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Cover: Jackalope, mythical hybrid of a jackrabbit and antelope. Photo by © Chase Swift/Corbis.

This page: Chorks, eating utensils designed and patented by artist and furniture designer Laura Rittenhouse (www.lrstudiofurniture.com). Photo by Barry Goyette.



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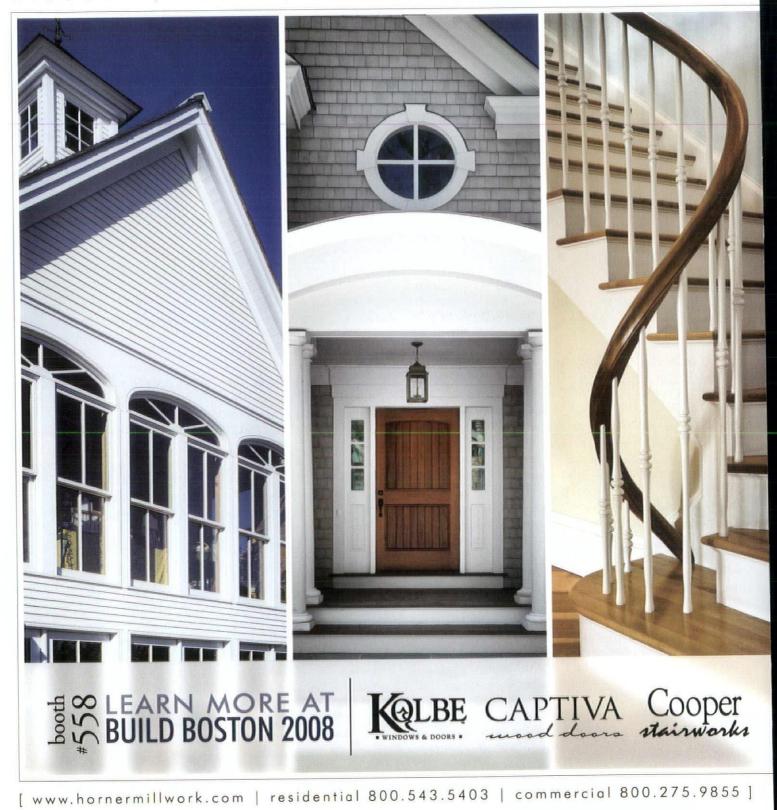
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BY ELIZABETH S. PADJEN FAIA | From the Editor

Two Schools of Thought

Swampscott

When the town of Swampscott, Massachusetts, faced a need for both a new high school and a senior center, community leaders faced the dilemma of limited site options and competing constituencies for limited funds. Last year, the town celebrated the opening of the Swampscott High School and Senior Center, two building programs joined under one roof.

What makes this project intriguing is not the idea of a shared roof - after all, Victoria's Secret and McDonald's share plenty of roofs in malls across the country with no redeeming effect. What makes the project worth scrutiny is the attention that was given to the resulting opportunities. The community worked with the architects, Symmes Maini McKee, to identify spaces and functions that might be scheduled for use by both students and elders, such as the gym, weight room, dance studio, computer lab, and ceramics studio - some of which are also available to townspeople after hours (the building is often busy until 10 PM). Today, the building hosts other unplanned synergies: kids give performances for Senior Center clients and help them with computers, e-mail, and cellphones; the hockey team even cleaned windows. The elders reciprocate as volunteers in the school library, cooking-class teachers, speakers in history classes. By combining a school and a senior center, the town has created a hybrid more valuable than either facility individually, an intergenerational community learning center.

Hogwarts

When J.K. Rowling imagined the school that was to be the focus of Harry Potter's adventures, she conceived of a place well-suited to a saga of good versus evil. Hogwarts evokes the familiar literature of English boarding schools; presided over by Albus Dumbledore, himself the product of the late Victorian era, it maintains strict social hierarchies while enforcing a traditional curriculum based on rote learning. Despite the advanced age of some of the faculty and staff, Hogwarts hardly functions as a senior center, any more than it serves as a community center for the larger wizard community. Hogwarts is a place of sharply drawn distinctions: good/evil; inside/outside; Muggle/wizard. Hybridity is an uncomfortable concept in this world — "half-blood" characters never feel as though they fit, which is completely understandable in an environment where a treasured ritual is performed by the Sorting Hat.

Given the choice of the new Swampscott High School and Senior Center or Hogwarts, no doubt many teenagers would jump at the chance to enroll at Hogwarts; spells and potions offer their own form of enchantment. But in doing so, they would miss a more modern form of magic.

Hogwarts is emblematic of a familiar, structured mode of thought: the expansion of knowledge through taxonomy ordered systems of classification. Swampscott is the product of a new kind of thinking: the expansion of knowledge and creativity through hybridity. Examples of hybrids and hybrid thought can be found throughout history, of course, but there is evidence that we are in the midst of a profound cultural and intellectual shift away from the dominance of taxonomic thinking toward the opportunities that come from hybrid approaches that combine dissimilar entities, ideas, or disciplines to create something new.

We are in the midst of a profound cultural and intellectual shift toward the opportunities that come from hybrid approaches.

We are already beginning to see the implications in design. "Hybrid" is the meme of the moment in academic studios and project names; firm names and marketing are soon to follow. More substantively, young designers (and a few adventuresome older ones, too) are exploring truly hybrid approaches to their practices and their processes. As always, architecture reflects the culture that creates it.

Hybridization is often a messy process — the results can be brilliant, disastrous, disappointing, bizarre, or in the case of the mythical jackalope, just plain goofy. The world of the 21st century will be a hybrid world, and the transition — as evidenced in the US presidential campaign and the recent Wall Street upheaval — will be sometimes rancorous. But the potential rewards are great: a whole new frontier of innovation and creativity.

Elizabeth S. Padjen FAIA Editor



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It's difficult to improve upon the view of the Washington Monument and other icons comprising the DC skyline, but the newest landmark, the Mandarin Oriental Hotel, adds a dramatic entry to the capitol at the 14th Street Bridge.

This nine-story hotel is topped with a striking mansard roof utilizing 20,000 sq. ft. of PAC-CLAD® Redi-Roof Batten panels finished in Hemlock Green. The Mandarin Oriental is part of The Portals, a mixed-use development that is the largest project in the history of Washington, DC. Brennan Beer Gorman Mank Architects designed the luxury hotel in the French style while reflecting the city's iconic neoclassic architecture. The nearly vertical roof installation was done by Progressive Services, Inc., of Dover, PA.

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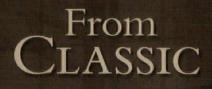


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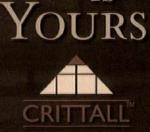
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Letters Letters Letters

As someone who has created a company that is focused on the precise measurement of existing buildings, I found your "Measure" issue [September/October 2008] quite interesting.

It is true that most things can be measured, be it a building or business activity. If the proper methods and tools are used, your results should create an accurate representation of the data. However, it should be recognized that with all measurements, certain tolerances must be expected; the idea that an absolute certain value must be derived from measurement data would mean that nothing would truly be measurable. If we understand that the "exact science" of measurement comes with the caveat of a reasonable tolerance, this gives us the freedom to use the data collected. The key question is, how would your study change by working within expected tolerances? We must conclude that a measurement is accurate only when the observer is practiced and sensitive to those tolerances. To quote Aristotle: "It is the mark of an educated mind to rest satisfied with the degree of precision which the nature of the subject admits, and not to seek exactness where only an approximation is possible."

> *Kurt J. Yeghian* Existing Conditions Surveys Inc. Boston

Joan Wickersham's article on measuring academic architecture programs ["Taking the Measure of a School," September/ October 2008] is a clear and accurate snapshot of the current state of architectural accreditation. The Accreditation Review Conference that took place this fall provided an opportunity for people with leadership responsibilities and special expertise to continue an ongoing conversation about the future of architectural practice and of architectural education. Regular occasions like this to hear each other and share different perspectives are at least as valuable as NAAB's work with individual schools. The organizational structure and processes of the NAAB provide the unique,

comprehensive venue in the world of architecture for consideration of where we are and what the future might hold.

When I noticed that one of the recommended websites in "Site Work" in the same issue addressed pass rates by school, I thought it might be helpful to point out that the Architect Registration Examination has consistently been designed to measure the information an intern learns and uses at work. Pass rates depend as much on their professional experience as on any particular academic program completed.

Sharon Carter Matthews AIA New Haven, Connecticut Former executive director of the National Architectural Accrediting Board

The Association of Collegiate Schools of

Architecture is circulating draft accreditation recommendations prepared by the National Architectural Accrediting Board. This "Fusion" model synthesizes scores of recommendations from educators and practitioners who have debated for the past two years whether accreditation ought to be more or less prescriptive ("...should all students know Revit, or study preservation principles, and if so, when...?"). No clear trend has emerged, but standards are essential to assure the profession's accountability to the public.

Recent debates have centered on whether design education should be more or less technical, learning-outcomes oriented, client-centered, focused on licensure or the development of analytical and critical thinking skills, or freed of such constraints in order to nurture maximum creativity and innovation. American practitioners have favored prescriptive standards; European practitioners have favored the development of critical thinking skills; American educators have preferred maximum freedom.

The standards currently being developed will be in effect until 2014, when practice and academic demands may be far different than today. The widest possible input is essential from educators and practitioners to help us project what skills our graduates must be able to demonstrate. Particularly given that half the heads of Boston-area design schools will not be the same as when these programs were last accredited, our schools need intense discussion of what we think we need to succeed in our wideranging programs. The new standards will affect how we prepare graduates to design spaces that are serviceable and beautiful, and who will enter a rapidly changing profession that is committed to life-long learning, research, innovation, thoughtful management, diverse client service, and social responsibility to protect our built and natural environments.

Ted Landsmark MEvD, JD, PhD President, Boston Architectural College ACSA representative to the 2008 Accreditation Review Conference

Whether or not there is agreement on the relative merits of the NAAB accreditation process, we can recognize that it has a significant impact on our profession. Before we can become architects, we first must be architecture students in accredited programs. Consequently, NAAB accreditation is a gatekeeper for assuring that our future architects have a minimal competency regarding issues of the public's safety and well-being. We must, therefore, foster a strong reciprocal relationship between academia and the profession. It is in the interest of the profession to support academic programs by serving as jurors for critiques, teaching courses, joining academic advisory boards, and supporting mutually beneficial programs like faculty research, lecture series, internships, and student scholarships.

The onus of moving beyond NAAB's minimal standards sits squarely on the individual architecture schools. Having served on all sides of the accreditation process, I have learned that the greatest value of a NAAB visit is the self-evaluation that occurs when assembling a school's output into a cogent format for the visiting NAAB team. This process demands that a school's mission and pedagogy are agreed upon and clearly articulated among the faculty. While NAAB strives to be nonideological in its assessment, each school can use the accreditation process to stake out its intellectual territory and refine its pedagogy accordingly. If done well, this process can build an ethos of teamwork and collegiality so a school can continually adapt to our ever-changing cultural and professional contexts.

Peter Wiederspahn AIA

Assoc. Professor, Northeastern University Principal, Wiederspahn Architecture LLC Somerville, Massachusetts

Building-performance evaluations or

post-occupancy evaluations, not unlike David Silverman's fascinating "Measuring Stata" [September/October 2008], are sorely missing from the building industry's project-delivery process.

Silverman compares his story to an architectural Rashomon (a tale told from varied perspectives); however, at the risk of making one metaphor too many, I'd suggest this saga be considered more a "whodunit," with Gehry likened to a scientist and the Stata Center to a Petri dish. Imagine a scientist developing a hypothesis (design), and then cleverly assembling an experiment to test it (building); but as soon as his Petri dishes have been cultured (occupancy), he rushes out of the lab without waiting to find out what happens (failure).

Now, metaphorically speaking, should we blame scientist for his experiment's failure? Or for his not bothering to assess it? And, in reality, had Gehry evaluated the Stata Center post occupancy, would it be a better building? Would its users still sue him?

> Simon Hare, Assoc. AIA Placetailor Inc. Roxbury, Massachusetts

I enjoyed Jeff Stein's interview with Alex Wilson of BuildingGreen Inc. ["What Do You Think You're Doing?," September/ October 2008]. I disagree, however, with Alex's opinion that designers need only know the proper resources to achieve good "green" results, and that the "intelligent" people who write the standards can handle the rest. To the contrary, I believe architects need to be exceptionally sharp and critical, especially when it comes to intelligently engaging environmental standards — and more importantly, surpassing them.

When it comes to thinking "generations" in advance and pursuing truly zero-carbon architecture (a step beyond being "less bad"), we as an industry need to start being critical of our own decision-making processes, and develop robust design methodologies, rather than using green guides as a crutch to limp towards a slower rate of environmental decline. We need to integrate environmental intelligence into our practices in a way that turns the checklists into a formality, rather than a prevailing catalyst for decision-making. We need to create a professional culture that produces designers who ask informed, critical questions; who can assess the complexities of "greenness" within a coherent, intelligent framework; who can identify and resolve the most critical problems; and who can do all this without compromising their design integrity or restricting the creative flexibility our industry needs to thrive. Their environmental skills need to be inseparable from their design skills. In other words, we need to fundamentally change the way we teach and practice architecture.

Sustainability is, by definition, how well an entity withstands the test of time and maintains its expected level of performance. The practice of architecture is fundamentally an industry of knowledge and expertise. It's no more sustainable to outsource our thinking and problem-solving, than it is to outsource the production of wind-turbine blades to the far side of the globe. The manufacture and maintenance of environmental design knowledge and the construction of robust design methodologies also need to move closer to the point of use. As an industry, we need to evolve.

> Lisa Ann Pasquale MSc Candidate, Sustainable Environmental Design Architectural Association London

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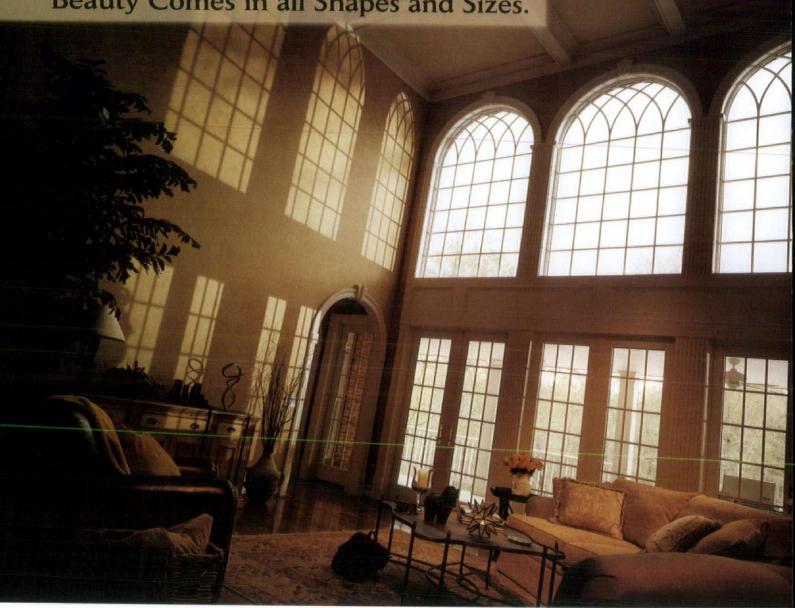
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REVIEWS OF LECTURES, EXHIBITIONS, AND EVENTS OF NOTE

BURST*008. Architects: Jeremy Edmiston and Douglas Gauthier. Photo by Richard Barnes. © 2008 The Museum of Modern Art.

Home Delivery: Fabricating the Modern Dwelling

Museum of Modern Art, New York City July 20–October 20, 2008

Visitors to Home Delivery: Fabricating the Modern Dwelling were supposed to proceed directly to MoMA's sixth floor for a comprehensive examination of the ready-to-assemble shelter phenomenon, an idea that's engaged architecture's greatest — from Gropius to Breuer, Fuller to Wright.

But really: who could resist first examining the performance-art aspect of an empty 18,000-square-foot lot next door that jauntily displays five actual pre-fab homes?

And that is as it should be, for nothing speaks more to the central idea of the exhibition than actually seeing these tiny abodes scattered about like so many Monopoly houses. A light-as-air version of a Philadelphia rowhouse dominates, crafted of polycarbonate and glass and acrylic by the Philadelphia firm Kieran Timberlake. And sitting deadcenter, there's the tiniest of the bunch, an aluminum-clad, 76-square-foot cube by Horden Cherry Lee Architects and Haack & Hopfner Architects of London and Munich. Off to the side, a shotgun house enchants with gingerbread and a wooden porch, courtesy of an MIT team under the direction of associate professor Lawrence Sass. Each home was erected on site, and most (except for the Cube) do a plausible job of convincing us that we could comfortably-if sparingly-live within their confines. Although their estimated costs (\$78,000 to \$400,000) are for the most part not especially cheap, the idea here is more about conservation, energy efficiency, and taking advantage of all that computers can offer the construction process. MoMA has documented this project online with a website www.momahomedelivery.org-so all can judge for themselves whether the idea has legs.

JoAnn Greco is a freelance journalist in Philadelphia.

Cryptic Providence

North Burial Ground

Providence, Rhode Island June 13–September 28, 2008

Tender, reverent, sometimes playful,

Cryptic Providence's installations and performances — the work of more than 15 visual artists and performers — have a somber elegance somewhere between Frederick Law Olmsted and Edgar Allan Poe.

Tucked among the silent mob of bonegray obelisks and headstones in the historic North Burial Ground, the pieces surprise even when they are sought out. Disintegrating letters make an introductory statement in Justin Pollmann's "We Live." Skull-like ceramic shells appear nearby on a shaggy hill, remnants of Hannah Verlin's pyrotechnic take on our own momentary lives, "Nest Eggs." Organizer Jay Critchley's mummified 1965 Chevy (photo below) waits beneath in an unused mausoleum, maybe a lighthearted response to a brash era's end. Final messages flutter beneath cedars in "Message Board," by artists Rochelle Martin, Valentine Mancini, and Jay McGuire. The sequence of pieces leads to the serenity of Potter's Field, delicately accentuated by handmade bells in "The Bells Ring for Thee" by Rebecca Siemering. Neither grim nor ghoulish, it's all a reminder that cemeteries can honor the living as much as the dead. (For info: www.jaycritchley.com.)

Conor MacDonald is a writer in Boston.

v Photo by Michael Persson.



I Ephemera



Dreamland: Architectural Experiments Since the 1970s

Museum of Modern Art, New York City July 23–March 2, 2009

Last March, I traveled with my wife to the Mall in Washington, DC, where we were amused and delighted by the curatorial honesty of two exhibitions: *Small Masterpieces: Whistler Paintings from the 1880s* at the Freer Gallery of Art and, at the National Gallery, *Small French Paintings*. In both shows, no matter what else, the paintings' dimensions were as advertised: small.

It must be difficult to organize and title an exhibition and deliver the goods, but < The Manhattan Transcripts by Bernard Tschumi, 1980. Courtesy The Museum of Modern Art.

perhaps, taking a cue from the National Gallery and the Freer, one needn't work so hard.

The works on display in Dreamland: Architectural Experiments Since the 1970s are an eclectic collection with little relationship as a group, other than as architecture. And that might be fine, except that the viewer suspects that the curator was counting on more cohesion to glue these works together. They are mostly, but not always, inspired by New York. They don't date "since the 1970s," as MoMA admits in signage - some pieces are older. If one goes further into the literature for the show, the earlier pieces are supposed to have influenced later work. Perhaps. But, for example, the connection between the urban fantasies of Koolhaas, Vriesendorp, Holl, and Rudolph and the country/ suburban homes by Leeser, SHoP, Roy and Ungers is not forthcoming, despite exhibition notes suggesting that the homes represent an antidote to the city. The connections of Dreamland are forced.

Why not focus on the strength of the show: an exhibition of architectural

speculation since 1970 (or whenever)? The drawings by Vriesendorp and Holl are witty and provocative. The life Vriesendorp gives the city in her painting of Manhattan is a unique study in the interaction of structure and urban character, of dweller/ building/megalopolis. Holl's Bridge of Houses, Melbourne/New York, New York series presents an urban fantasy akin to London Bridge and New York's in-progress High Line Park. Pesce's Church of Solitude Project, New York, New York (across the room from a model of World Trade Center Tower 1) inspired more than one visitor to wonder aloud why Pesce's church is not being built at "Ground Zero," Eisenman's Max Reinhardt Haus, an early 1990s proposal for Berlin resembling a Möbius strip, is satisfyingly familiar, reborn as Koolhaas's new CCTV building in Beijing. Why not show the dreams and let the viewer recognize what has come of them?

Dominic Barth, a former journalist and book editor, is a graduate student at Columbia University School of Architecture, Planning, and Preservation.



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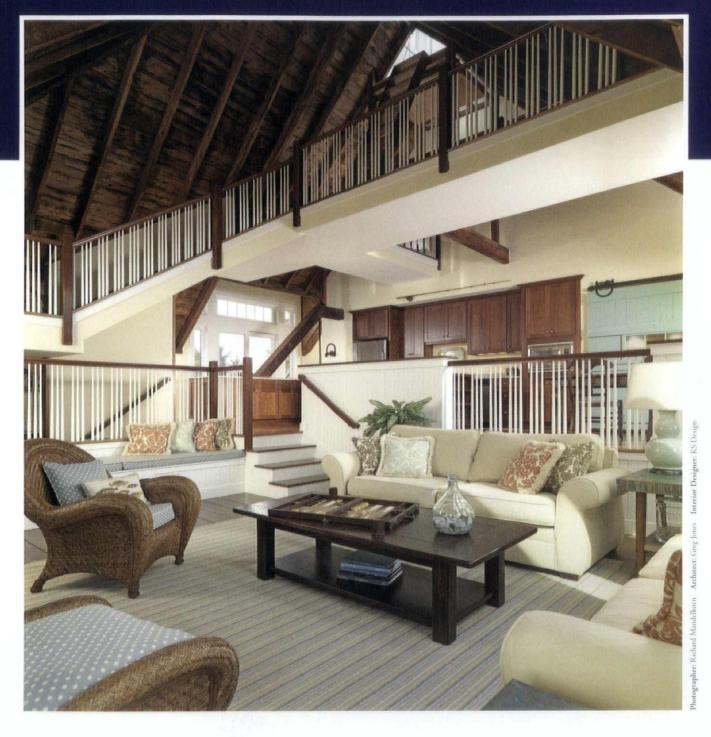


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BY JOAN WICKERSHAM | The Lurker

Old Again

The conservator: Christine Thomson, who has a studio north of Boston where she works, sometimes alone, sometimes with an associate, on the conservation of old furniture and decorative-arts objects from all over the world. Chris began her career 28 years ago as a technician. She learned on the job: the conservator who was her teacher suffered from migraines and would take to his bed, saying to Chris of a particular challenge, "See if you can figure this out."

Some projects in the studio: A Federal mirror whose original gold-leaf was at some point painted over with bronze radiator paint. A 1930s French Art Deco desk, with patches of sun bleaching. A wild 19th-century Anglo-Indian chair, whose dark bracken-like filigree needs repair in several spots. A neoclassical sofa from the 1820s which, unusually, still has its original under-upholstery, of interest to scholars; it needs new upholstery that won't damage the piece and can be easily removed to expose the original surface for any future study.

10:20 Chris is examining an old Japanned bonnet-top high chest. She has already completed a judicious restoration of the piece's fragile, spirit-based-varnish surface, filling in missing applied-gesso ornament but mostly leaving the faux tortoiseshell background alone so the chest won't appear over-restored.

When the chest arrived, the hardware was too big and too Chippendale. Chris has already removed the Chippendale hardware; now she is trying to figure out, by closely examining nail holes and faint marks in the wood, the size and shape of what was there originally.

10:35 Chris holds a piece of tracing paper against a drawer front and gently traces the pattern of nail holes. Then she holds one of the Chippendale escutcheons up to the chest to see which nail holes match it. Any holes in the wood that don't match must be older — and therefore left by the original hardware.

10:40 Removing the drawer and standing it on end, Chris looks closely at the faint imprints left on its surface by both sets of hardware. She repeats this with each

drawer, under incandescent and then ultraviolet light, discerning a curve here, an indentation there.

10:59 She makes a quick tracing of the outline of one of the Chippendale escutcheons, and compares it to the marks on the wood.

Gradually, using the subtle clues provided by the piece itself, the Chippendale hardware she removed, and samples and photographs of Queen Anne-style escutcheons and drawer pulls, Chris is assembling a speculative portrait of what the hardware might have looked like. She will send her sketches to a period-hardware expert in Providence, who will look at them with a historian's eye, saying, "Yes, that shape looks right," or "No, you would never have seen that particular detail in that period." Together they will refine the design and fabricate new pieces that have the right scale and feel for the chest.

11:35 Leaving the chest for the time being, Chris goes to another work table to look at paint samples with a binocular microscope. She is preparing for this afternoon at the Peabody Essex Museum



A Photo by Joan Wickersham.

in Salem, where she is working on an exceptionally rare and beautiful piece: a figurehead by William Rush, a leading early American sculptor and carver. This circa-1800 wooden figure of a woman was painted 28 to 30 times in her seagoing life and the thick layers of paint have obscured the delicate detail of Rush's carving. Chris has made cross-sections of paint samples scraped from the figurehead. Under the microscope, the striated layers of history are visible: many coats of white, some light blue, a period when the figure's dress was green and its shawl was burgundy, and then back to white again. For several months Chris has worked on the project one afternoon a week with PEM conservator Mimi Leveque, and they are as familiar with the striations as an archaeologist would be with the layers of a dig.

11:55 A phone call from Boston's Museum of Fine Arts, inviting Chris to lead a gilding workshop, to tie in with an upcoming exhibition of European decorative arts. She and the MFA curator discuss techniques that might be demonstrated: oil gilding can be applied to any surface, while water gilding is a more complicated process, although it can be burnished to look like gold. "That was the purpose of gilding, when it originated in Egyptian times — to make a lesser material look like gold." They agree on a date for the workshop, after Affixed to the prow of a ship, this carved woman with the neoclassical face must have appeared strong and graceful. But, lying here, she looks helpless.

Chris checks her calendar to make sure it won't conflict with a workshop she's scheduled to lead at Winterthur.

1:45 In the basement of the Peabody Essex, Chris and Mimi Leveque stop to admire a piece laid out on one of the tables: an Inuit raincoat made of strips of seal intestine, fashioned along the dashing lines of a Russian naval officer's cape. Mimi says the museum will clean it up and repair it as much as possible. "There's a woman I know, just outside of Anchorage, who works with seal intestine, and I'm going to get her to send me some."

1:55 The Rush figurehead is reclining on a table in the museum's mount shop. "There's our girl," Mimi murmurs gently. Affixed to the prow of a ship, this carved woman with the neoclassical face must have appeared strong and graceful. But, lying here, she looks helpless, swooning on the table, clutching her shawl around herself as if for warmth, her surface scraped in some areas, still thickly clotted with paint in others. In every sense of the word, she's distressed.

1:57 The three conservators — Chris, Mimi, and intern Sara Lapham — don white Tyvek coats, rubber gloves, and safety goggles. They gather around the figure and begin coating small areas with a proprietary non-toxic paint remover. They wait a few minutes for the surface to soften, and then use small woodenhandled Japanese carving tools to scrape down the paint. Mimi works above an eyebrow, while Chris and Sara attend to the pleats in the dress.

"Did you get your new iPhone, Chris?" Mimi asks.

"I did. It's almost too nice. My old one I used to just throw around, but this one's like a little treasure. I'll have to get over that." **2:10** Carefully and patiently, scraping tiny areas with the tiny tools. Talk of other conservators, who's working where, which museums are cutting staff.

2:24 More scraping. Talk of airlines: cancelled flights, lost luggage.

2:30 More scraping. Talk of Circus Smirkus: Mimi's daughter has spent the summer touring as an aerialist.

2:50 Sara jumps: her blade has snapped. Matter-of-factly, she changes blades, puts her safety goggles back on, and resumes scraping.

3:05 Mimi vacuums out some paint scrapings from the figure's eye socket. The vacuum-cleaner bags and garbage bags of scrapings swept from the table are full of lead and very heavy. They're taken away periodically and disposed of as toxic waste.

3:12 Two museum curators come in to see how work is going on the figurehead. Mimi



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shows them some photographs of crosssections of paint layers, as well as sketches the conservators have made of how the figure was painted at various stages. "So what we're doing now is really a three-part job: first, analysis of the layers of paint; second, removal; and third, the decision about what to do."

The decision, which ultimately rests with the museum's curator of maritime art, will be whether to leave the figure with a mottled surface, showing some of the different layers of paint; or to apply a clear matte varnish (which could be removed at some future date — reversibility is always a consideration in conservation) that would protect what's there and also heighten existing contrasts; or to paint her — but then which of the three existing color schemes should be re-created?

3:30 More scraping. Talk of the museum's recent acquisition of a Jain temple cart, or howdah, a ceremonial pavilion that would have been mounted on an elephant's back. "It's huge," Mimi tells the other two. "There are these long side pieces, so it could be

drawn by oxen, and then when you got it to the elephant, you put the little house piece up on top."

"What's it made of?" Chris asks. "Rosewood and chased silver. Some leather pieces. And little cymbals on all the wheels. There are some bits missing, which we'll have fabricated in India. But it's mostly just a monster cleaning job."

3:40 Mimi goes off to meet with one of the museum's curators about an object upstairs. Chris and Sara continue scraping. Chris asks Sara about her coursework; she is taking classes and racking up work hours, preparing to apply to conservator programs. She tells Chris she got an A-minus in chemistry.

"Yay! Who was in the course? A lot of nurses? When I took it, it was a lot of nurses."

3:44 Peering at the figure's flank, Chris says, "I think I just ran into a chunk of metal here." X-rays have shown that the figure has some buckshot in her — at some point, someone must have taken pot shots

at her. The conservators believe the shot is made of lead, making it difficult to date: steel shot is more easily dated because of its carbon content.

4:05 Mimi comes back and puts on her white gown again. "Job for Chris upstairs." "What?"

"A Hawaiian cabinet with a warped door."

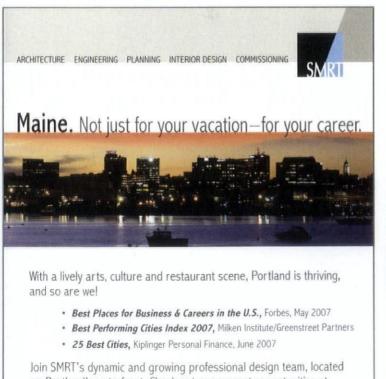
"Sadly, you can't do that much about warping," Chris says. "You can sometimes reset the hinges and make it look less warped, but..."

"I know," Mimi agrees.

4:15 More scraping. Mimi twists around to get at a tricky spot. "Hmm. I need to have her move her arm. Do you think she'd do that for me?"

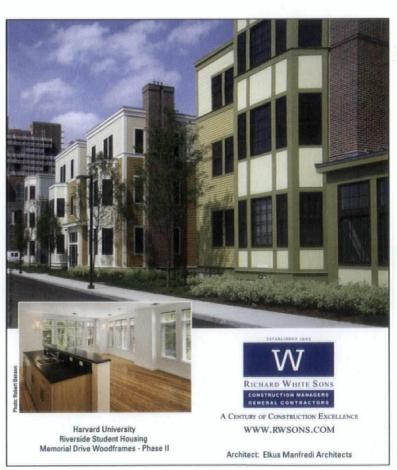
Chris says, "I bet she would, if you asked her."

Joan Wickersham is a writer in Cambridge, Massachusetts. Her new book is *The Suicide Index: Putting My Father's Death in Order* (Harcourt).



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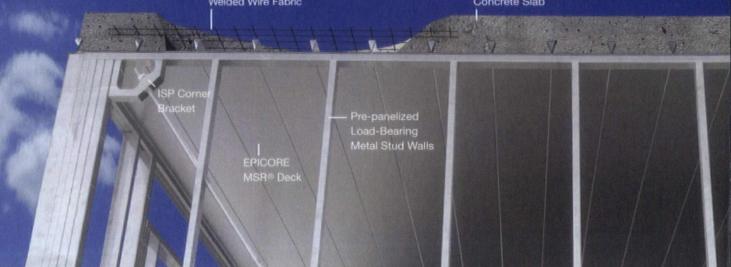
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Robert Cowherd PhD, Assoc. AIA is an associate professor of architecture at Wentworth Institute of Technology. His research has examined design, planning, and development in Southeast Asia. His most recent publication is "The Heterotopic Divide in Jakarta: Constructing Discourse, Constructing Space." in *Heterotopia and the City: Public Space in a Postcivil Society* (Leuven De Cauter and Michiel Dehaene, editors; Routledge, 2008).

Lynda Hartigan is the chief curator of the Peabody Essex Museum in Salem, Massachusetts and the curator and author of *Joseph Cornell: Navigating the Imagination* (Yale University Press, 2007).

Sheila Kennedy AIA is a principal of Kennedy & Violich Architecture in Boston, and the founder of MATx, the materials research unit of KVA. The Portable Light Project, a nonprofit initiative of MATx (see page 54), has been recognized as a 2008 Tech Museum Laureate, one of 25 global innovations that benefits humanity. The author of *Material Misuse* (Architectural Association/ Princeton Architectural Press, 2004), she is a professor in the department of architecture at MIT.

Hybrid Forget the cars. Hybrids are gaining traction in the design world. Vigor

Elizabeth Padjen FAIA is the editor of ArchitectureBoston.

Anne Whiston Spirn FASLA is a professor of landscape architecture at MIT. A photographer and writer, she is the author of *The Granite Garden: Urban Nature and Human Design* (Basic Books, 1984); *The Language of Landscape* (Yale University Press, 1998); and, most recently, of *Daring to Look: Dorothea Lange's Photographs and Reports from the Field* (University of Chicago Press, 2008).

Nevin Summers AIA is the president of Novation in Cambridge, Massachusetts, a biotechnology consulting firm, and the director of corporate development for the Biomedical Enterprise Program in the Harvard-MIT Division of Health Sciences and Technology. He holds degrees in molecular biology, architecture, and management of technology. He is a co-founder of the MIT Center for Biomedical Innovation and has served as life-sciences specialist to the MIT Sloan School of Management and as an advisor and grant reviewer to the MIT Deshpande Center for Technological Innovation and the Massachusetts Technology Transfer Center.

Jay Wickersham FAIA is a partner of Noble & Wickersham in Cambridge, Massachusetts, an environmental and construction law firm. Formerly a practicing architect, he was assistant secretary of environmental affairs for the Commonwealth of Massachusetts and director of the Massachusetts Environmental Policy Act office from 1998 to 2002. He is a lecturer at the Harvard Graduate School of Design. **Elizabeth Padjen:** Every century or so, there seems to be a radical shift in thinking, in the way that we approach the world. Consider the Victorian era: a lot of intellectual effort went into the task of classifying, categorizing, and simply naming things. The goal seemed to be to impose an order of sorts upon the world.

We now live in a time that seems to have set that kind of thinking aside. We much more readily embrace blurriness and complexity. In the last several years, the word "hybrid" meaning something new that has been created by combining dissimilar entities - has become increasingly common in popular culture, and the hybrid car has made it a marketing buzzword. But we are also seeing it applied to a different approach to creativity. Some of you here today represent this kind of hybridity. It's evident in firms such as KVA, which Sheila Kennedy co-founded with Frano Violich, a firm that is marrying technical research and design. It's evident in some people, like Jay Wickersham, who is an architect, a lawyer, and an environmentalist, and has founded a practice that somehow blends all of those things, a kind of legal practice that didn't exist 100 years ago. Similarly, Anne Spirn's work very early on focused on pulling together landscape architecture, infrastructure, and urban design and making people think about the urban environment in a new, hybrid way. They are evidence of ways that the design world can expand its boundaries and find new opportunities to solve problems that perhaps have not traditionally been considered design problems.

Let's start by thinking about some definitions of hybrid. Its roots are in biology, and so I'd like to ask Nevin Summers, as our architect-scientist, to describe some of its scientific connotations.

Nevin Summers: The first use of the term that I encountered, a long time ago, was in a discussion of hybrid vigor. Inbred strains are disease-prone; they are selected for a particular trait, but they're not very robust. If you cross them with another inbred strain or with the wildtype found in nature, you often get an outbred strain that rescues the robustness and has what's called "hybrid vigor." The more recent uses in biology have been in molecular genetics, in understanding how DNA, itself a hybrid molecule encoding functional instructions called "genes," is copied, cut-and-pasted, and edited during cell division, sexual reproduction, and during evolution. In the 1970s, humans figured out how DNA could be moved around between different organisms in the lab. This recombinant DNA technology borrowed the metaphor of the "chimera" from classical mythology - think of Picasso's images of the Minotaur, half-bull and half-man. But let's be very clear we do not make hybrid monsters today using DNA! The scientific community at that time self-imposed a moratorium to first

evaluate the ethics and safety. So today, researchers are proceeding cautiously, making genetically recombinant hybrid organisms only for societally approved purposes — for example, making a lifesaving drug such as human insulin by fermenting harmless bacteria that have been genetically modified by insertion of human DNA.

Of course, a more familiar example can be found in our family lineage: children are the hybrids of the sex cells of their parents. And Darwin expanded this family lineage concept to all organisms as one big evolutionary "Tree of Life," which is a grand unified genealogy where all members have descended from a universal common ancestor. All of us earthly living beings are biological hybrids genetically related to one another by a distant common relative. For humans and chimps, that common ancestor lived some 5 million years ago.

Human-made artifacts evolve as well. "Convergence" has a similar meaning to "hybridization" in the technological world. Cell phones and PCs, with their discrete functions merging together into "smart phones" like the Apple iPhone, are probably the most ubiquitous convergent devices around today. We can expect buildings to become even more convergent as information technology, energy management, and dynamic control systems become more necessary and more integrated into building design.

Anne Spirn: I consulted the *Oxford English Dictionary* and learned that the word "hybrid" comes originally from "hibrida," which is the offspring of a tame sow and a wild boar. The notion is that it's the offspring of two different species or varieties or, more generally, anything derived from heterogeneous sources or composed of different or incongruous elements. But the idea of people as professional hybrids isn't completely new. The *OED* cited a quotation from 1874: "I will tell you what you are: a hybrid. A complex cross of lawyer, poet, naturalist, and theologian."

We're seeing convergence, but also something that is perhaps more holistic, more synthetic, than the interdisciplinary efforts of the past few decades. *Anne Whiston Spirn FASLA*

Lynda Hartigan: That's an interesting quotation, because it makes the distinction between a hybrid person and the then-prevailing idea of the Renaissance man — the gentleman scholar with multiple interests, mingling the amateur and the professional which is an ideal that goes back even further in history. What's the difference between the current hybrid combining of disciplines and the concept that's been around since the 1980s of work that is interdisciplinary or cross-disciplinary?

Anne Spirn: I think the current hybridity is bringing back together things that never should have been separated in the first place. The late 19th century saw the rise of all sorts of new disciplines, which became increasingly specialized in the 20th century. Now we're seeing convergence, yes, but also something that is perhaps more

holistic, more synthetic, than the interdisciplinary efforts of the past few decades. And it's manifested in all sorts of ways — land use, for example. We are beginning to rethink the traditional approach to zoning, which maintained that all the various land uses should be classified and separated.

Elizabeth Padjen: There's an aspect of hybridity that is purposeful, that creates something new by design. The Renaissance-man model is interesting because it represents a different approach: it's about being a little bit of everything, but not really melding a knowledge base to create something new or different. Isn't that part of what's happening with this new convergence? We're choosing what gets melded back together in a deliberative fashion.

Robert Cowherd: Hybridity is helping us to recover something that was lost. It's important to remember that it was initially useful to create these separations and distinctions. There have been unprecedented leaps forward in terms of our scientific understanding, for example, because of the specialization that dominated the 20th century. But the problems of the 21st century are really the result of the solutions of the 20th century that came out of that single-issue focus. Now that we are confronted with such serious, secondary, unintended consequences of our actions in the last century, it's not surprising that we are rethinking some of these separations and fusing them back together.

Hybridity is not simply finding the least common denominator between two entities. Nor is it one-plus-oneequals-two. *Robert Cowherd PhD, Assoc. AIA*

> Shella Kennedy: Nevin mentioned the chimera, which made me think of Leonardo's monsters. Is a hybrid monstrous or wondrous? What was considered monstrous about Leonardo's monsters was that the individual parts were still recognizable: the tail of a fish, the top half of a lion. But hybridity in practice or as a way of thinking about design is a bit different than a collage of parts. The biological analogy, and the idea of convergence that Nevin mentioned, suggest that a hybrid is a new integrated whole, which is born from different parts, but in which the constituent parts are no longer recognizable.

> > Jay Wickersham: And yet the most familiar use of the word "hybrid" today is in fact marrying two very different technologies, each of which continues to work in its own way. The hybrid car has both an internal combustion engine and an electric battery, and it switches back and forth between those two modes of power. It is not necessarily some new convergence.

Robert Cowherd: The thing that keeps it from being just a dualfuel vehicle is the part where you hit the brakes and generate electricity; that's what starts to fuse the two together.

Nevin Summers: And there's a third element: you couldn't have a hybrid car without the computer, the "brain" that organizes and dynamically controls it as an integrated system.

Elizabeth Padjen: Can you describe some other examples of the hybrid in your own work?

Lynda Hartigan: I'm a representative of a hybrid institution, the Peabody Essex Museum. Two separate institutions literally down the street from each other, with very different perspectives and yet some ties of history, merged 16 years ago, and out of that has come a new institution that is very different from either of the original museums.

The Essex Institute in many respects functioned as a historical society but it was also a collecting institution, which put it in the realm of a museum focused on New England. And the Peabody Museum, since its inception way back in 1799, really was a museum, collecting and looking at things from a much more anthropological or ethnographic viewpoint. So when the two were brought together to become the Peabody Essex, the paradigm that each institution was using dramatically changed. Neither institution had looked at what it had as exemplars of art and culture, which is the focus of the new museum.

Robert Cowherd: That's a good example of another aspect of hybridity: it's not simply finding the least common denominator between two entities. Nor is it, to continue the math metaphor, one-plus-one-equals-two.

Anne Spirn: This conversation is making me think differently about the book I just finished on Dorothea Lange. Lange is known for her photographs; what is less well known is that she was also an author who grouped her photographs and wrote stories about the groups, in addition to the captions she wrote for individual photographs. But these stories have been stripped from her photographs. So did she create a hybrid art of image and text? Many people would argue that the photographs can stand on their own, and they can. But the experience of her photographs is entirely different when married with her captions for both single images and groups. The issues that arose from the fact that her images and words had been sundered, and the question of why the words of this famous photographer had been ignored, led me to produce what is itself a hybrid book — a combination of a monograph, a biography of Lange, and a journey back to the places that she photographed.

Lynda Hartigan: The time when Lange was writing those captions was a period in which photography itself was fighting the battle, not just over whether it was art, but over differences among art photography and scientific photography and journalistic photography — which is an example of what we talked about earlier, the urge in previous eras to identify and enforce distinctions. So the introduction of words, I suspect, would have made the art world's photography advocates very uncomfortable.

The architectural profession itself is subject to hybridization, and not always driven by forces within the profession. Jay Wickersham FAIA

Now there are contemporary photographers who embed inscriptions or narrative within the photographic image itself.

Anne Spirn: And of course photography is now an integral aspect of the Web, which is itself a hybrid medium. It brings together text, video, audio, and graphic images in entirely new ways.

Nevin Summers: And that's leading us toward informational content hybridity. Newsprint, which is carbon-based, has moved to an electronic form, which is silicon-based, and is supplemented by videos. You can see a real-time broadcast of a speech that someone is giving with the teleprompter transcript running down the side. It's a much richer experience to have all these different media simultaneously. Hypertext links have profoundly enriched the online reading experience and enabled powerful democratizing community-generated knowledge resources like Wikipedia.

Elizabeth Padjen: Is the Web one of the reasons why this kind of hybrid thinking is more prevalent? People are immersed in a hybrid medium, and it's encouraging them, overtly but subliminally too, to find things out there that might be married.

Sheila Kennedy: I would say that architecture is inherently synthetic, even apart from the influence of the Web. Architects reach out by necessity to other individuals in other disciplines for the common purpose of solving problems that couldn't be solved by one discipline alone. We're trained to synthesize information, to create not just a woven braid from those diverse threads, but a whole new cloth.

Jay Wickersham: At the same time, the architectural profession itself is subject to hybridization, and not always driven by forces within the profession. One longstanding assumption, rooted in the 19th century, is that architects don't build things. That was grounded in ethics: the architect was supposed to be a neutral, trusted agent who would ride herd on the presumably corrupt contractor. It also had a social goal: the architect could achieve a higher status by not sullying his hands with a trade — and back then it was, of course, *his* hands. The assumption that the architect doesn't build, which is so deeply ingrained in the design professions, seems to be breaking down now as we're seeing a move toward integrated project delivery. It's a form of hybridization that carries enormous risks for the profession; many existing design practices probably will not survive in this new world.

Elizabeth Padjen: What is integrated project delivery, and what are the risks?

Jay Wickersham: Integrated project delivery is driven by owners and contractors, and is a method of delivering the built product, not the design, faster and cheaper. So it is a process where the designer works with the contractor on a much more intensive basis from the beginning of the design. The consultants work with the contractor and with the subcontractors and with the manufacturers on a much more intimate basis, with the idea that you have a design that is more buildable, in which the cost has been much more carefully controlled through this process. But there's also a very real risk that the designer will lose control and lose the traditional role as the mediator between the contractor and the owner, who creates the design working directly with the owner. The designer may actually be squeezed out.

Robert Cowherd: Design/build is a hybrid process that is probably familiar to many people. Is this a variation on design/build?

Jay Wickersham: It's somewhat different. Design/build is a hybrid that already challenges the conventional role of the design professional, but the designer is hired by the contractor. With integrated project delivery, the designer may still be hired by the owner, but there is a greater blurring of the lines.

Shella Kennedy: I agree with Jay that integrated project delivery represents a profound change for the profession, but I have a slightly different perspective on the risks. It's a process that requires a digital platform, where many people are working together on the same software platform — as if on the same computer, so to speak — to create an artifact, a building. But many large objects - ships and planes, among other things - have been designed and constructed in many different parts of the world as a result of this process, and so there are ways to deal with the risks. But what happens when many people are literally working on the same digital model? What does that mean for ownership? What does that mean about responsibility? Who updates the digital model and, very importantly, who is its caretaker? But even these questions about ownership, control, and responsibility aren't unfamiliar to us as architects. Risks always reside even in the most standard practices of architecture. And they are very likely to reside in other areas of design practice, such as landscape, urbanism, and infrastructure, where traditional disciplines and design entities are merging into different forms of practice.

Anne Spirn: But there are always historical precedents. A great hybrid model that has inspired my work is the Fens and the Riverway in Boston. We have, in fact, a transcript of the conversation between Olmsted and the city engineer about the creation of the Fens. Originally the city engineer was proposing a straightforward masonry storm basin. Olmsted asked, "Why can't the whole park be a detention basin?" And then they extended the idea further, so the Riverway became a storm-drain system as well as a recreational system as well as transportation infrastructure in the form of a parkway. What I took from Olmsted was that habit of thinking, of always looking for ways to incorporate more functions, more purposes, into the program.

Robert Cowherd: Killing two birds with one stone is as old as design itself. One of the reasons I left engineering for architecture was because there was always only one right answer, and you were taught to look at a very narrow question. There are attempts in every generation to find a way to splinter architecture into disparate, specialized fields, but they've generally been resisted, perhaps for

the reason Sheila mentioned, that architects are trained to think in terms of synthesis. The big calamity was of course the separation between planning of the larger built environment and architecture; that has proven disastrous. And we're just beginning to correct that.

Elizabeth Padjen: How can we train people to think in terms of making the kinds of connections Anne was talking about?

Anne Spirn: The studio has to focus more on systems thinking in addition to the design of formal objects. And we need to teach students to imagine how multiple problems can be solved with a single solution. Your client usually hands you a set of issues that need to be resolved, and a program. But as the designer, you need to think beyond those issues and that program: here's what the client wants done, but what else is happening on this site, in this place? Are there other issues that can be served through this new design?

Sheila Kennedy: We don't have to worry about whether we are teaching a new way of thinking. The problems will tell us. And the problems that are first and foremost are about how architects make use of things: land use, water conservation, energy.

One specific example is the problem of how architecture makes use of the many different forms of renewable energy. The traditional solar panel on the roof may be part of a response, but the question deserves many responses. A decade ago, I discovered that though there were technologies that were being created — energy-efficient lighting, photovoltaics, sensors and switches — this young industry had very little capacity within itself to integrate these elements. The technology was available, but there was no real way to introduce it into the building context. In short, the problem was one of vertical integration.

So in 2000, our firm decided to radically reorganize the way that we were thinking — about making things and about practice. We hired people from different disciplines and with different sets of qualifications, from electrical engineering, to interaction design, material science, electronics, and of course architectural design — even people with experience in masonry and in working with materials. The goal was to try to build some capacity and to try to tackle this problem of vertical integration. We were interested in the problem of manufacturing, but also in finding ways that would make these new technologies appealing, that would encourage people to adopt them because of their aesthetics, their ease of use, and low cost. Eight years later, our work has little to do with traditional modes of architectural practice. The problems told us how we needed to think.

Elizabeth Padjen: You're describing a process that is very deliberate, and that's an essential aspect of this kind of hybrid thinking. It's not a path that many designers have been prepared to follow, although it seems to be more common among young firms.

Lynda Hartigan: I think it's partly generational. My college-age son belongs to a generation of people who have been encouraged to understand their individuality but also to work together as the key way to become better-educated and more well-rounded problem-solvers. I see a lot of promise in that process, but it's hard to learn to emulate that. **Robert Cowherd:** Facing complexity is what forces us to deal with hybridity. It was much easier when we had the heroic singular vision, when designers thought in terms of a beautiful, idealized object without context, placed on a pure, infinite plane. Now that we have opened Pandora's box, allowing the real world into the frame of our consideration, our students are facing extreme complexity in ways that previous generations of students and professionals have not really come to grips with.

Elizabeth Padjen: Members of this generation — those in school and those who have graduated in the last decade — are also the first to understand globalization as an integral aspect of their lives. We've talked about the Web as a contributor to hybridity. What is the influence of globalization?

Robert Cowherd: First, I have to say that "globalization" is a term that quickly outlives its usefulness. It's useful if you're writing a newspaper article and you want the majority of people to understand vaguely what you're talking about. But there are power disparities that lead to dominance and imbalanced transfer of influence rather than the more equitable exchange implied by the neutrality of the term "globalization."

As soon as you really examine the economic, political, and particularly the cultural forces — how they are coming together, where they are leading us — you quickly have to move on from the term globalization, which cloaks as much or more than it discloses, to ideas like cultural hybridity.

Hybridization turns out to be an extremely valuable means of dealing with the phenomenon of the interaction of cultures, which has been going on for thousands of years. For example, Java and Bali, where I've worked, have been influenced by the cultures of, first, India, then China, then Muslim traders coming in from northern India, then European colonial forces, and now American media. But the core values of the Javanese religion and culture are still there. They're simply expressed through new means. There is a word in the Indonesian language, Indonesianization, which is commonplace. It's just taken for granted that that's what you do. You take things from other cultures and make them your own.

An example: A prince was going to an event. The king would be there, so he had to wear the traditional Javanese costume with the short sword tucked in his sash at the small of his back. The Dutch governor would be there, so he had to wear European coattails. When the prince put them all on together the sword made the coattails stick out, so he called his dresser and said, "Quick! Cut these tails off." To this day, that is the required dress for formal occasions in Java. It looks European, it looks Hindu, it looks Chinese, and when the fez is sometimes added, it looks Middle Eastern. But it's considered purely Javanese.

Jay Wickersham: That's a fascinating example of a culture that is embracing infusions from other cultures into a society that is still struggling to maintain a sense of its own identity. Much of the talk about hybridization in contemporary culture, at least in the industrialized world, presumes that for a pre-industrial culture to survive and to retain its own identity, it must remain pure, uncontaminated by outside influences. At the same time, it's useful to remember, going back to our biological analogy, that many cross-breedings are reproductively sterile. The mule, which is a cross between a horse and a donkey, is an example; it may be useful in the short term but it cannot reproduce itself. So the challenge is to know which hybrids have real vigor, and which are ones that may be leading us into dead ends.

Elizabeth Padjen: I wonder if the history of art might be the best tool for teaching people about hybrid thinking. If you accept art as a cultural relic — the remains of a culture or society — then the history of art offers a way of tracing hybridization through human history, as well as different models for contending with cultural pressures in our own time.

Lynda Hartigan: Actually, I think it's art itself, especially modern and contemporary art, rather than the history of art, that provides insights into hybridity. The history of art has been driven by the concept of lineage — that artists and styles are either the logical progression from one to another or the reaction against predecessors. Since the 1920s, artists have really pushed the boundaries of what can happen when disparate ideas, materials, processes, and forms are brought together. The logic of lineage just isn't part of the equation for these artists. Globalization across cultures now has also exponentially escalated art's potential for hybridity.

Sheila Kennedy: Cultural hybridity is not necessarily about giving up a culture as much as it is about adapting and adding to your culture and being able to choose which strand of your culture you wish to draw upon at a given moment. We see that in design schools; it's definitely the reality of most young people today.

Nevin Summers: Perhaps another way of looking at the question of cross-disciplines that we talked about earlier is to think of them in this way, as cultural hybrids that increase our choices and opportunities. I work with the Division of Health Sciences and Technology [HST] that was established by Harvard Medical School and MIT 40 years ago to bring together the clinical realm and the engineering realm. Back then, there were a lot of clinicians at Boston-area teaching hospitals looking at life-threatening medical problems, but they didn't have access to technical engineering capabilities. Conversely, there were a lot of scientists and engineers in labs engaged in basic research without an awareness of real-world medical problems. You could say this region had a lot of nails in need of hammers and a lot of hammers in need of nails. The goal of HST was to create a

highly creative inter-institutional, inter-disciplinary environment where all these people could easily come together and collaborate. HST, while it now has a bricksand-mortar presence, started as a virtual institution that spanned across a world of vertical stovepipes. It's the longest-standing collaboration between Harvard and MIT, schools often portrayed as rivals, but HST is in fact a degree-granting institution, and at any one time there are over 400 students getting MDs, PhDs, and MBAs.

The irony is that the people get promoted by putting their effort into working their way up their particular departmental stovepipe, but the real creativity happens by making collegial connections between the pipes. So, for example, there might be clinicians in Boston studying some disease, who need access to a new drug-delivery implant technology, and maybe some engineers across the Charles in Cambridge who have been developing a novel nanotech surface coating, but haven't found the right application, because they're thinking photovoltaics or batteries, when in fact it could also be used in a biomedical application. Through HST, which is itself a hybrid, these two groups who might never have encountered one another are brought together, and they come up with an idea, a new application, which is a hybrid as well. Last year, HST began a new initiative with the government of India, so now the emergent "hybrid frontier" includes collaboration across geographic and cultural boundaries, too.

Cultural hybridity is not necessarily about giving up a culture as much as it is about adapting and adding to your culture and being able to choose which strand of your culture you wish to draw upon at a given moment. *Sheila Kennedy AIA*

Jay Wickersham: Do the HST faculty and researchers find each other by chance? Or are there people who are actually matchmaking?

Nevin Summers: There are mentors who advise, but collaborations aren't pre-structured. They just happen by creating a vibrant community and providing a lot of opportunities to network. Some researchers are natural-born entrepreneurs and very proactive social catalysts. Others need mentoring.

Robert Cowherd: Every verb Nevin uses to describe HST works equally well if he's describing a virtual interaction or a spatial interaction. So I'm dying to know, to what extent is this something that happens in "meatspace" and to what extent does it happen in cyberspace?

Nevin Summers: Interaction starts in meatspace, and then that face-to-face contact gets nurtured online. It's all about taking full

advantage of Boston's close physical proximity and public transit. In contrast, UCSF, Berkeley, and Stanford in the Bay area, where I've worked, have the same high level of brain power that's here, but it's spread out more. The Charles River Basin is incredibly fertile for biomedical innovation, and we're able to leverage our "propinquity," our geo-density, into a critical mass. Bright people like to be in close proximity to even brighter people because it improves their game. There are many places in the Longwood medical campus, at MGH, Harvard Square, and at MIT where HST people like to congregate.

Robert Cowherd: And then they invite each other to the home turf for a barbecue?

Nevin Summers: That's right. And faculty members get together with industry mentors to co-advise students, so there's a whole educational process that goes on at the same time.

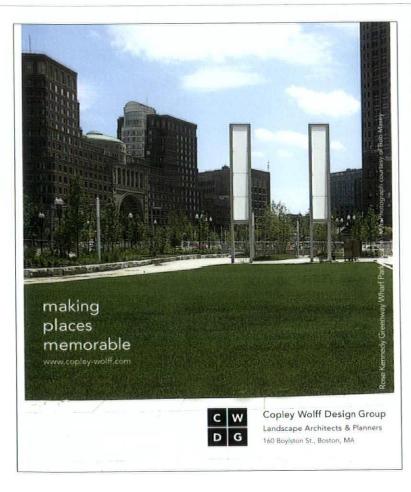
Anne Spirn: I often find that students are the catalysts for bringing people together. They go out and find various thesis advisors, who often have never met or even heard of each other. Meeting on a thesis committee brings people together physically, and cross-fertilization often emerges from the conversation.

Jay Wickersham: I recently did some research on one of the great hybrid practices of all time, the office of Charles and Ray Eames. Their entire method of working was all about hybridization, all Another way of looking at the question of cross-disciplines is to think of them as cultural hybrids that increase our choices and opportunities. *Nevin Summers AIA*

about moving from furniture to architecture to exhibition design to film. I talked to a number of people who worked with them, and a couple of interesting ideas emerged. One was the role of research. Some of their work came out of doing things just for fun. The films, for example, were for pure entertainment, but they developed some technical expertise, and then people wanted to back their projects. I talked to someone who had been their client at Herman Miller, who referred to their method of working as "clumsy." From the perspective of the furniture manufacturer, they took a long time and were willing to follow a lot of different dead ends, then tear everything up and start all over again. But that was part of their method. When they designed exhibits for the National Aquarium, they made everyone in the office learn how to scuba dive; then they filled the office with huge fish tanks, so everyone would learn how to feed fish and how to run the filtration systems. And they made things - for them, designing and making was all one, because they made all the prototypes.

Sheila Kennedy: You touch on something very important, which is that you have to really like and really enjoy what you're doing.

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You have to play around with things in order to understand what their potentials are. You can take something that's relatively new and start playing with it as a way of learning about it, even if your knowledge is going to be a bit imperfect.

Nevin Summers: Children are natural hybridizers for that very reason. They play. They'll put stuff together in naïve ways that aren't informed by prejudices that grownups have learned. Play is often part of creativity.

Lynda Hartigan: And broadly speaking, artists function in very much the same fashion, but they're often doing it more from a rebellious viewpoint, instead of the child's naïve exploration.

Sheila Kennedy: I wonder if Jay would be willing to speculate about new hybrid design practices since the Eames and how they might change the way we think of the basic architectural contract.

Jay Wickersham: The most radical experiments have happened in Australia, a country that has even more litigation than the United States. In certain parts of Australia, the predominant model of building large infrastructure projects is what's known as an alliance. It is a contractual model where the owner, the contractor, the engineer, and other consultants all join in one contract, and all agree not to sue one another, and all agree mutually to share the risks and the benefits of delivering the project on time and on budget and in accordance with certain defined performance criteria. Nevin Summers: It sounds like a partnership.

Jay Wickersham: Yes, in effect, it's a short-term projectspecific partnership. One of our clients was part of the Australia National Museum in Canberra, where it was used very successfully to design and build a very high-profile building. And interestingly, our client and other people who worked on that project called it a life-transforming experience. There was a different set of relationships among the different participants in creating this building. It was a contractual form that encouraged them to work collaboratively for the good of the project. The legal structure meant that they had to rely upon one another — either they all would succeed or they all would fail. And so they all succeeded.

Robert Cowherd: It's a social model.

Jay Wickersham: Exactly. We think of legal contracts, particularly in architecture and design, as being outside forces and constraints, but in fact they are social constructs. When we rethink how we build all these relationships in really hybrid ways, we can really affect behavior.



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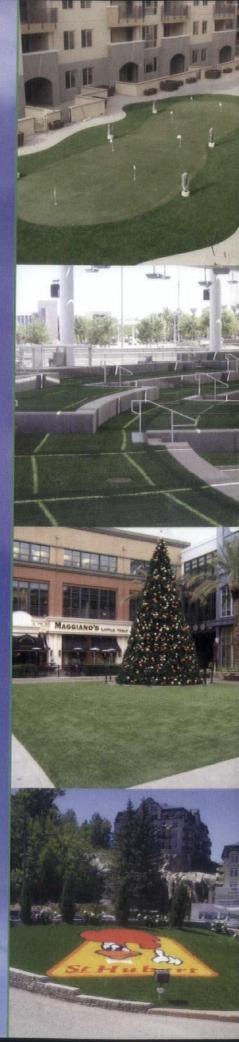
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A Building Is a Tendble Thing to Waste

Our most significant renewable resource is probably not what you think.

Each year in the United States, we pave over or otherwise convert to human uses an area equal to the state of Delaware.

By 2030, we will have demolished and replaced 82 billion square feet of the current US building stock. It will take as much energy to do this as it would to power the entire state of California for 10 years.

In the United States, more than 40 percent of our carbon emissions is attributed to the construction and operation of buildings.

Existing buildings, both historic and otherwise, play an essential role in creating a sustainable world. While statistics such as those above suggest that buildings represent a threat to the health of our planet, they also demonstrate that the reuse and greening of these structures present an enormous opportunity to reduce our nation's carbon emissions. New technologies, knowledge, products, and design methodologies are steadily creating new synergies between old and new, demonstrating conclusively that historic buildings can go green without losing (and sometimes even recovering) the distinctive character that makes them significant and appealing. Architects, developers, and property owners do not have to choose between environmental responsibility and historic character. They can have both — a true hybrid.

Like all hybrids, green preservation projects are shaped by two or more components that create designs of greater complexity and interest than those shaped as responses only to green or to preservation concerns. The expression of these new hybrids can be as exciting as any completely new building, and such projects often meet the social and economic goals of true sustainability more easily than do new buildings. According to the Carnegie Mellon Green Design Institute, renovations create 30 to 50 percent less greenhouse-gas emissions than new construction, at the same time creating 20 percent more jobs (usually local).

A sound older building that is abandoned, underused, or demolished is a wasted asset. According to a formula produced for the Advisory Council on Historic Preservation, about 80 billion BTUs of energy are embodied in a typical 50,000-squarefoot commercial building, the equivalent of about 640,000 gallons of gasoline ("embodied energy" refers to the total amount of energy used during construction and in the shipping and fabrication of materials). Putting existing buildings to good use reduces demolition and construction waste and lessens the demand for energy and other resources for new building and materials. We are much too inclined to think of our buildings as disposable, rather than as a renewable resource. As noted above, a 2004 report from the Brookings Institution projects that by 2030 we will have demolished and replaced 82 billion square feet of our current building stock. It will take as much energy to do this as it would to power the entire state of California - the 10th largest economy in the world with a population of about 36 million people - for 10 years. If we were to rehab even 10 percent of this 82 billion square feet, we would save enough

by Jean Carroon FAIA, LEED AP

energy to power the state of New York for well over a year. Construction debris accounts for 25 percent of the waste in the municipal waste stream each year. Demolishing 82 billion square feet of space will create enough debris to fill 2,500 NFL stadiums.

The reasons we demolish buildings rather than reuse them are many and complex, including misperceptions about energy efficiency. Older and historic buildings are often not the energy hogs that many people assume. Data from the Department of Energy indicates that commercial buildings constructed before 1920 use less energy per square foot than buildings from any other decade up until 2000. A 1999 study by the General Services Administration found that utility costs in the GSA's inventory of historic buildings are about 27 percent less than in nonhistoric structures. Energy performance of an existing building can almost always be enhanced by embracing both new and old approaches, especially because poor performance is often at least partially due to lost user knowledge and detrimental changes.

If we can change some of these misperceptions about older buildings, we can simultaneously relieve some of the pressures contributing to the loss of our landscape to development. While sprawl is devouring our land, many neighborhoods in the inner city and the inner ring of suburbs are vastly underused. Revitalization of existing neighborhoods promotes efficient land-use patterns and focuses public and private reinvestments in areas where infrastructure is already in place, and already paid for. Furthermore, older neighborhoods are typically compact, centrally located, walkable, and mass-transit accessible characteristics that are promoted by advocates of smart growth and the "new urbanism," and which are increasingly recognized as the key to sustainable land-use patterns.

Jean Carroon FAIA, LEED AP, is a principal of Goody Clancy in Boston and is the author of the forthcoming *Sustainable Preservation: Greening Existing Buildings* (John Wiley & Sons, 2009). This article has been adapted from testimony before the US Senate Rules Committee, prepared with Patrick Lally, director of congressional affairs and Patrice Frey, director of sustainability research for the National Trust for Historic Preservation. This is an exciting time, when the boundaries between architectural practice areas and specialties are blurring. Practitioners in the fields of preservation, green design, and architectural theory are finding common ground, each enriching their own work through a greater understanding of the others. The case studies below illustrate three dramatically different building types in different parts of the country — an Armory in Oregon, now a theater; a barn in Pennsylvania, now a visitors' center; and a small house expanded and transformed in California. Each is an innovative, elegant design shaped by both a commitment to environmental responsibility and respect for the context, purpose, and form of the original building.

Green preservation projects celebrate our cultural past as well as our connection and responsibility to the natural environment. While greening new buildings is undeniably an essential element of any effort to combat global warming, even construction of the greenest new building uses significant energy and other natural resources, thereby contributing to global warming. We simply cannot build our way out of our environmental crisis; we must *conserve* our way out, by making better, more efficient, and more innovative use of our existing buildings. There is approximately 300 billion square feet of existing built space in the United States. That space may well be our most significant renewable resource.

Older and historic buildings are often not the energy hogs that many people assume. Commercial buildings constructed before 1920 use less energy per square foot than buildings from any other decade up until 2000.



The Gerding Theater in Portland, Oregon, is a LEED-certified Platinum project, the highest ranking in the popular green metric system. The theater is housed in an 1890s armory listed on the National Register of Historic Places. The constraints of the exterior envelope led to a design that incorporates space excavated 30 feet below the original floor to accommodate a complex program in a dense urban setting. The visible celebration of the original Douglas fir roof trusses in the open ceilinged foyer is one of the most dramatic components of the design and an apt metaphor for green preservation.

The project team demonstrated from the outset a commitment to the building reuse and to environmental responsibility. Steps were taken to minimize the urban heat island effect and storm water runoff by using rainwater harvesting. An adjacent sliver park is home for native vegetation and benches to enjoy the garden. A rainwater harvesting system captures all rainwater and stores it underground for use in toilets and urinals. Installation of low-flow plumbing fixtures also reduces water consumption; in total, the building uses 88 percent less potable water than a conventional system. The unusual use of an off-site district chilled-water plant eliminated the need to install chillers on site. This strategy, combined with displacement ventilation, extensive daylight, and the building's thermal mass, cut projected energy costs by 30 percent. LEED-NC, v.2/v.2.1; Level: Platinum (53 points).

Photos: interiors by Josh Partee/GBD Architects; top right courtesy United Fund Advisors; center by Marcus Lima/GBD Architects.

GREEN DESIGN ELEMENTS Sustainable Sites:

- Public transportation proximity
- FlexCar shared vehicle
- Bicycle accommodation
- Interior excavation of site
- Permeable paving materials
- Xeriscaping
- Bioswales

- Water Efficiency:
 Rainwater harvesting system
- Ultra low-flow plumbing fixtures
- Dual-flush toilets

Energy and Atmosphere:

- District chilled-water plant (off site)
- · Chilled beams
- Radiant heating (lobby floor slab)
- Thermal mass
- Displacement ventilation
- Occupancy and photoelectric sensors
- Building commissioning

Materials and Resources:

- 95 percent construction waste recycled
- Recycled content materials
- · Fly-ash concrete substitute
- Forest Stewardship Council (FCS) certified wood
- · Locally manufactured materials

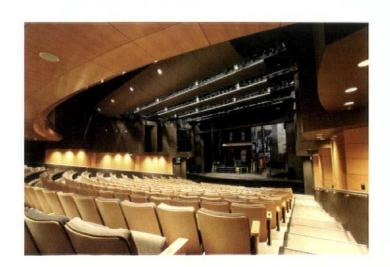
Indoor Environment Quality:

- Skylights
- Operable windows
- CO₂ monitors
- Low-VOC materials and finishes

Additional Features:

- Occupant recycling program
- Green cleaning policy

For more information: www.aiatopten.org/hpb/overview. cfm?ProjectID=833 (Click on left margin menu options.)



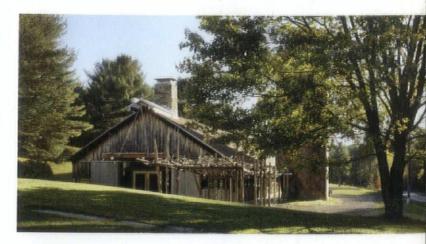
THE BARN AT FALLING WATER Mill Run, Pennsylvania

Bohlin Cywinski Jackson

This renovation of a barn for the Western Pennsylvania Conservancy not only houses administration functions, but also serves both as a remembrance to the community of Pennsylvania's agrarian past and an example of good stewardship toward the environment. The 19th-century, two-story, "bank" barn was built to accommodate access to both levels from grade by sinking one side of the barn into a hill. Excavation of earth beneath the existing structure preserved the building's integrity while gaining space for administrative needs.

A graywater system paired with a landscape design featuring indigenous vegetation (Xeriscaping) and low-flow plumbing fixtures helped to reduce the projected potable water use by over 70 percent. Energy needed to heat and cool the building is reduced by the use of geothermal wells, a heat-recovery ventilation system, and the addition of Icynene insulation that is both highly efficient and contains no VOC materials. As a result of these techniques, along with other "smart building" principles, the barn is 38 percent more energy-efficient than the ASHRAE 90.1-1999 requirements. In addition, 50 percent of the building's grid-supplied energy is purchased with American Wind Energy Certificates (a renewable energy source). LEED-NC, v.2/v.2.1; Level: Silver (33 points).





GREEN DESIGN ELEMENTS Sustainable Sites:

- Xeriscaping
- Bioswales

Water Efficiency:

- Gravwater system
- . Low-flow plumbing fixtures

Energy and Atmosphere:

- Renewable energy certificates (wind)
- Ground-source geothermal heat pumps
- Heat-recovery ventilation
- Solar-shading devices
- Occupancy and photoelectric sensors
- Seasonal assembly space

Materials and Resources:

- Over 80 percent of construction waste recycled
- Recycled wood floor (gym)
- Icynene insulation
- Innovative materials (straw and sunflower seed composite panels)

Indoor Environment Quality:

- Operable windows
- Low-VOC materials and finishes .
- Hazardous material decontamination (guano)

For more information: www.aiatopten.org/hpb/overview. cfm?ProjectID=453 (Click on left margin menu options.)

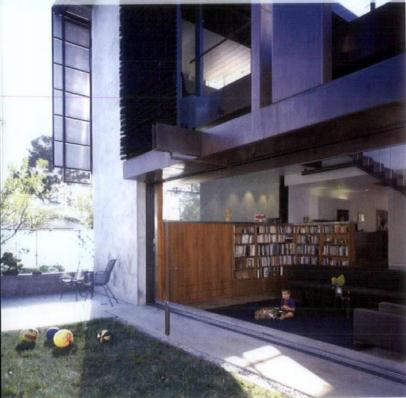




Photos by Nic Lehoux, except bottom right courtesy Bohlin Cywinski Jackson.

SOLAR UMBRELLA HOUSE

Venice, California Pugh + Scarpa Architects



The architects for the Solar Umbrella House took advantage of the eclectic architectural diversity of the surrounding neighborhood to create a thoroughly modern and elegant addition to a 600-square-foot tract home that in many communities would have been a "tear down." While not an example of historic preservation, the renovation of the house and the 1,200-square-foot addition maintained the form, scale, and exterior character of the original residence on the street front, while increasing site coverage by only 400 square feet.

Winner of multiple awards, including a national AIA Honor Award, the design intentionally uses local, highly durable materials with very low maintenance requirements, an aspect of environmental responsibility that is seldom acknowledged. The addition takes advantage of the long narrow lot to reorient the house east-west, creating 100 percent daylighting, passive solar heating, and natural ventilation throughout. The photovoltaic solar panels that provide 95 percent of total energy needs are dramatically positioned in a canopy over the second floor terrace, providing an energy source while screening the building and reducing thermal heat gain. As the architects note, "the solar canopy is multivalent and rich with meaning — performing several roles for functional, formal, and experiential effect."



GREEN DESIGN ELEMENTS Sustainable Sites and Water:

- Xeriscaping, minimal turf
- Minimal site coverage; 65 percent permeable
- Minimal construction impact
- Water-efficient appliances,
- fixtures, and irrigation
- 90 percent of precipitation managed on site

Energy and Atmosphere:

- Electric vehicle charging station
- 92 percent naturally ventilated
- 100 percent daylighting
- 90 percent of glazing on south and north elevations
- Building orientation for passive solar heating
- 95 percent of energy from on-site photovoltaic
- · Solar hot-water collector
- Energy Star appliances
- Whole-wall R-value of 15

Materials and Resources:

- Cellulose insulation
- Reuse of existing building
- Durable, low-maintenance materials
- · Salvaged and recycled materials
- Formaldehyde-free materials
- · Locally sourced materials

Indoor Environment Quality:

- Large high-performance windows
- Natural cross ventilation
- · Water-based natural finishes
- East-west axis controls daylighting

For more information: www.aiatopten.org/hpb/overview. cfm?ProjectID=561 (Click on left margin menu options.)



Photos by Marvin Rand, courtesy Pugh + Scarpa Architects.



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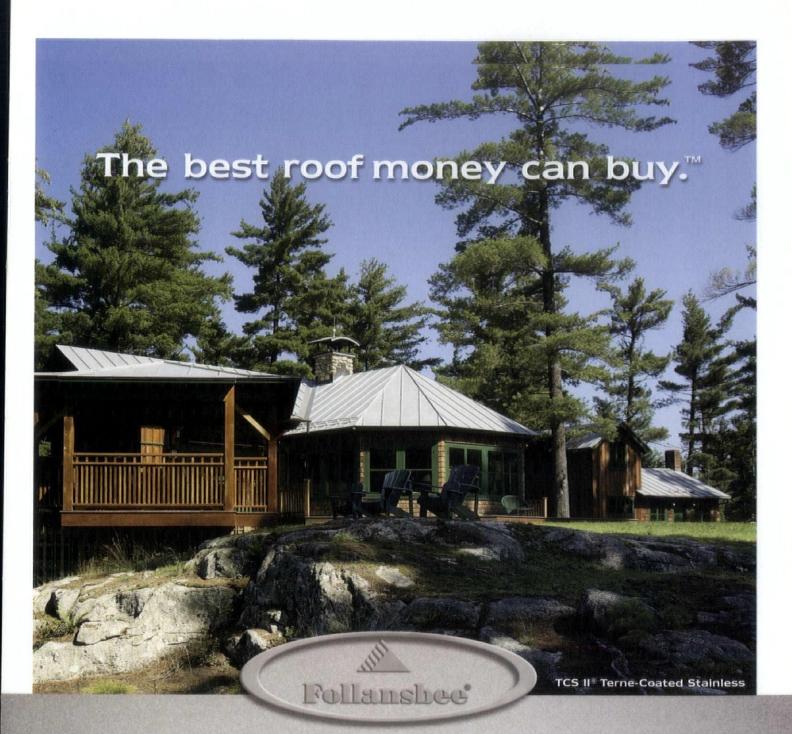


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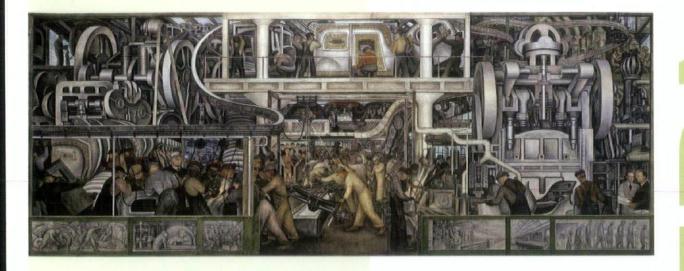


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A classic 20th-century text on Latin American culture offers clues to modernism in the 21st century.

by Luis E. Carranza PhD

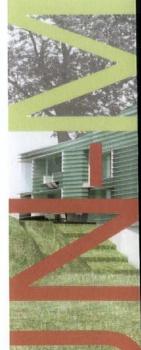
INCREDULOUSLY, I WATCH TWO MEN — one of them about my age refilling an aerosol can. Forced to balance the availability of many modern conveniences — such as the aerosol can, invented in the 20th century — with their limited access to modern resources that are widely available elsewhere, these two Cuban men find ways to "make do" in order to survive the hardships of the US economic embargo. In a way, I don't understand it. I have become used to our disposable culture. On the other hand, I see it as inevitable.

It seems that in our appetite for the new there is something decidedly oldfashioned. Despite our modernity, we often seem to revert to the ways of the past ways that haven't been part of our lives since the Great Depression left its mark on an entire generation. While the debate over paper-or-plastic has passed with our increased awareness of dwindling natural and economic resources, our new reliance on reusable bags, so ubiquitous in supermarkets now, harkens to a time when our elders shopped in markets carrying their own wicker baskets and when milk, soda, and water containers were refilled.

We live in times when it is necessary to enter and exit modernity, to be more hybrid.

This idea is, as the subtitle suggests, central to Nestor García Canclini's classic book, *Hybrid Cultures: Strategies for Entering and Leaving Modernity*. First published in 1989, this study by one of the leading Mexican cultural anthropologists casts contemporary Latin American culture within the paradox of modernity and modernism. In it, García Canclini tries to make sense of the coexistence of traditional or even ancient cultures within modern times and sensibilities. His conclusion is that Latin America suffers from "an exuberant modernism with a deficient modernization." In other words, the appearance of modernity exists without the infrastructure, means of production, and urban systems needed to produce it.

To a large extent, this paradox was due to the importation of cultures from Europe and North America by artists and thinkers who traveled there for their education. This is the case, for example, of Diego Rivera, the Mexican painter who lived in Paris at the beginning of the 20th century. There he became entrenched in the artistic climate that gave rise to Cubism, and was soon recognized as one of its most adept practitioners. Upon his return to Mexico, Rivera's aesthetic interests



were tempered not only by the fevered energy of the social insurrection that had taken place there, but also by the Revolution's goals to improve the living conditions of uneducated and poor Mexicans. His turn to muralism reflected his aspiration to address the largely illiterate population through a legible painterly language derived from vernacular traditions and forms; his European training allowed him to employ Cubist representational and organizational techniques to convey complex information.

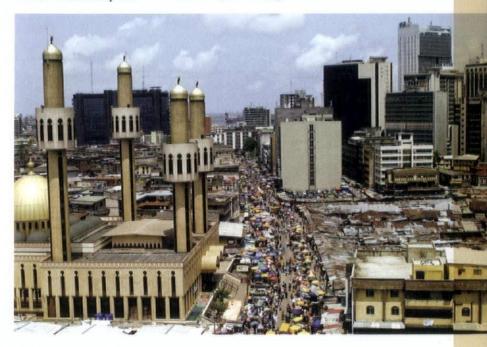
As this case attests, modernism was something that was largely imported. It was cultural. European modernism, on the other hand, had been fostered by societies that had experienced a far greater technical and economic modernization than had those in Latin America. Since the modern did not, and could not, entirely displace the traditional in Latin America, according to García Canclini, a "multitemporal

Clockwise from left: *Detroit Industry* (detail) 1932–1933; painting by Diego Rivera; © The Detroit Institute of Arts. Lagos, Nigeria; © George Esiri/Reuters/Corbis. Amonte House, exterior; architect: Axi:Ome (courtesy rendering).

heterogeneity" resulted as the past and the present worked together as a hybrid new. Within a generic Latin American way of operating, this resulted in the development of "hybrid cultures" that are aesthetically modern but in which "high" and "low," foreign and vernacular, popular and high-brow, traditional and contemporary cultures coexist through a system of negotiations of what is kept, altered, and discarded from each.

The following three examples attest to the existence of these kinds of hybrid cultures in our world today.

In the Lagos Charter, their excellent research contribution to Rem Koolhaas's Harvard Project on the City, Joshua Comaroff and Gullivar Shepard propose examining Lagos, Nigeria for new ways of thinking about cities — as one might extol the virtues of Italian piazzas and Catalan ramblas. In looking at Lagos, they say, we are looking at how the "much-touted values of contemporary capital and its prophetic organizational models of dispersal and discontinuity, federalism and flexibility — have





been realized and perfected ... This is to say that Lagos is not catching up with us. Rather, we may be catching up with Lagos." Central to their proposition is the inevitable corruption of our understanding of the modern as the most advanced and that, in fact, the collision and coexistence of the modern with other systems will dispel the inbred homogeneity of our ways of thinking based on a limited understanding of the world.

The second example concerns the ever-present race for highly rated sustainable buildings. In a conference discussion in Havana, Cuba, organized by the Association of Collegiate Schools of Architecture (ACSA) in 2002, the contradictions of our modernity became apparent. A participant had just finished touting the merits of William McDonough's newly completed Nike Headquarters in the Netherlands, with its multiplicity of systems to regulate the environment and promote good health and work habits. Someone from the audience asked the Cuban respondent for his reactions to this building and its applicability to the Cuban context. His response: "This building wouldn't work in Cuba. We do not have a consistent supply of electricity to power those systems or, in the worst of cases, to run its airconditioning units when the climate is unbearably hot." In Cuba, in other words, McDonough's work would be obsolete. Replacing it would be a good "old-fashioned" functionalist

Below: IMSS Hospital, Acapulco; architect: Nuevo Espíritu with Eduardo Canseco; photo by Michel Arciga.



building to fulfill well-defined practical requirements (and limitations) and operate most efficiently. Architects in this country are also seeing the paradoxes of the "new sustainability": from the exorbitant costs of many sustainable and energy-efficient materials, to the limitations of the ratings systems used to judge performance, and the reliance on other types of resources, such as computerized electronic systems, for their operation. The Saint Louis, Missouri-based Axi:Ome, for example, developed the Amonte House as a classically inspired modernist glass box. Yet, through the design of interior courtyards, vertical veranda-like edges based on vernacular traditions, thermal masses for passive heating, and manual operating systems that allow the regulation of ventilation through the double glass walls and the manipulation of thin brise-soleils on the building's skin, the design addresses the problems associated with the modernist typology and the current limitations with sustainability.

The final example is based upon the division of labor as it currently affects architectural production, design, and management. Many architects complain about the limited amount of time that they spend on design. This is partly a result of increasingly complex projects and limited (and shrinking) fees designated for design itself. Additionally, while the specialization of the profession and its component tasks makes it more economically viable and efficient, the integration of decisions is becoming more difficult. A truly outstanding practice would address all these competing concerns, although, by its very nature, it would most likely be somewhat anachronistic and inefficient. One successful example, however, is that of the Mexican

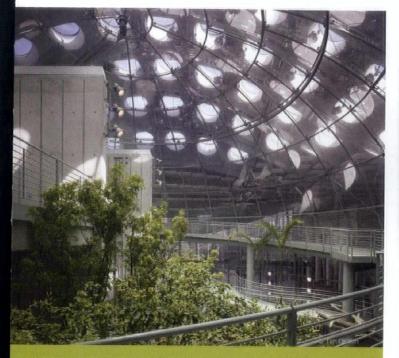
> architect Fernando Vasconcelos. Vasconcelos' practice consists of three independent offices; he divides his time among them, while privileging the third. The first focuses on construction management for large projects (at present, he is completing the JVC Center in Guadalajara, Jalisco); the second focuses on the design of speculative office and apartment buildings and retail spaces (in collaboration with another Mexican architect and developer); the third is his investigative design practice, which is, self-admittedly, "economically unsuccessful." It is, however, funded by the other two. In this third practice, Nuevo Espíritu (New Spirit, after Le Corbusier's L'Esprit Nouveau), Vasconcelos and his small team of young architects and interns work primarily on small residences, competitions, schools, and low-budget public works projects. Here, he applies his vast construction experience as well as his knowledge of real estate economics to the requirements of his clients, while developing new design and formal strategies without budgetary constraints. These new architectural solutions are in turn deployed in the other two practices.

> At the core of these three cases is a similar procedure: the selective abandonment of modernity. The result is a new direction

based on the integration of the contemporary, radical, and modern with the old, inefficient, and vernacular — a process, as García Canclini's *Hybrid Cultures* demonstrates, that has precedents in 20th-century Latin America.

Although it would be easy for designers to usurp García Canclini's argument by merely translating his provocative title and implications into an architectural context, his book offers something more: an understanding of our culture's present ambivalence toward modernity and our "multitemporal heterogeneity." The hybrid cultures in the Latin American experience were born of expedience, not choice. A deliberate, considered integration of modernity and tradition might yield very different results. In showing us how others have stepped back from modernity, García Canclini offers us heretofore unimagined strategies and possibilities. Perhaps our newly-found hybridity is one that reconciles our embrace of modernity with our desire to leave it.

Luis E. Carranza PhD is an associate professor of architecture at Roger Williams University and author of the forthcoming *Architecture as Revolution: Episodes in the History of Modern Architecture in Mexico, 1920–1940.*



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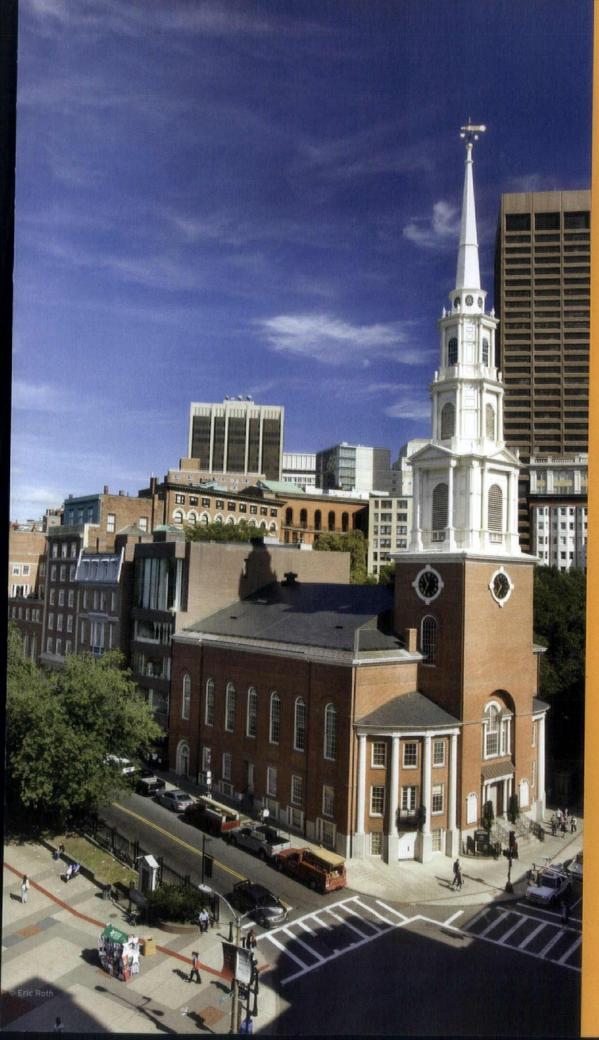


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The New Collaboration All Mixed Up

Told to "think outside the box," some designers and artists are doing exactly that: they don't think about the box at all.

by Ray Kinoshita Mann AlA

MULTIDISCIPLINARY. COLLABORATIVE. These are the words that litter countless architecture firm marketing brochures, that are tossed into design-school discussions, and that form many architects' self-image. The profession that emerged at the end of the 20th century was very different from that of the previous century: the master-builder had morphed into a team-player.

Now, at the beginning of the 21st century, the profession seems to be on the verge of remaking itself once again. As Alex Bitterman, a professor of design at Rochester Institute of Technology, has noted, "Architects are trained to observe and re-examine systems - construction systems, social systems, economic systems, and to forecast the vector of these integrated systems on a scale that impacts our global community." Add to that the generalized capability of architects to understand the physical and material implications of such systems, and you have a prescription for a field that is continuously reinventing itself. Today, the very nature of the multidisciplinary collaboration that has enabled the contemporary practice of architecture is evolving as a small but influential number of practitioners including designers and artists — are observing and re-examining standard practice. Their work goes beyond collaboration to mix, meld, and merge.

These practitioners embrace the notion of hybrid vigor, the idea that mixing yields something better — something more fluid and more adaptable that can better meet new and changing conditions by embodying the strengths of each component to yield a sum greater than its parts. For architecture, often so hide-bound in its traditions and professional self-identity, hybrid thinking offers the opportunity to reach well beyond the "bricks and mortar" into issues that may seem to have little to do with building, per se, that can even save lives or the environment by helping to "architect" a better life system.

Each of the individuals or practices represented in the following pages has extended the reach of architecture's potential in substantive ways through hybrid approaches. While the design media often seem to suggest that the expanding realm of architecture is defined by an ever-larger, elaborate, and technological high-wire act of complicated buildings and building systems, these works represent a

broadening of consideration that taps more deeply into social needs and customs. For some of these practitioners, such as Sheila Kennedy and Frano Violich from Boston's KVA, and Julie Bargmann from D.I.R.T. in Charlottesville, Virginia, hybridity has been the underlying influence on their work since they began with an early recognition of the need to respond to a broader mission; now, 20-plus years later, they've achieved a true maturity in their approach.

What is characteristic of these folks? They've truly opened themselves to the knowledge and procedures of other fields, of the reality of conditions "out there." They have put themselves forward to meet the question, not to hammer the question into a shape they already know how to answer. This simple fact is what separates them from the rest, and in so doing, they are redefining practice from without and from within.

Of course, these practitioners are themselves intellectual hybrids — many of them share genetic affinities with architects such as Rem Koolhaas, Steven Holl, and William McDonough; with cross-disciplinary thinkers such as Stewart Brand and Richard Saul Wurman; with established collaborative design firms such as Cambridge Seven and Sasaki; and with 20th-century pioneers of collaborative practice such as Ray and Charles Eames, and the Bauhaus.

Despite these roots, and for all their success and recognition by many of their peers and the public, those engaged in hybrid practice often speak of feeling at times marginalized by the "profession." Each has given up something recognizable for a less easily recognized something else. It's frequently a brave undertaking: financial security and professional stature are often at risk when the world doesn't understand exactly what it is that you do. Even so, these designers and artists may be not only expanding the margins of the field, but also, as hybrids often do in nature, creating what is really the new center. So, to the rest of us: Watch and Learn.

Ray Kinoshita Mann AIA is a practicing architect in western Massachusetts and associate professor of architecture and design at the University of Massachusetts, Amherst. She is writing a book about the working methodologies of Japanese architect, Itsuko Hasegawa.

Wexler Studio

New York City | www.allanwexlerstudio.com





Allan and Ellen Wexler bring the keen insights of the artist into investigating and revealing new potentials of architecture and the human interaction with and inhabitation of space. With remarkable precision and humor, they show us that a chair is not just a chair and a roof is not just a roof, or that the form of a wind turbine shadow can become yet something else. And by harvesting what is special out of the familiar, they remind us how architectural thinking in almost any venue can and should cultivate entirely new possibilities in our relationships with each other and the environment around us, every day.

Top to bottom: Two Too Large Tables, Hudson River Park, New York City, 2006. Drawing Water, Purchase, New York, 2002. Windworks, Cleveland, Ohio, 2006. Photos courtesy Allan and Ellen Wexler.



John Zeisel

Hearthstone Alzheimer Care | Woburn, Massachusetts | www.thehearth.org



John Zeisel has taken architectural thinking deep into the mind of Alzheimer's Disease, to discover how profoundly we are impacted by our environments, especially as we lose neurological functioning - and how most of our building activity fails to take this into account. In co-founding Hearthstone Alzheimer Care in 1992, John Zeisel essentially subsumed his identity as an architect into that of a team of medical and behavioral experts and caregivers. In so doing, his impact is felt both in the architecture of the spatial methodology and in the architecture of the understanding of the disease and how to care for it. When we consider that responsive spaces and care systems not only have a huge impact on the sense of well-being of individuals, but have also been shown to measurably slow the progression of the disease, it is clear that we have a lot more to learn about architecture for everybody based on his insights.

Hearthstone facilities in (clockwise from top left) Palisades, New York; Marlborough, Massachusetts; and Brockton, Massachusetts. Hanging planters discourage climbing; therapeutic gardens provide a roomy but well-defined enclosure with seasonally distinctive vegetation and pathway choices; gathering spaces, in the form of living rooms or microwave stations, offer opportunities to socialize. Photos courtesy John Zeisel.





D.I.R.T. studio

Dump It Right There) | Charlottesville, Virginia | www.dirtstudio.com



When Julie Bargmann, after schooling as a landscape architect, set out to take on some of the nation's worst pollution sites, she must have had an inkling that improving the most damaged places can make anything else seem possible. "Collaboration" is an inadequate word to describe the intensity with which she has reached into the scientific community, joined forces with like-minded colleagues such as William McDonough FAIA, and reached out to individuals, communities, and historians as keepers of our culture. From the rehabilitation and rejuvenation of acid mine drainage sites to the 100-percent-recycled site-materials strategy at the Urban Outfitters project at the Philadelphia Dockyards (shown above), Bargmann has teased out an entirely new role for design as a hybrid activity that rescues not only sites, but also their history, memories, and continued possibilities.

Left: Concrete pavers salvaged from site, Urban Outfitters project, Philadelphia, 2006. D.I.R.T. studio with Meyer Scherer & Rockcastle (architects) and Gladnick Wright Salameda (engineers). Right: historical photo of site. Photos courtesy D.I.R.T. studio/Julie Bargmann.

KVA MATx

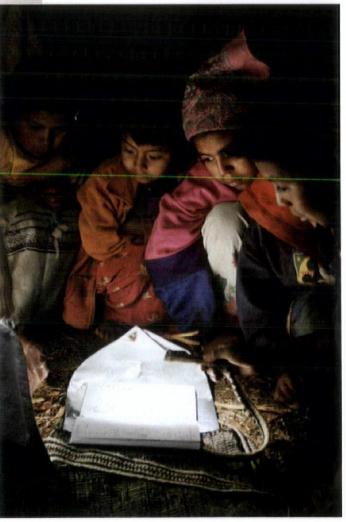
Kennedy & Violich Architecture | Boston, Massachusetts | www.kvarch.net







What makes an object a work of architecture? Someone infusing it with an architectural thought or methodology as when Sheila Kennedy recognized that a blanket can be a home. And when that blanket is made of a simple and durable "cloth" made of solar cells, LEDs, and reflective film, it not only shelters but may even save a life by offering therapy in the treatment of tuberculosis. Sheila Kennedy AIA and Frano Violich AIA have embraced a cross-over between arts, architecture, and technology since they began working together over 20 years ago. For them, each medium is a means for revealing and articulating the conditions underlying what we make and use. The artistic and technical rigor of their approach has brought them to focus on the new energy imperative, largely through KVA's materials research unit, MATx, which includes rapid prototyping equipment. The tuberculosis blanket is a part of the KVA MATx Portable Light initiative, a nonprofit established to find new ways of delivering power and light to the developing world.



Clockwise from top left: Patient with HIV and TB receives Portable Light energy-harvesting blanket kit; photo courtesy iTEACH Medical Team, Edendale Hospital, Zwa-Zulu, Natal. Printed circuit-board production, KVA MATx Opto-Electronics Workshop. Portable Light, Cohamiata, Sierra Madre; photo courtesy Centro Huichol. Wall prototype for 34th Street Ferry Terminal, KVA Digital Fabrication Workshop. KVA photos courtesy KVA MATx.

Höweler + Yoon Architecture

Boston, Massachusetts | www.hyarchitecture.com





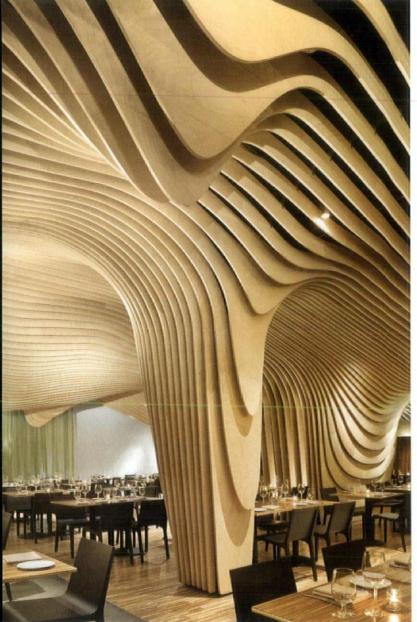
Eric Höweler AIA and Meejin Yoon might seem to be having just too much fun. Wearables and sittables; hovering yellow canopy cones that capture and interact with solar energy, rainwater, and sound; installations; buildings, condos, and interiors — their work suggests new lifestyle possibilities and demonstrates that architecture can be found everywhere.

Clockwise from top: Loop Chair, 2006. Möbius Dress, 2004. Hover, a temporary light installation incorporating solar panels, microprocessors, and LEDs. Photos courtesy Höweler + Yoon Architecture.



Office dA

Boston, Massachusetts | www.officeda.com



From doorknobs to toy cars, from restaurant interiors to entire buildings, Office dA principals Monica Ponce de Leon and Nader Tehrani make disciplinary boundary-breaking seem effortless. What makes this overt hybridity work so well, however, is a more subtle hybridity underlying their thought processes, what one might call a mathematical/ textile sensibility — a hyper-awareness of how the individual element exists and acts with another and another to repeat, shift, turn, accumulate. More than glibly digital or superficially virtuosic, their methodology evokes deep traditions in the made-ness of things, and in so doing, engages and enriches our collective sensibilities across time, class, and cultural boundaries. One can as easily imagine the artisan's pleasure in constructing a wall or piece of furniture as our own in seeing it.



Clockwise from top left: BanQ, restaurant and bar, Boston, 2008; photo by John Horner. Macallen Building, condominiums, Boston, 2007; photo by John Horner. Voroduo, installation at Pékin Fine Arts, Beijing, 2008; photo by Brandon Clifford.

Andrea Zittel

Joshua Tree, California | www.zittel.org

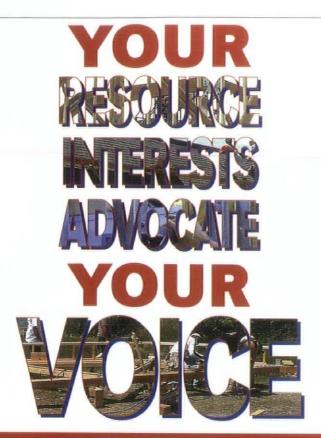




Andrea Zittel is a scientist of space and inhabitation cloaked in the guise of an artist. Relentlessly delving into the functions of the world and ourselves, often using herself "as a handy example of a human being," she helps us see with sudden clarity the assumptions and presumptions that underlie much of modern existence. Among her most familiar projects are the Wagon Stations, the portable living pods featured at the Whitney Museum in 2006 that were conceived as purposefully simple shelters that can be brought virtually anywhere. By pursuing her unbounded "research" from terrain to shelters to furniture, household goods, and even body wear, she ventures well beyond the designed gadget and the artful object to suggest that the solution to a design problem starts with redesigning the problem itself.



Clockwise from top: A-Z Uniforms, 1991–2000. A-Z Wagon Station customized by Russell Whitten, 2003. A-Z Wagon Stations, customized by Connie Walsh and Chris Young (foreground) and Jonas Hauptman (background), 2003. Photos © Andrea Zittel; courtesy Andrea Rosen Gallery.



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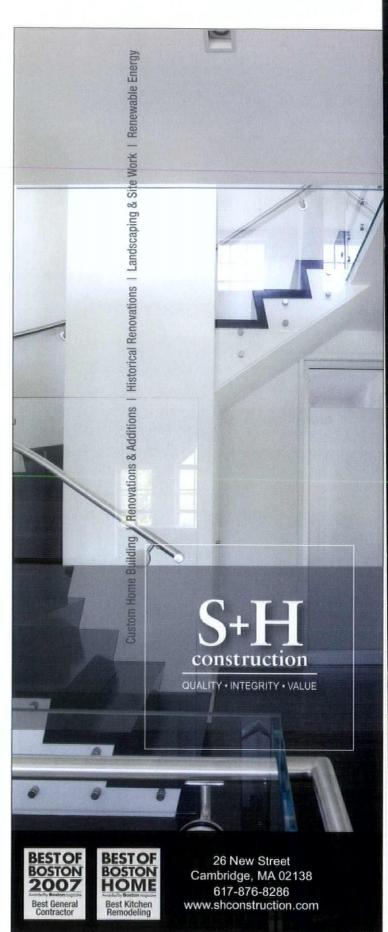
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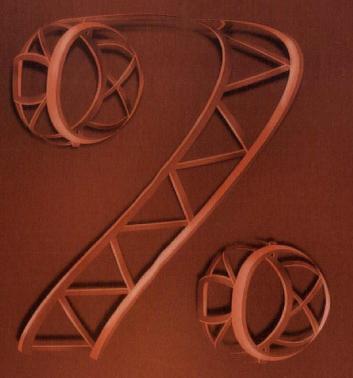
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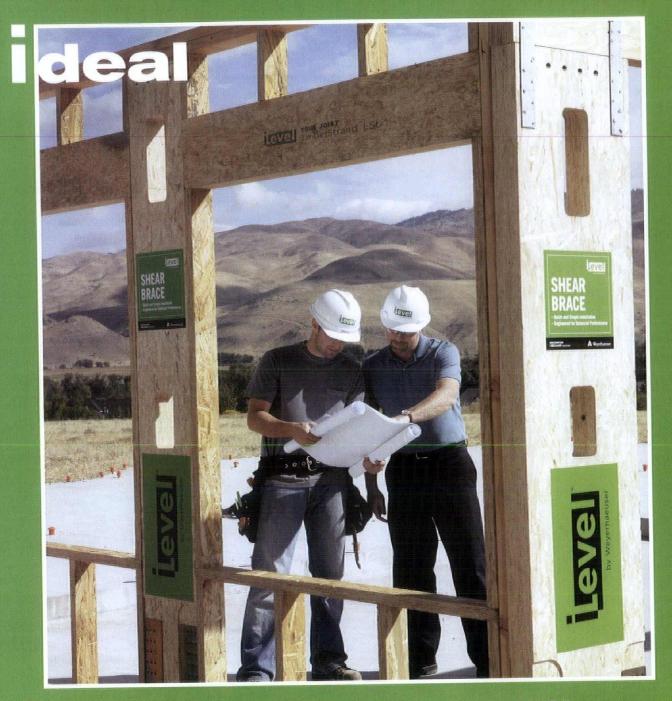
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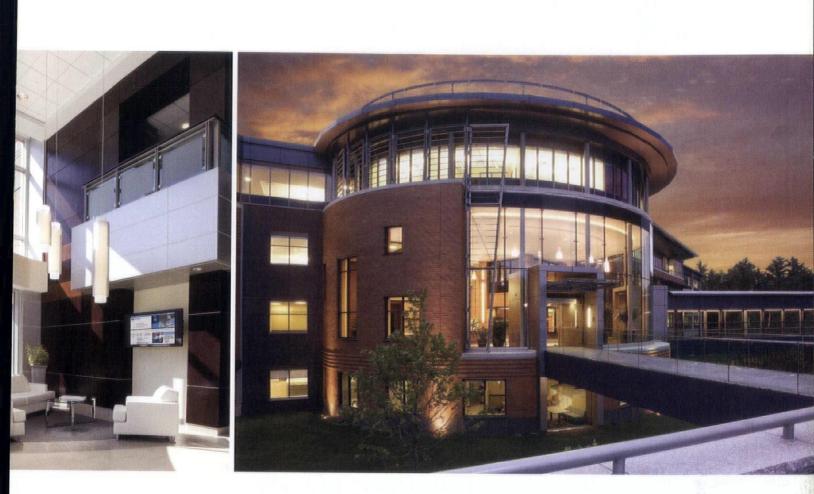
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Simplify, J. J. Simplify

John Maeda talks with Jeff Stein AIA

John Maeda was recently named the 16th president of Rhode Island School of Design. Previously the associate director of research at the MIT Media Lab, he is considered one of the world's leading innovators in digital design. He is the author of four books: *The Laws of Simplicity* (MIT Press, 2006); *Creative Code: Aesthetics + Computation* (Thames and Hudson, 2004); *Maeda @ Media* (Universe Publishing, 2001); and *Design By Numbers* (MIT Press, 2001).



Jeff Stein AIA is head of the School of Architecture and dean of the Boston Architectural College, and is the architecture critic for *Banker & Tradesman*.

- > Limited-edition sneakers, designed by John Maeda for Reebok: left, Timetanium; right, Emoretion.
- v Screen capture, RISD blog by John Maeda (http://our.risd.edu).

Jeff Stein: Many people would say that John Maeda epitomizes someone who has enjoyed a hybrid career, one connecting technology, art, and design. You've earned recognition as a digital artist, with work in the permanent collections of the Museum of Modern Art in New York and the San Francisco Museum of Modern Art. You are a renowned product designer, with clients including Cartier, Google, Samsung, and, perhaps best known to consumers, Reebok. You've been on the forefront of technology in your recent role as the associate director of research at the MIT Media Lab. And now of course you are in a position to further hybridize these experiences as the new president of Rhode Island School of Design. I can't help but notice that your education seems to have led to this kind of synthesis. You have degrees in computer science and electrical engineering, an MBA, and a doctorate from the University of Tsukuba, in Japan, in "design science." What is that exactly?

John Maeda: The Japanese have developed doctoral programs built around design as a science, in particular, industrial design. The idea is to create things that fit people better, using the very Japanese idea of *kansei*, which is a form of what is called emotional engineering.

Jeff Stein: You're coming to RISD from a science-based research environment at MIT. Schools of architecture, art, and design in this country generally don't promote research. Should we be rethinking this approach?



John Maeda: A lot of design programs worldwide are pondering how to engage in more research and how to get funding in a very competitive arena. The challenge for art and design schools is how to define themselves as teaching institutions, but also to engage in free-thinking research. This is something that I think is important to student development, because students are always best served by doing things they couldn't do in the real world — doing things without the normal constraints.

In the field of architecture, the real challenge is how our world of data has changed how we live. Architecture in the future is going to engage much more psychology, much more anthropology, much more of the human condition, and much more of the liberal arts perspective, because the act of living has become a lot more personal.

Jeff Stein: When architects are members of design teams with engineers and other consultants, they often characterize themselves as the people who know about the human issues of space. But when you look at the curriculum in any of the 117 professional schools of architecture in North America, the only place where they could possibly learn that would be in an architectural history course.

John Maeda: Yes. I would say that one thing that's different about RISD is the strong influence of the liberal arts curriculum; you walk around the studios and everyone's reading literary classics — *Walden* is all over the place — and that influences how students learn to think.

Professor Kyna Leski and I did a lecture together recently. When you hear her talk about architecture, it doesn't seem as though she's talking about buildings: she's talking about the purity of form, the spirituality of it, how it all connects. It's like an ancient art opening into our vast expanse of technological possibilities — how we make things, and how we've always united naturally when we are sharing the task of creating places. That's what I think architecture is.

It also translates to the world of business thinking. In studio crits at the end of the year, the architecture students defend themselves just as they would in any kind of situation where they're engaging clients. They're building the skills to defend One long-term issue I'm working on is how to resolve the misconception that many parents have about their kids going off to be artists and designers — that it's something dangerous to their future.

their ideas with logic, but also with passion. That's something that gets me excited every day here: there's just so much passion.

Jeff Stein: And that's important, because design never turns out to be a nine-to-five kind of job — it requires more time, more engagement.

John Maeda: One long-term issue I'm working on is how to resolve the misconception that many parents have about their kids going off to be artists and designers — that it's something dangerous to their future. Most people have the notion that becoming an artist is not good for you. It's not that they think artists are bad people; it's that they believe that artists can't make money — the classic "starving artist." What's missing today is the notion that artists and designers are among the most passionate people about what they do; and this world needs more passion. There's too much logic, too much systematic thinking, too much hope that the systems will save us. But humanity is about doing crazy, wonderful things. And that part has to be preserved, not just at the university level, but also K-to-12 as well. It's what built America — this wonderful place where all the rules were broken.

Jeff Stein: A large part of New England's economy depends on the export of educated minds. Yet there's only so much physical space to accommodate those transformations. Are you thinking about developing educational relationships at a distance through technology?



John Maeda: I think everyone is. I'm in a very interesting position because I have a different perspective — I can see all the parts that are out there. I can ask which ones are relevant, which ones are affordable, which ones are free. There are a lot of free things out there.

At the same time, I've always had this love-hate relationship with technology. So when people say, "I don't like computers," I understand them. When people say, "I like computers," I understand them, too. It's not that I'm wishy-washy. It's hard to figure out what to love, what to hate. I'm very curious about this balance.

Jeff Stein: And you are right in the middle of that. Some of your entries on your blog [our.risd.edu] talk about humanizing technology. What do you mean by that, exactly?

John Maeda: Some people say the best solution is high tech; some people say no, go low tech. I believe that the best solution is always less tech. Just enough, which is not usually considered an option.

Jeff Stein: You've been characterized as the father of the simplicity movement in the technology age. Someone once said your interest in simplicity came from your being frustrated that computers tend to become more complicated and difficult to use with each generation. Is that really true?

John Maeda: Yes, totally. I've been a computer user for the last 30 years now, and I've gotten kind of tired of them.

Jeff Stein: But it seems to me that they've actually gotten simpler to use, although I suppose that's partly because we have IT departments.

John Maeda: It all depends on your perspective. For instance, our vice president of media told me that her e-mail has stopped working because her password keeps timing out every hour, and there's no way to fix it. Technology has gotten so complex that fixing it is not trivial. I manage my own IT because I have such a complex situation. So I suppose you could say that I've actually complexified my life.

Jeff Stein: Your terrific little book, *The Laws of Simplicity*, has 10 rules for simplicity. The notion of Law #1, conscious reduction or subconscious compression, is a really important one right now. There was a recent *Wall Street Journal* editorial about the insanity of 55 mile-per-hour speed limits. Back in the mid-'80s when they were first instituted, Americans saved about 170,000 barrels of oil a day. But right away, it became clear that they were also losing about a billion hours a year of time by traveling more slowly. And pretty soon, they weren't traveling more slowly at all and it didn't really matter. This seems to me to be an urban-design problem. Most car trips are 20 miles or less and involve people commuting between home and work. If the urban condition were designed in a more compressed way, like Tokyo or Boston, time would be saved *and* oil would be saved.

< Digital community bulletin boards at RISD, designed by John Maeda with Potion NY in partnership with Samsung.



John Maeda: Working where you live is much more possible now than in the past because of information technology. It's not just big computers, but technology that enables services like FedEx, which were impossible before computers. You're describing a landscape that has been changed by the speed of data, which we now eat in all shapes and forms and which can provide us a different living experience. Add to that the fact that we live in an era of advanced material development, and in a time when we're creating things that are much more energy-efficient — things like hybrid cars. I've wondered what would happen if Toyota were an architecture firm, and Toyota made hybrid buildings. When I was in school in Japan, I had an industrial-design professor who was originally an architect, and he loved to say that cars were buildings with wheels on them.

Jeff Stein: When your name comes up in conversation, the term "innovation" also frequently comes up. What do you mean by "innovation"? It seems to me that innovation implies purpose — choosing something.

John Maeda: Some of the best innovation does. However, to innovate, you often have to be less purposeful. A good example is Post-It Notes. You may have heard the story — the guy who made glue that wasn't sticky and they all laughed at him? It was like Rudolf the Red-Nosed Reindeer. But now I'm not sure we'd be able to survive without Post-It Notes. That was a total accident. It was un-purposeful — innovation without a purpose.

Jeff Stein: So when you talk about creating corporate relationships with RISD, I suspect you're not just talking about funding relationships. I imagine that you want to develop relationships that foster that sort of unpurposeful thrashing around, creating new things that are seen as innovations later on.

John Maeda: Right. RISD has always collaborated with industry in different ways — that's part of its history. But I find that big companies like Google and Yahoo are discovering what's called "design thinking." When they come to RISD, though, they find RISD thinking, which isn't pure design thinking. It's a kind of anomaly: it isn't business school-driven, or industry-driven, like work-for-hire. It's very humane. It derives from the fundamentals < Preparation for Maeda:MySpace, May 2007 installation at Riflemaker Gallery, London.

of a strong liberal-arts education, and it makes students question everything, even the industries they may work in. I find that wonderful. And I find that the best companies really embrace that kind of thinking, because they continually ask themselves, "Is this business making sense?"

Jeff Stein: And right now we're at an interesting moment in our culture when, it turns out, many businesses aren't making sense. Most buildings don't make sense any more. They're obsolete, designed for an era of cheap oil. So the opportunities for this kind of engagement are really enormous.

John Maeda: These companies could hire any firm out there to tell them, for a fee, they're great. But when they come here, they have people who are questioning the whole nature of the economy and the industry; some of our people do not even like to collaborate with industry. And that's fine. These companies tolerate that because they're coming for a different reason. There's that great restaurant in Boston, Durgin Park, where you go because the waitress will abuse you, because that feels authentic. RISD is authentic.

What I'm trying to ensure is the preservation of its unique culture. My job is to build on that existing culture and create an advantageous situation for the next president and next generation of RISD students, and the ones after that, and beyond. My job is to ensure a 20- and 30-year horizon for RISD, so that the next generation will be able to benefit from whatever I plant now. Nothing is short-term to me. This job is not about profit. It's about ensuring how we will engage with the world in the future. We are a generator of education, of knowledge-sharing, and not just for our generation.

Jeff Stein: What about the conflict of the evolving culture of technology versus the preservation of other cultures? Is there a role for designers in the preservation of culture, generally?

John Maeda: Absolutely. That's where the big gains are going to be had, which don't have immediately obvious economic implication. But they will. The NEA [National Endowment for the Arts] design division has a program that sends designers into forgotten towns off the main highways to learn to understand them. I think it's fantastic. It's like going to a foreign country in your own country. I think that kind of socially meaningful work is what's driving a lot of students today. I think the Web has helped to create that interest. It's made them waste a lot of time, but their global identity is so much stronger now. A kid today with a MySpace or a Facebook page can have friends in India or Africa or Europe within seconds.

Jeff Stein: What do you think needs designing?

John Maeda: I think what has to be designed is what's been designed forever, which is relationships: between people, between people and their objects, between people and their past. These relationships have changed because of technology.

I was at a party and I saw Richard Saul Wurman with Nicholas Negroponte, sitting together at a table by themselves, chatting and laughing. I thought, "These guys have known each other for a long time." The quality of the relationship is incredible, because they've had a lifetime together. It dawned on me: I want that. How do you get that? How do you create a life out of those relationships? I look at the whole design question as encompassing the design of your own life.

Jeff Stein: Are there specific things that you're thinking of right now, to make sure that happens at RISD?

John Maeda: Yes, I take a morning jog with students. I also hang out in the cafés and the cafeterias. I show up and say, "Hey, how're you doing?" The one piece of knowledge I try to press upon all students is that they're coming to college for great classes, but also great relationships with friends. They'll have those relationships 20, 30 years later, and that's something that you can't put a price tag on.

Jeff Stein: You're probably one of the very few blogging college presidents.

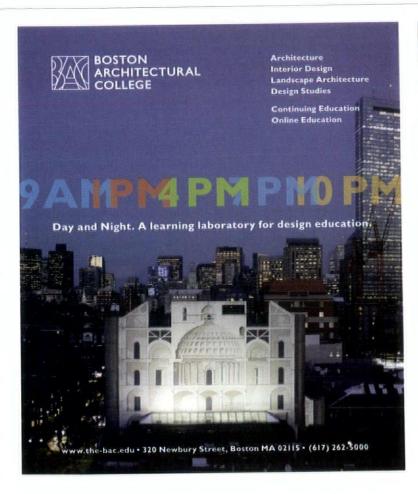
John Maeda: That's because, as a leader, it's considered dangerous to expose yourself, to be too out there, letting people know what you think. But I would prefer not to create the myth that you can't know what I'm thinking. So I open myself to the campus, to a blog where anyone can talk with me, can even have anonymous conversations with me, because I think that any open dialogue improves the quality of conversation because it's represents a diversity of opinion. That's America, and I love it. I was a kid who grew up in a tofu factory in Seattle. Against all odds, I'm the president of a college. It's a wonderful thing. I'm just out there, talking with people and making mistakes left and right, and saying I'm sorry, just as I did at MIT. A friend told me that RISD is like MIT for right-brained people. It's totally true. It's an intense place on a different dimension — a very deeply human dimension.

Jeff Stein: Simplicity for you doesn't mean just doing less, does it?

John Maeda: No, not at all. It's about the balance, really, between knowing what has to stay simple and what has to stay complex, and which ones have to un-stay. Every day, I'm like an architect, sketching new ideas in my head. And every day I have a new sketch, a new design. I talk to people and say, "Is this the right design?" And if they say, "No," I crumple it up and put it in the trash basket. So I keep looking, because I really believe in this whole reflective leadership kind of style. The more I can say, "Is this right?" instead of "This is right," the more I can benefit from the learning opportunity I have here.

Jeff Stein: And you need to ask that question often, because what you need are a series of little yeses rather than waiting for a big no at the end.

John Maeda: Right. I'm just following very simple rules of interaction that I've always believed in. Don't be passive-aggressive. Be open and honest every step of the way. If you make mistakes, say you're sorry, and move on. That's all I really have in my arsenal.



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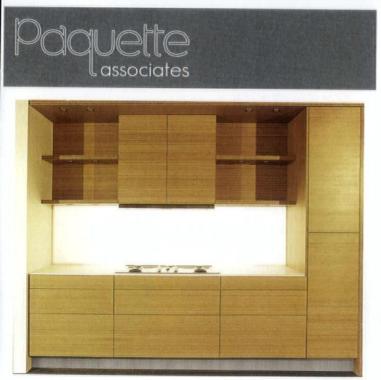


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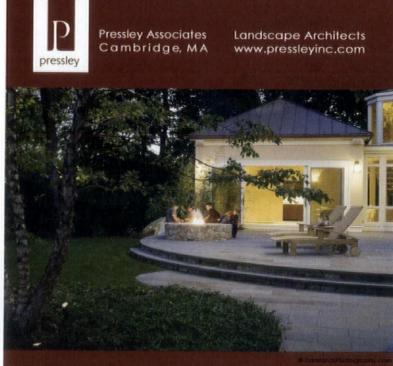


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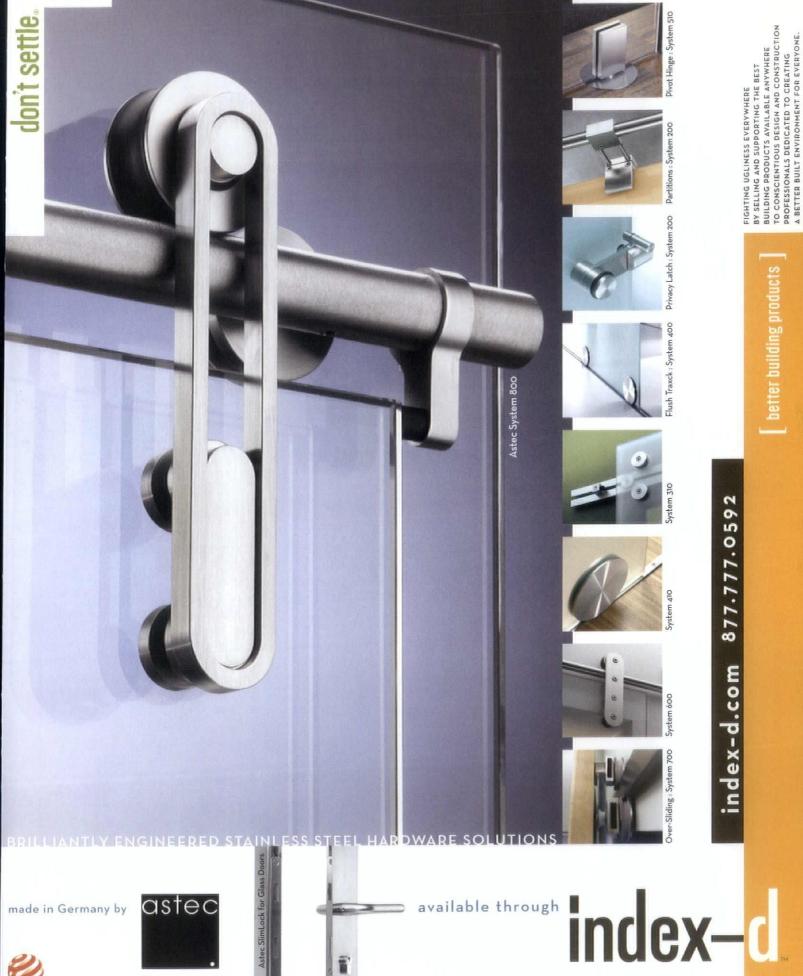
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BY GRETCHEN SCHNEIDER, ASSOC. AIA

| Periodical Roundup

Covering the Issues

Talk about digging big... Tunnels are "changing the world," enthuses engineer Martin Herrenknecht, owner of Herrenknecht AG, the global leader in tunneling machines. Burkhard Bilger profiles Herrenknecht in "The Long Dig," (The New Yorker, September 15, 2008). From Istanbul and Barcelona to New York City and the new city of Dongtan, tunnels now being dug underground are not only changing the traffic patterns and daily lives of the people above, but are also enabling urban growth to continue. Or so argues Herrenknecht. The Gotthard Base Tunnel through the Swiss Alps will make Switzerland "as flat as Sweden" and alter transportation routes across the entire continent. Beyond a simple company profile, Bilger explores the history and marvel of tunneling, along with larger questions about the relationship between infrastructure and urban experience, and our ability to carve the earth.

Back to school ... We probably haven't begun to hear the end of Newton Northan exceptionally expensive high school in a tony Boston suburb, which recently triggered initiatives for statewide school design standardization. Boston Magazine promises the "Lessons of Newton North" in its School Issue (September 2008). Still under construction and still a political fireball, it may be too early for lessons. Instead, writer Jason Schwartz delivers a balanced essay about the school: why it now costs \$200 million (clues are in the windows and the building's low, zig-zag configuration); local opinions, pro and con; Newton's role as a national leader in progressive and "trailblazing" education; and this building's role in a larger story about deferred maintenance in a town. Schwartz discusses client input and the design process, as he questions the

functional life of buildings and sheds light on the tough questions facing this community — and others — about where limited resources should go.

Shhhhh... A front door closing, a car starting, an airplane taking off, the ceiling fan, a garbage truck, the refrigerator motor, a bird - my world, like yours, is full of auditory distractions. Noise interrupts sleep patterns; increases anxiety, aggressions, and social conflict; and makes it hard for kids to learn, writes Mary Desmond Pinkowish in "Quiet Please!" This is one of a collection of related articles in Ode magazine's "Silence Issue" (July/August 2008). Not overtly architectural, to be sure, though important food for thought. It's a gentle reminder that the buildings and landscapes we design affect all of the senses, and that those other senses - like sound - deeply impact experience.

What's the rush? ... What's going on at Ground Zero? Lots, suggests Scott Raab. OK, maybe not lots in the ground, but lots behind the scenes, and Raab says we shouldn't get all worked up over it. Raab has chronicled the construction of the Freedom Tower since it began. In this, his fifth and latest installment for Esquire (October 2008), he takes irreverent aim at all the naysayers as he explains what's taking so long and imagines what this site will mean in the near and distant future. Raab takes irreverent aim at high-minded design, too, as he argues for the importance of getting it right (as opposed to just getting it done), and the imperative for this building to inspire us.

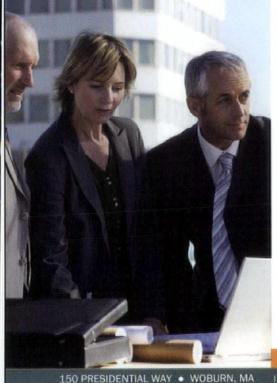
Creating creativity... Harvard Business Review continues to feature the business of design. In its September 2008 cover



story "Collective Creativity," digital animation guru Ed Catmull describes what it takes to support creativity in an office setting - and make it profitable. As the head of Pixar (the makers of Toy Story, Ratatouille, and WALL-E), Catmull has established a 13-year track record of wrangling thousands of ideas and hundreds of people into movies that repeatedly deliver critical acclaim and popular success. His advice? Step One: Hire good people — because good people can develop mediocre ideas into something spectacular, but mediocre people will mangle good ideas. Make excellence the only standard. Encourage everyone to speak up, regardless of job title. And "stay close to the academic community"-the best source for the next generation of great minds. Back to Step One.

Gretchen Schneider, Assoc. AIA, is the principal of Schneider Studio in Boston.

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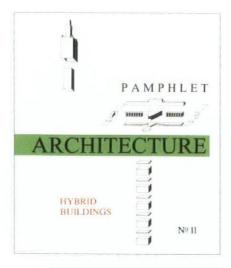


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MORE THOUGHTS ON HYBRID



HYBRID BUILDINGS PAMPHLET ARCHITECTURE, NO. 11 By Joseph Fenton Princeton Architectural Press, 1985

Borrowing from a concept found in genetics, "hybridity" is most commonly understood through the crossbreeding of plants or animals. In architecture, hybridity refers to "crossing" — the mixing of different programs and typologies within single buildings.

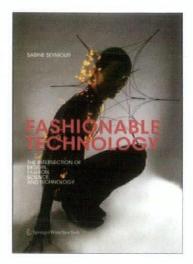
Hybrid Buildings, a short reference booklet amply illustrated with black-andwhite photographs, plans, and diagrams, explores the problem of combining disparate architectural programs and functions in a cohesive whole. Author Joseph Fenton presents the resulting "hybrid buildings" through a survey of historic buildings organized by type: "Fabric Hybrids" camouflage the interior volumetric programmatic configurations with the building envelope; "Graft Hybrids" express the volumetric variety of program through building massing; and "Monolith Hybrids" assume monumental building blocks that contain the various functions without distinguishing them formally. Published in 1985 as part of the well-known Pamphlet Architecture series, Hybrid Buildings also celebrates the postmodernist theories of its time - the embodied contradiction, ambiguity, and diversity that served as strong postmodern rhetoric.

Prior to the segregation of use through New York City's 1916 zoning, many buildings were conceived as containing multiple programs. For example, the One Hundred Story Building designed by Theodore Starrett in 1906 in New York was a monolithic structure comprising all sorts of urban amenities: an amusement park, market, residences, theaters, offices, industry, stores, and a hotel stacked one on top of another. New programmatic combinations emerged from greater structural capacities, zoning limitations, and the need to satisfy a broad and diverse market. The department store/hotel and the railroad smoke vents/office type can be traced back to the early 1930s. (Sound familiar? You guessed it: the Big Dig vent exhaust/ InterContinental Boston Hotel and the Nouvelle at Natick Collection - combining luxury housing and a shopping mall-are hybrid buildings in our own back yard.)

A biological hybrid is identifiable when one can recognize two separate entities that have been "crossed" to make a distinct third. Similarly, early examples of hybrid buildings often featured separate entities with clearly defined boundaries and expressions. Today programmatic variety exists without such distinct boundaries. This can be attributed to technology taking on a more active role in building systems as well as people demanding a holistic architectural experience.

The hybrid building became "a city within a city." Through the reconsideration of multifunctionality and architectural programming, it is a concept that may serve as a fresh model for the revitalization of American cities. If hybrid buildings are also considered in terms of technological systems, they can begin to perform similarly to hybrid cars, using passive and active systems as well as alternative energy resources. The iPhone can store music, serve as a phone, and browse the Internet. Why can't buildings be as robust?

Hansy Better Barraza AIA, LEED AP, is an assistant professor at the Rhode Island School of Design and a principal at Studio Luz Architects in Boston.



FASHIONABLE TECHNOLOGY: THE INTERSECTION OF DESIGN, FASHION, SCIENCE, AND TECHNOLOGY By Sabine Seymour Springer, 2008

Necklaces that remotely sense and respond to the touch of your loved one, garments that react to your body's tension and provide a soothing massage, a belt that plays music that is both heard and felt, a coat for shy people that barks if someone invades their personal space, and a dress that "grows" on your body—these creations sound like the stuff of science fiction. But in fact, they reflect the current state of science and design, as capably explored in *Fashionable Technology*.

The body/technology conflation is by no means new. In the late 1960s, farsighted designer Mary Ann Scherr created a heart-pulse monitor bracelet with technology that was eventually patented. In the 1980s, textile artist Junichi Arai created luminous fabrics with metallic yarns, the type of textile that now provides the foundation for garments that conduct sound, light, and electricity. But in recent years, there has been a veritable explosion of designers exploring the fashion/science idiom, aided by an unprecedented number of design collectives, laboratories, and schools, including the MIT Media Lab.

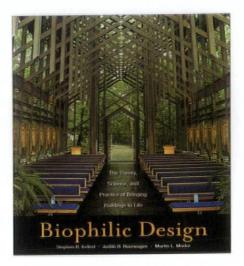
Seymour opens the book with a

"theoretical discourse" to provide an intellectual grounding and an introduction to the lexicon of "fashionable technology" (a phrase she coined in 2000). This section is rather thin, and the ideas presented could use deeper explanation. For example, Seymour argues that the integration of the body and technology is not evident in what the author calls "fashionable wearables" (i.e. fashion), but this can be readily disputed if one considers the correlation between haute couture, which is designed to seamlessly integrate with the body, and the "technology" of garment construction.

The first chapter, "Electronic Fashion," rightly opens with London-based fashion designer Hussein Chalayan. Chalayan has been exploring the confluence of fashion and technology from the outset of his career in the early 1990s and has notably created automated garments and a recent line that incorporates LED displays into the dresses' fabric. The rest of the book attempts to make sense of the burgeoning field by dividing the presentation of designer-scientists into chapters with titles such as "Scientific Couture" and "Social Fabric." Each entry consists of color illustrations and brief write-ups about the artists and their creations. While some veer into the realm of the conceptual, the book reminds us that some of this technology is readily available in the marketplace — the iPod's touch pad is a good example of a highly successful "e-textile."

While thorough in its presentation and international in its scope, the book feels hastily compiled. Many of the descriptions read like promotional literature; there are several editorial oversights and misspellings; and a more thorough explanation of the technologically complex products would be useful. *Fashionable Technology* is, however, an excellent resource and useful guide to the sheer possibility of such high-tech alchemy.

Michelle Tolini Finamore, a design and fashion historian, is a curatorial research associate in the Art of the Americas at the Museum of Fine Arts, Boston.



BIOPHILIC DESIGN

Edited by Stephen R. Kellert, Judith H. Heerwagen, Martin L. Mador John Wiley & Sons, 2008

Our culture is facing tough times. The need for drastic changes in our use of natural resources struggles daily with entrenched economic interests and our enjoyment of creature comforts. The



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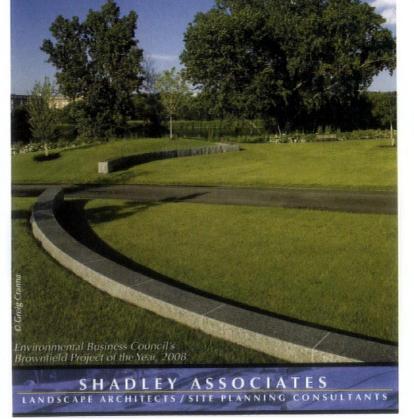
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concepts of sustainable design are beginning to take root in the community consciousness, but standard practices may well have to change more radically than we can imagine.

Biophilic Design collects descriptions of current destructive practices, analyzes their roots in human nature, and offers low-cost, low-impact strategies for change. Rather than give directions on Right Living, the concept provides an organizing structure for a great number of ideas on how changes in development and construction practices can improve our health, the health of the planet, and the relationship between the two.

Economic gain is the primary driver for the development and construction industry, and non-quantifiable motivations for development activity are generally considered suspect by the business community. *Biophilic Design* maintains that design and development strategies determined by the social sciences must be given equal weight with financial drivers. The editors have assembled a remarkably eclectic group of essays to make the case.

The essays cover a range of issues in the social sciences, medicine, the construction industry, and public policy. The first of three parts explores the theory of biophilic design and considers the ways in which nature can be an inspiration to architecture. The rationale is presented in chapters describing the disastrous effects of industrial society on ecosystems and on human relationships. "The Extinction of Natural Experience in the Built Environment," for example, is a searing description of the devastation wrought by coal mining in West Virginia.

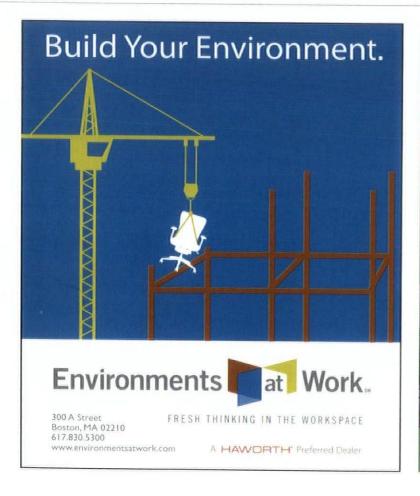
Part II looks at the science and benefits of a biophilic approach, through essays on the effect of design on health care, on restorative design, and on the necessity to focus on the needs of children in the design process. The need to connect human beings with nature as a source of mental and physical nourishment is documented in detail. Ian McHarg's *Design With Nature*, and Christopher Alexander's books are cited as groundbreaking investigations into ways in which design intervention can make an environmental and social difference at many scales.

Part III focuses on the practice of biophilic design, with essays considering everything from the place of windows in healthy design to developing urban biophilic concepts.

The essays are somewhat uneven in quality, and mining the gold takes some effort. It is worth it, however, and the ratio of "aha!" to "ho-hum" moments is high. Among many lyrical passages, I found a list by Stephen Kellert of nine very different ways in which humans respond to water.

My initial reaction to this book was, "Oh boy, another flaky plan to save the world through design by acupuncture." Then I read the book. I recommend that you do, too.

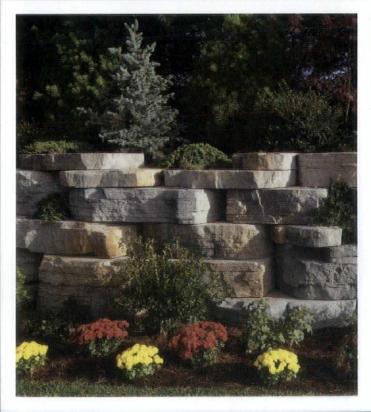
Andrew St. John AIA, LEED AP, is a principal of Smith + St. John in Essex, Massachusetts.



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WEBSITES OF NOTE | Site Work

VISUAL COMPLEXITY

www.visualcomplexity.com/vc

"A unified resource space for anyone interested in the visualization of complex networks." Some stunning examples from the growing field of information visualization. Check out the proposed New York Subway map, Oil Money (a map of political contributions), Hospital System, and Web Trend Map v3.0.

STRANGE MAPS

http://strangemaps.wordpress.com

A blog for those who are weirdly fascinated by maps — the first and maybe still the best form of information visualization.

DESIGN AND THE ELASTIC MIND

www.moma.org/exhibitions/2008/elasticmind

The Museum of Modern Art is definitely onto something: Web versions of its exhibitions that remain available long after the shows close. The design of this site may be a bit frenetic, but it provides a rich documentation of this influential show, including a complete checklist of all the objects and links to other resources.

UNIVERSAL LEONARDO

www.universalleonardo.org

Learn about the Great One, then go play with the "make a monster" feature.

HYBRID.COM

www.hybrid.com

Reviews and previews of alternative-energy vehicles plus tips on saving fuel and consumption comparisons of mainstream cars.

MIT CONVERGENCE CULTURE CONSORTIUM

www.convergenceculture.org

Mix MIT-caliber thinkers with researchers from its Comparative Media Studies program and leaders from cutting-edge companies, and something interesting is bound to happen.

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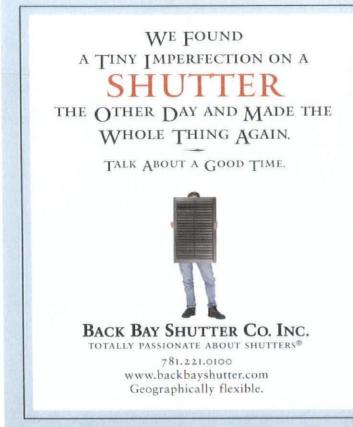
Great resource with links to media coverage and research on "all aspects of the application of biotechnology and genetic engineering" to the agricultural production, processing, and marketing of our food.

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www.iowafarmertoday.com/corn_cam Definitely more interesting than watching paint dry.

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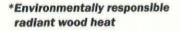
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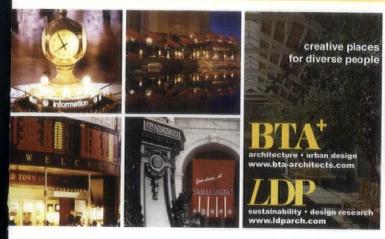
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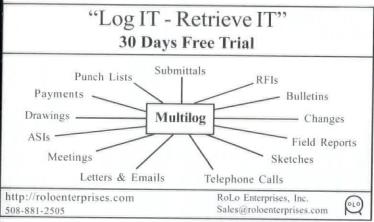
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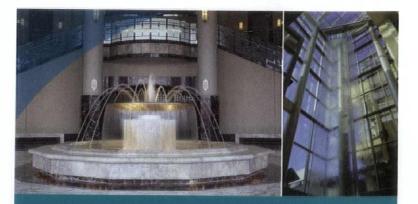
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Other Voices | BY ANNE RAVER

The Corn Patch

In The Story of Corn, Betty Fussell tells how, in 1948, a couple of Harvard graduate students found some tiny cobs of popcorn in a cave in New Mexico. They dropped a few kernels into a hot pan and watched them pop - 3,000 years after cave dwellers must have harvested them.

Indians were cultivating corn as early as 5,000 BC. Botanists believe that corn evolved from a wild grass, which somehow mutated, changing its sexual organs. While the tassel full of male pollen remained at the top of the stalk, the female organ - a cob lined with hundreds of flowers - moved down to the center of the stalk, where its silks could literally be showered with pollen.

Corn sex is quite incredible, really. Each flower on the cob sends out a silk, or style, to collect a grain of pollen, whose nucleus divides, the first twin tunneling down the style, the second sliding down right behind to fertilize the egg. According to Michael Pollan in The Omnivore's Dilemma, each plant can contain 14 to 18 million grains of pollen. So pollination was never a problem. The only catch was, the kernels were encased in a tough husk that prevented germination unless planted by some human hand.

Thus began the marriage of people and corn, which, for millennia, built civilizations, from the Maya and Inca, who worshipped corn as their gods, to contemporary American farmers, who are being strangled by a hybrid gone haywire. As Pollan writes, the descendants of the Maya sometimes say, "I am corn walking," to acknowledge how central maize is to their diet and culture.

The Indians were the first hybridizers, sprinkling pollen from one plant over the silks of another, and selecting the plants with the best drought tolerance, or texture for corn meal, or resistance to disease. When the Indians shared these varieties with the first colonists, they handed the white conquerors the key to what has become the monster of American agriculture. Modern hybrids

increased yields and adapted to chemical fertilizers and pesticides, the legacy of the wartime petrochemical industry. Soon, government subsidies provided another kind of fertilizer.

So then, of course, the question became, what to do with all the corn? Well, we are eating it, as Pollan tells us. It's not only in all those factory-fed cattle, which evolved to eat grass but are fattened on corn (which makes them sick, so they are given antibiotics and then slaughtered early, before they die). But corn is also poured into factory-fed chickens and hogs, farmed salmon and tilapia. It's in cow's milk and cheese. It's in all those sodas and fruit juices sweetened with corn syrup, in hamburger buns and Twinkies, catsup, and a myriad of other processed foods. Corn is also in plastics and pesticides and the very walls of your house.

We are corn walking.

This summer, while on vacation in Delaware, I couldn't find a single ear of Silver Queen, the sweet corn that used to be sold from just about every farmstand on the Eastern Shore. We used to grow it on our own 120-acre farm in Maryland, where my grandparents once sustained their family by raising beef cattle, pigs, chickens, and milk cows. They grew their own grain, they fertilized the fields with manure and cover crops, they tended a large garden and woodlot. But though Dad loved the farm, he worked in the city, and rented the fields to the Lippy boys, who were always on the cutting edge of modern agriculture. We kept a small patch of sweet corn, though, and a large garden, and enough animals to have beef, chicken, and home-cured ham. I didn't realize I was a member of a vanishing tribe of farmergardeners, who loved the race of getting a vegetable just plucked from the earth on the table and into the mouth as soon as possible.

We could taste the earth in the potato, the sun in the corn.

But now, Silver Queen has given way to

v Photo © Antoine Beyeler | Dreamstime.com.



white varieties that contain the so-called sugar gene, which keeps the kernels from turning so quickly to starch."They last longer and people like that," the manager at a farmstand told me last summer. "You can put them in the crisper for a week."

That's when my partner and I decided to grow our own patch of Silver Queen corn. We planted about 20 rows of it, right across from the genetically modified corn the Lippy Brothers grow now in the fields my brother owns. It came up beautifully, tall and straight, and thankfully, variable. Some stalks were shorter than others; some had two ears, some only one. It leaned over in a rainstorm and had to be propped back up. Just as the ears of our sweet corn were forming, the deer discovered them, so I sprayed them with Deer Stopper, a repellent invented by an orchardist who realized that deer hate the smell of peppermint and rosemary. And then we harvested those sweet, tender ears.

Across the road, the corn marched in military rows, tall and straight, over hills unbroken by fields of wheat or oats or cover crops that would let the land rest.

Anne Raver writes about gardening and the environment for The New York Times.

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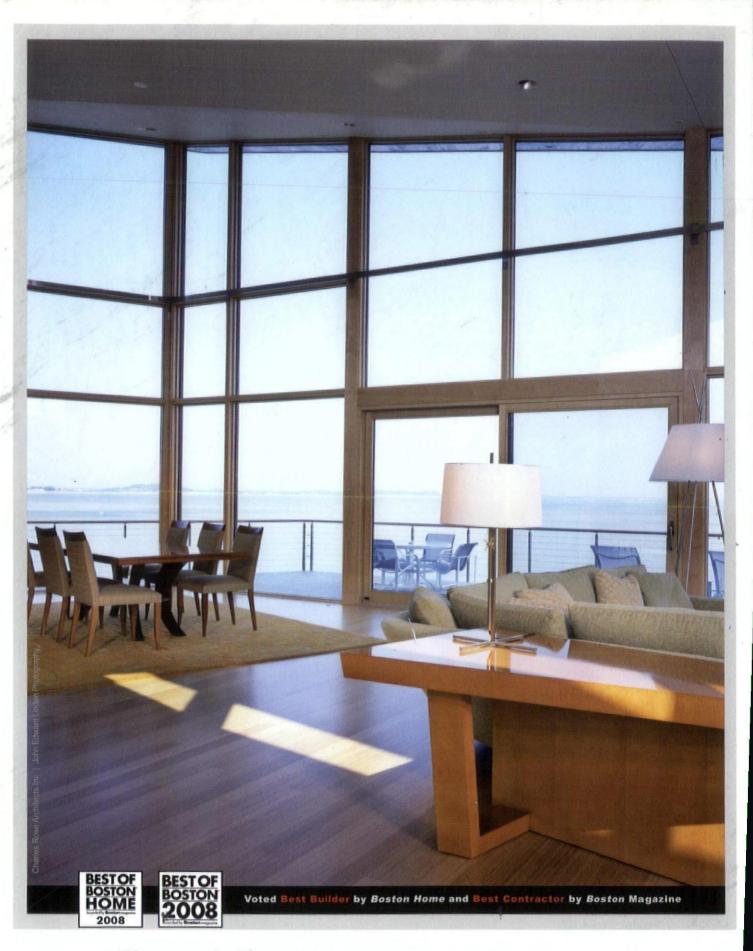
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