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A Change Is Gonna Come
Life After Arch 101
Beaux-Arts and Back Again

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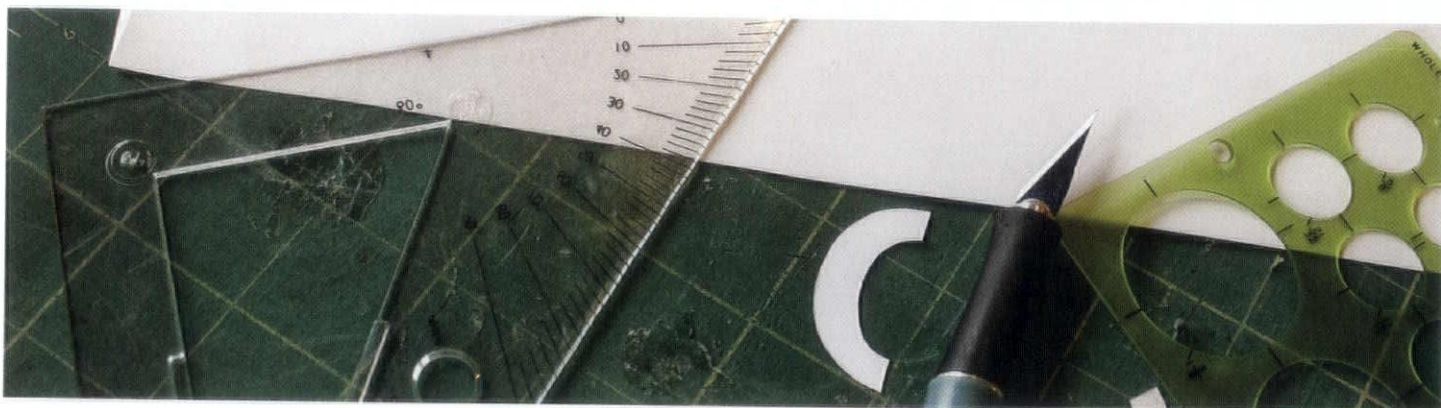
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ABOVE
Photo: Kyle Nelson

COVER
Alexander Turner, working on a final undergraduate design submission, at the School of Architecture, University of Liverpool, UK, May 2010. Photo: Sophie Determann.

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$$= U_m + (1 + \frac{1}{m}) B_m$$

$$U_m = \frac{1}{m} \sum_{i=1}^m U_i \quad B_m = \frac{1}{m} \sum_{i=1}^m (U_i - U_m)$$

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photo: Eric Roth

Harvard University Statistics Department

Don't Know Much About Masonry

Journalism school taught me many things: how to write in the active voice; the difference between verification and assertion; to let the facts speak for themselves. But possibly the most important thing I learned in journalism school is that everything is a story.

Sometime around graduation, I started to see the whole world framed by headlines. My mind clicked on people and situations like a promiscuous camera: The harbor channel where stolen cars go to die? Story! The unlikely friendship between two fierce political rivals? Story! The drug rehab program that's really a front for an insidious cult? Wicked good story!

This same sort of reorientation occurs with many architecture students, or at least the lucky ones. A new way of seeing steals over them, and all at once ordinary buildings and streets are studies in symmetry or scale, good circulation or poor wayfinding, economic revitalization, or just how sunlight strikes concrete at different times of day.

It's this moment of thrilling new awareness, hard to capture and harder to sustain, that a good education creates. This issue of *ArchitectureBoston* examines how well today's schools are preparing young architects to meet 21st-century challenges—disruptive technology, climate change, social fragmentation—but also how well they promote that ineffable joy of discovery.

Better still, for journalists and architects alike, is the knowledge that their pretty new skills can make a better world. Thanks to that Story! the abandoned lot gets cleaned up. The desperately ill child finds a liver donor. People caught in Kafkaesque legal or social webs find justice.

So, too, architects can improve the design of private buildings and public spaces, but they also can advance broader social, economic, and environmental goals. The graduate students Gretchen Schneider interviews in "Design for Dignity" (page 36) understand that good design can bring order, well-being, even peace into people's lives. These students want to change the world no less than the activists of the 1960s, and they are driving architecture schools to offer more public-spirited curricula.

When she died in January, the great critic Ada Louise Huxtable was memorialized in *The New York Times* for her ability to see a building "as a public statement

whose form and placement had real consequences for its neighbors as well as its occupants." Architecture, she often said, is about more than buildings.

Architecture is also about more than architecture. A striking conclusion from the discussion starting on page 22 with firm principals looking to hire architecture graduates is how much they are resisting overspecialization. They want young designers who can visualize, render, and compute with precision, of course, but they also want to see varied life experience, a grounding in the liberal arts, travel—a broad range of social interactions.

This, too, is something I learned in journalism school: Our teachers are everywhere, and everyone.

New Year, new ideas: This issue of *ArchitectureBoston* introduces Genius Loci, a new column in the Unstructured section of the magazine. Translated loosely as "the spirit of a place," Genius Loci will offer a fresh perspective—sometimes literally—on unexpected places in our environments. This time, for example, architect (and journalist!) Ian Baldwin celebrates "the unplace" between the expressways leading north out of Boston. It is eloquent writing about an inelegant space. We welcome additional ideas and proposals for this feature.

Also, we have revamped the book reviews, making them longer and not necessarily related to the theme of each magazine. The proliferation of great new books related to architecture and design belies popular notions about the death of print. The choices are so great that we no longer wanted to restrict ourselves to books about a given theme.

We hope you enjoy these. ■

Renée Loth
Editor



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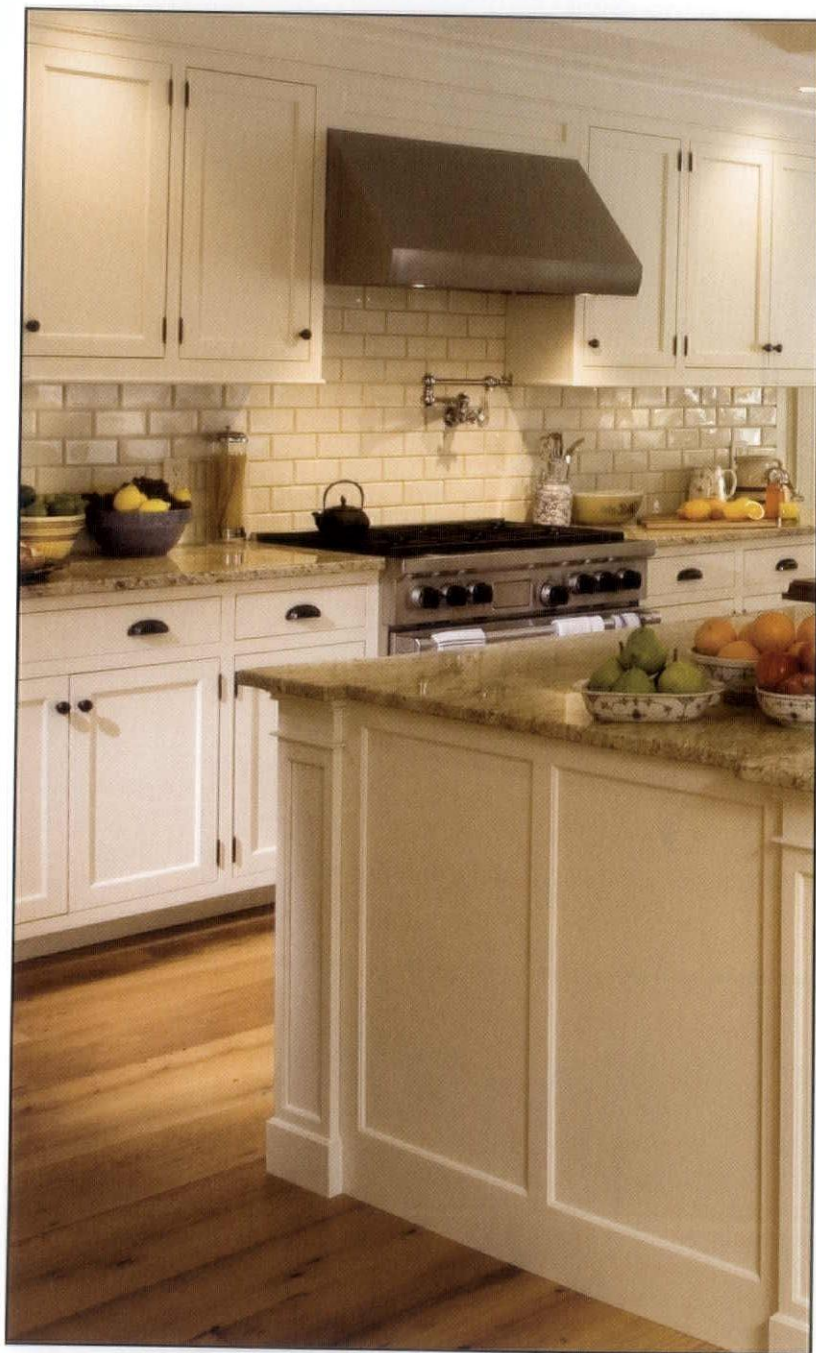
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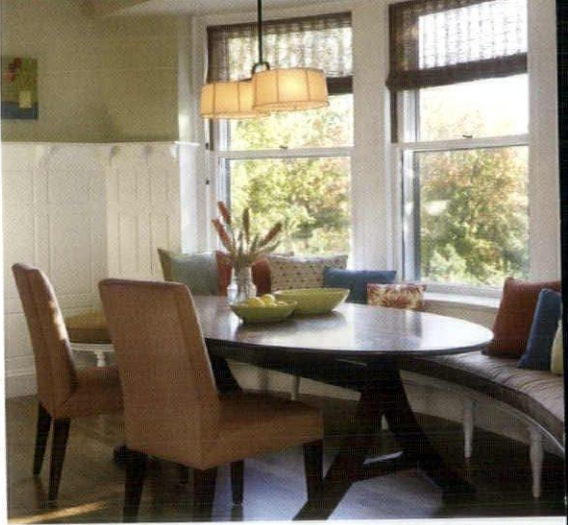


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On “Turn Signal” (Winter 2012)

ArchitectureBoston's commemorative

issue brings back fond memories of my migration from Houston to Boston for work in the mid-1960s. Boston was booming; urban renewal had ripped open the city and the floodgates for design firms. I interviewed with seven firms and got six offers. I settled at Cambridge Seven to work on the MBTA.

What is striking to remember today is that two offices I interviewed with were working to beautify the I-95 Inner Belt planned to move through the heart of Boston. The Architects Collaborative (TAC) was trying to make a one-block-wide, depressed corridor through Cambridge from the Charles River to Somerville look pleasant to the neighbors. Campbell, Aldrich & Nulty was trying to disguise a spaghetti of I-95 ramps as they crashed through the Muddy River and Fens. I had never seen architects working on such projects. In Houston, we just rolled over and let the highway barons pass through!

Twelve years on, I worked on the Forest Hills T station as part of the Southwest Corridor project. So I take a little issue with Fred Salvucci's article about getting from “no” to “yes.” The Jamaica Plain neighborhood we worked with on the station design continued to say “no” for about three years to the garage we proposed on top of the station; for them, no roadway cars also meant no parked cars. As budgets often shape projects, we later had to redesign the station without the garage. Then, after the neighbors won their case, they stopped coming to our meetings, so we had little community input over the next three years to help guide our work. It seems that it is still easier to say “no” than “yes.”

Looking back, and well documented in this issue, clearer heads prevailed—though only after a lot of emptiness had been created along the corridor's path.

CHARLES REDMON FAIA
Cambridge Seven Associates
Cambridge, Massachusetts

The issue is a great compilation of perspectives on the how, the why, the big characters, and the bits of political intrigue that propelled the state's transportation renaissance of 40 years ago. I hope that experience empowers more folks to take up the mantle today.

My general observation in comparing today with 40 years ago is that our problem now is completely on its head. We have the right policy foundations in place—from GreenDOT; mode shift; and our deep commitment to improving transit, walking, and biking statewide—we just don't have the resources to implement these worthy policy goals. The federal government is stepping away from the transportation financing commitments that were available during the highway fights of the 1970s.

At the state level, I am concerned that transportation has become more regionally polarized. We need to move beyond “who got what” in the past and focus on the vision for the future. Investing in the MBTA in particular is a harder case to make than in 1972. It's a problematic cycle: Service deterioration prompts claims of mismanagement, which discourages public sentiment to invest, which leads to further service deterioration, and the cycle continues.

We have the plan; we need the courage. With that combination, we can lead the Commonwealth's next, and so desperately needed, transportation renaissance in the coming year.

RICHARD A. DAVEY
Massachusetts Secretary of Transportation
Boston

“Turn Signal” tells the inspiring success story of a group of outspoken citizens who saved Boston from a highway project that would have severed Boston's neighborhoods, sacrificing community for automobiles.

Boston mayor Thomas Menino has carried this fight into the 21st century, famously declaring in 2009, “The car is no longer king in Boston.” With these words, Menino launched Complete Streets, an initiative that recalibrates our streets to focus on moving people, not cars.

The Complete Streets initiative presents a new design standard for Boston's streets that puts pedestrians, bicyclists, and transit users on equal footing with motor-vehicle drivers. It is being rolled out in a number of neighborhoods throughout the city, including the redesign of Dudley Square and Melnea Cass Boulevard. In addition to the transit benefits, these projects embrace innovation to address climate change and promote healthy living.

This has created a framework for other nonautomobile transportation programs to flourish. The city is extremely proud of bringing Hubway, the bike-sharing system, to the region and is continually looking for opportunities to ensure that all Bostonians have access to it. And we are looking forward to spring 2013, when three to four new parklets will temporarily transform on-street parking spaces into small public spaces that offer various uses for enjoyment—encouraging foot traffic and providing new places for communities to connect.

This journey has been marked with gleaming successes like Hubway, as well as tragedy. The community mourns the five bicycle fatalities that occurred in 2012, which serve as harsh reminders of the progress still needed. The City of Boston is committed to working with the community to ensure residents can safely and efficiently traverse the city in a way that benefits both the community and environment.

BRIAN SWETT
Environmental and Energy Services,
City of Boston
THOMAS TINLIN
Boston Transportation Department

Many thanks for the wonderful and poignant articles about the tremendous history of stopping I-95 and the Inner Belt highway from being built across metropolitan Boston, then getting mass transit funded instead.

A committee of veterans of that campaign got the MBTA to agree to a commemorative panel outside the Roxbury Crossing station recognizing over 100 people, including many neighborhood leaders, who contributed. However, the panel almost didn't get put up, a casualty of the "building the road vs. protecting the neighborhoods" battles that continued well after 1972.

Although Governor Michael Dukakis' administration approved the installation, Governor William Weld was in office when the completed panel was delivered. MBTA employees were afraid to install it, worried that the new, no-nonsense, business-oriented Secretary of Transportation, James Kerasiotes, wouldn't like it. A series of personal appeals had to be made to move MBTA officials to finally install it. At the 1993 unveiling ceremony, no MBTA officials would attend, but 100 veterans of the highway fight gathered and had a moving time.

Today, Ann Hershfang wants to install this same commemorative panel at the entrance to the Southwest Corridor Park in the South End; I'll join her in this effort.

LEW FINFER

Massachusetts Communities Action Network
Dorchester, Massachusetts

Your issue brought a flood of fond memories, but I would have liked to see mentioned more of the unsung heroes who didn't go forward in public-service careers but carried on in other ways.

As crucial as Fred Salvucci's sage advice on both technical and strategy issues was to these early efforts, it was Jim Morey of Cambridge's Urban Planning Aid who introduced him to those of us with no experience in such matters. And all that expertise would have been for naught without the tireless efforts of people like Jamaica Plain's Ron Hafer and Rev. Don Campbell, Edwina "Winkie" Cloherty, John Bassett, Charlie Carpenter, and Don Hughes—a local businessman who

recruited me, while still in college, to co-chair the Jamaica Plain Transportation Committee with him.

There were also a couple of strategic and tactical developments that might still be of interest and utility today. First was the strategic decision by the Jamaica Plain contingent to not simply join forces with Cambridge's total opposition to the Inner Belt. Rather than merely add our voices to that opposition, our strategy became a contingency one of advocating for a depressed highway—rather than the disruptive elevated highway planned for Jamaica Plain and Roxbury—in case the highway was not stopped altogether. This relatively sophisticated strategy for the time, largely the brainchild of Salvucci and Morey, helped us gain some early momentum given its more moderate appeal.

The second development was finding an error in the financial calculations of the state Department of Public Works, then charged with planning the elevated highway. The DPW initially estimated that a depressed highway through Jamaica Plain would cost three times the elevated highway plan. When this history and political science major, still in college, discovered the error and pointed out that the cost would be only double that of the elevated plan, opponents lost much of their leverage in arguing against the depressed highway alternative. Double the cost didn't sound as bad as triple, and this helped sway some city powers that were still resisting us.

Such contingency thinking and attention to detail certainly can apply today for those still trying to overcome the challenge of improving poorly planned public infrastructure and private development projects.

JOHN A. LYNCH

Holliston, Massachusetts

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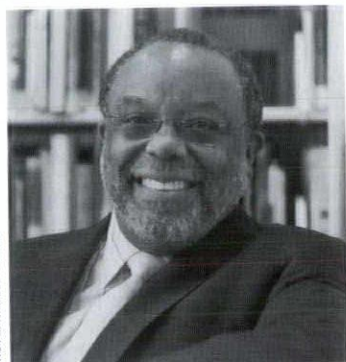
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Contributors

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Ted Landmark ASSOC. AIA
("The State of Our Schools," page 20)

Ted Landmark ASSOC. AIA is president of the Boston Architectural College. He received a master's degree in environmental design and a law degree from Yale, and a PhD from Boston University. In November 2012, he was elected president of the National Architectural Accrediting Board.

PHOTO: June Lee



Julie Michaels
("Life After Arch 101," page 32)

Julie Michaels is a former editor at *The Boston Globe*. She has written for *The New York Times*, *The Boston Globe*, and *The Wall Street Journal*, and she is a principal at Spence & Sanders Communications. She received a bachelor's degree from the University of Wisconsin-Madison, where she majored in English (and minored in revolution).

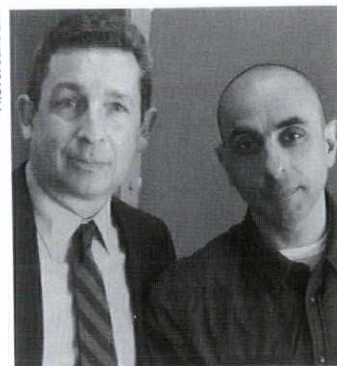
PHOTO: Anna Salmeron



Gretchen Schneider AIA
("Design for Dignity," page 36)

Gretchen Schneider AIA is an architect and educator who has worked in public interest design since she was a student in Lee Cott's first "Bronzeville" studio. She received a bachelor's degree in American studies from Smith College and a Master of Architecture from Harvard's Graduate School of Design. She is currently executive director of the Community Design Resource Center of Boston.

PHOTO: June Lee



David Hacin FAIA and **Nader Tehrani**
("Conversation," page 40)

David Hacin FAIA (left) is a principal at Sasaki Associates and president of Hacin + Associates, an architecture and design firm in Boston. He has taught at Northeastern and the Rhode Island School of Design. He received a bachelor's degree in architecture from Princeton and a Master of Architecture from Harvard's Graduate School of Design.

Nader Tehrani (right) is head of the Department of Architecture at the MIT School of Architecture and Planning. He is a principal and founder of the architecture practice NADAAA in Boston. He received a bachelor's degree in architecture and a bachelor's degree in fine arts from the Rhode Island School of Design, and a Master of Architecture in Urban Design from Harvard's Graduate School of Design.

PHOTO: Craig Bailey



George Thrush FAIA
("A Change Is Gonna Come," page 28)

George Thrush FAIA is director of the School of Architecture at Northeastern University. His research focuses on matters of urban design and participatory process. He received a bachelor's degree in architecture from the University of Tennessee and a Master of Architecture from Harvard's Graduate School of Design.



Amy Crawford
("No More Pencils," page 52)

Amy Crawford has written for *Smithsonian*, *Slate*, and *The New Republic*. Before moving to Massachusetts in 2012, she spent four years covering education for the *San Francisco Examiner* and the *Pittsburgh Tribune-Review*. She has a master's degree from the Columbia University Graduate School of Journalism.

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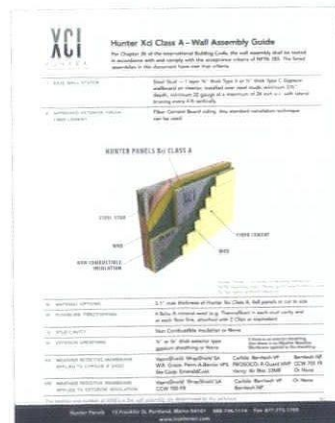
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Laura Raskin is a Brooklyn-based writer and an assistant editor at *Architectural Record* magazine.

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Desert Seal by Andreas Vogler and Arturo Vittori of Architecture and Vision, prototype, 2004. Courtesy the Museum of Modern Art.

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New York City**

Through January 28, 2013

Beginning with the premise that all design results from the clichéd but enduring notion of problem solving, *Born out of Necessity* packs an array of objects—from the mundane to the fantastically dystopian—into two small galleries. Though it opened in March of 2012, the exhibition seems eerily prescient post-Hurricane Sandy, as architects, engineers, and urban planners scramble to come up with solutions that could lessen the effects

of extreme weather on human beings and infrastructure.

Some of the curators' selections should have been on prestorm shopping lists: for example, the oversized *Sheather Plus Nails* (2001), designed for use in wood-frame buildings in regions where hurricanes and tornadoes are a constant threat. Walls constructed with these carbon steel nails can absorb roughly 50 percent more force before giving in. *The Desert Seal* (2004), a lightweight tent made of polyester fiber and silver-coated Mylar, has a solar-powered fan at the top and provides temporary protection in extreme environments.

Other items were motivated less by apocalyptic threats than pervasive ones, such as the model of Tour Bois-le-Prêtre, a modernist housing block in Paris that was transformed from 2006–11 by Frederic Druot and the architecture firm Lacaton & Vassal. Bleak interiors were expanded with the addition of a glass shell that surrounds the existing building and adds balconies, more square footage, daylight, and views—a simple solution that would undoubtedly improve life for millions residing in similar postwar housing projects around the world.

Though architects and designers are rightly obsessed with both environmental and social sustainability, *Born out of Necessity* offers ingenious reminders of the answers they possess—if provoked.

Pari Riahi AIA is the principal of Pari Riahi Architect. She is currently an assistant professor at RISD and received a Master of Architecture and PhD from McGill University.

RIGHT

Fireworks around the Antwerp Cathedral, unknown artist, from the book *Pompa Introitus Honori Serenissimi Principis Ferdinandi*, 1642. Courtesy the RISD Museum.

The Festive City

**The RISD Museum
Providence, Rhode Island**

Through July 14, 2013

How to capture the ephemeral? Religious rituals and civic festivities have always been part of collective living. Yet their temporal nature makes them less tangible for generations that follow. *The Festive City* offers glimpses into some of the most fascinating celebrations across Europe from the 16th to 18th centuries. The illustrations depict Paris, Rome, Venice, and Vienna, among other cities, featuring scenes of fireworks, religious

processions, and royal wedding ceremonies. Although some prints show temporary built artifacts, others offer episodic narratives of such events.

The exhibition reveals rituals and social structures of times and places that are inaccessible to us otherwise. The prints slowly take hold of our imagination with their minute details and the grandeur of the events they depict. By enabling us to imagine the sights and sounds of these festivities, the drawings become portals through which we see places we know so well in an entirely different light.



Genius Loci

The Unplace

Ian Baldwin is an architect and writer who has taught college infrastructure seminars in New York and Boston.

RIGHT

Photo: John M. Sullivan

Over the Zakim Bridge, past Boston Sand & Gravel and its orbit of swooping ramps, there is an unplace.

The expanse between East Cambridge, Somerville, Charlestown, and the Charles has no name. It is notable for what goes through it: I-93, the Orange Line, the Gilmore Bridge, commuter rails bound for North Station. Few riding by will look twice, if they look at all, at the tilt-up warehouses and access roads; at the train tracks looping through acres of dirt, scrubby greenery, and asphalt.

This urban flyover country is part of every city. Its universal look is low, flat, gray-beige, depopulated. It can be called brownfield, drosscape, or no-man's-land, terms that suggest a wastage and uninhabitability, which the view from a car speeding through seems to confirm.

I am drawn to these areas for their opposition—topographical and logical—to the City on a Hill. Tens of thousands of citizens hold stakes in the respectable blocks next door; here hardly anyone bothers to see a never-ending and messy evolution of economy and technology writ large. It is a case study in what the landscape architect James Corner calls *Terra Fluxus*, revealing “the entire metropolis as a living arena of processes and exchanges over time.”

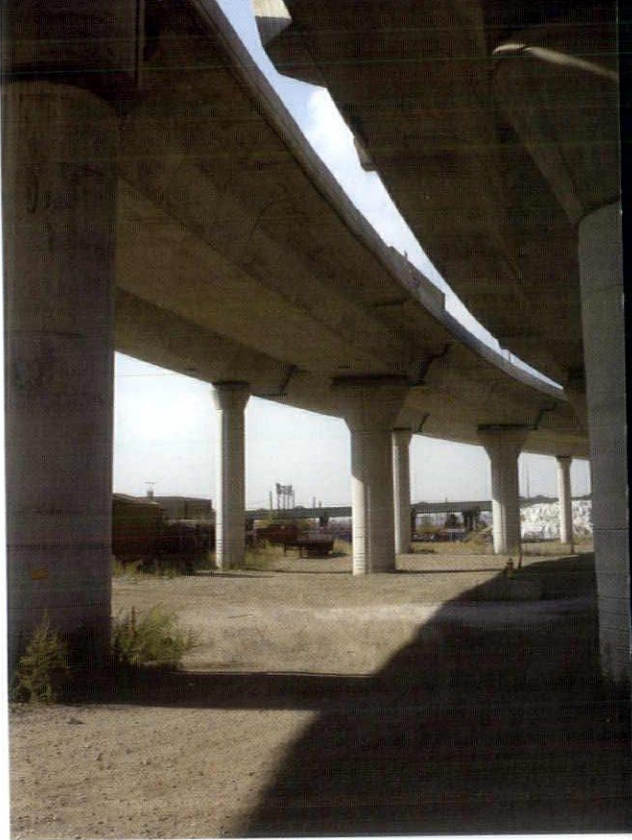
One such exchange was in 1633, when a Native American village on what is today part of Bunker Hill Community College was wiped out by smallpox. Not long before, a group of Massachusetts Bay Company colonists had laid out their town on the deeper waters of the Charles.

More colonists arrived from England, but a summer epidemic pushed new settlements elsewhere, including one across the river named Boston.

Nancy Seasholes' book *Gaining Ground* documents how the marshy flats were put to work. From 1645, a tidal dam powered a grist mill. The Middlesex Canal opened in 1803 and emptied into the Mill Pond south of Sullivan Square in Charlestown.

The same year, the state bought the point where the Native American village had been, enlarging and straightening its shoreline. Granite for a Charles Bullfinch–designed prison was quarried in Chelmsford, floated along the canal, and towed to the point along a floating towpath (later Rutherford Avenue). A group of Charlestown residents financed a bridge from Prison Point to Cambridge on the route still followed by the Gilmore Bridge.

If these early large-scale interventions suggested a future defined by infrastructure, the railroads' arrival in the 1830s ensured it. For the next century, they filled in the shallow bay with causeways, islands, and shore



extensions to hold train yards, freight sidings, and engine houses. In 1895, the Boston and Lowell line cut down the hill where McLean Asylum had marked the southernmost tip of Somerville; today the area is an industrial park.

By the 1930s, the eddies and flows of the tide had been redrawn in steel, all but erasing Miller's River, the original Cambridge-Somerville line. A riverine border remains where the river no longer runs, its stunted remnant hidden under the concrete pillars of the Zakim Bridge.

Environmental groups say that runoff from the MBTA's vast Boston Engine Terminal brings metal compounds, phosphorous, and oil into the river, and the volume of discharge sometimes causes flooding in Somerville. Restoring Miller's River and its wetlands could clean up the watershed and even re-create a riparian landscape. On the former flats off Lechmere Point, the beachhead of apartment towers and sculpted green called Northpoint suggests a market-driven alternative.

Both visions say far more about us than the site, for the unplace has never dealt in the aspirational. From brick factories and slaughterhouses to server farms and testing labs, the unplace is a horizontal backstage, the coulisse for the stage sets of the designed city, hiding in plain sight.

On an otherwise dystopian walk along the Gilmore Bridge, look north into the present tense of urban ecology. The horizon offers only decks of high-speed traffic and steel-pylon billboards, but on a warm afternoon in September, you can look down and be the only one to notice the wind rustling through a ragged stand of trees. When the traffic breaks, you can faintly hear it, too.

Seen

Sidewalk Dancing Mexico City, Mexico

Dennis Pieprz

HASLA is a principal at Sasaki Associates where he focuses on urban districts, new communities, waterfronts, and urban regeneration projects internationally.

RIGHT

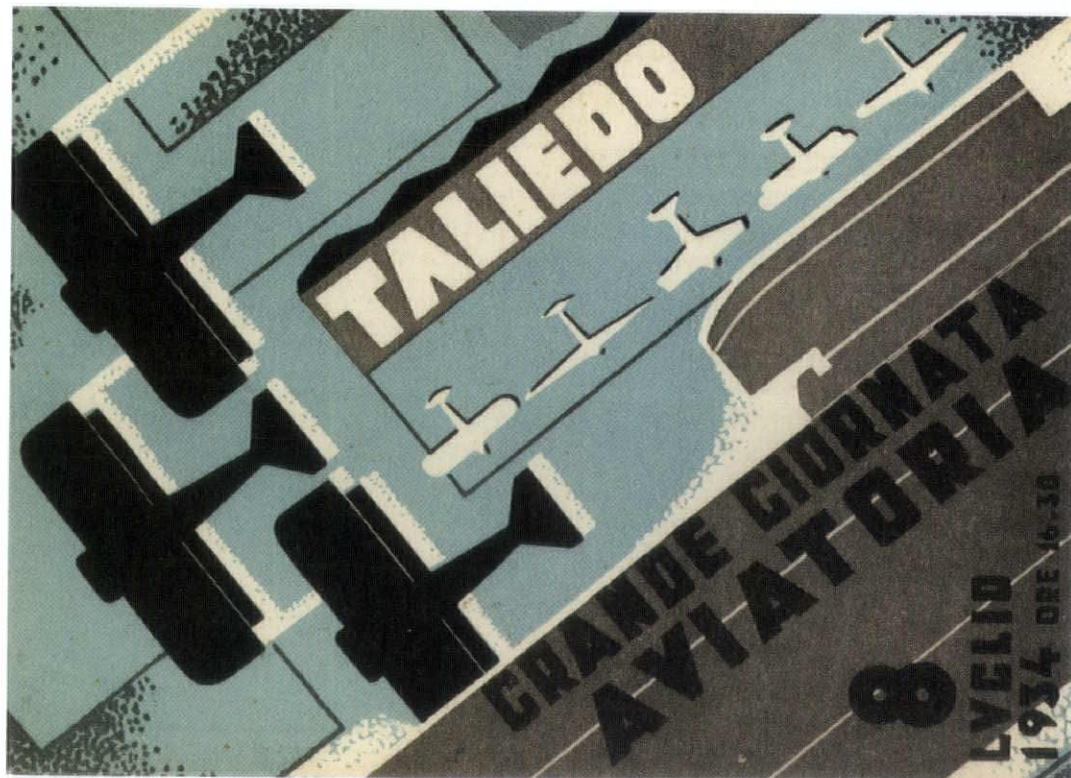
Photo: Dennis Pieprz

One Saturday a few months ago I went to visit a remarkable complex of libraries slowly transforming the sprawling La Ciudadela market into a center of culture and learning at the heart of Mexico City. Exhilarated by the experience, I walked outside to discover a small square adjacent to the complex that I had not noticed when I first arrived. Drawn by a cacophony of lively music coming from speakers set up in the trees all around, I saw people of all ages dancing together, as if they were at a formal grand ball. The elegance and civility, with the clamorous Mexico City traffic in the background, was a sight to behold.

Low walls formed long linear benches and combined

with stone or concrete “dance floors” set into the plaza surface to define a space for the action. Hovering above, a series of floating roof canopies seemed magically suspended. I loved the way the “design” of these informal urban plazas made people look so elegant in their lessons

and performance. Friends and visitors casually relaxed and watched the unfolding scene. I can imagine, during the weekdays when the dancers are gone, that those dance floors are a reminder of the special weekend event—a wonderful public space supporting public life in the city.



Focus: The Postcard Age

Museum of Fine Arts, Boston

Through April 14, 2013

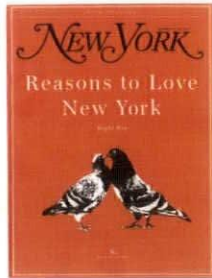
In our era of Twitter and Instagram, paper postcards are barely still with us. *The Postcard Age* takes us to the moment when the industrialized cities were growing at extraordinary rates, leisure time was new, and technological developments such as electricity and rail (and soon after, air) travel were celebrated. Featuring street photographs, painted scenes, and cut paper collage, these postcards are tactile, beautiful, and full of life, their handwritten messages as immediate as if posted to Facebook today.



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LEFT

Taliedo. Great day of aviation, 1934.



Covering the Issues

Gretchen Schneider AIA is the executive director of the Community Design Resource Center and the deputy editor of *ArchitectureBoston*.

The future is now... *Wired* magazine's UK edition offers its first annual forecast, "The Wired World in 2013," with a variety of luminaries weighing in on topics ranging from technology and the environment to media and medicine. Inventor and vacuum mogul James Dyson, for example, predicts that "Engineers will save the planet." He scoffs at "green" and "sustainable" labels as "lazy marketing," arguing that good engineering by definition pursues "lean solutions"—and this will be all the more critical as energy costs rise and raw materials are depleted. Dyson also makes a plea for research investment that allows long-term development over short-term results. The most important work is often not immediately obvious, he reminds us: Thomas Edison had no idea of the vast impact that his filament experiments would someday have. Meanwhile, Virgin Group founder Richard Branson argues for 2013 as the year to focus on oceans, while others discuss networked cars, crowd-sourced urban development, and expanding cap-and-trade programs to water consumption. Though *Wired*'s "annual" lens seems silly, the broader agenda is stimulating.

It's baaack... Like an old zombie movie, just when you thought the monster was dead, it rises again from the grave. So it goes with Boston City Hall commentary. "Leave City Hall Alone!" opines art critic David Bonetti for *Art New England* (November/December 2012). Recounting the decades-long debate between the cognoscenti (City Hall is a misunderstood gem) and regular people (it should be imploded), Bonetti stakes his claim among the concrete castle's admirers, likening its lobby to a Gothic cathedral. "Americans pay good money to visit France in order to experience architecture of equal awesomeness," he says. Um, maybe. Bonetti's more compelling insight is that "Boston City Hall may be the world's greatest architectural monument to what might have been; that is, a world in which the citizen, not the banker, not the CEO, not the corporation, is king." In our era of rather timid civic expression, he challenges citizens to be as great as their building.

Face Lift... Is New York City getting frumpy? Are too many office buildings too old, too small, and too unappealing to modern corporations when compared with the shiny new structures in Shanghai or London? Critic Justin Davidson suggests that might be the motivation behind the Bloomberg administration's rezoning of huge swaths of Manhattan, including potentially permitting 1,000-foot skyscrapers next to Grand Central Terminal. This is one proposal that goes too far, argues Davidson in "Too Much Midtown" (*New York*, December 17–24, 2012), as he eloquently describes the unique balance of public access, private profit, and spatial subtlety in the historic train station while outlining the negative effects that gigantic new buildings would have on pedestrian experience. More than a story about one business district, Davidson's discussion speaks to larger questions about how cities could and should change over time; architectural obsolescence; and the importance of paying close attention to what happens at the sidewalk level.

If you build it... MIT professor Neil Gershenfeld celebrates the imminent arrival of a digital fabrication revolution in "How to Make Almost Anything" for *Foreign Affairs* (November/December 2012). That is, "the ability to turn data into things and things into data," from jewelry to pieces of buildings. Since the 1950s, researchers have been developing computer milling tools, though their expense has limited their use to institutions and large companies. Not for long, forecasts Gershenfeld. Just as mainframe computers gave way to personal laptops, so, too, will individuals soon be able to purchase—and personalize—their own computer-controlled milling machines. As Gershenfeld notes, you or I already could buy our own machine to re-create the parts in an IKEA flat-pack box; 10 uses would recoup the machine's cost, and we can customize the furniture (or whatever) for our preferences. In today's digitally connected world, Gershenfeld speculates on the extraordinary promise of connecting innovative brains to the means of making things, no matter where one might live.

TEDxBeaconStreet

November 17–18, 2012, and ongoing

TED, the exclusive conference that began in 1984 bringing together top thinkers in technology, entertainment, and design, started licensing independent TEDx events in 2009. In the few short years since, the franchise has spawned more than 5,000 local offshoots around the globe. The Boston area alone hosts TEDxBoston, TEDxCambridge, TEDxFenway, TEDxRoxburyWomen, TEDxMIT, TEDxKendallSquareED, TEDxBU—and now, the newly formed TEDxBeaconStreet.

Why yet another TEDx? The Beacon Street edition, which held its first conference in November 2012, has ambitions beyond the TED motto, “ideas worth spreading.” Like the street itself, which traverses Boston, Brookline, and Newton, TEDxBeaconStreet hopes to bridge communities.

The November conference presented the usual program of speakers, alternately riveting and sensationalistic, including Adam Frankel, a former speechwriter for President Obama; journalist Anthony Flint from the Lincoln Institute of Land Policy; and Vlad Murnikov, a boat designer and builder. Unlike many of its counterparts, however, this event was free and held in a public elementary school in Brookline. The speakers were selected by a group of 50 curators and 100 “brain trust” members, not the typical two or three curators for a TEDx event.

As its name suggests, TEDxBeaconStreet seeks to change the way we engage with particular urban settings, taking participants out of the auditorium and into the streets. Toward this end, TEDxBeaconStreet’s founder, John Werner, has developed a full lineup of TEDxAdventures—field trips and behind-the-scenes tours that complement the formal conferences. “It’s about the community forged after the event,” Werner says.

Past adventures have included a tour of the MIT Media Lab’s Camera Culture Research Group and a visit to the early-morning operations of the Chelsea Produce Market, one of the world’s largest. Later this spring, Kairos Shen, chief planner for the Boston Redevelopment Authority, will lead a walk of the Innovation District, and Jim Levitt, director of the program on conservation innovation at the Harvard Forest, will offer a tour of Boston Common, exploring its role in the American conservation movement.

TED’s slickness and the zeal of its fans have long made me wary, but TEDxBeaconStreet represents a significant departure from—and perhaps an improvement over—the pervasive TED model. It focuses less on polished speakers and places greater emphasis on engagement with its host community. TEDxBeaconStreet re-envisioned TED, evolving from “ideas worth spreading” to “ideas in action.”

Meera Deean is a senior designer at Utile. She received a Master of Architecture from Harvard’s Graduate School of Design and a bachelor’s degree in art history from Williams College.



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THE STATE OF OUR SCHOOLS

UPHEAVAL AND UPLIFT IN EQUAL MEASURE

BY TED LANDSMARK ASSOC. AIA

The Great Recession has reshaped the American design industry through firm consolidations, withdrawals from practice, globalization, and accelerated project delivery methods using new technologies. Membership in the American Institute of Architects (AIA) has declined by about 20 percent over the last five years. Yet the AIA also anticipates a talent *shortage* by 2014 because of the large numbers of vacancies emerging within firms, particularly in midlevel management. Productivity has increased, and many firms now report their highest profits ever.

American design schools—and their students—also have been under duress. Over the past five years, architecture enrollments nationally declined by about 20 percent, to 28,000, while the number of programs increased—so fewer students are now enrolled in more programs. The average undergraduate student is now paying about \$21,000 a year for tuition, books, and materials; he or she will graduate with about \$52,000 in debt. The average master's degree student is paying about \$22,000 and will carry about \$82,000 of debt.

Since the average intern compensation in traditional design firms is about \$37,000 annually, many recent graduates forgo such employment to enter higher-paying related fields such as engineering, software development, real estate,

and construction. Such graduates must be adaptable, collaborative, technically skilled, and sensitive to designing for human and environmental needs.

Meanwhile, architecture firms are increasingly bypassing new spatial designers per se and retaining social psychologists, economists, and anthropologists to better accommodate clients' needs. Evidence-based design principles pioneered in interior design and natural sustainability principles developed by landscape architects are also being incorporated into architects' lexicon and work practices.

The practitioner's lament that architecture school graduates are too often ill prepared for the pragmatic vicissitudes of professional practice now combine with students' grumbling that they want more hands-on education that uses their advanced computer skills and rewards their compassion for underserved clients around the world. Change in design education is inevitable, and the profession's accreditation agencies need to prepare for change as well.

Higher education generally is trending toward virtual universities and curriculum revisions that shorten programs, add online education, combine traditional disciplines, and introduce lifelong learning. A la carte, do-it-yourself, online courses of study; collaborative Massive

Open Online Courses ("MOOCs"); and the use of social media for teaching have increased options for obtaining certification across a range of subjects.

Recommendations for new models of design education are proliferating. To distinguish themselves from the free-form education that takes place in open-source learning environments, accredited professional design schools are emphasizing their structured evidence-based rigor and outcomes assessments to ensure that graduates are well equipped for professional practice.

Integrative design programs such as those at the "D School" at Stanford or the Olin Engineering School at Babson are now also considered to be innovative places to study, even as they may lack recognition from traditional design-education accreditors. Such programs reflect how the increased complexity of design projects requires collaborative thinking and work across traditional disciplines. These programs raise questions about whether current accreditation criteria may be too narrowly prescriptive to allow for differentiated pathways into design careers.

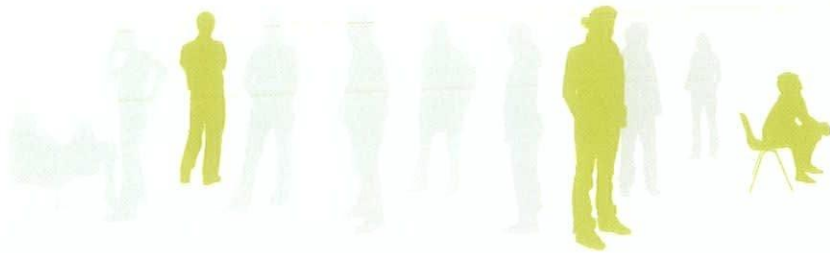
Innovative new design accreditation standards could redefine measurable learning outcomes and program assessment criteria to include design thinking, client awareness, research skills and



specialization, building science, management, communications, studio learning culture, public accountability, and comprehensive design.


James P. Cramer, co-chair of the Design Futures Council, proposed in *DesignIntelligence's* annual education issue that schools "obsess with keeping current," teach leadership, provide hands-on skills, teach current management metrics, and more closely connect faculty and practice. At the Boston Architectural College, we are increasingly focused on technical proficiency; applied, service-based learning; integrated design studies and collaboration; professional and continuing education; diversity and inclusivity; strategic alliances and global learning; and ethics and social responsibility.

These and other recommendations have educators, practitioners, and accreditors rethinking how we prepare graduates for the range of career options they will face—and invent—in the decades ahead. Our design professions will never again change as slowly as they have over the past century. To meet this accelerated pace of change, programs need to become more agile, adaptive, and innovative in anticipating what design professionals will need in the future. ■



NATURAL SELECTION

As thrilling as the design school experience can be, most graduates live in hope that their architecture degrees eventually will lead to a job. We asked principals from five top local firms to describe what skills and qualities they look for when hiring new recruits — and whether today's architecture schools are developing them. The answers may surprise you.



HARD WORKING TICULATE INTELLIGENT LIFE EXPERIENCE DEPTH OF THINKING

A HOME FOR BROAD MINDS by William Rawn FAIA

At its best, architecture is about ideas, about a nuanced understanding of culture, about the essential aspirations of clients and institutions, and always about a deep sense of place. Architecture has responded to these imperatives for thousands of years. It responds to these issues today.

This universality is one of the things that excites us about architecture. An architectural office should be responding to ideas, culture, and place as powerfully and robustly as it can. In our office, architects must be similarly well informed about these qualities. Following are three personal characteristics we look for in interviewing prospective architects for our firm. I would hope that architectural education—at the undergraduate and graduate levels alike—would focus on them.

First, an ability to be creative in the design process is a given. Design is unbelievably rich, broad, and very difficult. That said, in the interview process, we always are trying to make judgments about an applicant's design intelligence and intuition. This is step one.

Next, we know design is broader and more complex than simply intuition. In addition to design skills, we expect our architects to be conversant with and able to articulate the subtle and nuanced elements of ideas, culture, and place. We find this is best captured in a set of life experiences, which add depth of thinking about those issues to the normal skills that an architect learns in school. I find that the best education—in concert with life experience—comes from a broad-gauged liberal

arts curriculum. We do not care if one majors in English or chemistry or art history or a social science—or architecture, when it is combined with a liberal arts training. The important element is the depth of thinking coming from that education. Liberal arts education suggests an insatiable curiosity, an ability to express oneself visually, verbally, and in writing; a willingness to dig deeply into a problem.

Finally, our office maintains a strong belief in meritocracy. Anyone—from any part of the country, from any social background, from any college—can succeed here. That is our basic mantra. We are proud that for many years we have had a plurality of staff who grew up in the Midwest. I am from California, and when I first arrived in Boston, I did not know a single person here. From a similar start, I want anyone applying for a position here to know that family and social connections have no influence on hiring.

So many of us are immigrants—from abroad or from other parts of the country. That is one of the joys of Boston. Many of us came here to go to school, and ended up staying. We did so because Boston is an unusually democratic (small d!) and egalitarian place. It is a place where "outsiders" can make it. Succeeding is simply a matter of personal qualities, intelligence, and hard work. We are terrifically proud of this mantra. It has been valuable to us for more than 25 years, and we want to bring people to the office who believe in it, too.

William Rawn FAIA is founding principal of William Rawn Associates, Architects. He is a graduate of Yale College and Harvard Law School, and received his architecture degree from MIT.

CREATIVE ANALYTICAL DISCIPLINED ADA



A USEFUL EDUCATION by Sho-Ping Chin FAIA

Sho-Ping Chin FAIA is principal at Payette, where she leads the firm's healthcare practice. She received a bachelor's degree and a Master of Architecture from Princeton University.

A course I took decades ago in architecture school, *Fin-de-siècle Vienna* taught by the cultural historian Carl Schorske, was not required but strongly recommended. I signed up but asked, "Why?" It was much harder than design studio, what with writing treatises on how the intersection of Sigmund Freud, Arnold Schoenberg, and Adolf Loos gave rise to Modernism. Although I didn't get a stellar grade, the course began to discipline me to think analytically, which was instrumental in developing my skills as a designer and practitioner.

Decades later, what I learned in that course still resounds within my professional career. I am relieved to hear that architecture pedagogy continues to emphasize intellectual development via studio exercises and theoretical discourses. But I have also heard much disenchantment on this exclusive focus, which often leaves students ill prepared for the rigors of the profession. It's unfortunate that some academicians have never—or barely—practiced architecture and, consequently, are often out of touch with realities on the ground.

Our profession has evolved into a demanding multifaceted and exceedingly competitive business on all levels. The designer of today has to find the work, design it, and manage it within financial constraints. Now, more than ever, architecture education has to better prepare graduates for these expectations.

My firm, Payette, has a core practice in designing technologically complex buildings, primarily in science and healthcare, typologies often overlooked in the academic milieu. One would expect recruitment of the best and brightest would be challenging for us, but we have been fortunate to have access to a wealth of competent graduates. In interviewing a candidate, we

emphasize the following attributes:

Design acumen. For the portfolio, conveying the thought process graphically and verbally with clarity and brevity is far more compelling than showing Rhino renderings. We like to see creativity through inquisitive explorations within a disciplined rigor. Hand sketches that express the design concept are prized. And demonstrating successful collaboration on a team project is a welcome attribute.

Multidimensional competency. We are interested in other skill sets outside the core curriculum. Active participation on the debate team or writing critiques in the school journal adds depth and breadth to one's character. Versatility is much sought after in the professional practice.

Pro-activism. We like to see young designers taking initiative to enrich their development. I once interviewed an applicant who organized a school lecture series outside of the usual "in vogue" architects to focus more on students' interests, such as pro bono initiatives, new modeling technology, or works by lesser-known architects. A résumé with a list of community activism to rival Barack Obama's is indicative of leadership aptitude. As the baby boomer owners stream into retirement, firms are now scouting for the 20- and 30-year-olds who exhibit strong leadership skills to be groomed for the future.

Architecture is still one of the most challenging professions to master. Having a strong foundation in critical thinking will never lose its relevance. The rest has to do with the individual: inquisitiveness, collaborative spirit, discipline, and passion. Please contact me if you have all of the above.

CURIOUS PTIVE PASSIONATE AESTHETICALLY ATTUNED

DESPERATELY SEEKING GENERALISTS by Alex Krieger FAIA

When seeking younger staff for our office, the catchphrase “think globally, act locally” sometimes pops to mind. For me, this clichéd advice about responsible citizenship evokes—in the context of a staff search—an individual who has wide-ranging curiosities about design and planning coupled with very particular skills to perform design or planning roles. The above may sound a bit abstract, or slightly contradictory, but is crucial to the way that our office operates.

Because the Boston office of NBBJ undertakes a diverse set of projects, including many in urban design, we generally prefer generalists—generalists who are broad-minded, with passion to enhance the built world but always seeking specific ways to achieve a better-built world. What we take from the original dictum of Leon Battista Alberti—a large house is like a small city, and a small city is like a large house—is the challenge to inform the design of the part, or a building, or an urban place by studying its larger human setting and vice versa. We believe that better architecture and better urbanism more consistently result when they are influenced—infected, if you will—with insights about problems smaller and larger than those immediately being addressed. This is why we welcome a generalist’s perspective.

Of course, a design office must have people who draw and render beautifully; or detail expertly; or compute, or plan, or manage, or coordinate very well; or fulfill several such roles concurrently. But even when they are responsible for a specialized task, they must think “globally,” if not about the whole planet, then certainly

about how their specialized task relates to the project overall; the expectations of the client or user; and the physical and social context in which the project will be set.

Only rarely do we hire “a specialist”; indeed, we prefer those trained in more than one discipline. For example, a talented architect or landscape architect who acquires a second degree in urban design or planning; an interior designer with a background in architecture; or, simply, someone trained in one design discipline but committed to learning about a kindred design discipline through intensive collaboration and willing to step out of his or her disciplinary comfort zone. Such people are exceedingly valuable.

So we seek out young colleagues who think across tasks or disciplines.

On the other hand, we have had less success with people who just think. Now here is where I must proceed with caution, lest my academic colleagues express their disdain. By “just thinking,” I mean people who are moved more by theories about the built world rather than the application of those theories to the design of actual places, or designers who confuse their wondrous renderings with the far more granular process of placemaking.

Newly minted graduates tend to exhibit such thinking, at least for a while. That is not to say that design schools should become trade schools. Their primary purpose isn’t skill building but unleashing the “thinking powers” of future professionals, developing their creative, conceptual faculties. We seek out such thinkers, yes, especially those with a mindset predisposed to action.

Alex Krieger FAIA is principal of NBBJ and has taught at Harvard’s Graduate School of Design since 1977. He received his bachelor’s degree in architecture from Cornell and a Master of City Planning in Urban Design degree from Harvard.

LEADERSHIP APTITUDE

COLLABO

TECHNOLOGICALLY ADEPT

A CRIT FOR TEACHERS by Steven J. Brittan ASSOC. AIA

Steven J. Brittan

ASSOC. AIA is a principal at Sasaki Associates, where he is focused on the integration of technology and design. He received his Master of Architecture degree from Harvard's Graduate School of Design.

Fierce competition, economic cycles, and constant pressure to deliver exceptional service for reduced fees only increases the challenge of finding highly competent students who can learn the ropes quickly and become reliable contributors to a firm.

Until about a decade ago, the practice—and teaching—of architecture had changed minimally. Today we are at a point where architecture is fighting to stay relevant, precisely because it has not evolved. Large firms are trying hard to fight the commoditization of their services, and smaller firms are struggling to maintain their unique design identity.

What are the qualities that make the ideal candidate in this battle to survive? Ironically, some students today have a better sense of where our profession is headed than do the legacy firms and their leaders. They are skeptical about their training and question where their education will lead them. They are restless and searching for relevance. Why? Because, as architects, we have been slow to adapt, while other industries capture and leverage the inherent value of our discipline.

The notion that design is uniquely the endeavor of a single creative genius is anachronistic. Either the profession accepts an increasingly reduced role in providing design ideas and intent or we find a way to manage and lead the supply chain of the built environment. In the face of climate change and increasing urbanization, architects could be foremost in conducting teams to create meaningful, sustainable solutions.

Real change will most likely come from the bottom up: from the millennials who are innovating as I write. They are capitalizing on the rapid speed of decision making in start-ups and apps. They are adaptive, aesthetically attuned, multidimensional, and communicate in ways my generation has difficulty understanding.

Universities are failing to provide relevant subject matter to adapt to the massive changes under way,

and we owe it to future architects to do so. We should reduce the distraction of esoteric theory being taught at top-ranked schools and give students the experiences and tools to collaborate and innovate in the context of the contemporary world. Cisco Systems, IBM, and Siemens are fundamentally transforming the way we build—scientifically managing the construction and efficiency of infrastructure, buildings, and cities—yet architects are hardly participating in this arena.

Interdisciplinary, team-based courses that should be included in the core architecture curriculum would better prepare our students to help meet these global megaconstruction trends. Here are a few I would recommend:

- **Systems integration, manufacturing methodologies:** Aerospace, automobile, shipping industries as models; modular construction, fabrication
- **Renewable technologies:** Materials, systems, applications; building/environmental/material science and engineering; nanotechnology
- **Data-driven design:** Performance-based design; Building automation systems (sensors, devices, and controls); project management/lifecycle delivery systems)
- **Sustainable urbanization and climate change:** Smart Cities/urban ecosystems; infrastructure, waste management; behavioral sciences
- **Business finance and management:** firm management; real estate finance
- **Research and development:** Strategic partnerships; intellectual-property development

With design as the critical underpinning for all these courses, leaders in practice and academia alike need to anticipate the change happening in our industry—and, in so doing, allow future talent to emerge and help shape our future.



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VERSATILE

WELCOME TO THE REAL WORLD by Arthur Cohen FAIA

The role of architectural schools in creating graduates ready to "hit the ground running" has been debated as long as I can remember. As the education of an architect is a lifelong endeavor, I offer an explanation of how we at ARC/Architectural Resources Cambridge integrate recent graduates into our practice and help them in their journey to becoming architects.

Since ARC was founded in 1969, newly minted architecture school graduates are first assigned to the ARC Studio. As fellow architects who were once thrust into professional practice ourselves, firm leaders do not expect new graduates to be knowledgeable in all aspects of the industry, but to possess a solid foundation in the arts and sciences as well as architectural studies. Some schools try to incorporate courses in practice and business principles, which get lost in the fog of studio work and only come into focus when one moves into project or firm management.

The Studio serves as the heart of our office in both workflow and energy, allowing young interns to grow professionally and personally within the office culture. It is here where these interns get a chance to work on multiple projects with all members of the firm, ranging from other intern-architects to project managers to senior staff and principals. Through their time in the Studio and their experiences on these projects, they learn how we collaborate, communicate, and ultimately create unique solutions for each client's specific needs. It is in this role where these individuals grow in their knowledge of architectural practice and eventually "graduate," yet again, onto project-specific teams.

One recent graduate of Rensselaer Polytechnic Institute who experienced the ARC Studio observed that her time in the studio was critical to her transition from student to early-career architect. The work and demands she faced, she noted, felt similar to those she had encountered at college, and yet in the process of working closely with design teams, her knowledge of the profession expanded rapidly. "I quickly gained the experience that I would not have seen for years had I only worked as an intern on a single project," she wrote on her blog.

Now working within a small team on an addition linking two large buildings, she will continue on this project through all phases of its development, learning more about how buildings are put together and how interdisciplinary design and construction teams collaborate.

Such observations from those who have experienced this transitional approach from academia to the workplace validate how ARC continues to offer our employees on-the-job continuing education and an understanding of what it means to be an architect.

No matter what a particular academic program may offer in an attempt to prepare its students for the real world, it is the workplace that must offer individuals an environment in which they can find their own path to success. How individuals apply what they have learned in school and embrace the necessary spirit of collaboration—combined with the creative thinking required in an architectural practice—is what will determine their way forward in the profession.

Arthur Cohen FAIA is a founding principal of ARC/Architectural Resources Cambridge and a graduate of the Rensselaer Polytechnic Institute School of Architecture.



A Change Is

►► Design education hits fast-forward

BY GEORGE THRUSH FAIA

ABOVE, LEFT
A drawing room at the MIT Department of Architecture, circa 1890. Courtesy the MIT Museum.

ABOVE, RIGHT
The BEB CAD Lab at Rhode Island School of Design. Photo: Camila A. Morales. Courtesy the RISD Media Group.

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At our neighborhood Starbucks recently, my son and I sat down at a long family-style table to quaff our morning liquids. We were joined by a charming German woman who shared with us—quite without hesitation—that she was none too happy with recent alterations to the Starbucks decor. It turns out that the large communal table (seats eight, somewhat uncomfortably) had replaced three easy chairs. An idealized simulation of domestic living space is key to the coffee chain's success, and by altering it to increase seating capacity, management had carelessly assumed that the changes would be welcomed as progress. But our friend didn't see it that way at all. She was conscious only of the absence of the comfy chairs, not of the new opportunities for conversation that the big table offered.

Our coffee companion isn't the only one worried about change, and possibly missing out on its potential for upside as well. As both the academic and popular press have noted, dramatic changes are coming to higher education, as online pedagogy reaches a tipping point and begins to transform the university as we know it.

One of the market oddities of the higher-education

industry is that all undergraduate degrees cost roughly the same amount, irrespective of the prospective financial returns of the chosen field. When students and their parents are preparing to spend such a large sum of money, they cannot help but think of it as an investment in their economic future. And when the rate of increase in architecture salaries is not keeping up with the rising cost of the education, something has to give. In architecture schools, this is going to mean a lot of change.

The engine driving this change is pretty simple: The twin forces of rapidly advancing technology and unsustainable costs are combining to make dramatic changes throughout the industry. Although these changes will be dramatic, they will affect various academic areas in very different ways. Online education seems to adapt very easily, for example, to computer science or electrical engineering. In the fall of 2011, Stanford professors Sebastian Thrun and Peter Norvig taught a course called Introduction to Artificial Intelligence, and 160,000 people worldwide enrolled in the course. Surely quantitative courses (where there are clear distinctions between right and wrong answers) lend



Gonna Come

themselves to computer-based delivery most easily. But architecture schools offer a mix of quantitative material (math, physics, structures), cultural material (history, theory, professional norms); and skills (creative problem solving, diagramming, communication, analysis). Not all will lend themselves to online delivery right away.

We can probably best understand the changes in the following categories: new modes of delivery, obstacles to change, opportunities for the discipline, and, to paraphrase Dick Cheney, unknowns.

The new modes of delivery have been well documented. The biggest and most significant is the Massive Open Online Course, or MOOC (as in the Stanford example). Here, one can easily imagine a single leading faculty member teaching the dominant lecture portion of a critical architectural history course. What if, instead of Yale's Vincent Scully lecturing only to students in New Haven, Connecticut, he were lecturing to half the architecture students in the country? In such a scenario, only the smaller discussion portion of the course would be taught "in person."

Research already has shown that some kinds of knowledge are in fact better taught online, with quick and regular feedback greatly enhancing comprehension and retention. Quoted in the *MIT Technology Review*, Thrun sees lots of advances coming from online courses. "We've only seen the tip of the iceberg," he says, because the immense data sets available to computer-science researchers from the MOOCs mean that courses will continue to develop to maximize student learning outcomes.

It is harder to imagine how the design studio, seen as the core learning experience in architecture school, would easily transform in the new environment, but it could. Currently there are long periods of time spent in the studio with other students, periodic pinup reviews with outside critics, and then short, intense periods spent discussing an ongoing project one-on-one with an instructor. In the online world, the studio time might remain unchanged, while reviews could include participants from all over the world. The one-on-one studio portion is the only existing aspect that should remain unchanged.

One of the most frightening aspects of these changes for faculty is the notion that our job might no longer be to develop replacements for ourselves. Rather, the models for new faculty roles in this uncertain future may be quite different. There will likely be fewer full-time faculty positions in some areas (such as lectures). But there should also be an expanding need for people to teach small sections that require lots of contact and hands-on work, whether in the design studio or at the seminar table.

That's because the part of education that isn't vulnerable to these new scalable efficiencies is the development of real understanding. Analysis, reasoning, writing, explaining, contextualizing, and communicating are all critical skills that seem not to be ripe for these changes in how information is delivered. At least not yet.

The online revolution also may be able to make an architectural education shorter. Lowering the cost of onsite instruction has proved to be difficult, so perhaps we can reframe the time to degree instead. In architecture, we have an apprenticeship-based profession, in which we could transfer responsibility for more of professional training to the profession. At Northeastern University, for example, students spend

two six-month periods in paid, full-time employment at architecture and design firms (known as co-op, or experiential education), where they learn a great deal about architectural practice, often in ways vastly superior to the classroom.

But can this advantage be parlayed into a shorter route to a degree? It should be. Because right now, young people interested in becoming architects are asked to carry a large part of the cost of professional education. What if that cost were more equitably shared as it is through co-op?

The success of this option depends on other players as well, however. Among the potential obstacles to change are the National Council of Architectural Registration Boards (NCARB) and the National Architectural Accrediting Board (NAAB). Both, along with the American Institute of Architects, will have a say in how these changes affect the transition of young people from students to architects. If they do not accept the need to shorten the education process, and more equitably distribute its costs between students and firms, they will be seen as preventing the proper development of the next generation of designers at a moment when they are very much needed.

Interestingly, universities, never much in the



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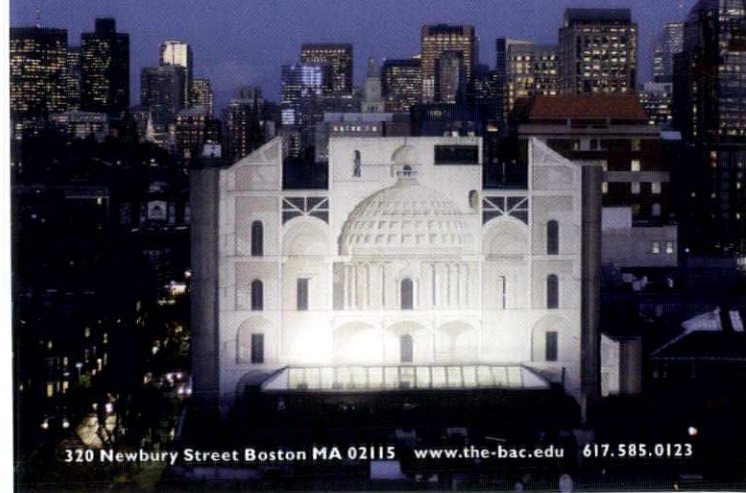


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vanguard of change, will adapt to the online education world faster than the professional organizations will. NAAB will need to hear from the schools of architecture whose accreditation it oversees to reduce the amount that it requires of students to learn in school, and NCARB should allow more to be taught in firm offices.

The opportunities associated with this change seem enormous to me. The most important is working to make what we teach in architecture school less idiosyncratic and site specific, and more scalable. At Northeastern University, we have been moving the intellectual center of the School of Architecture toward more scalable ends for some time. In our design studios, lectures, conferences, and research, we actively seek problems that are endemic, rather than one-of-a-kind situations that require a completely custom solution. We think that today's problems of affordability, flexibility, and sustainability are significant enough to warrant this attention.

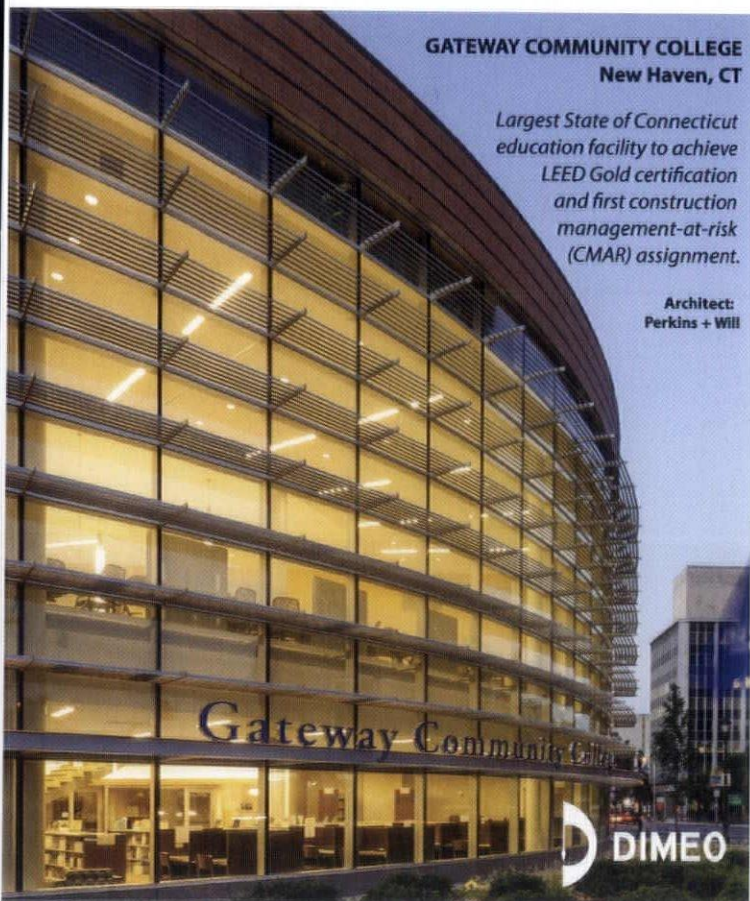
One consequence of moving toward more scalable delivery is that schools will need to define their methodology more clearly for prospective students. Today the stand-in for a clear method is often the promise of proximity to a single, famous

practitioner, but this may not be satisfactory when dealing with larger numbers of students, especially across large physical distance.

Instead of being everything to every student, schools may be encouraged by this new model for architectural education to focus more completely on a particular topic, and more rapidly develop true expertise. At Northeastern, we have chosen to create an online library, and we envision adding to this as a way of more effectively disseminating our research. All schools use the Web for communication, but our goal is to reinforce our commitment to the prototypical solution over the one-of-a-kind situation.

Many of these changes will be discomfiting, as they will challenge long-held approaches to the education, socialization, and preparation of our young people for careers and lives beyond. But as with the creative destruction that often benefits the business world, this transformation of architecture schools will bring exciting new opportunities.

And like our friend at Starbucks, we may not always like the first onset of change. Maybe we really like the comfy chair. But it's time to move up to the big table and start the new conversation. We're taking analog architectural education into the digital, scalable generation. Who knows? Maybe the next thing is an architecture course going viral online, and wouldn't that be interesting? ■



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Life After Arch 101

Four graduates take their skills elsewhere

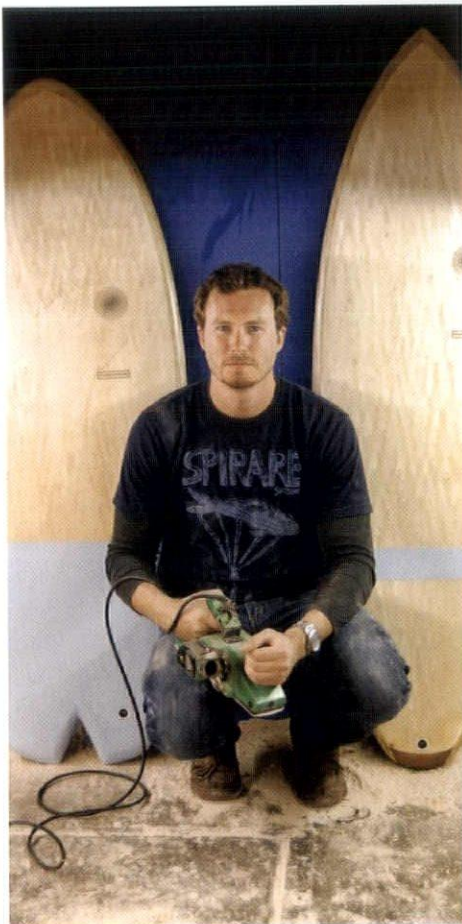
BY JULIE MICHAELS

Why must an architect be defined as a designer of buildings? Where is it written that a talent to visualize the three-dimensional must be limited to the creation of structures?

Any number of trained architects have taken their skills into related fields and triumphed. Robert Wilson, the avant-garde director and playwright, earned his architecture degree from Pratt Institute. Tom Ford moved into fashion design after studying architecture at Parsons School of Design.

Before he invented the artificial heart, Robert Jarvik studied architecture at Syracuse University.

Yes, architecture has been thoroughly flattened by the explosion of the housing bubble. But a less-recognized development is the growth of related careers for those with a talent for design. Even as the profession has contracted, the value of a good architecture education is never wasted. Here are four designers who took their triangles into other fields.



Kevin Cunningham

Spirare Surfboards

RISD '05

www.spiraresurfboards.com

Growing up in Baltimore, Kevin Cunningham had two passions: making art and surfing. He was the kind of kid who drew in his notebooks during high school lectures and surfed on the Maryland shore all summer.

Cunningham, now 30, was drawn to study architecture at Rhode Island School of Design (RISD) in Providence precisely because of its emphasis on design. "That whole first year, we never designed a building," he says. Instead, students focused on design basics: "how you approach a problem and find a solution."

During his junior year at RISD, Cunningham—still very much a surfer—decided to design his own surfboard. "A good surfboard costs around \$600, and I didn't have the money," Cunningham was also turned off by the toxicity of most manufactured boards, which are made from polyurethane foam and Fiberglas resins. He set out to design an eco-friendly board

that was also beautiful to behold.

Board shaping remained an avocation for Cunningham—something he did on a small scale for friends and fellow surfers—even as he graduated and found work with a Connecticut architectural firm. Eighteen months later, the economy sagged and Cunningham was out of a job. He worked in construction management for the next three years but soon found he could earn just as well by designing surfboards.

Today, as CEO and sole employee of Spirare Surfboards, based in Providence, Cunningham turns out 150 to 200 boards a year. Each board must perform well, be environmentally sustainable, and be a work of art. Cunningham's boards have been featured in gallery shows throughout New England. He's twice been awarded grants from the Rhode Island State Council on the Arts and recently raised \$3,500 on Kickstarter to help him design boards from marine debris—using driftwood, torn nets, and other ocean flotsam.

Cunningham believes his RISD education had everything to do with his success. "Our challenge was, 'How do you make good design?' I just took that and applied it to another discipline."

Brad Crane

Environmental Designer, IDEO

Harvard GSD '11

www.ideo.com



Brad Crane has hardly had the typical career in architecture. For starters, his architect dad gave the boy an AutoCAD program for his computer when he was 12 years old. Even when Crane was studying electrical engineering at Kansas State, he spent summers and weekends turning out three-dimensional drawings for the family firm.

"I sort of felt architecture was what I did before I went to college," says Crane, who spent eight years working as an electrical engineer for companies as diverse as Harley-Davidson and United Technologies before enrolling in Harvard's Graduate School of Design at age 28.

"I realized I was much more interested in exploring the space around me than I was in designing electrical circuits," says Crane, who graduated last year.

From the start, Crane believed that architecture offered him the most robust and systematic way of viewing the world in terms of design. "Architects like to think big," Crane explains. "They are used to thinking

through the extended effects of the complex systems they've designed." He wanted to take that talent and apply it in a parallel universe.

Perhaps it's not surprising that Crane quickly found his way to the Boston offices of IDEO, the award-winning global design firm that promotes human-centered design. Working with business and the private sector, IDEO is most famous for creating the first ergonomically designed computer mouse.

As an environmental designer at IDEO, Crane enjoys being part of a design team that digs deep into a single project. "How do you design a medicine bottle that a person with arthritis can open?" asks Crane. "How do you design a better gas pump? These are small things, but the solutions have an impact on how we live."

Crane brings his architecture training to every design challenge. "There's a pragmatism to architecture," he explains. "You have to design multiple systems that work together, and it's exactly that perspective I rely on most."

Teman and Teran Evans

Dioscuri

Harvard GSD '04

www.dioscuri.us

Teman and Teran Evans spent their Friday afternoons this fall turning a class of Harvard architecture students into brand strategists. Their seminar, "Paper or Plastic: Reinventing Shelf Life in the Supermarket Landscape," asked participants to rethink the branding of peanut butter, mouthwash, and other basic consumer products. Such nonarchitectural challenges reflect the broad definition these identical twins apply to their own diverse design practice.

"The challenge of architecture is to solve a three-dimensional problem," says Teman (pictured, sitting). "Some days that problem is the scale of a building, some days it's the scale of a city, and some days it's just something you can hold in your hand."

The twins, 33, developed their design perspective while interning at the Rotterdam offices of architect Rem Koolhaas. Instead of putting his interns to work on

building projects, Koolhaas had them design catwalks for a Milan fashion show and help with a competition for the Beijing Olympics.

"Rem used to say to us, 'I don't know why you architecture students all want to pass through the same narrow door,'" says Teman. "There are so many other ways of working in design."

After graduating from Harvard, the brothers took the advice of their mentor by launching Dioscuri, a design firm that addresses a multitude of interests. First, the pair tried furniture design and then switched to textiles, finally scoring with a design for colorful wooden bracelets that caught the eye of Oprah Winfrey. "We taught ourselves everything, from manufacturing to marketing," says Teman, who claims the experience was better than a graduate degree from Harvard Business School.

Their success, combined with an appearance on HGTV's popular series *Design Star*, has helped the brothers expand into product design, brand consulting, and interior design. Teran runs day-to-day operations in New York City, Teman teaches at the University of Michigan's Taubman College of Architecture, and both have lectured at Harvard's GSD.

The brothers view their practice as a raspberry to anyone who claims architecture is a dying profession. "If you're talking about brick-and-mortar buildings, sure," says Teman, "but that skill set has such a wide array of applications."





Natasha Case

Coolhaus

UCLA '08

www.eatcoolhaus.com

Think ice cream. Think famous architects. Think ice cream flavors named for famous architects: Frank Behry, Mies Vanilla Rohe, Richard Meyer Lemon, I.M. Peinut Butter, Louis Kahnteloupe, Norman Bananas Foster. Now throw in a "floor" and "roof" of chocolate chip or oatmeal cookies and what have you got? Coolhaus, a designer ice cream sandwich company that has 50 employees, revenues of \$3 million last year, and a fleet of pink and white food trucks selling to eager customers in New York, Los Angeles, and Dallas.

No one is more surprised at the success of this "farchitecture" (food+architecture) start-up than Natasha Case, Coolhaus CEO. "It was just a hobby, an art project,"

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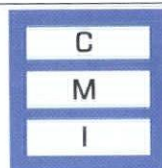
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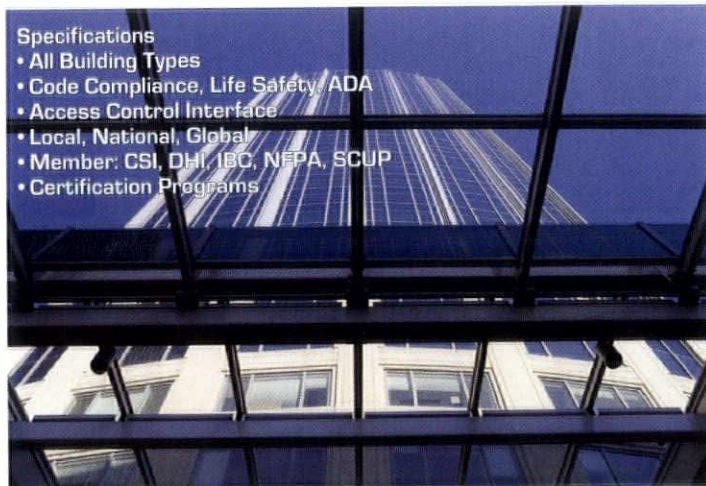
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explains Case, 28, who produced her first batch of ice cream sandwiches as a treat for colleagues at Disney Imagineering, where she worked after graduation as an intern in hotel design and master planning. "Everybody was so down about the recession and afraid of losing their jobs. I added the funny names for comic relief."

When Case made more ice cream sandwiches to sell at a crafts fair, her friend Freya Estreller—now Case's Coolhaus partner and wife—immediately saw the business potential. The two women bought a 20-year-old postal van on Craigslist, had it retrofitted and painted silver and bubblegum pink, and began selling their ice cream sandwiches at music festivals and museum openings. Word spread and the business blossomed, growing at a rate of 300 percent a year.

Case doesn't feel she's left architecture behind; she's just expanding its footprint. Having written her master's thesis on

mobile food, the architect sees her Coolhaus trucks as a way of breaking down the geographic confines of fixed, traditional retail locations. She even presented her ideas on the subject at an AIA conference in Los Angeles last year.

Case also sees her ice cream "houses" as a way of making architecture more fun and accessible. "Architecture has a way of being so esoteric that we forget that it's a public profession," says Case, whose trucks invite customers to read about well-known architects while they wait for their orders. There are even plans to make popsicles from molds shaped like famous buildings.

In the meantime, you can't keep the architect in Case down. She's used her skills to design a retail store, the company's website, and all its (edible) packaging. Her most cherished business moment? Seeing the real Frank Gehry stand in line at a Coolhaus truck, waiting to sample her wares. ■

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Kevin Cunningham.
Photo: Meghan Dove.

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Brad Crane, Teman and
Teran Evans. Photos:
Tony Rinaldo.

OPPOSITE

Natasha Case. Photo:
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Design for Dignity

Design in the public interest sets a new course

BY GRETCHEN SCHNEIDER AIA

"Most of [the students who choose to be activist architects] are not the really good students. Because it can also become an excuse and an easy option."

— Farshid Moussavi, architect and Harvard educator, during a panel discussion in London last March.

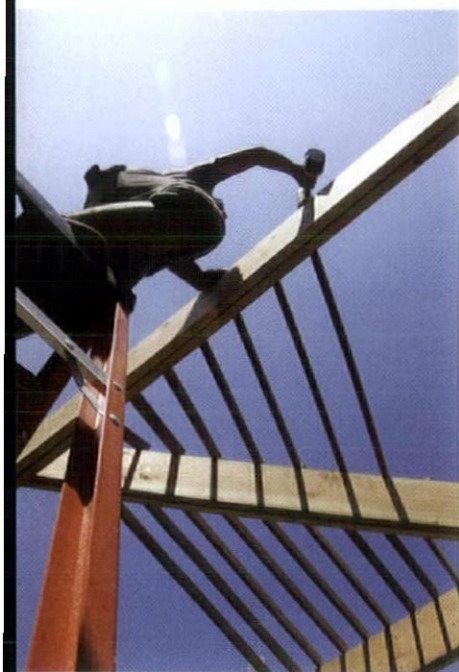
I recently sat down with Julia Buzan, a young Yale graduate who wants to pursue architecture in graduate school. Buzan majored in international economic development, has worked overseas, and crafted an undergraduate thesis that devised ways to assess the impact of economic development investment in particular communities. In architecture, she sees the opportunity to think imaginatively about the future, rather than simply responding to past data. She wants to work in collaborative, interdisciplinary teams that directly connect with the audiences they serve and to use her analytical tools as a means to evaluate and improve the impact of design. If Buzan represents the type of student now entering architecture programs, I couldn't be more optimistic about public-interest design and architectural education.

Excuse me, Professor Moussavi, but the times, they are a changin'.

Over the past year, publications from *The New York Times* to *The Huffington Post* have described the surging trend in public interest design, including among students and schools of architecture. "Public-interest design," "community-based design," "socially responsible design"—these terms are used interchangeably, but underlying all is the belief that good design can improve the lives of regular people and that these regular people should have a voice during the design process.

Despite the popular image of Gregory Peck's character in *The Fountainhead*, Architecture (with a capital A) is not something cooked up by the singular genius, imposed on a naïve or ignorant public; rather it's a discipline to be developed through listening to the people whom the structure or product or landscape or neighborhood will serve. That's not to say that design training doesn't matter and that architects shouldn't play a leadership role, but the attitude is fundamentally collaborative. It's design for—and with—the 99 percent.

Can public-interest architecture be taught? Of course! The same qualities that make a good architectural education also make a good public-interest architectural education: a broad liberal arts foundation; the ability to work across disciplines; an enthusiasm for diverse ideas; an awareness of the many contexts of design (economic, political, social, technical, historical), a desire to wrestle with those competing influences, and an ability to incorporate multiple agendas into a coherent, compelling architectural form; an entrepreneurial spirit; a desire to listen carefully, and the skill to apply that insight; good communication, both graphic and verbal; effective collaboration and teamwork. The lone genius need not apply.





OPPOSITE

A student in the Massachusetts College of Art and Design's community design and build studio works on a roof trellis structure for an outdoor classroom at the Dennis C. Haley Elementary School in Boston.

ABOVE

The Rose Lee House (Footwash, Alabama), designed and constructed by second-year students of Auburn University's Rural Studio program. Photo: Timothy Hursley.

RIGHT

Another Rural Studio example: a mobile concession stand for Lions Park (Greensboro, Alabama), designed and constructed by three fifth-year thesis students. The Rural Studio blends innovative design with social activism and has inspired many similar endeavors. Photo: Timothy Hursley.



Perhaps the better question about teaching public-interest design is: When?

Michael Meo has just finished his third semester of "core" curriculum in the Master of Architecture program at Harvard's Graduate School of Design. The core experience is somewhat akin to sixth grade, when one shares the same courses with the same students; electives don't come until later. Most professional architecture programs follow a similar curricular pattern because no matter their ultimate specialization, all students need to learn the basics of design principles, structures and other building technologies, architectural history and theory, and techniques of representation. It's a time ripe for indoctrination and a time when individual brilliance often seems to prevail.

Meo comes from Hampshire College, a curriculum in which students design their own path. It couldn't be more different from GSD core. His senior thesis included orchestrating a community-based design process, ending with the student-led design, construction, and transformation of the Hampshire College Library. He's explored participatory design in international contexts as well, having been selected as a US delegate on teams that worked in the Philippines

and Korea. He chose the GSD over other elite masters programs because he was turned off at the beautiful but vacuous student work and paternalistic attitudes he saw elsewhere. The GSD seemed to offer the place where he could most vigorously pursue his passion. But core?

I expected Meo to hate the experience. Instead, I found him to be happy and thriving. His studios so far have focused on the language of architecture and its geometry; even his most recent "comprehensive" studio included only technical considerations. Any social context has been completely brushed aside. Yet this public-spirited student appreciates that he's developing a skill set in a certain kind of vacuum, and that he'll ultimately be able to apply this rigorous process in many different ways. His recommendation for change is for instructors to be more explicit about the vacuum. The vacuum of school is a precious opportunity, as long as students don't confuse it with the real practice of architecture.

And he's "really thirsty" to get to his upper-level elective courses and options studios, where he will be able to pursue courses in participatory design and work directly with communities.

During my graduate school days of the 1990s, there was a perceived divide that echoed Professor Moussavi's sentiment: good design vs. design that did good. The

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Rural Studio at Auburn University in Alabama changed all that. In the now-famous program, launched by the late Samuel Mockbee in 1992, sophomore and thesis students may apply to spend a semester living, designing, and building in Hale County, Alabama, one of the most impoverished in the United States. From its inception, the Rural Studio has insisted that students create designs that are both architecturally innovative and socially conscious.

Over the past 20 years, the Rural Studio has published, exhibited, and promoted its work widely. Legions of design students have noticed and have been inspired; no doubt administrators, too. In his current introduction to the GSD program, Harvard dean Mohsen Mostafavi writes: "Our program has a social dimension. ...The complexities of contemporary global and environmental issues—the impact of rapid urbanization; the scarcity of resources; the after-effects of disasters, both natural and manmade; and the continuing inequities between the rich and poor nations of the world—require solutions that are both imaginative and emancipatory." It appears that the good design/design good divide has largely dissolved.

A fundamental shift of thinking has emerged: Design that does good on social grounds needs to be good design

on aesthetic and technical grounds as well, and deserves a seat in the spotlight alongside other design specialties. The five-year-old Curry Stone Design Prize, for example, aims "to make the talents of leading designers available to broader segments of society and to inspire the next generation of designers to harness their ingenuity and craft for social good," as it dispenses \$125,000 annually. On the GSD website, one can now search for faculty, courses, and projects under the theme of "activism," just as one might search for "speculation" or "sustainability." Of the 72 independent student projects published, two-thirds tackle public-interest or community-based topics, from working with local farmers in rural Damascus, Syria, to constructing a temporary storefront library for Boston's Chinatown neighborhood. Of those, 21 are officially classified as "activism." Clearly, there's robust student interest right now.

In contrast, of the 85 faculty projects published, only two are classified under "activism." Whether this reflects a true lack of interest or a statement of work deemed worthy of tenure is unclear. Regardless, lingering attitudes such as Professor Moussavi's couldn't be more wrong. Working in public interest begs for the best students and is attracting them. It's the attitudes that need to catch up. ■

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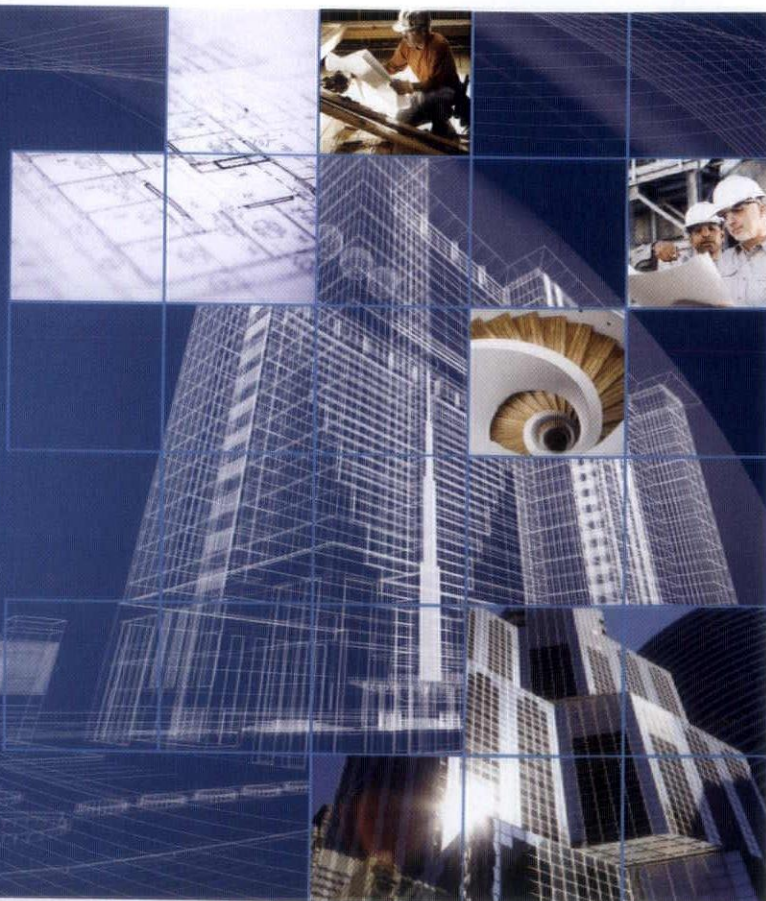
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Beaux-Arts

and Back Again

NADER TEHRANI AND DAVID HACIN

A CONVERSATION

In 1881, the architect and scholar Leopold Eidlitz wrote that to prepare for professional life, the student of architecture must “master the mathematical and scientific branches taught in modern polytechnic schools, make himself proficient in drawing, attend an academy of architecture, and then become, in succession, a good carpenter, mason, stonecutter, painter, sculptor, and decorator.” But as human life is too short for all this, Eidlitz concluded, one must reduce the question: “Shall the pupil of architecture be educated in some mechanical workshop, in an art studio, or a polytechnical school?”

Given that this debate has dogged architecture education for more than 100 years, we asked **Marc J. Neveu**, associate professor at Wentworth Institute of Technology, to delve into it with two thoughtful leaders of the profession: **David Hacin** and **Nader Tehrani**. Neveu interviewed them late last year.

OPPOSITE

A bookcase staircase, created for a private residence by Levitate, a London-based architecture and design studio. Courtesy Levitate. levitate.uk.com.

Marc Neveu: Considering what Eidlitz had to say in 1881, what is the responsibility of an architecture department today to prepare students for professional practice?

Nader Tehrani: What’s remarkable is all the other things that quote overlooks that we consider indispensable to the study of architecture today—history, anthropology, sociology, among other things. But to some degree it also asks the question: Does expanding the terrain of architecture to be inclusive of everything automatically equip a student to become a good architect? Or is the best architect the one who is able to interpret and edit the world in strategic, deliberate, and incisive ways?

David Hacin: Determining what it takes to be a good and a successful architect can be linked to other aspects of that question, about the business of architecture, working with clients, and convincing people of your ideas—skills that are absolutely critical to being able to make manifest the ideas that are born out of this broadened exposure to history, anthropology, and sociology.

Marc Neveu: But if we expand the field, what’s left to define it? Aren’t there certain skill sets, modes of knowledge, and histories that are specific to architecture and must be taught in the professional model of education?

David Hacin: Absolutely. Architectural education is rooted in design skills and being able to represent those skills and develop ideas through the making of form. The question is less about whether this is an essential characteristic of study than what else is needed in architectural education to support that goal. The criticism is that some programs are either almost exclusively design-oriented or primarily technical. So what’s needed to make architectural education a generally broader topic?

Nader Tehrani: In that period [1881], there were two strands of architecture schools that emerged, one from the Polytechnic and the other from the Beaux-Arts. They had very different emphases. With Modernity and the end of World War II, there was also the advent

of specialization, where the architect began to lose his or her control over the related fields of architectural disciplines. Today teams are composed of not only an architect but also 15 to 20 specialized consultants. This has effectively changed not only how we practice but also how we get there in the first place.

The nature of schools took huge twists and turns over the same period, not only expanding the curriculum in certain technical or historical courses but also in absorbing the role of theory as a central part of discourse—as in the '70s and '80s when linguistics, structuralism, and philosophy took on a greater role in forming architectural thinking. How is all of that really relevant to what we do when we're drafting up a house in the suburbs? I'm not always sure. But it's arguable that we must be conversant with the other issues, above and beyond formal-technical ones, that are culturally relevant.

Marc Neveu: Today, we do have an incredible amount of specialization. Architects specialize in healthcare design, or stadiums, or other building types. Do you think that students should specialize?

David Hacin: No, but they should be aware of what is out there and how significant the choices they make early on will be in terms of charting their career path. Schools aren't adequately preparing students by giving them a real understanding of the current professional landscape. And in a global arena, the professional options available to someone in Massachusetts are very different than those available to someone in Malaysia.

Nader Tehrani: You have to use education as a way of building up thinking skills, interpretive skills, creative skills. Those skills become, in a way, calisthenics for all the things that we do not know are going to happen five years from now. How do you develop curricula that are conversant with the things students actually need to learn for today, while opening up channels for all of the things we can't even imagine yet, which will replace what becomes obsolete in a few years?

David Hacin: Theoretically, the goal of the US undergraduate system is teaching students how to think. Then, when you move on to a professional school—whether it be law or medicine or architecture—you are learning how to practice very specifically.

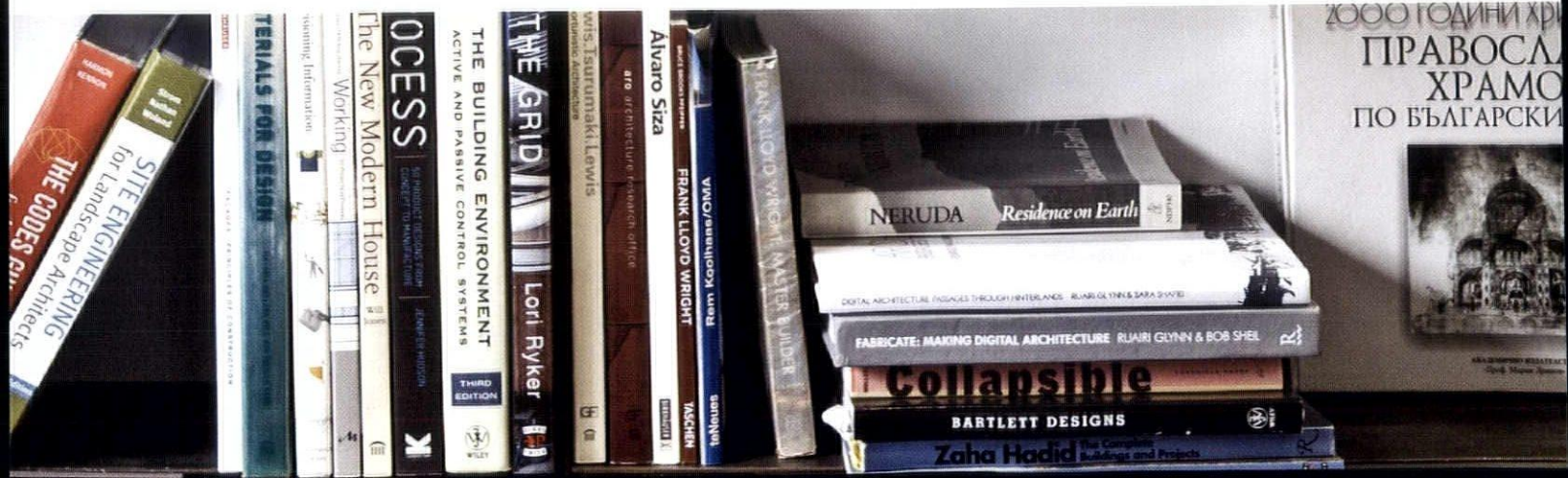
[After graduate school], you end up having learned how to think, and maybe even refining your design abilities, but you haven't really developed enough practical understanding or professional expertise to hit the ground running. This is a particular concern to me now because there are other factors at play—the cost of architectural education, for one. Young architects are graduating with insurmountable debt. And they're moving into a profession where the financial rewards are limited. Unless we want architecture to remain a profession for the well heeled, we're setting people up for failure in some cases.

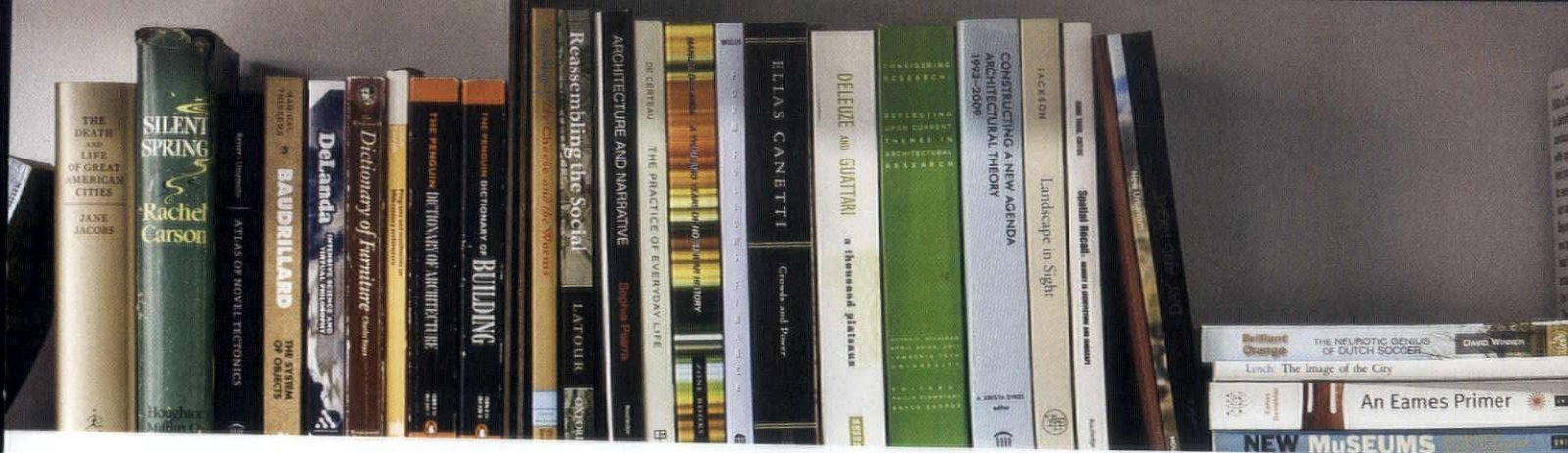
I hate to be so mercenary, but what is the value proposition here? I'm hearing that game design, for example, is sucking up a tremendous number of the most talented design students because they see a financial horizon there that they don't see in architecture.

So much has changed. Do you think that a student who was attracted to the architecture profession 25 years ago is the same student who's attracted today?

Nader Tehrani: It's a different person, because culture has changed significantly. At the same time, it is a tall task to ask any student why they are, at the age of 18, choosing any profession. To some degree, as young applicants, we all mythified what "architecture" was, and we were innocent of the actual conditions of practice. But operating within those myths is part of the charm of growing up.

David Hacin: I was different because I thought I knew exactly what I wanted to do and how I wanted to do it. My father was an architect, and I wanted to have a practice like his; but that form of practice doesn't really exist anymore. One is forced to adapt one's expectations.





I ask students who interview with me what they would like their architectural career to look like. Almost without exception, they talk about having their own practice; that's their dream. And I have to believe that their motivation for studying is built around that reality—or perhaps mythology.

Marc Neveu: The Fountainhead-ache.

David Hacin: The image of the master operating in his own practice. ... Yet the schools do very little to prepare students for what that means. There is increased specialization, midsized firms are being squeezed out, small firms have trouble staying on the cutting edge of rapidly changing technology. [If I were] a student, I would like to know about these issues, not necessarily in depth, but enough to be able to make informed career choices.

Marc Neveu: The role of research in architecture has shifted quite dramatically. There is no longer only the model of the humanities, leading to a PhD. You have efforts like the [Harvard GSD] Koolhaas Project on the City, where there's a lot of information gathering but it's a design-based thing. Then you have the [MIT] Media Lab, where there's a kind of interdisciplinary, project-based approach. Could research promote a new form of practice?

David Hacin: Absolutely. Researching innovation as a form of practice is very compelling, and it's certainly going to advance the profession. However, let's remember that the vast majority of architecture students are moving into conventional practices that are not research based and that do not dedicate what limited profits and funds they have to research. The architecture profession has got to figure out a way to both support and promote the research and innovation that is going to make practice more relevant in a 21st-century world, and still make sure that we are advancing more normative practice models—making them more relevant to the economic model of our country, which is not particularly supportive of research and innovation-based methods.

Nader Tehrani: You've outlined several models of research, but I also consider certain very conventional things that we always and already do to be research. Drawing, for example, is research for me; drawing a project on the oblique, from the outside and inside is a way to research how the building turns its corners. Only an architect can come to appreciate the discrete resonance of this task as a piece of research.

Research is also instrumental. It is an alibi for what we do, the ammunition. Students need to be equipped with all levels of understanding how we interpret research, because the conventional architect will need to stand up to the contractor, a project manager, or a city agency and be able to present narratives that are relevant for all of them, and in a convincing manner. For instance, researching the means and methods of fabrication in a proactive way is more important than ever for a designer today; it is the only way to construct a meaningful dialogue with both fabricators and value engineers on the one hand but also a way to defend design in the process.

David Hacin: In this conversation we've talked a lot about critical thinking in architectural schools. But we haven't talked very much about implementing critical thinking more broadly.

My concern is that we are moving toward having architecture students who are less and less reflective of the broader society that we live in, both economically and demographically. The criticism that's been often laid at the doorstep of the academy is that it's an ivory tower of folks who can afford to indulge themselves in thinking about things that have limited relevance to the majority of citizens. If we don't expand the base of students who are coming into our profession to reflect the shifts that are occurring in our country, I think the architectural profession has the potential to become the GOP of the next decade—more and more detached from the rest of society. This is where I come back to the issue of how we compare with the medical or legal professions.

Marc Neveu: The one major difference is that if you're

ABOVE AND OPPOSITE

A bookshelf in the North End home of architects Diana Tomova (KVA) and Parke MacDowell (NADAAA). Photo: Parke MacDowell.

a law associate, you need to have passed the bar. If you don't pass the bar, you don't work. Architecture does not have the same requirement. Further, to get a building built, you do not need an architect. We've driven ourselves out of the equation.

David Hacin: We let that happen, and we continue to let it happen. We don't really seem to have any great interest in correcting it, either.

Nader Tehrani: Arguably architectural education is the only education out there that is based on a "crit" format; we do more teaching and learning by debating, interpreting, and critiquing. It's almost like the legal profession. You may know that your client is guilty, but you're going to present the case of why they're not. Presenting a design is almost always like that. Because you know that there's no foolproof reason why anything has to be the way it is, and yet you have to present to the client, the community, the engineer, a narrative that is convincing.

David Hacin: So then why do we do make our case so badly as a profession?

Nader Tehrani: When you and I went to school, the architectural profession was comparatively narrow. Now, architecture and design is everywhere because of the Internet. It's arguable that design is at its peak in terms of relevance. The accessibility of architectural images and content is ever-present, for young designers and clients alike, making design more popular than ever before. In turn, this has made it even harder to raise the stakes of good design, critical thinking, and discerning judgment.

David Hacin: Design is so available that there is no longer that sense of having to explore an idea, get to an idea—the work that goes behind making a building. Everyone is so attached to image now, that creating the image of the building is all they think we do, when in fact there's so much more that we do and so much more that we understand.

Nader Tehrani: And you want to be able to explain to the client the integral relationship between the mechanical, structural, and spatial relationship of a building as if it were relevant? We care about that, but nobody wants to listen to that.

David Hacin: No, but this helps explain the importance of

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licensure and the responsibility that schools have to promote it. To a client, a license means that you should know how to do all of that. It's shorthand, and it has real value.

I think we need to give our students the tools to be effective. First of all, not everyone is as talented as the next person. I'm not sure you can teach design talent. That doesn't mean that architecture students who maybe are not the best designers can't have a lot of impact on the profession or have a lot of success in other ways. But is architectural education too focused on the brilliant designers and making sure they achieve success?

Nader Tehrani: The architectural license is practical to have, but it says very little about the relevance of building meaningful bridges between education and practice. I have tried very hard to serve as a model for this very issue. If there's a pattern I've been able to identify after my 20 years of teaching, it's that out of an average-sized studio of 12 people, I've rarely been able to impact the so-called one or two brilliant designers in the studio, and I probably could not have much of an impact on the one or two people on the bottom who had very little initiative or ability to see visually. But education has nothing to do with talent; it has to do with the other eight, nine people, to whom you do teach design skills.

You do teach instruments. You do teach agency.

Marc Neveu: One final question: After being out of school for several years, what do you wish you had learned in architecture school that you did not?

David Hacin: I wish I had learned how much I would have to rely on others in both building buildings and building a practice. My architectural education was very rewarding, but it was a very solitary experience. Being out in the world and having a practice, it's anything but. I hardly ever have time to be alone in my own head with anything. I wish I had understood that a little bit better, not because I would have done anything differently, but because I would have been better prepared.

Nader Tehrani: What I lacked was a program that could demonstrate that everything is design, beyond design: The mechanical and structural systems, which seem to be accessory courses but in fact are the only thing I'm focused on today. Budget, structural engineering, and environmental systems are the three creative areas of design that are commonly overlooked in the context of school but become absolutely dead center when you're doing anything. ■



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
DEFENDING YOUR LIFE

TEXT BY LIAN CHIKAKO CHANG
PHOTOGRAPHS BY TONY RINALDO

Lian Chikako Chang is studying for her Master's in Architecture at Harvard's Graduate School of Design. She has a bachelor's degree in art and design from the University of Alberta and a PhD in architecture from McGill University.

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OPPOSITE
Stephen Akerblom carries his work to his review.

 **MORE ONLINE**
architectureboston.com

People say that love is the opposite of fear, but then, they've never been to architecture school. As the date of a final review approaches, we students throw ourselves into our work with an intensity that can be explained only by a mix of love for our projects and fear of public humiliation.

Days before my first advanced studio review in 2011 at Harvard's Graduate School of Design, our professor, Marion Weiss, gathered us up—beyond fatigue and on the edge of meltdown—and announced that these were the best moments of our lives. We scoffed, but in a way she was right. When your excuses, your bodily aches, and the activity around you fade, you are left with nothing but an intimate dialogue with your work. It's a funny thing that we best sustain this rapt state under the external pressure of deadlines and a rivalry of the kind only siblings and the closest of peers can inspire.

At noon one day in early December, just before final reviews were to begin, several students in Wentworth Institute of Technology's graduate architecture studios remained in this state of immersion, while others gathered up their work and made their way to the auditorium.

Stephen Akerblom, a final-year Master of Architecture student, was finishing up a video. "It was pretty much down to the wire," Akerblom told me later, explaining that after a challenging series of conceptual exercises, his building design had come together just in the final week or two.

Call it a crit, jury, or review: Architecture students present their work to a panel of practitioners and professors, and then endure whatever verbal jousting unfolds. This rite of passage, lasting typically 20 minutes to an hour, has occupied the center of architectural education for decades. What justifies it is the notion that, beyond fluency with construction details and an intuition for the subtleties of inhabitation, architects need to be able to stand and deliver a proposal, even when they're outnumbered and outclassed.

I always feel relief when I stop making things and start transporting them, and myself, to a review. Leaving behind the rancid studio atmosphere of solvents, stale coffee, and unwashed clothes, and heading toward an arena of judgment and intellectual exchange, the rush of adrenaline does wonders in washing away

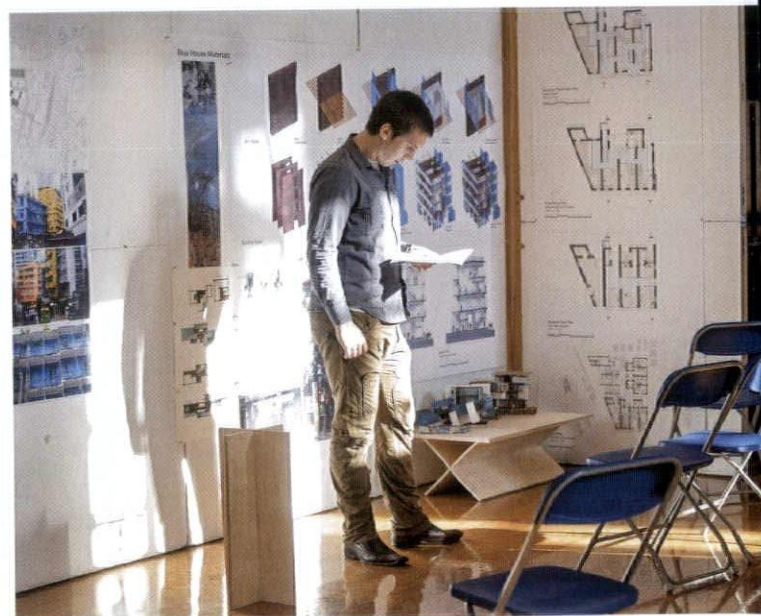




ABOVE
Chris Bonarrigo
finishes a model in
Wentworth's graduate
architecture studio.

ABOVE, RIGHT
Douglas Martin and
Michael Wojnarowicz
carry their studio's site
model across Parker
Street to Watson
Auditorium.

RIGHT
Stephen Akerblom
reviews his notes
before his presentation.





doubts and sharpening faculties. At Wentworth, this transition took the form of a literal breath of fresh air, since the auditorium where the reviews were scheduled was across the street from the studios.

In the auditorium, partitioned for rotating reviews, drawings were pinned up and models arranged with the help of friends and classmates. Akerblom was slated to present first, and he paused in front of his work—a block of mixed-use housing micro-units—reviewing his notes one last time. His studio, led by assistant professor Jennifer Lee Michaliszyn, was called *Hong Kong Express*, a play on the title of Wong Kar-wai's film *Chungking Express*. In developing their architectural strategies, students started with his films and their own videos of their dense, bustling sites.

When it was time to present, Akerblom led with his

video. "The movie was supposed to show the layered quality and how each one of these surfaces has a real depth to them," he said. "Then this model tries to assign these materials a tectonic quality ... the brick as the load-bearing party walls, the timber as the lower flooring, the blue paint as a building envelope. My project starts to expand this building envelope, essentially treating the interior space as a thickened façade."

There's a moment in every review when the momentum shifts. A critic interrupts with a question and stands up to scrutinize a drawing, or the student hands over a model and cedes the floor. The critic turns the model or holds it up to squint into its depths, and everyone waits for the verdict. From here, the review can go in any direction. The days when a critic could

express dissatisfaction by smashing a model to bits or setting it on fire have almost entirely passed, but a critic's words can still cut pretty deep.

This group of critics eased into things gently: "Could you talk just briefly about this interpretive model that started everything; maybe explain it in a more linear fashion? Was there a set of rules?"

Akerblom answered the best he could: "I started by trying to represent the existing materials. ... So you have the brick, which is this really heavy structure in the middle; and the blue is the wrapper. ..."

But no question in a review is entirely innocent, and one critic picks up where the other left off: "What do you think of the mixed-use housing? Why is that a good program to test out your ideas related to surface, materials, and infill?"

Akerblom seemed eager to expand: "The micro-unit was a good program because the spaces are compacted, and each surface has to hold more depth and program within it. There is a kinetic element ... like the Murphy bed. When it flips up into the wall, you're essentially making a thickened wall—"

"—Where is that?" The cross-examination begins in earnest.

"—I didn't, I have them planned in here but I didn't explore them at a detailed scale."

The critics proceed, taking turns elaborating on

one another's critiques:

"—An obvious choice, so I'm not sure what mileage you got out of that."

"—The blue is still a kind of keying, instead of a pushing..."

"—If there was a sheet that diagrammed..."

"—Is that Hong Kong, or is it LA? You don't know."

"—There's also a temporality to the architecture that I don't see."

At this point, the floor is no longer yours: You are by design outnumbered and outclassed. The reviewers enjoy holding forth. Each is eager to provide his or her advice, criticism, and praise, but in such a besieged state, it takes a fair amount of effort just to stay vertical and maintain eye contact. When the time is up, the professor makes appreciative comments about the work and conversation. Classmates offer their commiserations and congratulations.

In the hours after a review, it's easy to feel off balance. Emotions loom larger than usual: relief, pride, disappointment, and an overwhelming fatigue. There will be time, later, to reflect. For now, a semester's worth of work is carried back to the studio, each artifact bearing the weight of judgment while also suddenly light and insubstantial. Some items will be gladly tossed, while others will be treasured, like comrades returning from war. An architect's love is a strange thing, indeed. ■





ABOVE

Corey Roberts presents his project to (seated, left to right) classmate Ben Leedy, professor Weldon Pries, and visiting assistant professor Zenovia Toloudi.

FAR LEFT

Lucy Brown presents her model to associate professor Michael MacPhail as professors Ronald R. Bernier and Jennifer Lee Michaliszyn look on.

LEFT

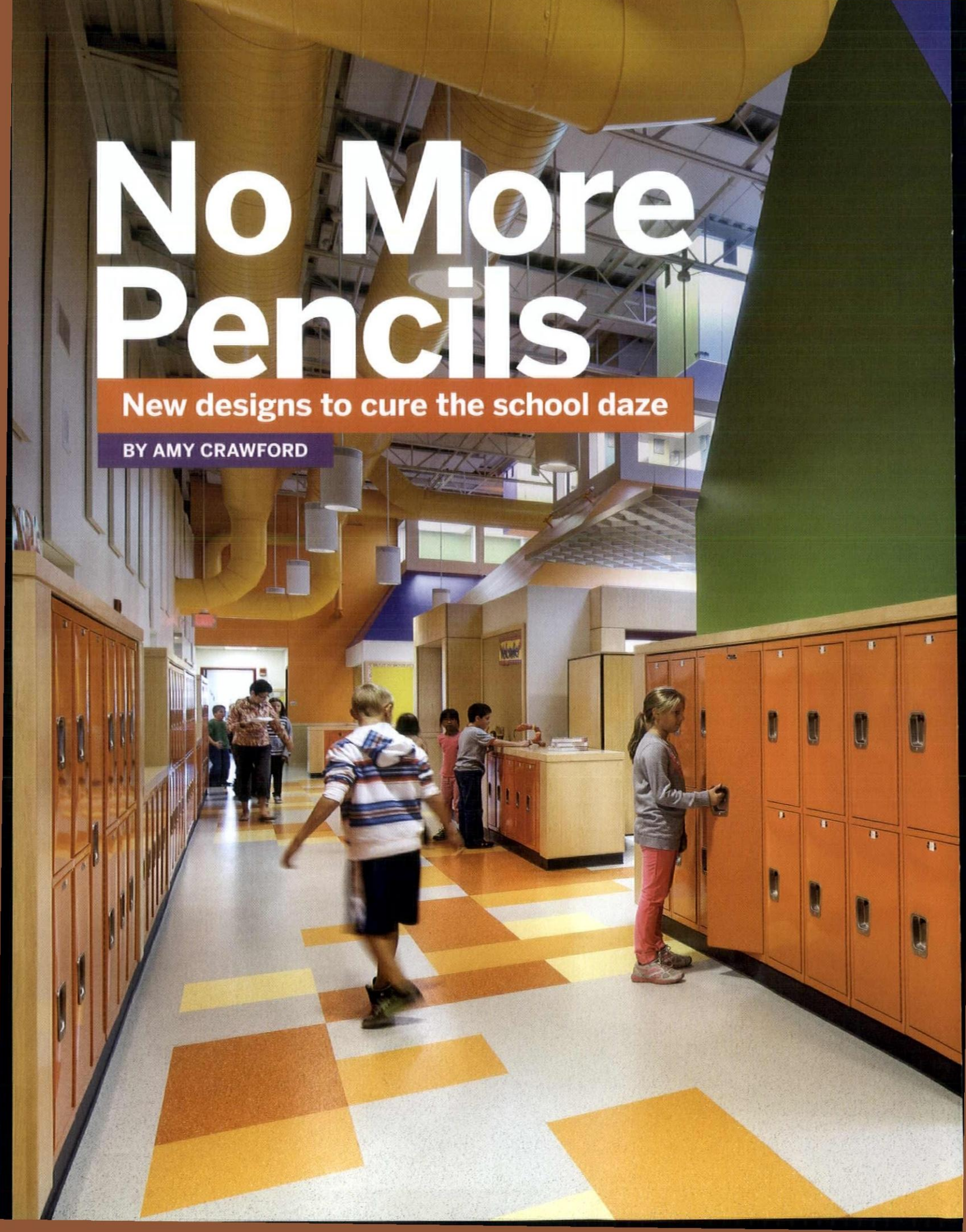
Nicholas Gianetti presents his project to (left to right): professor Jennifer Lee Michaliszyn, associate professor Michael MacPhail, assistant professor Marc Neveu, adjunct faculty member Anne-Sophie Divenyi, and professor Ronald R. Bernier.



No More Pencils

New designs to cure the school daze

BY AMY CRAWFORD



It's just after lunch on a Friday, but many of the classrooms at Abbot-Downing Elementary School in Concord, New Hampshire, are empty. Instead of sitting behind desks as their teachers lecture, a handful of fifth graders are holed up in a nook by the stairs, taking notes on a whiteboard.

Two boys stand at a counter working on iPads, while other students are clustered around tables in a common area, discussing novels. Overhead, the sun streams in through skylights, and interior windows connect a double-height library with the second floor. The building, with its casual atmosphere and warm color palette—orange floors, yellow-painted ductwork, bright-green walls, and blond wood furniture—does not feel like a typical public school. And according to the architects who designed the new building, that was the idea.

In recent years, educators have begun to realize that traditional schooling may not work for every child. Many studies have shown that children learn best by working on open-ended, real-world problems. Schools have also embraced theories of diverse learning styles: Some children learn best in groups; others have trouble



paying attention unless they're on their feet. Today, rather than forcing children to sit still and be quiet, teachers are assigning hands-on projects and allowing students to learn in whatever way suits their brains.

"We have different strengths and ways of learning," says Laura Wernick, senior principal at HMFH Architects, which designed Abbot-Downing and two other new schools in Concord. "How do you provide an environment where that can happen?"

In 2012, researchers at the University of Salford in England found that school design, including such elements as a flexible classroom layout, wide hallways, and interesting decor, can account for up to 25 percent of academic progress. The paper, part of an ongoing study of more than 20 schools in the United Kingdom, is consistent with other recent research, including a 2009 University of Georgia finding that freedom of movement and views of the outdoors correlated with higher test scores in reading, math, and science. Other studies have looked at such factors as the impact of color on memory and engagement.

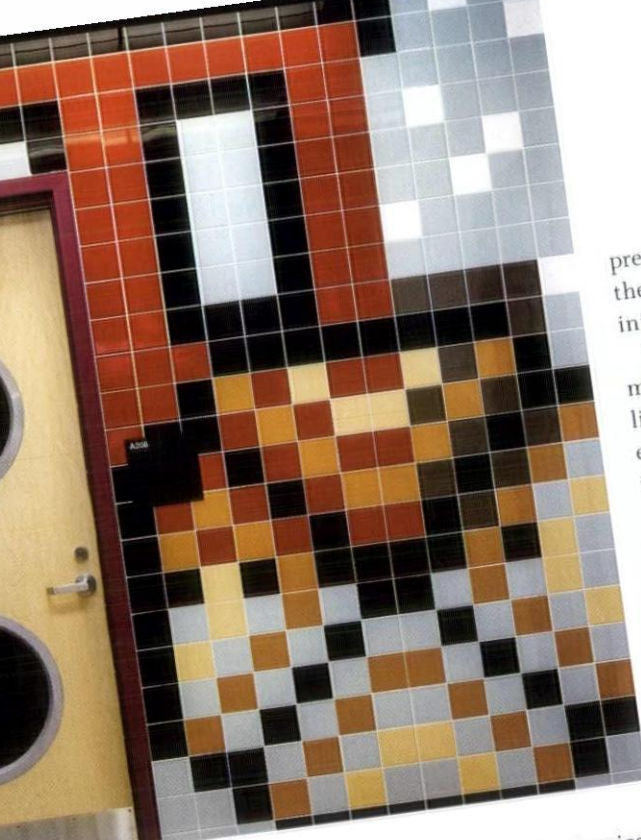
OPPOSITE PAGE
The Learning Commons at the Abbot-Downing Elementary School.

LEFT
The Amphitheater at the Abbot-Downing School.

ABOVE
The cupola was reused from the school's predecessor.

All photos: Ed Wonsek.

 **MORE ONLINE**
The Edgeless School, an exhibit at the Center for Architecture Foundation: www.cfafoundation.org/exhibition-tours



previous research has found that the way a school looks—the patterns on the walls and floors, for example—can influence how well students engage with their lessons.

“What the research generally finds is that a moderate amount of complexity is best,” she says. “Too little is boring. It doesn’t encourage kids to want to explore, to be active and excited. Too much complexity is overwhelming.”

In the same vein, sunlight and views of the natural world may help children learn. A 1999 California study of more than 2,000 classrooms found that students exposed to the most daylight did 20 percent better in math and 26 percent better in reading after a year than students in classrooms with the least.

These principles were put into practice at the John D. Runkle School, a public elementary school in Brookline, Massachusetts. As part of a renovation project that wrapped up last year, architects at the Design Partnership of Cambridge brought the outdoors in, with glass walls that look out to a courtyard garden. In the classrooms, large windows provide natural light, while an angled ceiling ushers it inside.

“The ceiling is a very inexpensive way to get any light that enters and bring it deep into the room,” explains Robert Bell, the lead architect of the project. “It’s also about avoiding contrasts, light and dark.”

The lighting, as well as the school’s acoustics and muted blue and green color palette, were engineered to minimize children’s stress and distraction, says

While researchers are still exploring the intricacies of design’s effect on learning, their findings have already begun to reshape the classroom. “Schools of the past were set up for the way you and I went to school—the teacher at the front of the room, disseminating information,” says Phillip Poinelli, an architect with SMMA/Symmes Maini & McKee Associates in Cambridge. “We’re changing from teacher-centric to student-centric, from passive learning to active learning.”

Poinelli pointed to the layout of a new high school his firm designed for the town of Grafton, in central Massachusetts. Instead of a long hallway with rows of classrooms on either side—what Poinelli called the “egg crate” floor plan—the Grafton school was divided into “pods,” with several classrooms arranged around a common area that can be used for group projects such as rehearsing a play or conducting a physics experiment. The classrooms themselves can be easily rearranged to accommodate group work. “We haven’t turned schools on their heads,” Poinelli says. “When you walk in, they still look like schools. But when you look closely, there is a whole series of features that accommodates the learner better.”

In addition to innovative floor plans, those features can be as simple as an emotionally engaging color palette and the right kind of lighting, says Lorraine Maxwell, a professor of design and environmental analysis at Cornell University. She is studying the Concord, New Hampshire, schools as part of an inquiry into the effect of design on learning. Maxwell’s

THIS PAGE
More views of the
Abbot-Downing School.
All photos: Ed Wonek.



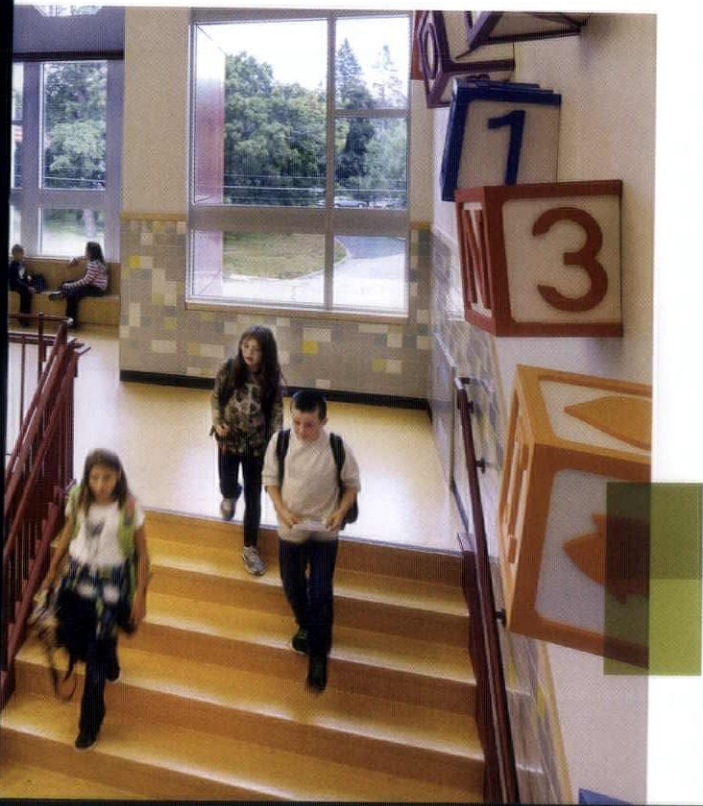
Bell's colleague, David Finney. "Making the classroom a calmer environment, reducing the level of visual stimulus so that it's not overpowering, has been proven to lead to more retention."

Although it is too early to say whether children at Runkle are learning better, kindergarten teacher Tanya Paris says that she has noticed a change since the teachers and students relocated to the updated building from a temporary space in October. "I think the kids are happier," she says. "I think having all the lighting does something to you."

Although architects and educators are increasingly thinking about how building design affects learning, persuading community leaders—and taxpayers—that a flashy new building could pay off years from now can be a challenge. Architects say it's a myth that a well-designed school is necessarily more expensive, but the belief can be hard to dislodge. "It's much easier to go with what you're comfortable with, with what you know," says HMFH's Wernick.

However, it may soon become imperative that communities begin to think differently about school design.

David Stephen, the founder of New Vista Designs for Learning, an education consulting firm in Boston, points to the lack of room for group work or individual lessons in traditional classrooms, which may also not be equipped with the technology that a 21st-century curriculum requires. "We could continue to use our



older buildings, but I think they're increasingly a constraint," he says. "Maybe the way it changes is kids are going to demand it."

Stephen, a licensed architect who changed careers in the 1990s to work in education and now advises schools on building and curriculum design, notes that building a new school is a chance for communities to rethink their basic philosophy of education.

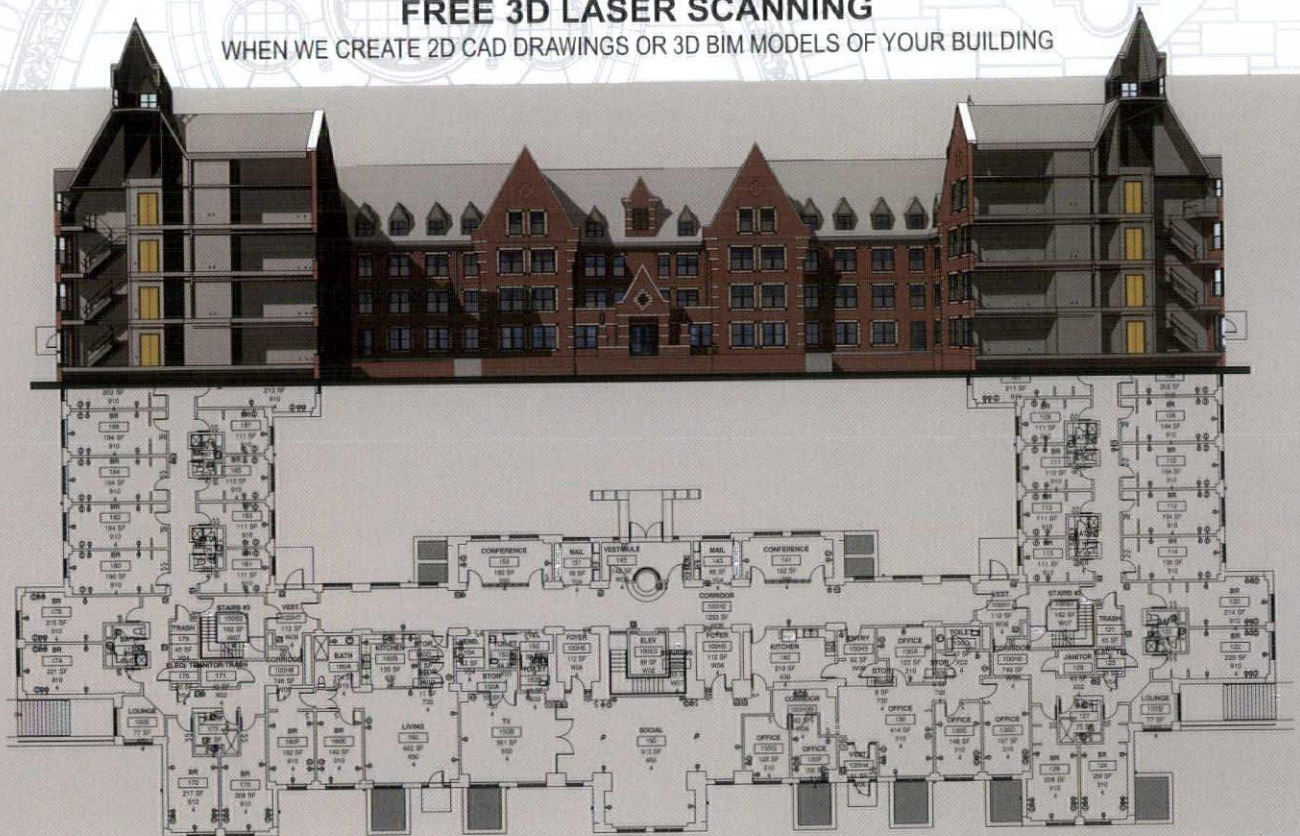
"The building should be geared toward evolving with the school," he says. "Designing a building is a once-in-a-lifetime opportunity, and we need to be designing schools for tomorrow, not for today. And certainly not for yesterday." ■



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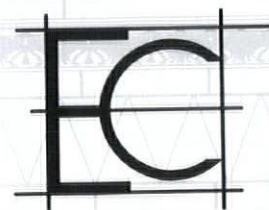
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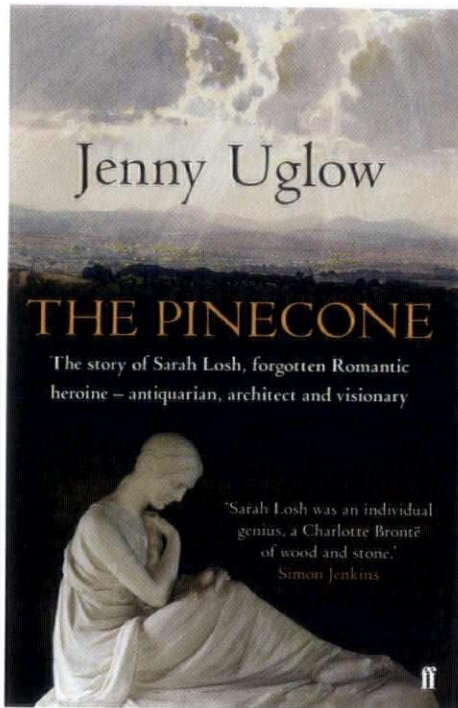
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Books



The Pinecone

Jenny Uglow

Farrar, Strauss, and Giroux, 2013

Reviewed by Deborah Weisgall

Sarah Losh was born in 1785 in the north of England, in a village called Wreay, close to the Scottish border and the Lake District. As a child, her family recognized and encouraged her intelligence; she studied science, mathematics, the classics. She was well-loved, willful, pretty, and inseparable from her sister, Katharine. Neither married; we don't know why. After Katharine's death, in 1835, Sarah became an architect. One of the churches she built is an unsung marvel—a moving combination of intellect, passion, and craft that expresses the tectonic shifts of 19th-century thought.

The Loshes were an old family, rich landowners, attuned to change. They became entrepreneurs who invested in emerging technologies: railroads and the manufacture of alkali. Liberals and abolitionists, they read widely and studied abroad. In 1816, Sarah and Katharine spent several months in Europe looking at art, architecture, and

the ruins of ancient civilizations. She burned many of her own papers; what she did save, including an account of her Grand Tour, has disappeared. No children, few words: Like so many extraordinary women, she was almost forgotten.

Jenny Uglow fills in the details of Sarah's life with reports of her family and neighbors, digging through diaries and records like a paleontologist in search of fossils. She constructs a subtle picture of the community negotiating complicated times, but her subject remains elusive. The person who was Sarah Losh seems a fossil whose ghostly impression is caught in hardening sediment. In Uglow's deeply informed discussions of her work, Losh's artistic character and genius come alive.

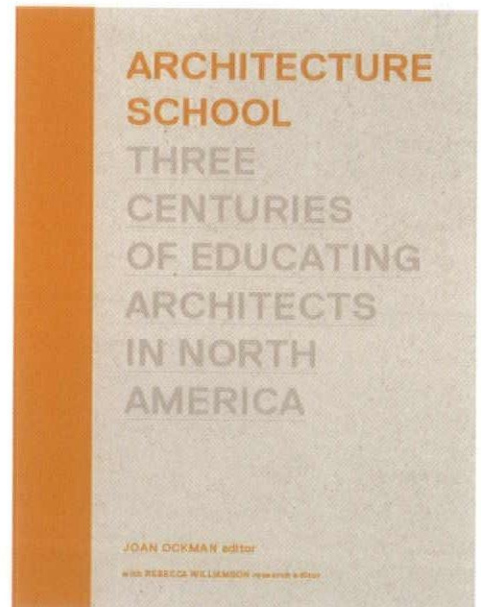
Uglow points out that, as a woman, Sarah Losh would never have presumed to call herself an architect. And, unfettered by category, Losh proved to be more than that: a philosopher who wrestled with the opposition of science and faith, time past, and eternity to come; a thinker who rendered her ideas in stone. The strongest evidence for her powers of mind and emotion is the little church in Wreay, which has astonished visitors ever since it was consecrated in 1842.

Sarah Losh designed the church, paid for it, and carved some of the decorations herself: alabaster candlesticks in the shape of lotus flowers. Built in what was coming to be called the Lombard, or Romanesque, style, the church seems far more ancient than it is. And at first its decorations appear to be conventional: gargoyles, carved heads, stained glass windows. But the gargoyles are turtles, not fabulous monsters. Two carved heads belong to a man and a woman, ordinary humans with no attributes of sainthood. The colored windows depict flowers, not Bible stories, and a semicircle of windows high in the apse are fitted with thin panels of alabaster, carved with the designs of fossils. A row of angels alternates with palm trees, a reference, perhaps, to the temple of Solomon. Lotus flowers and pinecones are everywhere: symbols of life

and regeneration predating Christianity.

Losh understood the implications of the new science of geology, the growing rift between the evidence of paleontology and the doctrines of religion, the vanishing centrality of human life in the history of the planet. The world had already witnessed time without end—what, then, was faith? But she did not abandon it. In this church, with its round arches recalling the origins of the Church and its decorations recalling the origins of the earth, Losh constructed a prayer for reconciliation. Science and religion: Each addresses the mystery of existence, and each can exist only in an edifice of human design.

Deborah Weisgall writes about art and literature for national publications. Her last book was *The World Before Her*, a novel about George Eliot.



Architecture School: Three Centuries of Educating Architects in North America

Joan Ockman, editor

MIT Press, 2012

Reviewed by Amanda Reeser Lawrence

The critic Reyner Banham once remarked that historians of architecture, particularly of contemporary architecture, “distort”

the field that they are observing, just as scientists inevitably impact their results—however slightly—with their instruments. Joan Ockman's book makes no bones about this "observer effect." In her introduction, Ockman qualifies the book's choices and acknowledges that it is decidedly a document "of its time," reflecting the preoccupations and issues of contemporary architectural culture.

Commissioned for the centennial of the Association of Collegiate Schools of Architecture, the 400-plus page book, with 35 contributors, is a rich and varied exploration of architectural education in North America. Somewhat unconventional in format, it is divided into two sections: six chronological essays stretching from the mid-19th century through to the present; and a "thematic lexicon" of key ideas in architectural education, organized alphabetically. Though the two sections don't tie directly together, connections between them allow for some of the more satisfying moments in the book.

The six chronological essays begin with Dell Upton's look at the prehistory of the American education system in architecture leading up to 1860 and end with Stan Allen's consideration of "contemporary" architectural education from 1990 to 2012. Precise chronological divisions of this type of subject matter are necessarily artificial, and the essays deliberately violate their own boundaries, overlapping the dividing years 1860, 1920, 1940, 1968, and 1990. Along the way, however, a portrait of changing pedagogical frameworks appears—notably from the British apprentice system through to the Beaux-Arts and later German Polytechnical models.

The second half of the book is at once less satisfying but also more fascinating, as the 29 topics, all of which were chosen because they "figured centrally in architectural education's history," beg the question of not only their specific nomenclature (Why "Architecture School Buildings" and not "Buildings"? What does "Disciplinarity" mean, exactly?) but also their extent. The sample set is

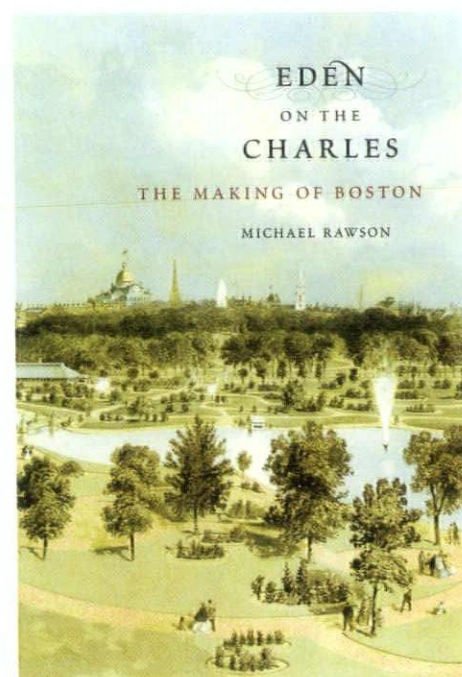
large enough that things invariably seem to be missing—landscape urbanism, for example, or student-produced publications—and 29 is close enough to 26 that one wonders why there isn't one entry per letter.

The range of authors in this second half produces diversity at the cost of cohesiveness; in contrast, say, to the similarly encyclopedic *Words and Buildings* by Adrian Forty or even the essay introductions in Ockman's influential anthology *Architecture Culture: 1943–68*, which are held together not only by the author's brilliant observations in the former and depth of knowledge in the latter but also by their singular voice.

The authors in the book, Ockman tells us in her introduction, were asked not to privilege any school in particular (presumably their own) but certain institutions—the University of Pennsylvania, MIT, Columbia, Yale—emerge more than others, as do certain figures: Kahn, Le Corbusier, Rowe. The stars of the show, however, are the illustrations, many before never published, which better than words flush out a history of architecture's educational system and its settings: photos of "masters," such as Kahn or Le Corbusier, on juries or lecturing to students; pages from student journals; and many student models and sketches, with techniques ranging from elaborately rendered ink washes from the Beaux-Arts-led institutions to Hejdukian hardlines of Cooper Union in the 1970s.

These images go a long way toward compensating for the biases of the historian that Banham warned against, and of which Ockman is so keenly aware. The strength of this graphic "evidence," along with the breadth of its scholarly research, make this book not only a profile of today's architectural preoccupations but also a lasting resource for future architects and educators.

Amanda Reeser Lawrence is founding co-editor of PRAXIS. Her book *James Stirling: Revisionary Modernist* will be published by Yale University Press in January 2013.



Eden on the Charles: The Making of Boston

Michael Rawson

Harvard University, 2010

Reviewed by Matthew J. Kiefer

Among its other virtues, reading history can cure myopia about the present. So if, for instance, you assume environmental consciousness is a late-20th-century phenomenon, Michael Rawson's *Eden on the Charles* will reveal how it emerged in 19th-century controversies about managing Boston's growth.

Boston began the century a large country town and ended it a burgeoning industrial metropolis. Rawson, an environmental historian, describes several vigorously debated undertakings to address this growth. He's less interested in mapping physical changes than in tracing changing values about how to shape a city. Is nature an obdurate resource pool to be plundered or outwitted, or a sacred and vulnerable common resource requiring public management?

Each debate Rawson recounts reflects this duality: the campaign to convert Boston Common from a pasture to a park aimed to protect public health and prevent the collapse of the Common from overgrazing or the gentry who had newly landed on Beacon Hill and eventually persuaded the City Council that each household's "ancient privilege" of grazing one milk cow for free who had to

make way for the expanding mercantile city.

The campaign to build a municipal water system to replace the overstressed patchwork of private wells and cisterns was led by social reformers, mostly doctors and ministers. They framed abundant clean water as a basic right that would reduce disease, aid firefighting, reduce drunkenness and prostitution, and even quell ethnic and religious unrest.

Well-to-do landowners thought private water companies could provide it more efficiently. This time the mercantile class lost, and soon the newly fenced Common was graced with a fountain fed by municipal water. Both the park and the public water supply were recognized as great civic achievements.

As Boston's growth spread to semirural communities such as Roxbury and Brookline, annexation offered lower-cost police and fire protection, sewers, and roads—but at the expense of local control and a pastoral ideal. Most communities chose annexation, but Brookline resisted, starting a national trend

against consolidation.

In a growing port city, land making on an isthmus surrounded by mudflats was irresistible—and unregulated. Shipping interests blamed it (incorrectly, it would turn out) for silting up shipping channels in Boston's superb natural harbor. The ensuing battle to regulate harbor land making pitted land interests (railroads, developers) against water interests (shipping) in much the way waterfront licensing debates do today.

Finally, by the end of the 19th century, concerns about deforestation and loss of New England's Puritan heritage from suburban development provoked urgent calls for a metropolitan park system. Before long, the newly formed Metropolitan Park Commission had acquired the Middlesex Fells and the Blue Hills, and laid out the system of parkways we use today.

Arguments on both sides of these debates proceeded from principle, from pragmatism, and from self-interest, and Rawson follows them closely. Arguments were often advanced opportunistically; self-interest was clothed in

moral imperative. More than one reason was often necessary to spur public action. Preventing imminent harm was invariably more compelling than providing distant benefits.

It's oddly comforting to know that fractious present-day debates over infrastructure and development have such a venerable lineage. And, yes, the modern notion of environmental collapse—whether of the Common, the water supply, the port, or the outlying forest—underlies the success of many of these campaigns. Ironically, managing the resource generally accommodated further growth and fashioned the city we still argue endlessly over today.

Moreover, these debates seemed to come out in the right place. Imagine a Boston without public water, metro parks, or limits on land making. This may be the most comforting news of all as we prepare to tackle climate change and other challenges.

Matthew J. Kiefer is a land-use attorney at Goulston & Storrs in Boston. He teaches in the urban planning program at the Harvard Graduate School of Design.

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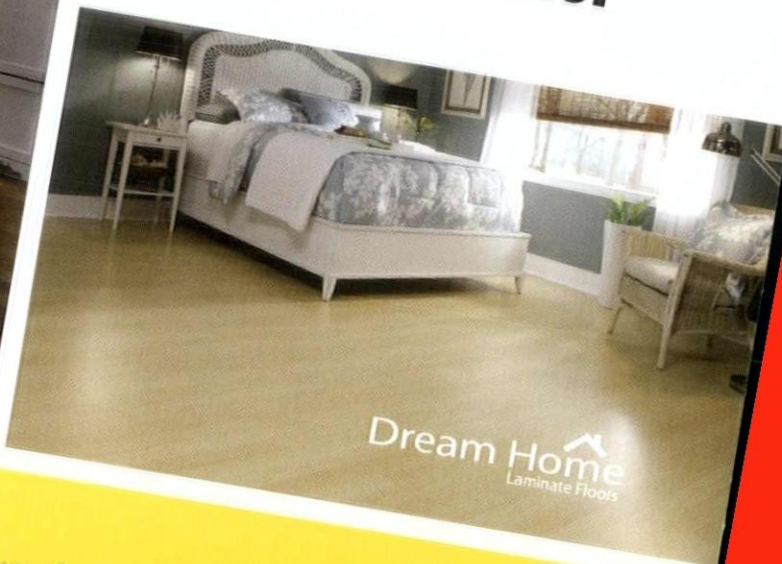


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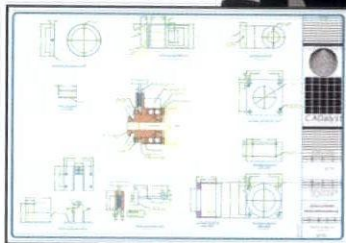
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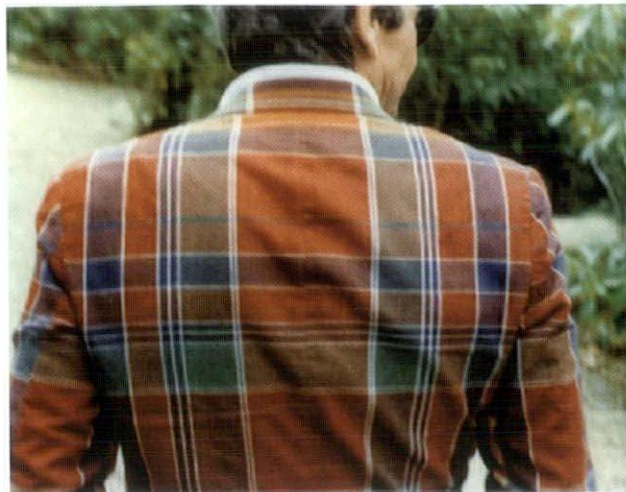
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The Last Word, Indeed

Matthew Frederick is an architect, educator, and author of seven books, including *101 Things I Learned in Architecture School* and the forthcoming *101 Things I Learned in Engineering School*.

ABOVE

Professor James Morrett at Fallingwater, 1980. Photo: Matthew Frederick.

"Don't go to architecture school," Jim warned. "It will ruin your mind."

Jim was James Morrett, my first architecture professor. I had enrolled in his community college program in Pennsylvania while deciding whether to attend architecture school. Jim was sure his drafting-oriented program provided all the education I would need. He had not completed architecture school himself; presumably, he dropped out when he sensed ruination was imminent.

Jim's curriculum was surprisingly rigorous, with courses in physics, structural design, and building technology. And as the first architect I had met, he provided a compelling template: smart, good looking, hilariously contrarian, and apt to provide the convincing last word in any debate. During our marathon drafting classes, he turned off our rock music, set the dial on a classical station, and pontificated good-naturedly on conservative politics. At lunchtime he vanished; hours later he'd return, trailed by the scent of cigarettes and Drambuie.

One day, Jim took my classmate Steve and me to one of his marathon lunches. On the return trip, he stopped his Jaguar near the State Capitol in Harrisburg. He pointed to a set of gates he had designed, each an intricately gridded composition in bronze.

"You see that bar near the bottom right?" he asked.

"It's crooked," I said. "Why did you do that?"

"So I could drive by here one day and show you."

...

By the time I graduated from Jim's program, its limitations had become evident. Jim taught the how of making buildings, not the deeper, broader why. Steve and I moved to Boston to enroll in architecture school, where we gained insights into the built environment that Jim could not have provided us. But as my interest in architectural theory deepened, professional practice grew boring. Eventually, I became unemployable. Perhaps architecture school *had* ruined me.

At my nadir, Jim called. The president of the community college wanted to start a "real" architecture program. Was I interested in running it?

The opportunity was a gift. I imagined Jim and me working side by side in our respective programs, kibitzing over coffee and sharing Drambuie-punctuated lunches.

An enthusiastic interview landed me the job. But although Jim and I shared an office, I saw him rarely. One morning I spied him in the hall and invited him to visit my design studio. He accepted. I was sure that upon seeing my students' work, Jim would discover within himself an intuitive appreciation for their explorations in figure-ground theory.

Jim was a no-show. For the rest of the term, he avoided me. The next semester, he shifted to a half-time schedule, and I rearranged our office.

"What happened here?" he asked the next morning.

"I renovated," I offered meekly.

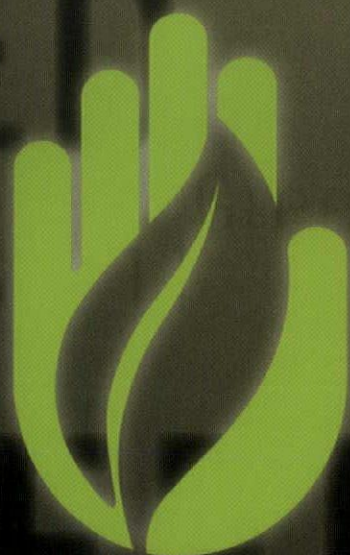
"Well, renovate it back."

...

Jim retired at the end of the school year and went in search of warmer weather. A few years later, I returned to Boston while my friend Steve moved back to Harrisburg. Steve and I fell out of touch, but in 2010 he called to ask me to be his best man. We rehashed our favorite Jim Morrett stories, and I searched for Jim on the Web. Jim had moved to North Carolina. A second search told me he had died two years earlier. His widow was a former student I had known well.

Steve reported from time to time on his and his fiancée's search for a house. They were becoming disillusioned by the choices in their price range. But, eventually, they stumbled upon a compelling mid-century Modern ranch: gently sited, well-proportioned, airy, simply and honestly executed. It was a house any architect would be proud to live in. A house perfectly suited to the wedding reception it hosted later that year.

Curious as to the house's history, Steve asked he previous owner about a modest renovation she had performed a few years earlier. She sent over the renovation drawings. Under them, Steve found the original construction drawings from 1966. From the title block, the name of the house's creator looked up at him: James Morrett, Architect. ■



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