010book.tumblr.com

Dan Sinker, a journalism professor at Columbia College Chicago, revisits a children's book, 2010: Living in the Future, published in 1972 by science fiction writer Geoffrey Hoyle. How does the real 2010 compare with the world envisioned by Hoyle and his illustrator, Alasdair Anderson? Apart from the jumpsuits everyone is supposed to be wearing and generally utopian designs and attitudes, we're not all that far off.





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2010 SALARY SURVEY Let's get right to it: For most architects, 2009 was an *annus horibilis*, a year so rotten that previous bad years start to look sunny by comparison. But we're not the ones saying so—you are, in the comments that ARCHITECT readers submitted as part of our annual salary survey. "Potential clients are now interviewing many architects just to get the lowest price. Very tough and strange times," wrote one respondent. "We have been in the red for 14 months," another architect wrote. "If [there is not] a dramatic recovery very soon, we will be out of business." Many principals and owners report that they've taken pay cuts of 10 percent or more just to keep their firms afloat. One owner complained, "My gross income for 2009 was \$7,404. I call this VERY GROSS INCOME."

In January, we polled nearly 1,300 readers of this magazine, drawn at random from our subscriber lists. (For every completed survey, we promised to donate \$2 to the nonprofit Public Architecture.) We did a screening to eliminate all respondents except those working at architecture firms in the United States with a portfolio of at least 50 percent nonresidential architecture. Our final respondent pool of 1,001 people spans all job titles and experience levels in the profession,

LESS = THE NEW MORE

although management-level architects and sole practitioners dominate: 77 percent gave their title as principal/partner/owner or president/vice-president/C-title, and the median age was 51.8. (Younger architects should keep this in mind, if the figures here don't square with their experience.)

We asked Kermit Baker, chief economist of the AIA, to interpret our findings. He warns that conclusions are difficult to draw in a period of unprecedented volatility. "Our estimates are that 25 percent of positions at architecture firms were lost since the middle of 2008," Baker says. "The finding is that those losses tend to be concentrated at the lower end of the salary spectrum." In our Median Salary by Firm Size chart (p. 56), he points out, an apparent uptick in salaries at midsized and large firms might signify a compositional change, instead: A firm of 100 (which is likely to pay architects more than a firm of 50) would drop into the midsized category after a few layoffs, thereby pushing the median up. With those caveats in mind, read on. And keep your fingers crossed for a better 2010.

TEXT BY AMANDA KOLSON HURLEY RESEARCH BY KARLIN ASSOCIATES INFOGRAPHICS BY CATALOGTREE

\$80,900	\$88,800
2010 MEDIAN SALARY (BASE) 2009 MEDIAN SALARY (BASE)	

DID YOUR FIRM MAKE CHANGES LAST YEAR BECAUSE OF THE ECONOMY?



In this economy, it's a little surprising that nearly a third of firms *didn't* take any self-defensive measures. Downsizing may have been most prevalent at large firms; 85 percent of respondents at firms of 100 or more employees saw co-workers get laid off. Hiring freezes, reduction/ elimination of benefits and bonuses, and other measures (such as a reduced work week, frozen or reduced salaries, and reduced IT spending) were common across the board, but slightly more common at midsized firms.



IF YES, WHAT CHANGES DID IT MAKE?

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WHAT IS YOUR SALARY?

"MORE WORK AT LESS PAY HAS A LIMIT. I HOPE I FIND IT SOON."

-RESPONDENT #126

55

2010 SALARY SURVEY

ARCHITECT APRIL 2010

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"THE DIFFICULTY OF RUNNING A SMALL FIRM INCREASES EVERY YEAR. IT'S COMPOUNDED IN HARD TIMES BY COMPETITION FROM LARGER FIRMS." –RESPONDENT #68



MEDIAN SALARY BY YEARS OF EXPERIENCE



MEDIAN SALARY BY GENDER



57

DID YOU GET A BONUS?

BONUSES Any of these Performance Christmas End-of-year Discretionary Profit-sharing ARE/NCIDQ

7. ARE/NCIDQ
8. LEED
9. Signing bonus
10. Referral
11. Project
12. Relocation
13. Five-year anniversary
14. Marketing

15. Quarterly 16. Other



It seems heartening that 59 percent of respondents got a bonus last year. But Baker has a sobering theory about that: Firms might have cut base salaries and relied more on bonuses. "'If we don't deliver this year, we can't be on the hook for your full salary,'" the thinking may have gone.

"WE STILL PAY 100 PERCENT PREMIUMS. IT'S THAT IMP

OF HEALTH INSURANCE ORTANT."

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WHAT BENEFITS DO YOU GET?

24%

28%

BENEFIT 1. Any of these 2. Medical insurance

401(k) or IRA
 Association dues
 Pay ARE expenses
 Cell phone

B. Dental insurance
 Life/ADD insurance
 Long-term disability
 Profit-sharing

Vision insurance
 Flexible spending
 Short-term disability
 Health club reimbursement

Benefits were down slightly across the board. Eighty percent

ago.

of respondents reported

having medical insurance, versus 88 percent a year

16. ESOP
 17. Pension
 18. Other

7. Continuing education reimbursement

-RESPONDENT #300

5%

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59

-4 percent change from 2009

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60%

57%

56%

olotics

94%

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WHAT KIND OF YEAR WILL 2010 BE FOR YOUR FIRM?

HOW SECURE DO YOU FEEL ABOUT YOUR JOB IN 2010?



WHAT SIZE IS YOUR FIRM?



WHAT'S YOUR JOB TITLE?



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60

As in our 2009 survey, respondents tended to be

respondents tended to be principals/managers and had a fairly high median age (51.8). More reported working in small firms this year, a likely result of downsizing.

"THESE DAYS I AM $|\Delta\rangle/|$ ||| |S|| (||A||() |-ΔΙ)ΥΡΑΥ(ASIK)/\/\ 🛆 |() | | |-IKF IFI HAVF OR A RAISE, I IVF WITH THA

—RESPONDENT #411

WHAT'S YOUR AGE?



WHAT'S YOUR GENDER?



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TEXT BY KATIE GERFEN PHOTOS BY ROBERT POLIDORI

MARRIOTT HALL, ST. ALBANS SCHOOL

WASHINGTON, D.C. SKIDMORE, OWINGS & MERRILL WHEN SKIDMORE, OWINGS & MERRILL (SOM) principal Roger Duffy first arrived on Washington, D.C.'s St. Albans School campus in 2003, he saw a lone man in a cardigan sipping a coffee in the early morning light. Hoping to get a leg up for his interview, Duffy asked the man for a tour. It wasn't until later that Duffy realized his tour guide was, in fact, headmaster Vance Wilson, the man who would become his client for the next six years.

Nestled on the grounds of the Washington National Cathedral, in a landscaped close designed by Frederick Law Olmsted, the St. Albans campus comprises several architecturally disparate hillside buildings. SOM's 70,000-square-foot Marriott Hall—half a renovation of a 1970s building (stripped down to the concrete frame) and half new construction—connects the existing facilities and adds classroom and social spaces.

Despite being unabashedly modern, Marriott Hall fits so well within its historic context, it's hard to see that it wasn't always a part of it. The entrance to the new building is deliberately quiet and unassuming: a singlestory volume in glass and stone. Duffy specified masonry to match the color and mortar style of the original 1909 school building that sits adjacent. The real drama of Marriott Hall begins as the ground plane falls away to reveal three floors below the entrance level, and projecting volumes, intersecting terraces, and shifts in material disrupt the building's long, rectangular mass.

Duffy asserted that what the school needed was a landscape solution, not a building solution, which resonated with the selection committee. His team visited the Olmsted archives in Brookline, Mass., where they found the original drawings for the cathedral close—and realized that there was once a direct line of sight from the campus' main archway to the Capitol dome. Reinstating that exact view was not possible, since the 1970s building was erected in the way and because of other construction along that visual axis in the intervening century, but Duffy's team nonetheless developed their interior strategy around it. The circulation spine of the new building follows the Olmsted axis, ending in a window that frames the modern vista.

Nine massive planters, each with 3 or more feet of soil, are populated with species of trees and shrubbery found elsewhere in Olmsted's landscape. Balconies provide breakout space for students, as do green roofs planted with grass, trees, field turf, and sedum. The goal is that in five years, when the plantings are mature, the building will resemble a tree house. "There's a symbiosis with nature," says Duffy, "but there will be a balance. Right now the architecture is in the fore, but it will be softened by nature over time."

The architecture encourages students, teachers, and visitors to traverse the elevator-accessible campus via a series of exterior staircases. Bordered by masonry walls, the meandering stairs lead up and over the structures on site—an effect that Duffy likens to an Italian hill town. But in the shadow of the cathedral, the staircases also evoke a pilgrim's path. Starting at the base of the site, one can walk up and over the new building—without ever going inside it—to reach the cathedral.

Presented with more than one path, people sometimes go astray. But without the journey, the pilgrim's progress would not be nearly so sweet.



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1. The masonry walls of the new Marriott Hall were designed to match those of the original 1909 school building (shown on opening page) as much as possible. Since the original quarry was long-closed, the team selected stone-based on a color match-from White Hall, N.Y., in the Adirondack Mountains, and they executed several mock-ups to ensure that the mortar work had the same hand-tooled raking as the original. The design team selected darker stone to act as a sort of wainscoting where the building meets the ground plane, another homage to the original building.

2. The project includes several green roof strategies. By applying field turf to the roof of an existing pool building (foreground), the architects created an outdoor recreation area directly off the student center. The glass guard rail on top of the cantilevered top story protects another planted green roof, this one with sedum and pavers. The next phase of the project will add a pavilion-like, glass-enclosed conference room to that topmost green roof, for use by faculty or for special events. **ARCHITECT** APRIL 2010





1. Group study spaces, like this one adjacent to the building entrance, are located throughout Marriott Hall. Floor-to-ceiling windows allow students to view the original 1909 school building. Cues such as the terrazzo floor that matches the hallway (unlike the carpeted classrooms) mark the space as a public area.

2. Fire egress is accommodated by glass-enclosed indoor stairs that run directly alongside an exterior stair, with doors on each landing that allow students free run of the outdoors. "This is not a culture where we want to limit freedom," says Michael Carline, director of capital projects for St. Albans.









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→BUILDING





TEXT BY EDWARD KEEGAN

ILLINOIS HOLOCAUST MUSEUM

SKOKIE, ILL. TIGERMAN MCCURRY ARCHITECTS

SITTING IN THE reading room of the Illinois Holocaust Museum & Education Center, Chicago architect Stanley Tigerman recalls applying to architecture school in 1958. One of the questions asked by Columbia (which the eventual Yalie did not attend) was, "Would you design a concentration camp?" He tells the story while leafing through a rare book from the museum's collection, which documents the correspondence and working drawings that produced the gas chambers of Auschwitz. "Somebody had to design the things," says Tigerman, before emphatically adding—"the motherf***ers!"

Tigerman has long been known for his use of specifically (and sometimes whimsical) Judaic ideas in his work. He dubbed a 1977 addition to a North Shore house a "Kosher Kitchen for a Jewish American Princess." But the Illinois Holocaust Museum in Skokie, Ill.—a Chicago suburb that is home to a large number of survivors—is the closest Tigerman has come to building an overtly religious structure based on his interpretation of his Jewish upbringing. He won the commission for the project after his partner (and wife) Margaret McCurry fetched the invitation for the interview from the trash where he had pitched it. "You have to interview for this," she told him.

Tigerman's competitors came to the interview with teams of consultants and PowerPoint presentations. He

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came alone, and with a single napkin sketch that depicted two rectangular structures rotated 5.7 degrees apart. The linear journey through the building—"there's no going back," Tigerman says of the path, which leads through exhibits that tell the story of the Holocaust beginning with the oppression of the Jews in Germany and ending with an exploration of post-war Jewish culture—begins with the visitor's back toward Jerusalem and ends facing due east, representing the anticipation of a messianic age.

Two sites and nine years later, the building that opened is realized almost exactly as presented in the sketch Tigerman did for the interview. Only an early 20th century German boxcar—the museum's largest artifact was added to the program. And it fit precisely into the void he drew between the two main volumes.

Tigerman planned the building using the ancient (and biblically cited) measurement of cubits—equal to approximately 18 inches. Since many American construction standards are based on 16-inch modules, there's a discrepancy between certain elements—such as 18-inch square windows that, with some creative joint work, fit into 16-inch standard modules—due to the difference between the ideal and the practical, an intentional contrast that Tigerman likes to use.

Two ghost-like metal columns establish a symmetrical datum for the two different, but attached, volumes. Their dimensions match the description of Solomon's Temple in 1 Kings 5–9.

The two distinct volumes are visually opposed through their architectural expression. The entrance and descent into darkness occurs within a dark building with a basilica-type section that's drawn from typical death camp structures. The ascent to light occurs in a barrel-vaulted white structure that's rooted in Tigerman's understanding of the experience in the camps. "White is about hope," he says—and it started in the death camps. "They made art, they played in orchestras," Tigerman says. "If you're alive, there's always hope."

Three circular spaces cap the ascent to light. First is a theater that displays films about the continuing efforts against genocide in the period since the Holocaust. Next, the visitor climbs to the second floor and the brightly lit Hall of Reflection—where one can sit on one of 12 cubes, measuring a cubit on each side, that represent the 12 tribes of Israel. Finally, the smaller Room of Remembrance is accessed via a walkway that overlooks the exhibits; it's located at the hinge between the two buildings.

Tigerman worked on the project for almost a decade, amassing numerous friends within the survivor community. Although these individuals may soon be gone, their bond with the sometimes serious, sometimes irreverent architect is obvious in the project's outcome. Anyone who spends time with these extraordinary people will be moved by their stories of youthful horror and the amazing lives that followed in its wake.

"It's about resilience, renewal, and spirit," says the museum's executive director, Richard Hirschhaut. The statement applies equally to the building, its patrons, and its architect.



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1. A cylindrical volume that houses the Book of Reflection is situated at the connecting point between the dark and light volumes of the museum. The cylinder punches through the roof plane and is topped by six riveted steel spires, called Points of Light, that represent the 6 million Jews who were killed in the Holocaust.

2. The Room of Remembrance is a double-height volume located on the third floor of the museum. Flanked by Jerusalem stone columns, a book containing the names of those killed during the Holocaust and memories penned by family and community members serves as the focal point of the space. Bent-wood, uplit panels were painted with names of the dead, in English, Yiddish, and Hebrew. First names were used so as to represent as many individuals as possible; the names are $2^{1/2}$ inches high at the base and increase in size as they move toward the ceiling. The names begin in a full, rich black at the base, which turns into a mid-tone black at the top. This was a nod to an idea by a community member to have smoke coming from behind the book of names, a proposal that was not carried out because of fire regulations.

PREVIOUS PAGE TOP AND 1: WILLIAM ZBAREN, PREVIOUS PAGE BOTTOM AND 2: ©2010 DAVID SEIDE/DEFINEDSPACE.COM

Ground Floor





2

Second Floor



Third Floor











1. The first room visitors enter is the Prologue, a dark space with no access to natural light and with a raw materiality expressed in concrete floors, CMU walls, and a heavy steel reception desk. A catwalk above the desk leads to the Listening Space (top), a perfect cube, where visitors see presentations about the Holocaust and the exhibits they are about to enter. The museum also encourages community members to do their own research, offering resources such as a reading room (above).

2. In the white volume, glazing creates light-filled spaces that drive home the contrast between light and dark that exists throughout the space. The dark triangular trusses of the first volume give way to white arced beams, like those in this circulation space by the museum shop.

3. The bridge between the two volumes is an early 20th century German railcar, like those used to transport Jews to concentration camps during World War II. Visitors first see the car as they approach the Deportation space, a round room at the base of the Room of Remembrance cylinder, where they watch videos of the transportation process. After exiting Deportation, they can choose to enter the car before moving into the North Gallery in the lighter building volume.

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1. A catwalk leads from the Room of Remembrance to the Hall of Reflection, another roughly cylindrical volume in the lighter wing that offers visitors a chance to reflect on all they have seen. The catwalk is suspended above the North Gallery and sits just under a maze of exposed ductwork. The design intent was to create a building that was raw and transparent in its functions.

2. The Hall of Reflection is, intentionally, one of the lightest spaces in the building, representing the hope that comes out of learning from the experiences of those who suffered through the Holocaust. Skylights admit natural light into the space, and a glass block wall, square windows, and glass floor tiles ensure that every surface is in some way glazed.

3. Inside the Hall of Reflection, ceramic tile covers the floor and the 12 benches that represent the 12 tribes of Israel. Acoustic material lines the gray wall, diffusing sound in a room otherwise composed of hard and potentially reverberant surfaces.













Project Credits

Project Illinois Holocaust Museum & Education Center, Skokie, III. Client/Owner Holocaust Memorial Foundation of Illinois Architect Tigerman McCurry Architects, Chicago—Stanley Tigerman (architect); Nancy Atsumi, Harold DiVito, Lisa Kulisek, Melany Telleen (project managers) Interior Design Tigerman McCurry Architects (office spaces); Layman Design (exhibition spaces) Mechanical/Electrical Engineer Lehman Design Consultants Structural Engineer The Structural Shop Civil Engineer Daniel Creaney Co. Construction Manager Patrick O'Bryan General Contractor Bulley and Andrews Landscape Architect Hoerr Schaudt Landscape Architects Lighting Designer Schuler Shook LEED Consultant J.T. Katrakis & Associates Security Secure Source Roofing Building Technology Associates Acoustical and A/V Kirkegaard Technology Baker Robbins & Co. Size 65,000 square feet Cost \$30 million

Material & Sources

Acoustical System Chicago Metallic Corp. chicagometallic.com; Conwed Designscape conweddesignscape.com; Almute (Acoustical Panels) almute.com Carpet Mohawk Industries mohawkind.com; Bentley Prince Street bentleyprincestreet.com Ceilings Tectum tectum.com; Chicago Metallic Corp. chicagometallic.com Concrete Ozinga ozinga.com; Advanced Cast Stone Co. advancedcaststone.com Exterior Wall Systems Northfield Block Co. (CMU) northfieldblock.com Expansion Joint Emseal emseal.com; Dimex dimexcorp.com; Foamtastic Corp. foamfiller.com Flooring Expanko expanko.com; Estrie american-biltrite.com/flooring/estrie; Johnsonite johnsonite.com; Armstrong armstrong.com Glass Glass Solutions Inc. glasssolutionsinc.com; Glass Block of America glassblockusa.com Insulation Cetco (Voltex) cetco.com; Kedmont Waterproofing Co.; Dow Building Solutions building.dow.com Roofing Sarnafil (PVC membrane) sarnafil.us

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JOUKOWSKY INSTITUTE FOR ARCHAEOLOGY & THE ANCIENT WORLD

ANMAHIAN WINTON ARCHITECTS



RHODE ISLAND HALL, an august 1840s Greek Revival structure at Brown University, is a major chess piece on the main quad, with one entrance opening onto the green and the other toward town. Prominent by location and distinguished by its stylistic purity, it is also singular for a stucco façade (which simulates limestone) on the brick campus.

Because of the building's iconic status at the university, all eyes were on Anmahian Winton Architects of Cambridge, Mass., when it was asked to reinvent the 15,000-square-foot interior of the Joukowsky Institute for Archaeology and the Ancient World. The exterior had been restored a decade before, but the interior, compromised by many jerrymandered changes over decades, demanded restructuring and a gut renovation.

Compounding the expectations was the archaeologists' request that the architects dust off the image of their field with an up-to-date interior that would attract faculty and graduate students. The design also fosters an environment that encourages spontaneous exchanges between scholars. The clients perceived architecture as an instrument for defining the institution and enhancing its competitive academic position.

The structure originally was designed as a natural history museum with specimen display cabinets in a daylit, top-floor space. Along with the restored shell and a sound roof, the architects inherited five massive skylight openings whose luminosity would be the only constant after the floors were removed and the structure taken back to the rubble walls. "Over the years, the spaces were closed in and chopped up, but the [skylights] on the top floor were intact," principal Nick Winton—who designed the project with partner Alex Anmahian—says. "The genesis of the design was how to distribute and manage that light."

It was the rare interiors commission with a strong mission, a distinguished existing building, and a mandate to build inside from the ground up. The program itself called for classrooms, a lecture hall that could double as an event space, and faculty and administrative offices. "They wanted niches for artifact display," notes Winton, "but they were clear about being perceived as an active research facility, not a museum." The architects organized the program so that the most appropriate spaces would occupy the luminous second floor. Conceptually, the vector of the design went from the high-ceilinged ground floor up through a core staircase to the light.

Winton and Anmahian, working with project manager Aaron Bruckerhoff, deployed the administrative offices, common room, and lecture hall on the ground floor, and set the new ceiling at a generous 12 feet. The architects saved the second floor for the faculty offices, library, lounge, and student research space. The library rings the perimeter of this double-height space, and the offices—in a translucent glass enclosure—form a glass-walled island centered in the large room. The cluster of offices acts as a podium for a mezzanine designed as an open graduate student research studio directly under the skylights.

The architects orchestrated the basic rudiments of architecture—a core staircase, overlooks, pooled space, glass walls—to socialize the interior and keep it from becoming a den of isolated and isolating cubicles and offices. But there is a material corollary to their socializing strategy. Throughout both floors, the architects built screens made of slender, 1-by-6-inch, walnut-veneered fins that separate spaces without closing them. Their porosity allows spatial flow and visual access while giving the spaces definition.

The twist, however, is in their twist. At strategic moments in the plan, the screens warp, creating peeling planes that dynamize walls and spaces within the static confines of the original stone shell. Designed and fabricated with digital files, the screens are geometrically complex, but were not difficult or prohibitively expensive to craft.

The Greek Revival shell represents the progressive thinking of its time, and the screens inflect the stately shell with the grace and intelligence of our own day. The design is progressive without being conspicuously radical. And no one can mistake this digitally driven interior for a musty museum that houses a staid academic department. The dynamic interiors imply a dynamic institution.





1. On the double-height second floor, the design team created an office enclosure out of plywood and translucent glass. This allows the surrounding library space to serve as a lively research and social area without creating distractions for those at work. The architects achieved the pleated form of the enclosure by creating a variety of cutting patterns for the wooden fins, and by allowing for coordinating seams in the glass. Two pieces of glass were used in each vertical panel to accommodate the bend.

2. Also on the second floor, a screen composed of 1-by-6-inch walnut veneer planks doubles as a sunshade and a spatial divider between a reading room and the circulation pathways (above). The screen is a recurring theme throughout the interior, warping to create small rooms without cutting off visual access and serving as spot sunshading underneath the existing skylights over workstations (top).



TOP: JANE MESSINGER

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The architects left signs of the building as it existed before-framed reveals in the new walls (opposite) allow students to see through to the original stone walls of the 1840s structure. In the same vein, the architects preserved the building's legacy as a natural history museum by creating new exhibition spaces on either side of the main entry (above). These spaces pair new exhibition techniques with the highlights of the institute's collection of artifacts. The double-height second floor is the social heart of the building, where students and faculty casually meet and mix in the library, on the stairs (top) and in the research space perched atop the office enclosure (middle).









BUILDING 1 2 (3)

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Project Credits

Project Joukowsky Institute for Archaeology & the Ancient World, Providence, R.I.

Client/Owner Brown University Architect Anmahian Winton Architects, Cambridge, Mass.—Nick Winton (principal-in-charge); Alex Anmahian (consulting principal); Aaron Bruckerhoff (project manager); Joel Lamere (project architect); Makoto Abe (project designer); Aaron Stavart, Esther Chung, Sabah Corso (project team)

Mechanical/Electrical Engineer RDK Engineers

Structural Engineer Richmond So Engineers Geotechnical engineer GZA

Construction Manager/General Contractor Shawmut Design &

Construction

Landscape Architect Hines Wasser Associates Lighting Designer Lam Partners

Size 15,000 square feet Cost \$8 million

Material & Sources

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SHELL GAME





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1960 P/A Awards Jury William Caudill Louis Kahn Ralph Rapson Jose Luis Sert Lyndon Welch

TEXT BY THOMAS FISHER

THE CURRENT FASCINATION in architecture with complex geometries and expressive forms had a precedent in the HOK-designed St. Louis Planetarium, a citation winner in the 1960 P/A Awards program. Its hyperbolic, thinshell concrete roof, consisting of straight lines rotated around a central vertical axis, created a circular shape that flared out at its base to cover a perimeter porch and glass-enclosed exhibition area and that opened up at its top to encircle a platform initially used for star-gazing. A 60-foot-diameter aluminum planetarium dome originally stood inside the structure, with a suspended spiral ramp leading up to the observation deck. Classrooms, offices, and support spaces occupied the lower level.

Time has proved the 1960 jury correct. While the jurors liked the "sculptured form of the exterior," they found the shape "totally unrelated to the concealed dome" and "the resulting space between the two surfaces ... awkward." In the intervening years, an 80-foot-diameter dome replaced the original, which forced the removal of the ramp and the closing of the observation deck. Exhibition standards also changed, and the once-tall, glass-enclosed display space around the dome acquired hung ceilings, with walls covering the glass. And the growth of the institution, with a large science center attached underground to the planetarium, has led to the removal of the lower-level classrooms and the transformation of that space into a reception area. The elegant hyperbolic roof remains, however, as a testament to the flexibility of complex forms that have a loose-fit relationship with their functions.

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