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Green and Greener

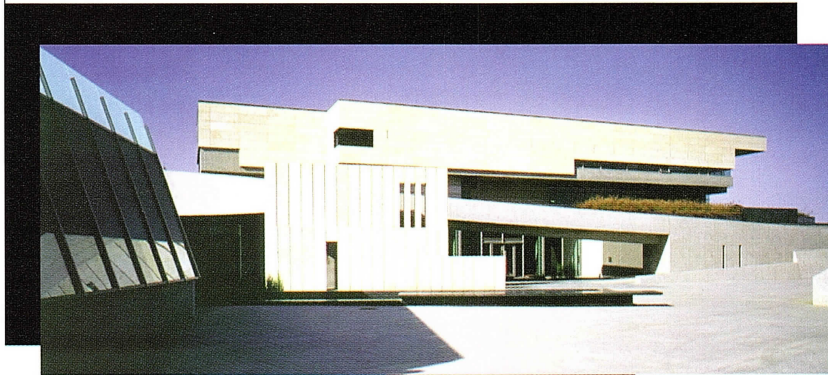
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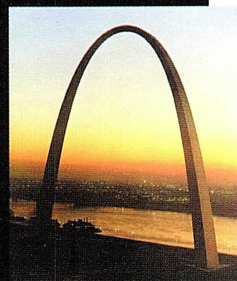
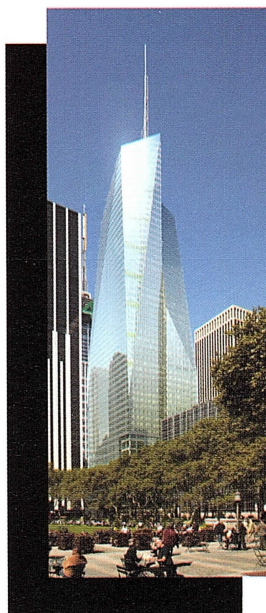
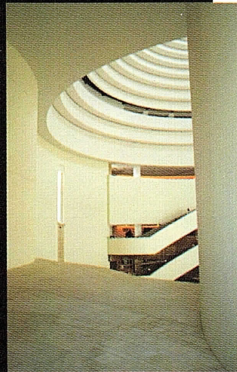


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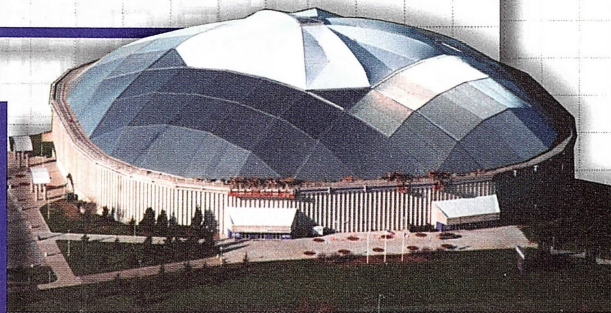
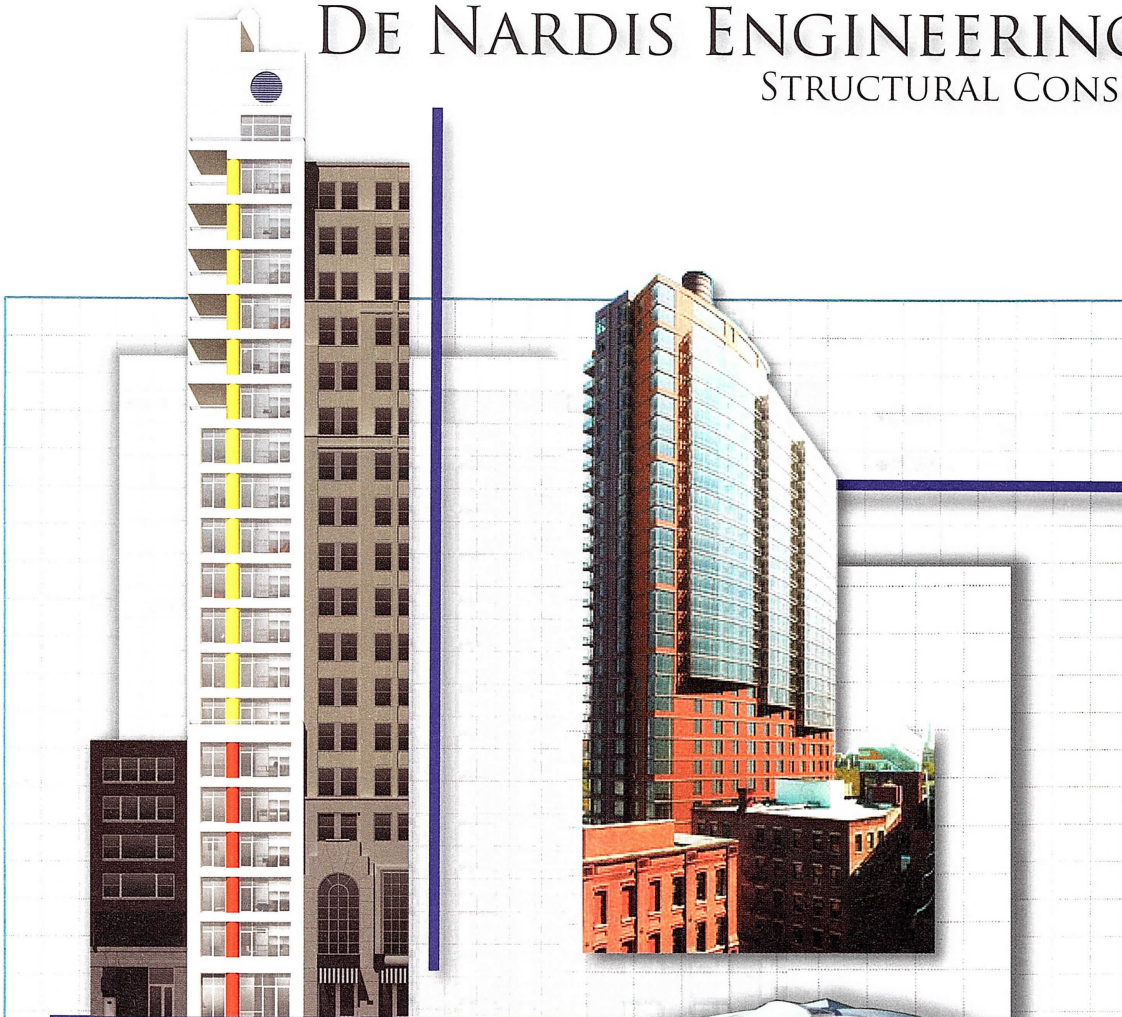
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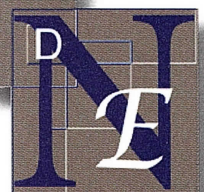
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Design Opens Doors

First Words
Letter from the President

The Center for Architecture opened in the fall of 2003 as a model of green design: reuse of an older building, proximity to public transit, and our very own geothermal system that allows us the luxury of heating and cooling as needed. This issue of *Oculus* examines the many ways in which environmental awareness has stimulated new design solutions that respond to changes in technology, a greater understanding of context, and more attention to cultural influences.

A visit to the Center for Architecture this fall brings other design explorations to light. The exhibition "Context/Contrast: New Architecture in Historic Districts" examines the legacy of the NYC Landmarks Preservation Commission over 45 years of regulating key neighborhoods, such as Brooklyn Heights, SoHo, and the Upper East Side. "Building Connections: 13th Annual Exhibition of K-12 Design Work" showcases work completed by students who participated in the Center for Architecture Foundation's built environment education programs, Learning By Design:NY and Programs@theCenter. The exhibition examines design education and the Foundation's methodology for teaching about the built environment.

The highlights of the season are the Heritage Ball on October 8, the Landmarks Preservation Foundation's forum on design in historic districts on October 21, and the Symposium on Design Literacy, which takes place on November 2. All these events will be held away from the Center, which points out how important partnerships are to architects. As the audience for good design expands, it is imperative that we use the Center for Architecture as a springboard to elevate architecture in all realms. We must continue to open doors and invite all interested audiences into discussions about design, but we must also walk through those doors to speak out and advocate to others the importance of design to learning, civic engagement, and changing the energy equation in our time.

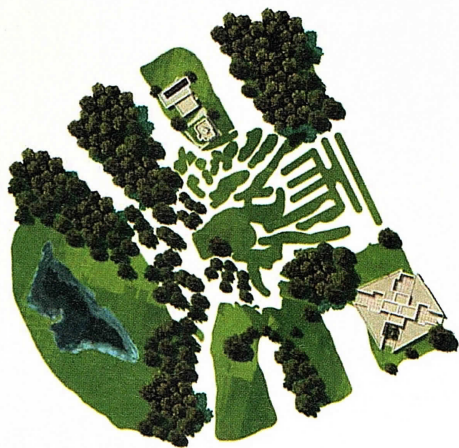
Our design literacy symposium will give us the opportunity to discuss how to engage with K-12 education experts in developing a curriculum that is relevant to our lives and stimulating to our children. The symposium will be an invited retreat held at the Philip Johnson Glass House in New Canaan. It is a setting that inspires because of the melding



KELLY CAMPBELL

of classic modern architecture and the landscape design of the site, and because Johnson was a true advocate for design. I was privileged to work for him during the early 1980s (yes, I worked on the AT&T building), and he was an inexhaustible champion of architecture for all. His belief that all buildings could be interesting, beautiful, and good civic additions is best seen in Houston, where he designed office buildings, a college campus, a chapel, houses, and more. The retreat will give us a chance to pull together ideas, bring them back to our members and build (pun intended) new programs that inspire future architects.

Sherida E. Paulsen, FAIA
2009 President
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Eco Echoes

It's been almost five years since the first "green" issue of *Oculus*, "Think Green" (Spring 2005). Have we come a long way, baby? As this current issue came together, all indications were, yes, things are moving in the right direction, with sincere efforts on many fronts to plan and build a sustainable future for New York City. Perhaps things aren't moving as far or fast as some would like, but we are making headway.

As Kira Gould, Assoc. AIA, LEED AP, explains in her introduction, "The call for 'carbon neutral now' is urgent." Are architects ready to go beyond "silo" thinking and play on a much larger team? The Bloomberg Administration is certainly trying to. We're now more than two years into PlaNYC. With 127 official milestones set to be achieved by 2030, the first 35 goals have been completed and another 50 are on schedule. Still, as our lead feature illustrates, it is facing some hard challenges, especially in a tough economy.

A major step in reaching PlaNYC goals will be transforming the city's almost one million existing buildings into ZEEBs (zero-energy existing buildings), which, according to Chris Garvin, AIA, LEED AP, involves "an integrated, creative approach" to building design, operations, and management. Randy Croxton, FAIA, LEED AP, points to new guidelines and initiatives that should help cull overstated, "hollow green" claims and encourage growth strategies that are beneficial – environmentally and economically – for built and natural systems at every scale. And landscape architect Liz Pulver, ASLA, demystifies the new green roof tax abatement and more streamlined application procedures that can add another tool to architects' green toolkit.

A portfolio of projects including schools, housing, and interiors in a wide range of scales, styles, and budgets is proof positive that NYC architects are getting ever more creative in achieving the greenest bang for their clients' green bucks. But when we looked into what architects are doing to reduce their own carbon footprints, Jacqueline Pezzillo, Assoc. AIA, LEED AP, was hard-pressed to come up with even a handful of firms with in-house carbon emission reduction programs. While there are signs of progress, we still have a long way to go.

Anticipating the spring release of the fifth edition of the *AIA Guide to New York City*, Norval White, FAIA, and Fran Leadon, AIA, go in search of green places and find a new aesthetic they call "Green Sleek." Times Square's transformation into the city's town square is the focus of "One Block Over." *Bloomberg News* architecture critic James S. Russell, AIA, has a "So Says..." sit-down with NYC Department of Transportation Commissioner Janette Sadik-Khan, Hon. AIANY, to talk about her mission to rearrange some of the city's streets and squares. "Outside View" is London-based Shumi Bose's take on the differences between Londoners' and New Yorkers' behavior in public places. "21-Year Watch" revisits the Natural Resources Defense Council's 1988 offices – a poster child for green design if ever there was one. "Good Practices" is an amusing guide to an architect's greatest social challenge: navigating the business networking event. "In Print+" gives a thumbs-up to *Urban Design for an Urban Century* by AIANY's own Lance Jay Brown, FAIA, among others, and new tomes that tell us what we can learn from *Learning from Las Vegas*, and why, in the history of disaster books and films, NYC has been so frequently the focus of destruction. Meanwhile, the latest *Guide to New York City Landmarks* is a welcome update of the 2003 edition. And "Click Here" reviews the *aia.org* and *aiany.org* website makeovers.

As this issue reveals, there's good and bad news when it comes to the profession's efforts to reduce energy use and carbon emissions. In the 2005 "Think Green" issue, we surveyed NYC architects about the state of sustainability. Among the results: on a 1–10 scale of awareness of sustainability issues, they collectively rated themselves as 6.5. If we did the survey today, I trust that number would be higher.

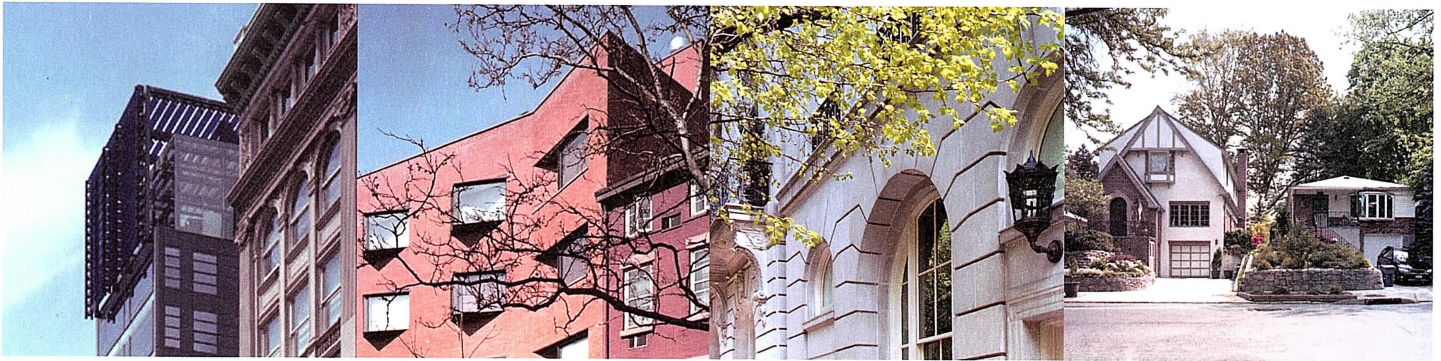
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Editor trying to fool Mother Nature

CONTEXT \ CONTRAST

New Architecture in Historic Districts 1967–2009



October 6, 2009 - January 23, 2010

Exhibition Curator: Rachel Carley

Exhibition Design: Moorhead & Moorhead

Graphic Design: PS New York

Photography: Elizabeth Felicella

Exhibition and related programs are organized by the AIA New York Chapter, the NYC Landmarks Preservation Commission, and the Center for Architecture Foundation in partnership with the New York Landmarks Preservation Foundation.

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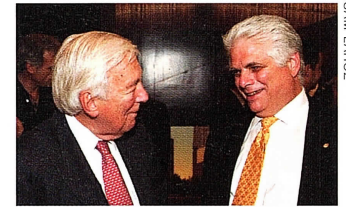
Center Highlights

Center for Architecture

"A Space Within: The National September 11 Memorial & Museum" Exhibition



BLOERN WALLANDER



SAM LAHOZ

John Whitehead (left), founding chairman of the Lower Manhattan Development Council and Board member of the National September 11 Memorial & Museum Foundation, with AIANY First Vice President/President-Elect Tony Schirripa, AIA, IIDA, at the exhibition opening on June 25.

The exhibition, curated by Thomas Mellins, was designed by Incorporated Architecture & Design.



EMILY NIEMENS



EMILY NIEMENS

Left: Fit City 4: Promoting Physical Activity Through Design: NYC Department of Health and Mental Hygiene (DOHMH) Commissioner Thomas Farley, MD, MPH, started his first day on the job by introducing the new "NYC Active Design Guidelines" to a full house during the fourth annual Fit City conference in early June. The Guidelines were developed jointly by the NYC DOHMH, Department of Design and Construction (DDC), Department of Transportation (DOT), and Department of City Planning (DCP), with anticipated release this fall. The DOHMH and AIANY are already planning for Fit City 5. **Above:** Karen Lee, MD, MHSc, FRCP, Deputy Director, DOHMH Bureau of Chronic Disease Prevention and Control (second from left), makes a point during a Fit City 4 panel discussion that included (l-r): John Pucher, professor of planning and public policy, Rutgers University; Laurie Kerr, Senior Policy Advisor, NYC Mayor's Office of Long Term Planning and Sustainability; Keith Wen, RA, Acting Director, Code Development and Interpretation, NYC Department of Buildings; Dr. Gayle Nicoll, Chair, Department of Architecture, University of Texas at San Antonio; Alexandros E. Washburn, AIA, Chief Urban Designer, DCP; Wendy Feuer, Assistant Commissioner, DOT Urban Design & Art; and Victoria Milne, Director of Creative Services, DDC.



SAM LAHOZ

Memorial architect Michael Arad, AIA (left), and Joseph C. Daniels, executive director of the National September 11 Memorial & Museum at the World Trade Center Foundation.



EMILY NIEMENS

July design panel (l-r): Michael Arad, AIA (Partner, Handel Architects, memorial design); Steven Davis, FAIA (Partner, Davis Brody Bond Aedas, museum design); Matthew Donham (Partner, Peter Walker Partners Landscape Architecture, plaza design); Craig Dykers, AIA (Project Director, Snohetta, pavilion design); and exhibition curator Thomas Mellins.



"The Global Polis: Interactive Infrastructures," curated by Nader Vossoughian and designed by Project Projects, explored interpretations of infrastructure that incorporated social, political, and environmental concerns into their matrices. In foreground: the stunning timeline **"System Patterns in Housing"** by Institute Without Boundaries.



"Global Polis" community workshop **"Energy Infrastructures"** in May: Olympia Kazi, the director of the Institute for Urban Design and Mark Shepard, assistant professor at the University at Buffalo, where he has a joint appointment in School of Architecture and Planning and Media Studies.



AIANY 2009 Annual Meeting in June: AIANY President Sherida Paulsen, FAIA (holding certificate), confirmed the 2009 Medal of Honor on Charles Renfro, AIA (left), Ricardo Scofidio, AIA, and Elizabeth Diller of Diller Scofidio + Renfro.



The **"New Practices San Francisco"** exhibition, designed by Matter Practice, featured six young design firms from the Bay Area.



New Practices sponsors and California architects attended the opening and winners' symposium, including (l-r): Sarina Bowen Kennerly and Owen Kennerly of Kennerly Architecture; *The Architect's Newspaper* Editor William Menking, AIASF Program Director Stacey Williams; *The Architect's Newspaper* Publisher Diana Darling; and sponsor, Mark Goldberg of MG & Company.



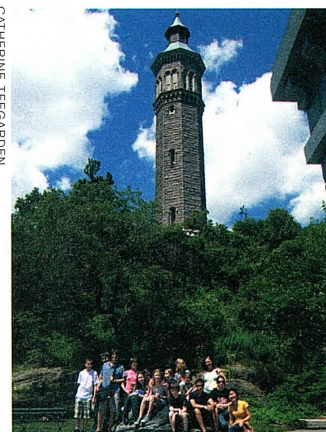
NYC Department of Design and Construction Commissioner David Burney, FAIA, and Belmont Freeman, Jr., FAIA, catch up at the annual meeting.



The AIANY Emerging NY Architects Committee (ENYA) and the Governors Island Alliance kicked off the Governors Island Water Taxi Beach season with a happy hour for emerging professionals on June 10. More than 250 guests attended and \$10,000 was raised to support free public programming and public advocacy on Governors Island. Three of ENYA's own (l-r): Venesa Alicea, AIA, Megan Chusid, Assoc. AIA, and Jessica Sheridan, Assoc. AIA, LEED AP, enjoyed the sunset views.



Children and parents worked together to design and construct the perfect playhouse for each child's favorite character at the July FamilyDay@theCenter.



Middle-school students visited – and climbed – the High Bridge Tower as part of the Center for Architecture Foundation's July summer studio week, Exploring NYC's Secret Places.

Times Square/ Town Square

One Block Over
By Claire Wilson

Cynics are a dime a dozen in New York, and they railed, the urban harpies, against the idea of turning Broadway into a pedestrian zone, complete with café tables and chairs. “The anti-car, Commie mayor has really lost his mind this time,” they said.

In late July, two months after the zone opened, you might have given the skeptics their due. Orange traffic cones and yellow tape defined it. Many of the colorful webbed lawn chairs had been broken, stolen, and replaced; it was hot; the asphalt was ugly and uneven. It was as gritty as ever. And what’s fun about sitting in the middle of the street, anyway?



CLAIRE WILSON

The surprising popularity of the traffic-free Broadway, the expanded Father Duffy Square, and the new glass TKTS booth not only silenced the skeptics, it converted them. Executed with public and private funds, the three-part project has turned the “Crossroads of the World” from something anybody in his right mind avoided to a destination in its own right, according to Tim Tompkins, director of the Times Square Alliance, the area’s Business Improvement District.

“Young, cool, trendy art types who you’d think wouldn’t come to Times Square for anything but a cutting-edge play are coming to hang out in the lawn chairs,” he says. “So are New Yorkers who work in the area but never left their buildings because it was too unpleasant.”

Observers dubbed the kitschy chairs “the best public art installation of the summer,” Tompkins says, but it is the Theatre Development Fund’s (TDF) TKTS booth that is the bold, bright marker of a new Times Square. Based on the winning design by Sydney-based Choi Ropiha in a competition sponsored by TDF and the Van Alen Institute in 1999, the TKTS booth was developed by Perkins Eastman with PKSB as plaza architect. It’s a big front stoop at the Duffy Square intersection of Broadway, Seventh Avenue, and 47th Street. The 27 red glass steps buzz day and night with lovers, picnickers, snoozers,



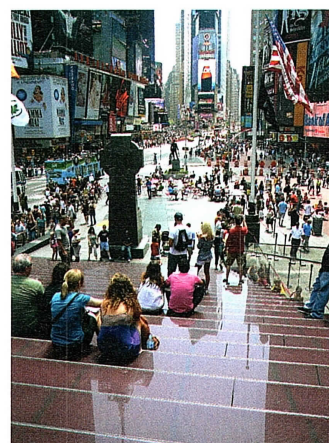
CLAIRE WILSON

and people just enjoying the view from the perch far above the madding crowd, even in bitterly cold weather.

According to PKSB Principal William Fellows, AIA, the steps and their success are emblematic of the whole redesign of Duffy Square. He notes that it is also a success as a preservation project. “While Duffy Square has been transformed into a new thing, the branded iconographic quality of the booth has been maintained,” he says. “That transformation is quite remarkable.”

The colorful scene tumbles down to the structure’s bottom step and scatters among tables and chairs at the base, before it moves to the lawn chairs on Broadway. The square is now more than double its original size.

According to Nick Leahy, AIA, LEED AP, a principal with Perkins Eastman, the project revealed a fresh perspective on Times Square. “You get the sense of an urban room enclosed on four sides that you only noticed when they set up the staging on New Year’s Eve,” he says. “Only then was it thought of as a public gathering space.”



CLAIRE WILSON

The closing of Broadway is a seven-month experiment that may or may not be made permanent. The road has been resurfaced, and new, more permanent furniture arrived in August. Public art programs are underway, and the enormous wealth of high-tech media that characterizes the square will eventually be put to optimal use.

With the new incarnation of the Crossroads of World, Tompkins has seen a paradigm shift. Once, the area was more a source of concern and anxiety than support. Now people are looking at the raw version of the pedestrian mall and asking how it could be better. “Our biggest problem is keeping up with people’s rising expectations,” he says.

Claire Wilson writes the “Blueprints” column for the *New York Times*. She lives in Manhattan.

CLAIRE WILSON



So Says... Janette



DOT Commissioner Janette Sadik-Khan, Hon. AIANY (in green jacket), pedaling across the Brooklyn Bridge

A visitor might expect to see paint cans piled in the office of Janette Sadik-Khan, Hon. AIANY, New York City's transportation commissioner. After all, she's stealthily rearranged some of the city's most prominent streets and squares using paint, traffic cones, orange-plastic barriers, and construction-site tape. Colorful umbrella-topped tables have sprung up at Madison Square. Strategically placed boulders guide Gansevoort Street traffic. Plaid beach lounges are scattered in Times Square. Green-tinted bike lanes snake through neighborhoods and run along waterfronts.

Indeed, change has come so rapidly to the streets that New Yorkers' heads are spinning. Suddenly bikes, buses, and people share space once strictly reserved for cars. This new notion of "street" is all the more remarkable in a city where a curb alteration seemed an effort akin to negotiating a nuclear arms-reduction treaty. Streets are not just about auto throughput anymore, Sadik-Khan has explained, they are *places*.

Sadik-Khan sat down with *Oculus* Committee member James S. Russell, AIA, in a perfectly normal office in Lower Manhattan, with a harbor panorama of huffing waterborne commerce.

James S. Russell: What's going on with all these changes in New York City streets?

Janette Sadik-Khan: Part of enhancing New York's world-class status is to redesign the streetscape so that it functions well and looks good. We describe our broad strategy of caring for the public realm in the Department of Transportation's "World Class Streets" report.

A lot of our work comes out of the mayor's PlaNYC and its sustainable-streets elements. PlaNYC looks ahead 25 years and considers how to create more capacity for growth in transportation. We've gotten 10 agencies to come together so we can make "complete" streets that accommodate people, bicycles, and transit.

JR How do you make transportation work better?

JS-K We've made new priorities and taken a more efficient approach to the city's basic circulatory system. We're improving mobility by redesigning the way streets work: creating bus lanes and bus rapid transit and improving disabled access. We're also reducing our impact on the global climate. To our 200 miles of shared bike lanes, we'll add 15 more miles of protected bike lanes. We've just filled our 275,000th pothole.

JR What's with the paint and traffic cones?

JS-K Part of our approach is to use temporary yet durable materials so we can make quick changes to the streetscape. We use, paint, gravel, planters – whatever we can find – to create signature spaces and improve the character of neighborhoods.

We've moved away from thinking about our streets as utilitarian corridors and instead focus on them as urban rooms, as the space in between. It's about, and it reflects, the vibrant character of diverse neighborhoods in the city.

JR You've certainly gotten the city's attention, especially with the controversial bike lanes and the beach chairs in Times Square. What prepared you for this role?

JS-K I'm a longtime New Yorker, and I've walked the streets, ridden the rails, and biked around for over 30 years. I've picked up a lot. I trained as a lawyer and started my first job at New York's Department of Transportation. I worked at the state level, doing the capital program for the Mass Transit Association. Then I went to Washington and the U.S. Department of Transportation. I spent 10 years in private practice at Parsons Brinckerhoff, where I handled the transit market in the U.S. and worked internationally.

JR The notion of designing rather than just engineering streets is still pretty new in America. What cities have inspired what you've done in New York?

JS-K You can pick up really interesting ideas from other places, but you definitely have to tailor them to New York City. Certainly we have been inspired by the bus rapid transit work in Bogotá. We're impressed by the bikeway design and street work in Copenhagen. I learned a lot about what not to do in São Paulo. I've followed the congestion-pricing debate in London. We learned about intelligent transportation systems in Beijing – the idea of integrating technology into transportation management. Berlin is also very interesting. Ten percent of the population bikes to work; there is a very strong transit system.

Sadik-Khan, Hon. AIA NY

JR We hear a lot about Copenhagen as a kind of street-design utopia. Is it really unique?

JS-K What intrigued me is the bike-lane design in Copenhagen. They flipped the bike lane and the parking lane so that the bikes are near the sidewalk and the parked cars protect the lane.

Lively public spaces are vital, and cities like Copenhagen have done a lot to grab road space to improve the public realm. You are starting to see that here in the way we created new public space in Madison Square. It's not just ornamental; people flock to these places.

JR You've done so much quickly with temporary measures. Is there a role for architecture in this?

JS-K A can of paint can do a lot quickly. The capital construction program catches up after that. People hunger for change right now. They flock to Times Square, even with its orange cones and barrels. When we started making space for people, it was like some kind of *Star Trek* episode: people just materialized.

Our newly issued "Street Design Manual" helps by creating a playbook for both the private and public realms. It offers a coherent set of options because one size does not fit all. We have 6,000 miles of roadway in the city, and the manual acknowledges that this is a complex urban environment with a lot of diversity at every street corner. It gives architects and engineers a framework to design within.

There is no question that design is an extremely important part of what we're doing. From Times Square to Herald Square, we've worked with the business improvement districts and partnered with Gehl Architects, industrial designers BillingsJackson, and graphic designers Pure + Applied. Together they transformed Broadway from a one-dimensional place that you use only to get somewhere else, to a series of places where people want to be.

JR Rerouting traffic in Times Square and placing beach chairs in what were traffic lanes seem to be quite controversial. Will these be permanent?

JS-K It's a pioneer program. If the mayor decides to go ahead after reviewing the data we're collecting, we'll be in a good position to make further design improvements and make it more permanent.

JR Even the smallest alteration to a street can get caught in a tangle of bureaucracy. How do you get so many agencies to work together?

JS-K We're working on a comprehensive street-management program. After all, someone cuts into a street something like every 10 seconds. We're fleshing out a new, coordinated process to include 13 agencies. The other program is to advance the way we design streets and help us push the envelope. That's why the design manual is in notebook form – for future amendments.

JR Are New Yorkers ready for these new ways of getting around?

JS-K We can't build our way out of congestion. We must look at different, healthy, sustainable approaches to moving around in the 21st century. We've got 3.2 million bus riders and the largest bus fleet in North America. We also have the slowest bus speed. The new bus rapid transit program with the Metropolitan Transportation Authority is very important. Better pedestrian places make it easier to walk around. We've got to build out the bike network and create safe places to lock up your bike when you get to where you're going.

JR In a city where people sit for hours in their cars, waiting for street-cleaning restrictions to expire, can you really win against entrenched car culture?

JS-K There are 8.4 million New Yorkers, and some days I think there are 8.4 million traffic engineers – but that's not surprising. Streets are our front yards. I think people will become increasingly comfortable with the changes as safety improves. Our Safe Routes to Schools initiative addresses kids on foot. We've also identified neighborhoods with many seniors so we can improve safety for them.

JR Is there a single accomplishment you are particularly proud of?

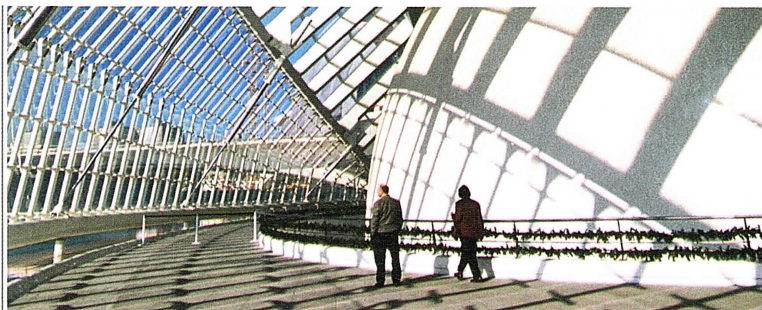
JS-K I'm proud of how far we've come so quickly. Last September we added more than 40,000 square feet of public space in Madison Square. At the time it was probably the largest non-park public space undertaken by the Bloomberg Administration. We've built community plazas in all five boroughs. We've used temporary materials to reclaim underutilized roadways in the Bronx – like the Hub – and in DUMBO. All over the city we're doing what we can to transform the streets.

James S. Russell, AIA, serves on the *Oculus* committee and is the national architecture critic for *Bloomberg News*.

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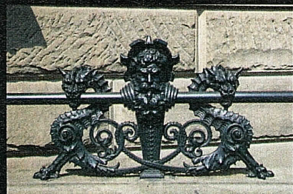
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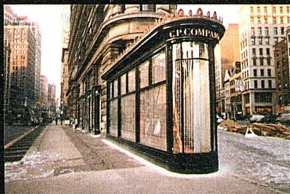
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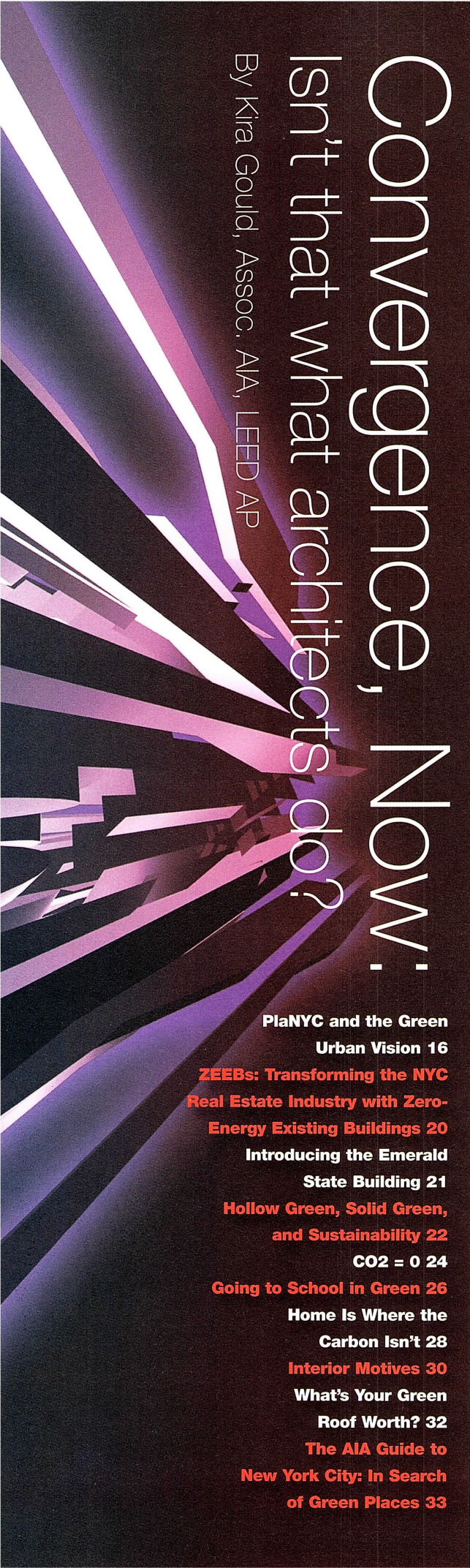
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Convergence, Now: Isn't that what architects do?

By Kira Gould, Assoc. AIA, LEED AP

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The call for “carbon neutral now” is urgent. Thousands of architects are devising ways to dramatically reduce energy use and carbon emissions, and that is something to celebrate. But “silo” thinking is not enough to solve our complex problems. Other challenges loom, such as threats to water and issues of cradle-to-grave waste cycles. Who wants to be carbon free and dying of thirst or drowning in our detritus?

To continue human settlement while keeping the planet habitable requires a deep acknowledgement of interdependence. It is a challenge for the professional, academic, and government realms – a design problem begging for whole systems thinking. Bill Reed, AIA, LEED AP, calls this “integrative design” to emphasize the process over the object. We need to seek convergence in how we learn and work together – something much deeper than the “collaboration light” that the term integrated design has come to imply.

Climate change is irreversible. Its effects will be with us for at least 1,000 years, no matter how quickly we change our consumption patterns. The problem will require thinking differently than we have before. Unfortunately, we're taking too much time to understand this. In the schools, only the environmental science departments require ecological literacy, dual majors are difficult to obtain, and true hybrid learning is rare. The building industry remains remarkably stubborn about models of practice, and even the most enlightened clients wind up (unintentionally) stifling progress by making life-of-building services challenging or unfundable. Worse, client and consultant concerns about litigation and competitive advantage often prevent the design and development community from sharing project successes and lessons – critical information if we are to speed up our progress.


The economic crisis is linked tightly to infrastructure, mobility, community, building design, employment strategies, and the healthcare crisis. The need to devise solutions that address their interdependency has never been more clear. But can architects play on a team this large? If so, the issue could breathe new relevance into the profession. Sustainability, after all, is about life. If we elevate it to that level, we are more likely to engage its linking properties. Architects are recognized as vision drivers for individual projects and large developments; we work closely with design teams and consultants to devise robust solutions that can evolve over time. But we have to work closely with the power brokers – policy and money – to make convergence work. Changing how we work might pave the way to new patterns of development and settlement that thrive as native to their place.

Malcolm Wells's 1981 book, *Gentle Architecture*, was a compelling case for change in our industry. Nearly three decades later this book is still relevant, as is the quote by Don Watson, FAIA, on its last page: “Our principal impediments at present are neither lack of energy or material resources nor of essential physical and biological knowledge. Our principal constraints are cultural.”

As we take up the ecological and technological challenges of sustainability, we must remember the cultural, and find a way to help a stubborn industry move nimbly. Fortunately, integrative or convergence thinking comes naturally to many architects who are committed to the qualitative and the quantitative: commodity, firmness, and delight. We know that beauty is important for sustainability.

Other sectors and innovative businesses are applying convergence thinking. Are we ready?

Kira Gould, Assoc. AIA, LEED AP, is director of communications for William McDonough + Partners, and a past chair and current adjunct member of the national AIA Committee on the Environment. She is co-author, with architect Lance Hosey, AIA, LEED AP, of *Women in Green: Voices of Sustainable Design* (Ecotone Publishing, 2007).



PlaNYC and the Green Urban Vision

As New York's green master plan enters its third year, it's focusing national attention on every city's role in advancing sustainability. Now come the hard parts: locking in the mission and assuming global leadership

By Bill Millard

Today's climate-change crisis makes cities look like both the problem (as potent consumers of resources and generators of greenhouse gases [GHGs]) and the solution (as sites of high traffic in both knowledge and goods, and thus generators of ways to mitigate damage). We consumed, extracted, and sprawled ourselves into this mess; if we learn more about how cities work, maybe we can think, discipline, and design our way out of it.

At the May 13 conference Sustainable Urbanism in the Information Age, hosted by the United Nations Human Settlements Programme (UN-HABITAT) and co-sponsored by the AIA New York Chapter, Malian Ambassador Cheick Sidi Diarra observed that "no country has achieved growth without urbanization; the question isn't whether urbanization is good, but how to reap its benefits." As of last year, 50% of humanity lives in cities, with this proportion expected to reach two-thirds by 2050. A billion slum dwellers live in perilous, unsustainable conditions, grindingly poor and vulnerable to natural disasters. On the other hand, density maximizes transit use, thermal efficiency, and other economy-of-scale advantages; Manhattanites emit less than one-third the U.S. average GHGs per capita.

Today's fastest-growing cities, those of India, China, and Africa, need to overcome isolation in order to develop and share best practices in man-

aging growth. Extending current Western consumption levels to Earth's entire population is not a serious option: as architect/planner and International Society of City and Regional Planners (ISOCARP) Secretary General Pablo Vaggione reported, it would create an environmental footprint equivalent to 3.5 planets. In the mega-cities of the South, the alternative to energetic development, effective conservation, and more equitable distribution of resources is widespread immiseration and violent conflict. And since trade and technology have linked the developing world's mega-cities with the West, these risks are universal. The UN conference examined ways that cities might leverage expertise and information, in Vaggione's phrase, to "align incentives, regulations, and partnerships like a Rubik's Cube" toward a future of high-performance buildings, urban parks and farms, information technology, every imaginable strategy for reducing motor-vehicle use, and more responsive governance (usually metropolitan). Arup Principal and Urban Strategy Leader Gary Lawrence gave grounds for optimism: "The only bit of infrastructure that improves with use is human intelligence. Make an investment in that, coupled with resources from the North, and the developing world can solve its problems."

Presentations at such gatherings sometimes involve more expressions of admirable intentions than application-ready ideas, but recurrent themes emerged: scaling efforts regionally and megaregionally, allocat-



ing roles appropriately in public-private partnerships, emphasizing infrastructure and housing, and balancing decentralized decision-making with top-down coordination. It is no accident that these are also among the concerns of Mayor Bloomberg's PlaNYC 2030, or that some of the plan's early achievements stand with comparable efforts from Estonia to Melbourne as highlights of the conference. Prominent speakers included Regional Plan Association President Robert D. Yaro; Ernest W. Hutton, Jr., FAICP, Assoc. AIA, co-chair of New York New Visions; and

The more visible PlaNYC becomes,
the more a green ethos will permeate
grassroots habits as well as policies.

Alexandros E. Washburn, AIA, chief urban designer at the Department of City Planning (DCP), who offered an Olmstedian, conservation-based redefinition of Aristotle's concept of civic virtue. If PlaNYC succeeds – as not just an attractive initiative by today's administration, but a permanent transformation of how city government operates – it has the chance to be what Planning Commissioner Amanda Burden, FAICP, Hon. AIANY, calls a “bully pulpit,” influential worldwide.

Cost-effective first fruits

PlaNYC was publicly unveiled on Earth Day 2007, but its concepts have guided the administration since early 2002. Burden traces it to the recognition by DCP's Population Division that the city was likely to add a million residents by 2030. “Former Deputy Mayor Dan Doctoroff said, ‘We’re going to have to plan for this,’” she says, “and look at our entire city, the five boroughs, and redirect growth to the places that can accommodate it,” upzoning areas whose infrastructure is suitable for density and downzoning more auto-dependent neighborhoods. DCP at this writing has completed 94 rezonings, covering more than 7,000 city blocks, creating more than 46,000 new housing units, and stimulating more than 30,000 permits per year.

The full five-borough focus is critical, Burden says. Despite the high visibility of new development, “about 70% of the city is very, very low-density and doesn't have the infrastructure for growth, and shouldn't have it; it provides a different kind of housing opportunity.” Outer-borough districts have their own distinct greening strategies, she notes. Permeable pavement can help protect the storm-water system where front yards have been paved over; plantings of bioswales with canopy trees around parking lots (now a requirement for lots above 10,000 square feet) help control runoff and heat, as well as improve aesthetics.

But the fundamental strategy is to ensure that development bypasses those areas. The rezoning map in the “PlaNYC Progress Report 2009” (pg. 7) illustrates this emphasis, with “neighborhood preservation/enhancement” areas scattered in the outer-borough periphery to counterbalance the upzoned central and transit-node districts.

PlaNYC became a six-front campaign addressing land use, water, transportation, energy, air quality, and climate change, distributing 127 official milestones across these areas to yield an overall target of a 30% reduction in citywide carbon emissions by 2030. Two years in, the Office of Long-term Planning and Sustainability (OLTPS) reports the first 35 goals completed and another 50 on schedule.

OLTPS Director Rohit (Rit) T. Aggarwala acknowledges the scale and difficulty of the undertaking. “It’s relatively easy to come up with a sustainability plan that’s really a fluff piece: that has a couple of good intentions, sounds good, but doesn’t have any meat to it,” he comments. “For a 23-year plan, you’re not going to lay out annual milestones, but we’d done two . . . one for the end of 2009, the end of this mayoral term, and one for 2015, notionally the midpoint” of the full plan. “Measuring ourselves against the end-of-’09 milestone in the original plan, we’re two-thirds on time or ahead of schedule,” he continues. “Not bad, especially having done the plan two years ago in a buoyant economy.”

Large-scale application of low-tech changes that Aggarwala calls “the unsexy, no-brainer stuff” – replacing bulbs, adding motion sensors, insulating hot-water pipes – can outperform more attention-getting measures.

Aggarwala’s attention to specific metrics – trees planted, parks renovated, transit-based rezonings approved, underused schoolyards opened as public playgrounds, bicycle lanes constructed, parking placards withdrawn, positions created, federal stimulus dollars directed toward infrastructure, construction projects begun, laws amended – also involves a realism about the ones that haven’t been met yet or have been redirected. He acknowledges that “constraints on the city’s budget, both operating and capital,” along with Albany’s failure to enact congestion pricing last year, have stretched out certain milestones, making the Metropolitan Transportation Authority, in particular, a point of vulnerability. Still, congestion pricing is only one path toward the goals of reducing congestion, improving air quality, and funding long-term MTA capital improvements. “Congestion pricing is an elegant solution because it does all of those at once,” Aggarwala notes, “but it is possible to cobble together a set of strategies that would do the same thing.” In a similar jujitsu maneuver, after a federal court prohibited the city from mandating conversion to a hybrid taxi fleet, the Taxi and Limousine Commission adopted lease-cap provisions that improve emission standards through financial incentives instead. The fleet is now 15% hybrids and clean diesels.

PlaNYC’s early stages have involved projects that critics call unchallenging but that officials consider high-bang-for-the-buck investments. “There’s an awful lot of low-hanging fruit to be picked,” Aggarwala remarks. “It doesn’t actually make sense to do the harder stuff until you’ve

nearly run out of low-hanging fruit. Why make an expensive improvement if you’ve got a number of cheap improvements lying on the table?”

Many prominent ideas come from the Department of Transportation (DOT) and DOT Commissioner Janette Sadik-Khan, Hon. AIANY: the pedestrianized sections of Broadway, the 81 miles of bike lanes and 1,211 racks installed in 2008, and the bus rapid transit experiments known locally as Select Bus Service (SBS) in the Bronx, Manhattan, Brooklyn, and Staten Island. “Twenty-five percent of the total time you spend on a bus is at a stop waiting for people to dunk their MetroCards,” Aggarwala says. Instead, a Curitiba-style preboarding fare-collection system using curbside swipes, receipts, onboard fare checkers, and front-and-rear boarding accelerates the process. New dedicated SBS lanes on 34th Street will create speedy synergies with other transport modes, including East River ferries (which were “fundamentally unattractive,” Aggarwala observes, when coupled with a slow M34 bus) and commuter bus lanes from Queens. Long-term plans will transform 34th Street into a transitway, with a car-free, bus-only pedestrian mall between Fifth and Sixth Avenues and out-bound-only one-way status east and west of that block. Though DOT’s reforms have attracted carhugger backlash, they are grounded in detailed traffic-flow research before and after implementation. (And, Aggarwala notes, in data refuting faux-populist arguments about the alleged regressivity of bridge and tunnel tolls: “We know that the average income of somebody who commutes from the outer boroughs by transit is much lower than the average income of somebody who drives.”)

Information management also underlies technical measures such as the automated water-meter-reading system using low-power rooftop radio transmitters, giving property owners and businesses web-based feedback about water consumption four times a day instead of quarterly estimates. Installation, at no charge to property owners, has proceeded at a rate of some 500 meters per day, ramping up to 1,200 later this year. Officials project replacement of all 826,000 meters in the city by 2012, leveraging a one-time changeover investment of \$250 million into potential annual savings of around \$90 million.

Large-scale application of low-tech changes that Aggarwala calls “the unsexy, no-brainer stuff” – replacing bulbs, adding motion sensors, insulating hot-water pipes – can outperform more attention-getting measures. Not all homeowners can realize rapid paybacks from green roofs, even with the new green-roof property tax credit and building-code standards clarifying roof design (see pg. 32). Blue roofs retain storm water and help reduce combined sewer overflows; the “Cool & Green Roofing Manual” of the Department of Design and Construction (DDC) describes them as cheaper than foliage, though high-profile projects such as the Hearst Tower and Silvercup Studios are adopting them faster than cash-strapped smaller owners. But “cool roofs,” painted white or metallic to increase albedo, can cheaply cut any building’s air-conditioning costs by up to 30%, reducing the heat island effect to boot. This feature is now required by code in new buildings, including all DDC projects; for older ones, the local Sierra Club and the city are organizing volunteer painting crews.

Next, the tougher stages

On some fronts, the city is ahead of schedule. Under the MillionTreesNYC initiative, for example, the 2009 report counts

225,000 planted so far, a figure that Aggarwala and media officer Jason Post now update to 250,000; Burden independently estimates this year's street-tree component at about 10,000. The Greenstreets program got off to a fast start (177 sites completed or under construction since PlaNYC launched) but has hit a funding-related delay, with the original goal of 80 sites per year cut back to 40, though federal stimulus support may pick up some of the slack.

PlaNYC's harder challenges include upgrading the performance of buildings – the source of 77% of the city's emissions, according to OLTPS Senior Policy Advisor Laurie Kerr, RA, LEED AP, speaking at Washington's National Building Museum. (Nationwide, according to U.S. Energy Information Administration data analyzed by Architecture 2030, buildings contribute 48% of GHGs.) Prominent new LEED-rated buildings rightly attract attention, but the majority of our built environment remains pre-LEED, and PlaNYC projects that 85% of energy use in 2030 will still be from buildings existing today. Last Earth Day the mayor and Council Speaker Christine Quinn announced the Greener, Greater Buildings Plan, a six-point legislative package designed to make a 5% dent in the city's carbon footprint while creating some 19,000 construction jobs.

This plan creates a city energy code governing all renovations to existing buildings, and requires those over 50,000 square feet to benchmark their energy consumption, make energy audits every 10 years, and adopt any improvements that pay for themselves within five. Commercial buildings of that size and above must also upgrade their lights; citing recent advances in lighting technology, Aggarwala says, "Replacing lighting if it's more than five to seven years old always has a very fast pay-back." (Lighting accounts for nearly 20% of New York's total energy consumption.) The legislation also establishes workforce training and a pilot unsecured-loan program helping property owners increase energy efficiency even if they lack reserve funds, or the collateral and creditworthiness to get into NYSERDA's program. If enacted, Greener, Greater Buildings will apply federal stimulus funds to cover upfront costs of efficiency measures that will eventually pay for themselves.

Beyond the large number of small owners, city government is retrofitting its own facilities (representing 6.5% of local GHG emissions, says Kerr) and targeting certain categories of major users: universities, Broadway theaters, and hospitals. The University Challenge has brought 14 institutions on board to reduce their GHG emissions 30% within a decade; the Broadway Green Alliance has induced 25 theaters to adopt efficient bulbs in marquees. Hospitals' consumption is less flexible because of both medical necessity and capital costs – "You can't replace an MRI machine because the next generation is 5% more efficient," Aggarwala notes – but replacing lighting in a lobby that's open 24/7 can bring dramatic savings. New York Presbyterian's experience as a U.S. Environmental Protection Agency Energy Star Partner since 2003 and three-time national Partner of the Year offers evidence that hospitals can improve performance through audits, plant upgrades, on-site generation, and LEED participation.

It is no accident that PlaNYC has sought alliances with prominent organizations (see pg. 21, "Introducing the Emerald State Building"). A major-users-first strategy has both quantitative and symbolic value: the more visible PlaNYC becomes, the more a green ethos will per-

meate grassroots habits as well as policies. Today's officials recognize that no administration lasts forever – OLTPS headquarters includes a prominent countdown clock, a reminder that the time available is finite – and that program resources depend on variables outside their control. To counteract the perception of green improvements as options more suitable to flush times, publicizing their economic advantages is essential. "We don't do it just because it's green; we do it because it's smart and it pays for itself," Post says. "Some people might be willing to retrofit their building because of the marketing value," adds Aggarwala, "but we try to focus on the fact that you're going to save money."

PlaNYC's early stages have involved projects that critics call unchallenging but that officials consider high-bang-for-the-buck investments.

Making it permanent

Some categories of change resist funding fluctuation better than others; specific programs come and go, but structural reforms can endure. "In zoning," Burden observes, "we don't plan around economic cycles; we plan for the long term, so that when the market is ready, the right kind of building at the right scale is built in the right place. We have zoned almost a fifth of the city, and we will continue in that effort so that whenever the market cycles back, the city will have a perfect blueprint for a sustainable future." Her role as chair of the New York Metropolitan Transit Council helps extend that blueprint to the vital realm of national transit and development policy. "We have to have a very interconnected system of both commuter rail and public transit, buses and subways, to make sure we get people out of their cars and into public transportation." More broadly, Burden says, in design innovation as well as mitigation measures, "We think the city should set the standards for the rest of the country."

Aggarwala points to three principles that can institutionalize PlaNYC's reforms. First, "get as much done as quickly as you can." Second, recognize that "you can't legislate culture; what you can legislate is reporting and process": OLTPS is a permanent part of city government, the online Citywide Performance Reporting system incorporates annual sustainability indicators, and quadrennial updates require explanations of every change from the previous plan. The third component, he adds, is out of the administration's hands: "Public support. If the public demands sustainability and long-term thinking, then it will more or less happen, but democracy means you get the government you deserve."

"Cynicism about government in general," he adds, is an obstinate obstacle. "All we can do is try to execute as well as we can, but you can't really refute that argument. It is also a doomed-before-you-start assumption. At that point you give up and move to the hills."

Such a move is a literal part of American history: urbiphobia drove the great migration to Ebenezer Howard's troublesome invention, the suburban spaces that offered a Thoreauvian glimpse of green at the eventual cost of sprawl's climatic effects. The blowback from that failed experiment now makes green urbanism both urgent and realistic.

Bill Millard is a freelance writer and editor whose work has appeared in *Oculus*, *Icon*, *Content*, *The Architect's Newspaper*, and other publications.

ZEEBs: Transforming the NYC Real Estate Industry with Zero-Energy Existing Buildings

In a city with almost a million existing buildings, ZEEBs are an idea whose time has come. Creating them involves innovative approaches to building design, operations, and management By Chris Garvin, AIA, LEED AP

We are witnessing the dawn of a new age of buildings that will produce more energy than they consume. Pioneering examples of these zero-energy buildings (ZEBs) are already in operation around the world, most notably the Lewis Center for Environmental Studies at Oberlin College by William McDonough + Partners. These new buildings represent an integration of design, construction, and advanced controls and equipment, with an emphasis on passive strategies such as solar orientation and passive ventilation. New York City will soon have its own ZEB with the completion of Kiss + Cathcart Architects' Solar 2 in East River Park along the FDR Drive in 2011.

Given that buildings consume 40% of all energy produced in the United States, moving toward net ZEBs (whose total annual energy production is equal to or greater than their annual consumption) and near-zero energy buildings is critical to addressing global climate change. Yet however green, new construction alone will hardly impact our current energy consumption; it will only slow its growth. To confront climate change, we must address resource use in our existing buildings, of which New York City has nearly one million. The development of net zero-energy existing buildings (ZEEBs) in NYC is still a conceptual idea that will have to surmount many practical challenges, but these challenges must be addressed to ensure the city's future economic vitality and environmental quality.

The challenges to developing true ZEEBs involve all aspects of a building's lifespan, including:

Building Design

- Improving the performance of the exterior envelope is one of the greatest design challenges for existing buildings.
- As buildings age, systems must be replaced. High-performance equipment should be phased in to reduce first-cost impacts and steadily reduce energy consumption.
- Because large urban buildings have a high energy density per lot area, today's photovoltaic and wind systems can't produce more than a fraction of the energy demand, even for an energy-efficient building. Advances in photovoltaics that increase yields well above 40% will be required to tip the scales toward ZEEBs.

- Rethinking building waste streams, such as waste heat, as potential resources can provide cost savings and new revenue streams.

Building Operations

- Existing buildings will need advanced controls and equipment beyond standard BMS (building management systems) to monitor building systems, analyze changing needs, and respond on demand.
- Building engineers must improve their capacity to operate more complex building systems and controls – and be held accountable by owners and the city – in order to yield improved building efficiency.
- The industry needs improved metrics that address building/system differences and allow for more accurate reporting and goal setting.
- Tenant plug loads are the fastest growing demand in buildings; addressing equipment energy efficiency and sleep mode for equipment is essential.

Building Management

- "Split incentives" between the landlord and tenant, one of the largest barriers to efficiency in large buildings, should be realigned to reward both parties for efficiency upgrades and operations. Green leases have been developed to address this issue, but are not yet widely in use.
- Industry financing needs to expand the lending criteria to include long-term energy costs, carbon trading, and the cost of climate change.
- Third-party incentives and legislation will be needed to motivate many building owners to address energy efficiency.

Many solutions to these challenges already exist, albeit in limited form. The critical issue is the building sector's ability to take an integrated, creative approach to simultaneously solving these problems and creating new financial possibilities. By transcending these barriers we can transform the fabric of the city and reduce the cost of electricity by investing in our buildings instead of in power plants. At the same time, we can eliminate our dependence on foreign energy sources and improve grid stability and passive survivability, or the ability of buildings to maintain critical functions after a blackout or other loss of services. The time of incremental energy efficiency is coming to an end, and we need to embrace bold plans in order to direct the next generation toward a better future.

Chris Garvin, AIA, LEED AP, is a senior associate at Cook+Fox Architects, a partner at Terrapin Bright Green, and a board member of the Urban Green Council.

KISS + CATHCART ARCHITECTS



Kiss + Cathcart Architects: Solar 2 in East River Park along the FDR Drive

Introducing the Emerald State Building

A rigorous rethink of the Empire State Building's energy-use profile is making the city's most famous skyscraper competitive with brand-new towers in sustainability and tenant appeal. Its floodlight colors vary, but underneath, tomorrow's ESB is pure green

By Bill Millard



KRISTEN RICHARDS

It hasn't been the world's tallest skyscraper for decades, but the Empire State Building (ESB) is still New York's best-known single structure. Now it's turning green from the inside. ESB Company owners Wien & Malkin have enlisted the Rocky Mountain Institute (RMI), working with the Clinton Climate Initiative's Energy Efficiency Building Retrofit Program, to guide an upgrade of the ESB's electrical and mechanical systems, fenestration, lighting, and tenant services. Engineers included Clanton & Associates (lighting), Rumsey Engineers (mechanical), and Alpen Energy Group (glazing), with Johnson Controls as the preferred energy service company and Jones Lang LaSalle as project manager; architectural tenant, BBG-BBGM, is independently renovating its own 25th-floor space. Increases in energy efficiency (with projected savings in the 35-40% range) and reductions in GHG emissions will make the ESB a performance icon as well as a visual and historical one.

Caroline E. Fluhrer, LEED AP, a consultant with the RMI's Built Environment Team, stresses the coordination of all the major projects, identifying the ventilation-system replacement as a pivotal step. "Typically they had 485 constant-volume air-handling units, four units per floor that were ceiling-hung. One of the recommendations we made was to decrease that – put in two larger variable-air-volume air handlers and make them floor-mounted. You can imagine trying to conceal an air handler: it dramatically lowers the ceiling height for a particular space and makes it much more difficult to daylight." Expanded use of daylight adds to the savings from the new layered lighting system. Retrofitting the ESB's 6,514 windows, Fluhrer adds, involves "removing the double-paned windows, taking the two panes apart, and inserting a heat-mirror film as well as a gas mixture. You basically take that sandwich, heat it up, and reinstall that same window. In essence we're recycling the glass, but we're taking the R value from about R2 to R5 or 6." Installing radiative barriers behind each window's steam radiator also cuts the building's prodigious thermal leakage. Retrofitting the industrial chillers, reusing shells while replacing working components, improves efficiency without requiring an entire new chiller plant.

Informational components accompany the functional gains. Addressing 3.8 million annual observatory visitors as a queued-up captive audience, pedagogic visuals will tell the story of the building's greening strategies. For prospective and existing tenants, the building is adding a sample prebuilt space on the 42nd floor to demonstrate design features. The ESB serves as a strong example for other old buildings, Fluhrer says, since it was "ripe for retrofit. A lot of the projects we suggested were already in line with the equipment replacement cycle." With major steps aligned with tenant turnover, the last phases should be completed by the end of 2013 – well-timed in an era when many investors lean toward retrofitting existing properties instead of purchasing new ones.

Bill Millard is a freelance writer and editor whose work has appeared in *Oculus*, *Icon*, *Content*, *The Architect's Newspaper*, and other publications.

Hollow Green, Solid Green, and Sustainability

New guidelines and initiatives point the way to a more sustainable future

By Randolph R. Croxton, FAIA, LEED AP

New Yorkers have that most rare of American hometowns: an inherently efficient and highly evolved urban order with mass transit at its core. Add to that Mayor Bloomberg's PlaNYC sustainability initiative, which is two years down the road with quantified reductions in global warming impacts and heavily marketed "green" buildings popping up all over the city, and one could easily conclude that the city is soon to be sustainable, that carbon-neutral or energy-neutral buildings are just around the corner. In reality, this impression is a complex combination of solid accomplishment, overstated performance, and, in some cases, pure illusion. On the plus side, this reflects the changing of the most difficult of all things to change – the public's attitude.

The first level of visibility is, of course, the U.S. Green Building Council's (USGBC) LEED designations, which are key in the marketing of new buildings but vary widely in their significance. At the high end, what you might call "industrial strength" LEED, are the residential buildings of Battery Park City (BPC). These five significant projects – which include the Solaire (Gold), Verdesian (Platinum), and Visionaire (Platinum) by Pelli Clarke Pelli; Tribeca Green (Gold) by Robert A.M. Stern Architects; and the Millennium Tower (Gold) by Handel Architects – are required by BPC to achieve high category standards and high energy standards. (The USGBC had no minimum energy requirements prior to the June 2007 mandate for a minimum of 14% energy reduction; amazingly, 10% of LEED projects certified in 2007 and 2008 still had *no energy points*.) The City of New York Department of Design and Construction also has a number of "normal" LEED projects, with the Bronx Zoo Lion House (Gold), by FXFOWLE Architects, and the Queens Botanical Garden Visitor & Administration Center (Platinum), by BKS Architects, being standouts.

All the projects mentioned above are LEED NC (New Construction), which assures that the full building must comply. However, there is only one NYC office building that has achieved a LEED NC rating: the Hearst Building (Gold) by Foster + Partners. All other LEED-rated office towers are LEED CS (Core and Shell) – an improvement, but "hollow green" nonetheless. Since 80% to 90% of the space in these buildings will be fitted out by tenants with no mandated requirements to follow the developers' green strategies, this model is not going to carry us into a sustainable future.

So how many buildings in the city are actually LEED certified, and how many are registered? As of early July 2009, there were 16 LEED



BKS Architects: Queens Botanical Garden Visitor & Administration Center (LEED Platinum)

NC, one LEED CS, and 28 LEED CI (Commercial Interiors) certified projects in NYC, not including pilot projects. Another very important category, LEED EB: O&M (Existing Buildings: Operations & Maintenance), has a total of seven. If you think these are amazingly low numbers, there is a reason – there are another 400 city buildings that are currently registered, i.e., pursuing LEED. There are no requirements to register for LEED; you just sign up and pay a small fee. Unfortunately, there have been hundreds, if not thousands, of buildings in the U.S. that registered for LEED but failed to be certified or never submitted. Projects typically tout the “striving for” or “pursuing” a LEED title from the first day of marketing, and NYC will surely get its share of these phantom LEED projects.

Under the Bloomberg Administration, the city has been moving beyond its early model of guidelines and exemplar projects in its own portfolio to stronger action in the form of code and regulatory mandates, as well as incentives for all buildings. The recently released two-year “PlaNYC Progress Report” (see pg. 16) was accompanied by the mayor’s specific legislative initiatives that, if approved by the city council, will constitute the first step in addressing the 80% share of greenhouse gases represented by all existing buildings.

If the city is just nibbling at the edge of sustainability, how big is the challenge, and is anyone taking it on? The answer is a tentative yes. The 2030 Challenge, the handiwork of architect Ed Mazria, FAIA, calls for all current buildings to be designed for 50% better energy performance than the local benchmark for building type, and to be 100% carbon neutral by 2030. The “Sustainable Sites Initiative Guidelines and Performance Benchmarks – Draft 2008,” from the American Society of Landscape Architects and others, outlines 12 ecosystem services (per the UN Millennium Ecosystem Assessment) and integrates those objectives in its guidelines. The initiative creates an integrated high-performance approach to sites and, importantly, calls for recertification over time. The Living Building Challenge, from the Cascadia Region Green Building Council, is the most robust of all and mandates a close to zero impact for buildings. These early models are beginning to grapple with implications of creating a sustainable future at the project scale.

Two institutions engaged at the global scale are both here in the city: the United Nations and Columbia University’s Center for International Earth Science Information Network (CIESIN). The UN Millennium Ecosystem Assessment specifically identifies the “services of nature,” or “Eco-System Services,” and their essential economic and strategic role in our sustainable future. The total of these services constitutes the carrying capacity, or biocapacity, of the planet, the key to understanding how all nations can shape their conduct, growth, and consumption to achieve a world in balance with our given sustainable resources. (Earth in 2008 was already exceeding biocapacity by 30%.) In partnership with Yale, CIESIN has developed the Environmental Performance Index (EPI), which ranks nations on the basis of environmental health and ecosystem vitality, while the World Wildlife Fund has developed the Living Planet Index (LPI). The EPI and LPI operate at the global scale, ranking nations in terms such as ecological footprint (the share of the world’s biocapacity consumed directly or indirectly by each nation per capita per year). Benchmarks

for a sustainable future can thereby be set, and building and site performance at the project scale can be derived.

According to our 2008 LPI rating, the U.S. has the second highest ecological footprint per capita of any nation on Earth (four-and-a-half times the available biocapacity per person), so clearly our challenges in sustainability go beyond the project scale. The core issue in America is the irrepressible suburban sprawl that is consuming the ecosystem services base and decreasing the efficiency of the urban core. NYC, with its population density and mass transit, has “great bones” as a model for urban sustainability, while New York State has excellent natural resources to provide the balancing biocapacity.



FXFOWLE Architects: Bronx Zoo Lion House, now Madagascar! (LEED Gold)

To remain viable in the long term, NYC and New York State should adopt growth strategies enhancing the efficiency of built and natural systems, thereby reversing course and achieving “growth to balance.” In this framework there would be urban growth boundaries (UGBs) established for all major urban/suburban areas (Albany, Syracuse, New York, etc.), and the remainder of the state would be designated as the “eco-region.” This model grows UGB density “up, not out” to mass transit levels via a transfer of development rights from the eco-region. Conservation easements assure that the eco-region achieves enhanced agricultural or forestation use. This creates an expanding “natural capital” bank for New York State. All new construction in the eco-region would have to meet a “restorative” code much closer to the Living Building Challenge.

This is a whole-system model of constantly improving efficiency of both built and natural systems, with NYC’s future growth linked to enhancement of ecosystem services, and its buildings and infrastructure to the standards of The 2030 Challenge or better. In short, we have only just begun.

[Randolph R. Croxton, FAIA, LEED AP](#), has led Croxton Collaborative Architects since 1978, and is a pioneer of sustainable architecture and recipient of the USGBC’s National Leadership Award in 2005 and 2008. The firm received National AIA COTE Top Ten Green Projects Awards in 2005, 2006, and 2007. Croxton authored the first national green design guidelines under a NIST grant in 1994 (preceding LEED 1.0 by four years), as well as the 2003 precedent-setting World Trade Center Sustainable Design Guidelines.

CO₂ = 0

Clarity and credibility on in-house carbon emission reduction programs

By Jacqueline M. Pezzillo, Assoc. AIA, LEED AP

Possibly the most publicized threat to the environment, global carbon emissions will rise 40% by 2030 if governments fail to impose regulatory restrictions on greenhouse gases, according to the U.S. Energy Information Administration. As architects, we work toward creating a sustainable built environment. But are we as green as we encourage our clients to be?

Ironically, the design industry is lagging behind the rest of the professional service demographic in terms of CO₂ reduction in the office. In-house carbon emissions tracking is a proactive measure that practices can take to raise the bar within the design community. Though the process is undeniably in its nascent stages, firms in New York City and elsewhere are beginning to demystify the quantitative metrics associated with CO₂ reductions in their own studios. By enlisting the guidance of consultants, observing the strategies of our more progressive international colleagues, and sharing techniques and information within our professional community, carbon neutrality can become comprehensible and achievable.

What it means to be “carbon neutral”

Staff and operations are the main causes of carbon emissions in an office. A carbon audit is the first step to reducing emissions by providing an assessment of a firm’s current carbon output and illuminating possibilities for reduction. U.S.- and U.K.-based The CarbonNeutral Company is a carbon consulting and offsetting firm that works with clients to determine areas of improvement. For instance, limiting air travel and using videoconferencing and online meetings instead can result in drastic reductions in greenhouse gas (GHG) emissions. Utility and energy usage, mail and courier services, and staff commuting all contribute to an office’s carbon footprint.

Since there are practical limits to what a firm can achieve on its own, carbon offsets can help. Purchasing them reduces GHG emissions from fossil fuels and certain agriculture practices through the financing of alternative clean-energy sources. In turn, the purchaser claims a portion of the resulting carbon reductions. Simply put, a firm can avoid as much carbon output as possible and then “trade in” the rest of its emissions by paying for someone else’s carbon-saving activities. Et voilà – carbon neutrality!

One example among many sources of carbon offsets is the Green Communities Offset Fund, which is offered by Enterprise Community Partners, a national affordable-housing nonprofit for which the AIA is a sponsoring partner. Contributions to the fund go toward greenhousing initiatives, such as solar water-heating systems, in low-income neighborhoods.

Carbon offsets vs. renewable energy certificates

Another option is renewable energy certificates (RECs), which represent the exclusive legal right to claim responsibility for the environmental benefits a renewable unit of electricity produces. While a carbon-offset credit represents one metric ton of carbon dioxide equivalent emission reductions, RECs are issued as evidence that one megawatt-hour of electricity has been generated and delivered to the grid from a qualifying renewable energy source (wind, solar, or biomass).

To ensure that offsets are actually making a difference, the revenue from selling a project’s emissions reductions needs to have substantially enabled the implementation of the project. If the savings can be classified as “business as usual,” it will not be attributed to an offset credit.

RECs do not require such clarity on ownership and are victims of “double-counting,” engendering debate about their effectiveness. GHG



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reductions from renewable energy projects occur at places in secondary grid locations, as “indirect” reductions (meaning the reductions take place at sources owned or controlled by other entities). Thus, uncontested ownership is difficult to achieve without contractual assignment, which carbon offsets offer. In the United States, it is currently impossible to monitor RECs being claimed by multiple renewable generators on the grid. Because of this problem with RECs, carbon offsets are increasingly coming into favor. Though RECs are still being purchased to achieve LEED points, offsets are beginning to be used as alternative compliance paths for LEED Energy and Atmosphere credits that were previously awarded for REC purchases.

The U.K. leads the way

The U.S. is behind the times when it comes to combating climate change, says Mark LaCroix, executive vice president of Global Business Development at The CarbonNeutral Company. Most of his firm’s clients come from the U.K., where carbon neutrality has become a commonplace dimension of business management, he says. In fact, the UK Green Building Council has urged firms to begin efforts in their own backyard.



©STOCKPHOTO

In Britain, Aedas is a leader in reducing in-house carbon emissions. Compliant with ISO 14001:2004 – the globally recognized standard for environmental management systems requirements – Aedas’s U.K. offices track employees’ travel-related carbon emissions through a required in-house worksheet based on the distance and mode of transportation. The practice is working toward a goal of a 25% emissions reduction per employee by 2011 and aspires to a 50% CO2 reduction for its projects by the same year. “The question arises about where to concentrate your efforts,” says Judit Kimpian, Aedas U.K.’s head of sustainability. “Do we mitigate our own impact or reduce our project emissions?” The obvious answer is both, she says.

Active measures taken since January to reduce energy consumption in the Aedas Huddersfield office, with a staff of 105, include switching off electronic devices, installing timers on AC units, and locking AC controls. Between January and May 2009, the office reduced its energy usage by 9.7% of the total consumption for 2008, creating a cost savings of approximately \$5,600 with no capital investment required. The results avoided 12.5 tons of CO2 from entering the atmosphere, the equivalent benefit of planting 12 trees.

Making strides at home

LaCroix is hopeful that the pace of activity in the U.S. will increase even during trying economic times, because “as building owners and specification writers become significantly more literate in green building, the market is evolving and assessing the life-cycle impact of building materials and systems.” Congressional debate and climate legislation encourage an understanding among business people and facilitate a national industry agenda of environmental awareness.

New York City-based Cook+Fox Architects has responsibly monitored its own energy usage since moving to its LEED Platinum office in Chelsea in 2006. The firm composts its own waste on-site, works electronically, and boasts a beautiful green roof complete with a photovoltaic array. Cook+Fox finances offsets for both its office and the average energy consumption of its employees, in addition to purchasing RECs.

Atelier Ten, an environmental design consultant and lighting design firm with offices in both the U.S. and the U.K., audits its carbon output, purchases offsets, and invests in wind-energy RECs for all of its locations. Each new branch office adheres to energy requirements and guidelines for fit-outs and operations that include proximity to mass transit, installation of bike racks and showers, and daylighting. According to Catherine Nueva Espana, who worked in the New York office until recently becoming business manager for the San Francisco office, internal conversation is integral to the firm’s pursuit of carbon neutrality. “The initiatives that we fund through our offsets are a staff decision,” she explains. “We focus on local projects within the U.S. and on conservation.”

“As building owners and specification writers become significantly more literate in green building, the market is evolving and assessing the life-cycle impact of building materials and systems.”

Davis Brody Bond Aedas (DBBA) is Aedas’s North and South America partner. The firm’s New York office has made significant strides in 2009 since learning about Aedas’s progress and how simple measures can be achieved. Internally, the firm has launched GreenDBBA, a multifaceted approach to greening its office. Led by Partner Chris Grabé, FAIA, LEED AP, the campaign outlines a series of internal and external initiatives to enhance responsible design as well as practice. The initiative is centered around a core team of LEED-accredited professionals who meet regularly to plan presentations on current sustainable DBBA projects, serve as resources on project teams, and work to increase the amount of LEED APs within the practice. In-house recycling campaigns, circulation of topic-specific podcasts, and encouraging energy-saving measures have become common practices in the New York office.

Despite such signs of progress, architecture firms in NYC and elsewhere in the U.S. have a long way to go in terms of in-house carbon emission reductions. Ideally, carbon neutrality should be a universal goal. A full greenhouse gas assessment for a firm of 100 people costs approximately \$2,400. So instead of taking your next flight to Abu Dhabi, give the atmosphere a break and invest in a wake-up call.

Jacqueline M. Pezzillo, Assoc. AIA, LEED AP, is the communications and marketing manager at Davis Brody Bond Aedas.



Sustainability is part of the lesson plan for the NYC School Construction Authority
By Richard Staub

Going to School in Green

Ehrenkrantz Eckstut & Kuhn: P.S. 59/Beekman Hill International School, East 63rd Street, is heated with Con-Ed steam produced as a by-product of electrical generation. It has no boilers, consumes no fossil fuels, and produces no carbon dioxide emissions

How sustainable are New York City's public schools? With the introduction of the NYC Green Schools Guide, they are becoming very much so. The guide is the New York City School Construction Authority's (SCA) adaptation of the U.S. Green Building Council's (USGBC) LEED certification requirements, specially tailored for city schools. It guarantees that every public school now under construction or designed in the future will meet the equivalent of LEED certification.

The immediate push came in late 2005 with the passing of Local Law 86, which called for a comprehensive sustainable design program for all city buildings. The statute mandated that new school buildings, additions, and substantial renovations receiving over \$2 million must achieve LEED certification. It requires that capital school projects with a construction budget of \$12 million reduce energy costs by 20%.

The momentum to design sustainable public buildings had been growing slowly since the Giuliani Administration, until Mayor Michael R. Bloomberg and the City Council, with input from all other city agen-



HOK: P.S./I.S. 48Q, Queens, includes a five-story L-shaped Learning Block, with classrooms and library, and a four-story Activities Block, housing the auditorium, gymnasium, and cafeteria

cies, made a citywide commitment. With the passing of LL86, the SCA assembled a consultant team, which worked to develop the guidelines with Ms. E. Bruce Barrett, RA, PE, the SCA's vice president for architecture and engineering, and George Roussey, PE, its director of standards. The final product was introduced in 2007.

But why a special green schools guide – and one just for New York City? "Several reasons," says Barrett. "The general LEED guidelines have to cover a wide range of building types, including residential, retail,

corporate, and healthcare. Prior to the guidelines, our consultants and the SCA had to evaluate each project individually to determine which measures worked best for schools. That took a lot of time, especially with our volume of construction and fast-track approach. Just this year alone, we have 45 green schools under construction, 15 in design, and smaller renovation projects under way.

"Also, the air quality of our schools has to be good because so many city children have respiratory problems, in particular asthma," she continues. "And then there are local climate and site conditions. It made sense to offer guidelines that would simplify the application of LEED criteria, without compromising it."

"We had a pretty good track record already," says Roussey, "but incorporating these guidelines into the design standards gave us a consistent approach – and eliminated the competition that can come with earning various levels of LEED certification."

"Fortunately, we didn't have to start writing the guidelines from scratch," adds Robin Auchincloss, AIA, LEED AP, of Dattner Architects, the architect member of the team. "We reviewed similar programs already in use, such as Collaborative for High Performance Schools in San Francisco and programs in New Jersey. We compiled their recommendations – hundreds of them – and then conducted a painstaking evaluation of the cost and impact of each to decide what would work for the city. Barrett and Roussey were very hands-on during this vetting process, which meant we were getting the best possible feedback and quickly. The Board of Education's Division of School Facilities had significant input as well." Another member of the team, Viridian Energy and Environmental, did energy modeling to provide a prototype for energy use and reduction. Once the guidelines were complete, the Mayor's Office of Environmental Coordination named Davis Langdon to vet the guidelines to assure they were fully LEED compliant.

The NYC Green Schools Rating System is proscriptive, with more requirements and fewer options than LEED. It does, however, distinguish between two types of required credits. The category "required for all" includes 26 LEED-based credits that must be achieved, while a "required if feasible" credit must be met unless the design team can offer an acceptable explanation of why it cannot. "Architects don't have the same options with SCA projects that they may have with other clients' projects," says Roussey. "The sites are often very defined with little choice about placement and orientation, and our design standards set definite expectations about how each facility will come together. Being creative within these limits proves an architect's real ability."

Projects can be as straightforwardly demanding as SBLM Architects' design of the P.S. 133K replacement school, a new,



DATTNER ARCHITECTS

Dattner Architects: P.S./I.S. 276, Battery Park City, is one of the first green public schools built in NYC

116,000-square-foot building for 950 students that offers two individual school programs within a shared facility and incorporates elements of the turn-of-the-20th-century school formerly on the site. And then there are adaptive reuse projects such as Ehrenkrantz Eckstut & Kuhn's design of P.S. 59/Beekman Hill International School, which converted a 1917 hospital annex into a school for 470 students. Or Dattner Architect's design of P.S. 276, which makes the most of its slim site at Battery Park City with an eight-story structure whose stairways offer an inviting, energy-saving way to get around.

The reviews during the design process are the most intensive in the life of the project, according to Barrett, with four submissions required during that phase. "We're checking everything out to make sure the team stays on track and understands what's being asked of them," she says. "This is more work for the SCA, but it prevents problems later on. One advantage is that most architects come to the program already committed to sustainable design, so they are very willing participants. And while the first project often involves a steep learning curve to adjust to our approach, the second comes much easier."

When asked if she had a "poster school" for the program, Barrett suggested that all are exemplary. "That's the point of the program," she explains, "green equity among all the facilities. And now that we've come this far, we have standards we can apply to smaller projects, such as low-flush toilets in bathroom renovations. Sustainable design is becoming part of the process, regardless of the size or requirements of the project."



SBLM ARCHITECTS

SBLM Architects: P.S. 133K, Brooklyn, incorporates building elements from the original school built in the early 1900s, such as the original terra cotta and limestone entrance that will be re-used as the new gateway to the auditorium

"The gratifying part," Barrett continues, "is that I think we're getting it right. We can feel the momentum growing within the agency and from the consultants. SCA's Manager of Sustainable Design Programs Richard Eiden is coordinating what we do with the Department of Education, helping individual schools to do energy benchmarking and introduce educational programs for the students. And the High-Performance Building Award the Green Schools Guide received in 2008 from the Sustainable Building Industry shows that our colleagues outside of the city understand what we've accomplished."

For professionals who spend their days immersed in getting these complex projects built, this must have been very welcome news.

Richard Staub is a marketing consultant and writer who focuses on issues important to the design and building community.

Home Is Where the Carbon Isn't

Four new eco-friendly NYC residential projects focus on energy efficiency

By Lisa Delgado

LEVENSON MCDAVID ARCHITECTS



Levenson McDavid Architects: Brooklyn Cohousing

With New York City facing a burgeoning population, eco-conscious architects are searching for the best ways to provide new housing while lowering their projects' carbon footprint. In four recent low- to medium-budget residential projects, local architects chose to sidestep "green bling" in favor of pragmatic energy-efficient approaches that don't break the bank.

Brooklyn Cohousing

Over the past couple of years, Ken Levenson, AIA, has found himself increasingly concerned about ecological issues in the profession. "Obviously climate change is, essentially, an energy crisis, and it's accelerating beyond everybody's wildest imagination," says the principal of Levenson McDavid Architects. "In addressing that crisis, a building's operational efficiency is critical."

In the design for the 30-unit Brooklyn Cohousing project (which incorporates an old mattress factory) in Brooklyn's Greenwood Heights, his firm is tackling the efficiency issue head-on by applying a technique known as "passive house," which lowers a building's heating and cooling energy consumption by 90%. The timeline for the project is uncertain, but construction could be completed as early as the end of 2010, says Brooklyn Cohousing founding member Alex Marshall, an adjunct professor at the New Jersey Institute of Technology School

of Architecture. If so, it will be the first multifamily passive house in the state, Levenson says.

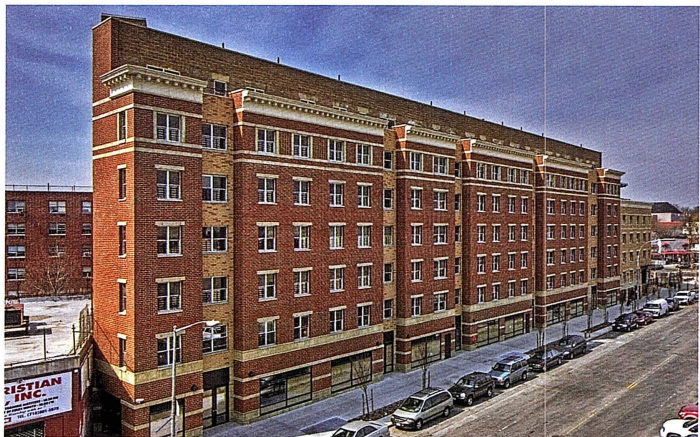
A building designed to meet the passive house construction standard is nearly airtight and has high-performance insulation, so it requires very little, if any, active heating and cooling. The technique originated in Europe but is gradually gaining traction in the United States. With its tight focus on low energy use, it complements standards such as LEED, but doesn't replace them, according to Levenson.

Despite the project's carefully sealed building envelope, the interior will have a constant supply of fresh, filtered air, fed by centralized enthalpy-recovery units on the roof. Making it a passive house means the construction will be about 7% more costly and will take an extra four to six weeks, but Levenson expects the extra expense will be recuperated within six-and-a-half years, due to energy savings.

At first, the clients gravitated toward more familiar features, such as a green roof, photovoltaic panels, and a geothermal well. But those seemed to offer more expense and less energy savings than a passive house, Levenson says, adding that it was his role to "get everyone beyond the sexy bells and whistles that everybody imagines when they think green sustainable building." They plan to eventually build a green roof, but a geothermal well will be unnecessary due to the building's low energy use.

Intervale Green

The decision to go for a highly sustainable design for Intervale Green – a new affordable-housing complex in the Southeast Bronx – was about keeping the project light on the environment and light on the wallet, according to Nancy Biberman, president of Women's Housing and Economic Development Corporation, the nonprofit community group that owns the building. Designed by Edelman Sultan Knox Wood/Architects and Peter Franzese Design and Engineering, with help



EDELMAN SULTAN KNOX WOOD/ARCHITECTS

Edelman Sultan Knox Wood/Architects: Intervale Green

from energy consultant Steven Winter Associates, the 128-unit housing complex features superior insulation and high-efficiency heating and ventilation. Energy usage for heat and hot water plummets by 43%, and greenhouse gas emissions drop by the equivalent of 33 cars. Utility bills are around 30% lower for the low-income and formerly homeless families who live there. The residents also enjoy two green roofs, two landscaped courtyards, a sculpture garden, and a parade of 33 new trees lining the sidewalk, thanks to the MillionTreesNYC program.

Serviam Gardens

In the Northwest Bronx, Serviam Gardens – a 243-unit residential complex for low- to middle-income seniors – also boasts a number of energy-saving tactics, including superinsulation and high-performance boilers, elevators, and lighting. What sets it apart was OCV Architects and client Fordham Bedford Housing Corporation's decision to reuse an existing four-story brick building, a former convent, amidst new construction. In fact, the architects made that 1939 building the centerpiece of the larger project, which will be completed by spring of 2010.



OCV ARCHITECTS

OCV Architects: Serviam Gardens

Not only did recycling the building boost the project's sustainability, the architects also drew inspiration from the existing building's Georgian-style design throughout the rest of the complex. "Oftentimes, affordable housing buildings are plain because of their budgetary constraints," says OCV partner Jack Coogan, RA. "This allowed us to share some of the craftsmanship and style of the building. Why waste it?"

Community of the Holy Spirit

Coincidentally (or perhaps by divine intervention), another recent green project involves a convent: BSKS Architects' design for a new eco-friendly home for a group of Episcopal nuns known as the Community of the Holy Spirit on West 113th Street. The nuns have "really tried to infuse their entire life with sustainable living: they cook organically; they use CSA [community-supported agriculture]; they live very simply. And so this building is really a statement of their belief structure," says Julia Nelson, AIA, LEED AP, a partner at the firm.

Taking a cue from the nuns' uncomplicated way of life, the architects searched for simplicity in their own approach to the project, which is slated for completion by summer 2010. The idea was to "go back to basic sound building principles," Nelson says. "We want to give them a building that's going to last a long time, that's not going to cost a lot to operate, and that will let them live how they want to live and worship in a way that acknowledges their mission."



BSKS ARCHITECTS

BKSK Architects: Community of the Holy Spirit

Good insulation was key to energy savings: the firm chose R-31 for the walls and R-25 for the roof, not counting the insulating effect of green roofs on top (one for quiet contemplation; another for the nuns to grow produce in container gardens). Plentiful operable windows are made with Energy Star-rated wood casements and low-e argon-filled insulated glass. Other green measures include sustainable materials, rainwater collection, and solar water heating.

Since the nuns do not favor air conditioning, BSKS looked for ways to incorporate natural ventilation. In a double-height chapel, air can flow in through open windows in warm months and escape up through opened skylights. In the nuns' chambers, oversized windows can be opened to cool those spaces (ceiling fans help, too), and when the doors are open, the air will flow through to the corridors beyond.

All in all, the project proves a potent reminder that architecture is only part of what makes a home green. "The best way to reduce the carbon footprint is through lifestyle," Nelson observes. Perhaps the 11th Commandment should be: Thou shalt not crank up thy AC.

Lisa Delgado is a freelance journalist who has written for *The Architect's Newspaper*, *e-Oculus*, *Blueprint*, and *Wired*, among other publications.

Interior Motives

New York's architects and their clients are finding sustainable interiors to be increasingly attainable and highly appealing

By Roger Yee

Office interiors. They're here today, gone tomorrow. Yet four recently completed Manhattan projects reveal a surprising twist. Thanks to a quiet revolution in design and construction, sustainable interiors with a holistic, long-term view of the environment are becoming increasingly attainable. Not only do most manufacturers of building products and furnishings now offer products with green design specifications, they are priced at a modest premium – if any. Correspondingly, more players on the development team are embracing green design, fashioning environments that reflect the cost-benefits that suit their circumstances. The process seems refreshingly open-ended and free of dogma. A tour of the four spaces shows how creative today's sustainable interiors can be.

AECOM Design + Planning: Where clients want to hang out

New Yorkers seldom encounter bright, sunlit interiors. So the new 10,000-square-foot New York office of AECOM Design + Planning in Chelsea, designed by Michielli + Wyetznr Architects, is unfailingly inspiring. The latest Manhattan home of the global landscape design, master planning, environmental and ecological planning firm – known as EDAW until October 2009 – revolves around the multipurpose conference area occupying the center beneath a massive skylight. The area has a visual and functional presence, using movable glass panels mounted on truss-supported tracks to illuminate the office while providing a setting for meetings and displays.

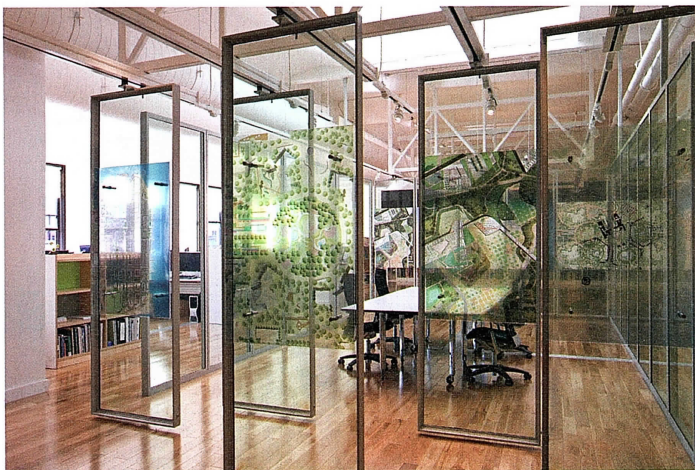
"Sustainable design is our mission," notes Sarah Haga, AIA, vice president and managing principal of AECOM's New York office. "We had a clear idea of what we wanted." Indeed, the firm sought sustainability with comfort. As Christopher Stienon, AIA, AICP, LEED AP, director of urban design and senior associate of AECOM, explains, "We wanted a space where our clients would want to hang out." The staff's green wish list included natural light from the then-darkened skylight, operable windows, showers for bicycle commuters, and bio-waste composting.

For Frank Michielli, AIA, and Michael Wyetznr, AIA, principals of Michielli + Wyetznr Architects, AECOM's passion for sustainability was motivational. "We challenged each other to do more," Michielli says. Adds Wyetznr, "With the commissioning agent checking that the facility meets design guidelines, we know it will deliver on its promises." As intrepid visitors will discover, AECOM's composting center already produces compost and "worm tea" – as promised. LEED Gold is anticipated for the project.

National Audubon Society: Making the right choices

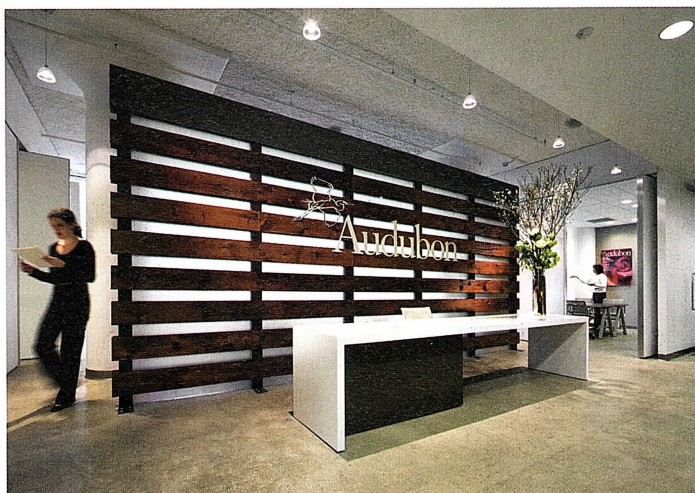
In 1992, the National Audubon Society, with Croxton Collaborative Architects, completed an award-winning green renovation of the historic Schermerhorn Building (George B. Post, 1891) at 700 Broadway. But after recently decentralizing operations, the society needed a smaller space, and it chose new headquarters at 225 Varick Street. Audubon's leadership dutifully mentioned sustainability in its RFP along with a desire for a LEED Silver rating. "When we said they shouldn't settle for less than LEED Platinum, they replied, 'If it achieves Platinum, good for you!'" says Guy Geier, FAIA, FIIDA, LEED AP, senior partner of FXFOWLE Architects, which designed the project. Audubon's new headquarters is an outstanding one-floor, 27,500-square-foot LEED Platinum facility. Geier says that architect and client achieved that rating primarily by making the right choices about materials, methods, and people.

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Michielli + Wyetznr Architects: AECOM Design and Planning

DAVID SUNBERG/ESTO



FXFOWLE Architects: National Audubon Society

Rather than regard sustainability as an added cost, FXFOWLE considers it a basic design parameter. "Not every project can be Platinum, but all can be sustainable," Geier believes. "We put sustainability in Audubon's program so it would be part of every decision." With support from Audubon President John Flicker, project team members worked together closely to advance sustainability. General contractor Citadel Construction, for example, helped with pre-construction estimates, product innovations, construction waste, and alternate suppliers. "The whole team bought in," Geier reports.

Best of all, the project is generating hard data on sustainability through a post-occupancy study. "Some issues are subjective," Geier concedes. "Yet people who say they feel more productive generally are. Fortunately, variables like sick days, staff turnover, and job retention are easily measured. If you reduce sick days, you save real money."

Skanska USA Building: Scoring with a green team

The new 24,000-square-foot office for Skanska USA Building in the Empire State Building illustrates what can happen when a progressive organization and a world-class project team aggressively pursue green design. The regional office for the subsidiary of the Sweden-based project development and construction company anticipates LEED Platinum certification. Among the benefits of sustainability are projected energy savings of 46%, based on a raised floor system with operable floor diffusers for individual control; a lighting system that uses 35% less energy than ASHRAE standards; and a reduction in water usage 40% below Energy Policy Act levels through waterless, low-flow, and sensor-activated fixtures.



Skanska USA Building

"We always strive for the highest LEED ratings throughout the nation," declares Steven J. Pressler, PE, Skanska's executive vice president and area regional manager. "For this office, we decided to keep meticulous records and go for the top." Confident it could produce a LEED Platinum job at market cost and convince others to follow suit, the company elected to use anticipated savings to develop an even better environment.

Numerous factors led to Skanska's success. Pressler and Tri Tran, LEED AP, Skanska's pre-construction director, praise the expert consultants assembled to navigate the checkpoints leading to LEED Platinum. Savvy as Skanska is, it learned still more from the architects of Cook+Fox, Terrapin Bright Green, Swanke Hayden Connell, and BBG/Brennan Beer Gorman, and the engineers of Cosentini Associates and Arup. Of course, it didn't hurt that W&M Properties, the building's

owner, is promoting green design in updating the core and shell (see pg. 21), enabling landlord and tenant to coordinate their efforts.

Skanska's office is a showcase for sustainability, where 90% of offices receive daylighting, 99% of employees enjoy outside views, and projected operational savings should reach \$556,436 over a 15-year lease term. However, Pressler reminds visitors, "This is a hands-on place. It's not fancy. We're a construction company, not a law firm."

Material ConneXion: It's all about the materials

While some organizations develop sustainable interiors to attain LEED certification, others follow their own paths to sustainability. Material ConneXion exemplifies an organization with a unique agenda at its new 12,000-square-foot lower-Madison Avenue office, designed by Imrey Culbert. A leading global platform for material solutions and innovations, Material ConneXion fields teams of experts in the U.S., Europe, and Asia who advise businesses and governments on materials and their potential uses.



© MATERIAL CONNEXION 2009

Imrey Culbert: Material ConneXion

Not surprisingly, the new facility's design celebrates sustainable materials. Finding green versions of standard building products and interior furnishings is becoming easier, reports Dr. Andrew H. Dent, vice president, library and materials research, of Material ConneXion in New York. "However, tradeoffs are rarely painless," he cautions. "Despite their authentic looks, they do not always have equivalent properties. Designer and client have to decide what's important."

In determining priorities for the new facility, Material ConneXion expressed broader interests in materials besides sustainability. No less important for the organization was its decision to keep time and cost under control by concentrating on sustainable materials in the new space instead of launching a comprehensive green design. "We're not against LEED," Dent says. "But we've used our expertise to select materials we could justify on environmental terms. As a result, we didn't ask our architect to design a sustainable interior." Accordingly, Imrey Culbert has created a lively contemporary environment for offices, conference rooms, and a materials library where imaginatively used finishes remind visitors how quickly new materials are evolving.

Today's interiors can be as green as we want them to be. "Clients who value LEED certification will submit to the paperwork and cost of registration and commissioning," Geier points out. "But you don't need a LEED designation to be sustainable."

Roger Yee is senior editor of architecture and design for Visual Reference Publications and a consultant to organizations in the design community.

What's Your Green Roof Worth?

An NYC property tax abatement offers a financial incentive for green roofs – and more streamlined procedures for applying By Liz Pulver, ASLA

You're probably aware of green roofs' many benefits: they extend the lifetime of roof membranes, boost insulation, reduce energy costs, minimize temperature fluctuations (the urban heat island effect), improve air quality, and absorb rainwater. Now there's one more reason to push for a green roof in your next project.

Through March 2013, the City of New York is offering a one-time property tax abatement of \$4.50 per square foot for the installation of green roofs. Since they provide a vegetative layer to absorb and store water, the city's Office of Long-term Planning and Sustainability and PlaNYC recognize that green roofs reduce demands on the city's overburdened storm-water drainage system. In our impervious, paved city, even minor rain events (less than 1/10 inch of rainfall) can overwhelm the municipal sewage infrastructure system. This leads to significant pollution in our waterways and fines from the NYS Department of Environmental Conservation (DEC). In fact, last year the city agreed to pay \$1 million and fund \$4 million worth of environmental benefit projects to settle DEC fines relating to delayed upgrades of the city's storm-water systems and infrastructure. To better address these issues and to encourage the installation of green roofs, the city created the tax abatement in August 2008.

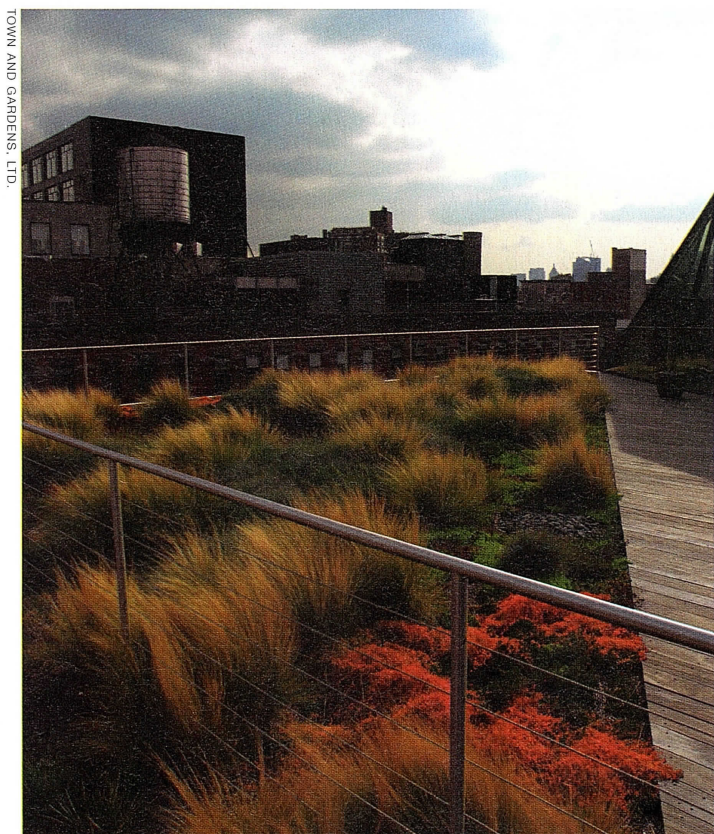
In April 2009, the NYC Department of Buildings (DOB) released new, more streamlined procedures for applying for the property tax abatement. Here are the general guidelines:

- New and existing buildings are eligible, including Class 1, 2, and 4 buildings encompassing two- and three-family homes, rental buildings, most cooperatives and condos, office buildings, hotels, factories, and garages.
- Over 50% of the eligible rooftop space must be covered with green roof planting (including appropriate roofing membrane, drainage, soil and growth medium, and plant material). At least 80% plant coverage must be achieved during the compliance period – the first year after applying for abatement.
- A maintenance plan must be prepared by a licensed landscape architect, architect, engineer, or certified horticulturist.
- A licensed architect or structural engineer is required to certify the application for the green roof abatement, along with an alteration application.
- Extensive green roof installations (shallow, four inches deep or less) are the simplest type to submit for the tax abatement. They incur fewer professional fees because they may not require certain drawings, construction documents, and calculations to be filed.
- Applicable green roof projects must be completed on or after August 5, 2008, and applicants must follow the latest application rules. Contact the DOB for more information on how to apply, including responses to frequently asked questions.

To help determine whether it is worthwhile for you and your client to apply for the abatement, you should factor in time and fees for professional services, permit filing, and coordination. Compare those fees to the square footage of the green roof, multiplied by \$4.50. Running some ballpark numbers shows that a green roof installation on an existing building would need to include at least 1,000 square feet of planting area to cover fees and to begin to reap some financial benefit from the abatement. So the larger the green roof, the better! At this point, new construction projects may prove the most worthwhile applicants. They already incur professional and permit fees, and a green roof's absorption capacity may help reduce requirements for the building's storm-water collection system.

With the green roof tax abatement, NYC has taken a great first step toward encouraging more sustainable building practices and addressing storm-water drainage issues. But cities like Chicago, Philadelphia, Seattle, and Portland, Oregon, are leading the charge, featuring green roofs on their public buildings and offering technical assistance and grants for the installation of green roofs. Chicago even offers expedited permitting for green building projects. Compared to other cities, New York has some catching up to do. C'mon New York – let's go!

Liz Pulver, ASLA, is a registered landscape architect working at Town and Gardens, Ltd., which specializes in the design, installation, and maintenance of commercial and residential green roofs and exterior spaces.



The green roof of Diane von Furstenberg headquarters; architect: WORKac; landscape design, specifications, and installation: Town and Gardens, Ltd.

The AIA Guide to New York City: In Search of Green Places

By Norval White, FAIA, and Fran Leadon, AIA

To prepare for publishing the fifth edition of the *AIA Guide to New York City* (Oxford University Press) in 2010, we've walked and driven countless streets in the five boroughs in search of interesting new buildings to include. There have been some big changes since the last edition nine years ago: not only the staggering number of new buildings, but also the fact that so many of them are proudly marketed as green. When Croxton Collaborative Architects renovated the Audubon Society's headquarters at the corner of Broadway and East 4th Street in 1992 using sustainable energy systems and recycled materials, it was a bit of a novelty; these days some stab at sustainability is virtually required. Sustainability is rapidly becoming synonymous with good design, and it even seems to be evolving into an aesthetic: call it Green Sleek.

New additions to the upcoming *Guide* will include green buildings that are tall (Cook+Fox's Bank of America Tower, Foster + Partner's Hearst Tower, Skidmore, Owings & Merrill's 7 World Trade Center), luxurious (Polshak Partnership and Ismael Leyva Architects' Riverhouse, Pelli Clarke Pelli's futuristic-sounding Visionaire, Solaire, and Verdesian), and fun (BKSK's Queens Botanical Garden Visitor & Administration Center, Antonio Di Oronzo of bluarch architecture + interiors' Greenhouse nightclub on Varick Street in Manhattan). BKSK's project, the city's first LEED Platinum-certified building, features on-site storm water retention, recycled materials, and beautiful integration of exterior and interior space. Di Oronzo's Greenhouse is the city's first sustainable nightclub, built almost entirely of recycled materials. Di Oronzo turned the LEED-certified club into a riotous jungle: fake moss creeps up the walls of the main space, and the ceiling of the downstairs lounge is festooned with faux fall foliage.

Pelli Clarke Pelli's Solaire was proclaimed as the first green residential tower in the city, featuring a rooftop garden by Balmori Associates. Polshak and Leyva's Riverhouse features an adjustable double-layer curtain wall that regulates heat gain. But as exciting as double-layer curtain walls are, our rambles through the city over the last year have reminded us of a simple fact: nothing beats a good tree. Since the last edition of the *Guide* in 2000, the city has been blessed with great new parks, including Hudson River Park, designed in segments by Dattner Architects, MKW + Associates, Michael Van Valkenburgh Associates, Sasaki Associates, Mathews Nielsen Landscape Architects, and Abel Bainson Butz; Van Valkenburgh's Brooklyn Bridge Park, which is in construction; Lee Weintraub Landscape Architecture's Erie Basin Park; and Thomas Balsley Associates' Riverside Park South.

Van Valkenburgh's tiny Teardrop Park in Battery Park City, sandwiched between Pelli's Solaire and Verdesian, Robert A.M. Stern Architect's Tribeca Green, and Gruzen Samton's 22 River Terrace, is described in the upcoming *Guide* as "a shady and mysterious glen, full of nooks and switchbacks." The park unites the four residential towers, providing much-



FRAN LEADON

Michael Van Valkenburgh Associates: Teardrop Park, Battery Park City



ADO

bluarch architecture + interiors: Greenhouse nightclub

needed public space that knits the buildings together into a whole: a *green place*. More Olmsted than Moses, the park was designed in a style that might be called Neo-City Beautiful, a place for strolling, contemplation, and rest. LEED certification is noble and necessary, and the more green buildings New York has, the better. But we need more green places, not just green buildings, to become a truly sustainable city.

Norval White, FAIA, is an architect, architectural historian, and professor who has designed buildings throughout the United States. In addition to the *AIA Guide to New York City*, he is the author of *The Architecture Book* and *New York: A Physical History*. He currently resides with his wife Camilla in Roques, France.

Fran Leadon, AIA, is an architect and professor at the Bernard and Anne Spitzer School of Architecture at the City College of New York. He lives in Brooklyn.



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The Benefits of Behaving Badly

Outside View
By Shumi Bose

Since returning from New York to London, I've had to shake off the habit of looking over my shoulder for a policeman when opening a can of beer outdoors, as I did when sitting on my Brooklyn stoop. While there's less interference from the police here, there are also fewer sidewalk sideshows and less passing chit-chat than in New York. On the subway in London, people are cooperative and unobtrusive; in New York, commuters are sprawling and theatrical. The messy overlap of public and private spheres is conspicuously absent within London's more orderly rhythm.

London boasts more CCTV cameras than anywhere else in the world, yet I've perceived an exhilarating tolerance by authorities in this city. The unwritten code is that as long as someone's behavior is not disturbing others, it can generally pass. It's curious that in New York, where I found a more palpable authoritarian oppression, people seem to naturally exert a sense of spatial ownership.



DAVID COULHARD

In Trafalgar Square, on-duty authorities tell provocateur/picnickers that drinking beer from teacups would be fine

Manhattan's new High Line is a brave rupture for the urban fabric to absorb. Amid the rooftops and fire escapes of Chelsea, street life is elevated and observed. Interactions shoot between people in the park, on the street below, and in surrounding buildings. London's denser inner-city areas are too nestled in protective preservation orders to see this scale of intervention. Its own Smithson-esque "walkway in the sky" at the bold and elegant Barbican Centre is almost always deserted, lacking the High Line's tumbleweed chic and gritty vibrancy.

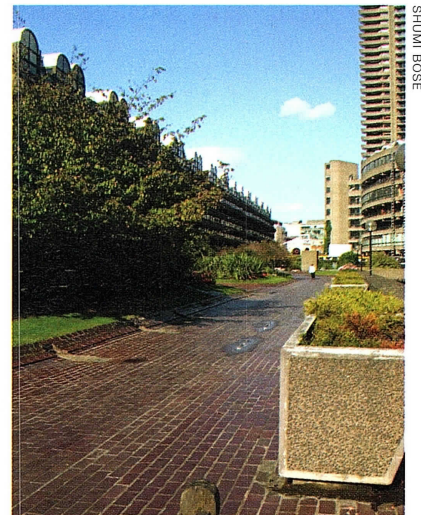
Last summer, London Mayor Boris Johnson called for ideas to revamp and revitalize some of the capital's public places. Such lip service makes Londoners feel represented, while in reality their behaviors and activities are curtailed and proscribed. The golden rule of never disturbing the peace – whether that of the public or the history-shrouded built environment – has created a bureaucratically nannied citizen, sucking on the pacifier of politely restrained behaviors, particularly in terms of placemaking.

Has the hyper-regulation of urban space redefined the Londoner's behavior so much that we need to purposefully search for ideas to enliven it? Recently in Trafalgar Square, Anthony Gormley's One & Other project allowed ordinary citizens to spend an hour atop the Fourth Plinth expressing anything (legal) they wanted to. Elsewhere, local authorities positioned 30 pianos in public places across the capital for any passerby to launch into an impromptu recital or start a sing-along. Both programs are part of an over-energetic push to instigate the spontaneity and random interaction that seem to falter under "public-minded" decorum.

Indeed, urban provocateurs from *Blueprint* magazine and the Manifesto Group recently found that London authorities were usually sympathetic – even apologetic – in their policing, and seemingly kept watch largely for the benefit of those pesky CCTVs. For instance, rebel revelers in Trafalgar Square were complimented by the on-duty authorities on their "cute picnic" and told that though they were occupying a Controlled Drinking Zone, discreetly taking beer from teacups would be fine.

I'm still receiving e-mailed whispers of various "secret" or underground happenings in New York. Whether it be a clandestine movie screening or Macro Sea's dumpster pool, which drew flash mobs when appearing at undisclosed locations in Brooklyn, it seems the authoritarian radar provokes people to independently seize and control the environment and what happens within it.

"A way of measuring the quality of life in the city is by the design of its public spaces," said architect Richard Rogers, deputy chair of Mayor Johnson's Great Spaces Panel. "These people's places bring great vitality to a city." Rather than look to institutionally sanctioned activities or to the dictates of underground coolness, Londoners and New Yorkers should grasp the liberating potential of public spaces. These places belong to the people only as they are claimed.



SHUMI BOSE

The Barbican Centre's "walkway in the sky" is almost always deserted

Shumi Bose is an architectural writer and researcher, and writes regularly for London-based publications such as *Blueprint* magazine and *The Architect's Journal*, and has contributed to *Urban Omnibus* and *The Architect's Newspaper* in NYC. She is currently studying at the Architectural Association in London.

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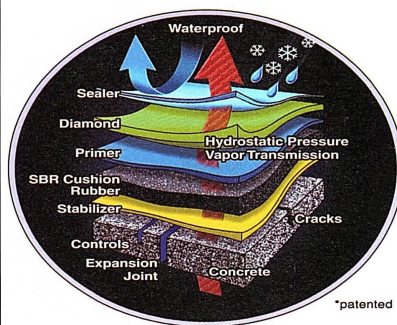
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21-Year Watch

Croxtan Collaborative Architects established a benchmark for sustainable design in the NRDC's 1988 headquarters

By John Morris Dixon, FAIA

Long before the 1998 introduction of LEED ratings, the New York headquarters of the Natural Resources Defense Council (NRDC) exemplified their environmental strategies. Determined to make their offices a demonstration of green design, the leaders of this nonprofit research and advocacy organization turned to Randolph Croxtan, FAIA, of Croxtan Collaborative Architects, one of the few architects of that time who was knowledgeable about the issue. (Croxtan was instrumental in founding the AIA's Committee on the Environment and the U.S. Green Building Council.)

The NRDC's 1988 offices included the top two-and-a-half floors of a 12-story building in Manhattan's Garment District. As its staff has increased, NRDC has continued to work with Croxtan Collaborative Architects, expanding the space to its current four full floors. And now – 21 years after completion of those initial offices – the same client-architect team is applying more advanced sustainability strategies to a fifth full floor (two more are anticipated; see building section below).

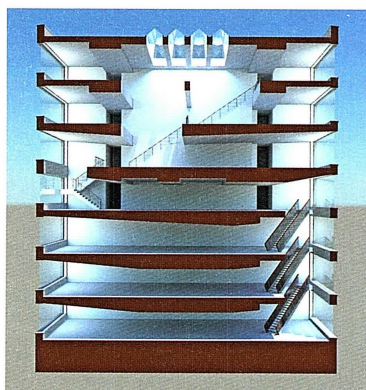
Croxtan describes NRDC's approach in the 1980s as moving beyond mere energy-saving to "ecological design." In response to the 1970s oil crisis, prescriptions for saving energy had entailed serious sacrifices of indoor air quality.

The reigning ventilation standard of the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) for office spaces had been reduced from 10 cubic feet per minute (cfm) per person to only five cfm, a level soon associated with "sick building syndrome." These NRDC offices showed that energy use could be reduced by 50% from prevailing levels with 30 cfm per person, and ASHRAE subsequently raised its standard for this kind of occupancy to 20 cfm per person.

NRDC's energy use was monitored with the cooperation of Consolidated Edison, which contributed \$100,000 toward the project's energy-saving features. Tracking performance for 1991, the study showed that lighting consumed only 20% of the energy required for conventional office lighting. These power savings, not even counting reduced demand for air conditioning, would pay off the added first cost of this energy-efficient lighting in a mere three years.

The project's energy savings were accomplished, in collaboration with engineers Flack + Kurtz, without exotic or expensive hardware. Nothing was specified that hadn't been on the market for a least a year.

Maximum use of natural light was crucial. The building's generous windows were retrofitted with low-e insulating glass, with heat mirror to cut heat gain. Clerestories around perimeter offices admitted day-



Building section, showing floors completed and proposed.

CROXTAN COLLABORATIVE ARCHITECTS



OTTO BAITZ

Main stairwell under skylight

light deeper into the floor. Low-wattage ambient lighting, with occupancy sensors, was coordinated with low-wattage task lighting. Light-colored surfaces helped. Wall insulation was boosted to R-11, roof insulation to R-30. The air-conditioning system makes effective use of outside air when it is cool enough. And only sustainable and non-toxic materials were specified – not easily done in the 1980s.

A three-story stairwell connecting the top three floors, introducing daylight through existing retrofitted skylights, became the visual and social magnet for the original offices. Generous stairwells along the windowed exterior provide comparable light-filled links to floors added later.

NRDC's eighth-floor office space, nearing completion, illustrates the continuing evolution of sustainable design. Here there will be no perimeter offices, demand for which has fallen off as workplace practices have evolved. At the center of the floor, enclosed spaces – largely glazed – will provide for group meetings, private phone calls, etc. Angled ceiling planes will direct daylight deeper into the space. With the latest in proven lighting and air-handling, this floor is expected to set a pattern for future NRDC office space in other cities. Croxtan expects a LEED Platinum rating for this new floor, but predicts its performance will be "considerably beyond LEED." (See Croxtan's article in this issue, pg. 22.)

John Morris Dixon, FAIA, left the drafting board for journalism in 1960 and was editor of *Progressive Architecture* magazine from 1972 to 1996. In recent years he has written for *Architectural Record*, *Architecture*, *Architect*, and other publications.



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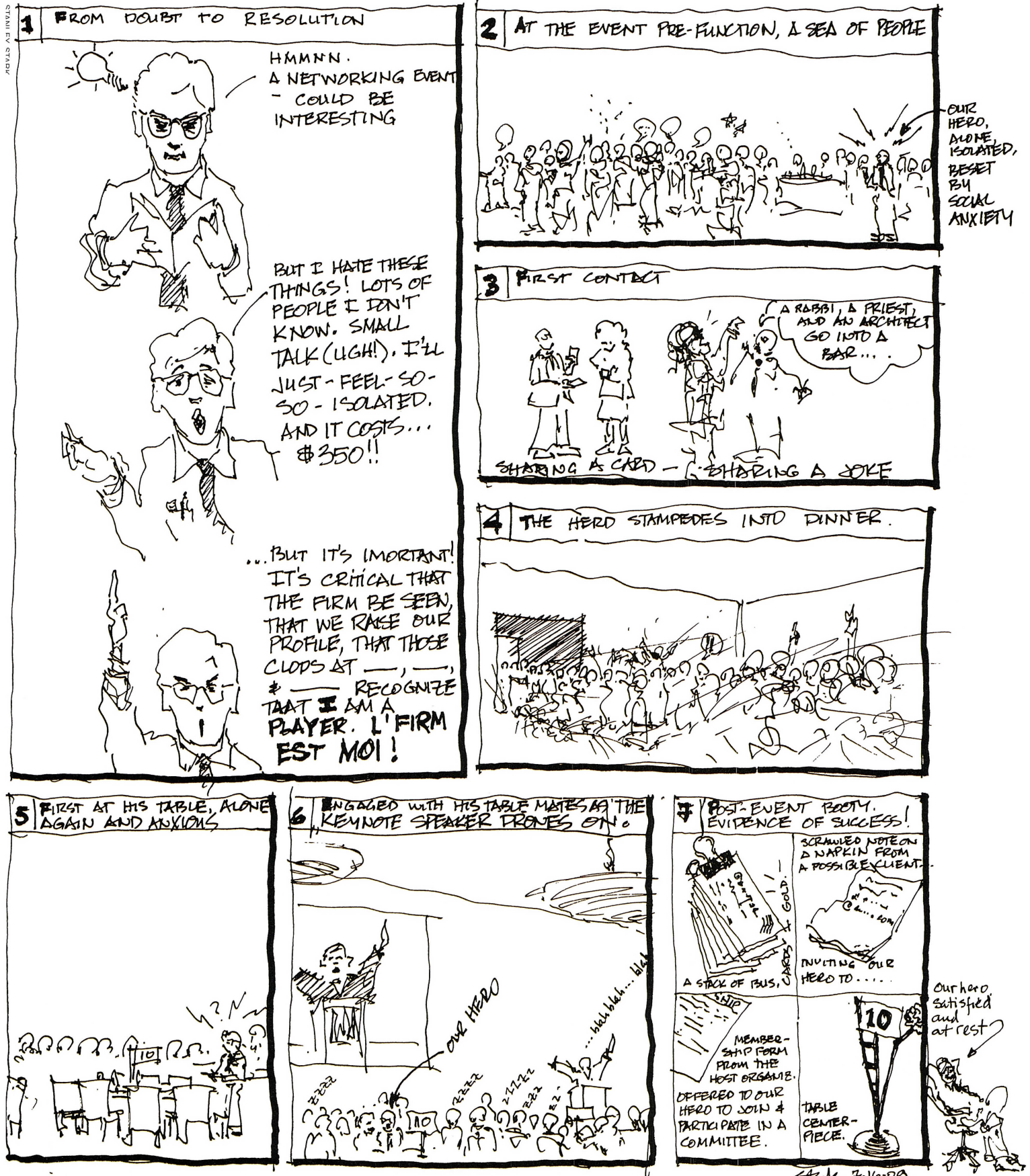
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Raves & Reviews

In Print +

Urban Design for an Urban Century: Placemaking for People, by Lance Jay Brown, FAIA, David Dixon, FAIA, Oliver Gilliam, AIA. Hoboken, NJ: John Wiley & Sons, 2009. 304 pp. \$80.

There has been a recent outpouring of books about urban design, reflecting a surge of interest in cities and their attractiveness

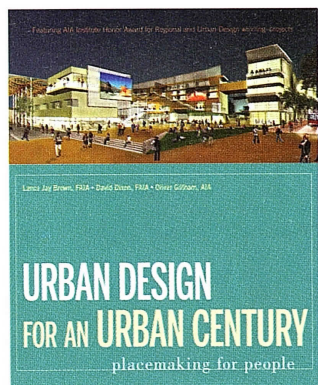
as livable and sustainable environments. This peak of attention is occurring during a period when urban designers have begun to expand their scope with the revival of a broad societal belief in the positive powers of urbanism, a rejection of urban renewal as a failed experiment, and the reaction, beginning in the late 1990s, against the lure of the suburbs.

Urban design as a profession has also matured beyond its first generation of postwar architect-planners armed with a Modernist theoretical model determined to wipe the urban slate clean and start anew. This book asserts that urban designers have a new sense of confidence in the more recent empirical approaches they have codified: smart growth, densification, multiuse districts, pedestrian-friendly environments, and public transit closely integrated with land use and neighborhood planning. These are proving to be successful in emerging 21st-century urban models.

This is an ambitious book that combines a history of urban form and the evolution of modern urban design. As a foundation text on the principles and approaches that guide good urban design, it should be of interest to professionals, students, and stakeholders. A series of case studies in a variety of contexts and situations illustrate how successful urban design projects have been implemented, and paint a picture of the urban design profession during a period of dramatic change. Underlying all of this is the authors' belief in the power and necessity of recentralization, their confidence in the multidisciplinary, comprehensive social, physical, and environmental approach, and their embrace of an inclusive process.

The urban designer is portrayed as both a leader and a facilitator. Of course, urban designers are not alone in tackling the challenges of multidimensional urban and regional problems, and some discussion of the critical roles played by others – real estate and financial advisors, urban infrastructure engineers, sociologists, political advisors, and zoning experts – would have been helpful. But in general, this book is packed with information and insight. It is an important addition to the key texts on urban design and urbanism.

Reviewed by Stanley Stark, FAIA



I Am a Monument: On Learning from Las Vegas, by Aron Vinegar. Cambridge, MA: MIT Press, 2008. 208 pp. \$29.95.

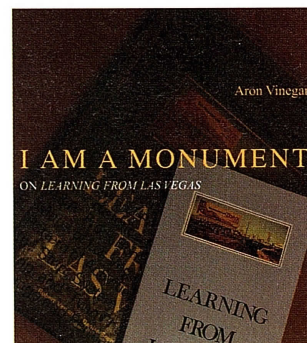
Aron Vinegar, a professor of art history at Ohio State University, has written an appreciation and a reinterpretation of Robert Venturi, Denise Scott-Brown, and Steven

Izenour's landmark 1972 text *Learning from Las Vegas* (*LFLV*), which is about finding order, richness, and meaning within the apparent visual chaos of the Las Vegas Strip. Vinegar conducts his reinterpretation through the philosophy of skepticism; that is, it is nondogmatic and questions the idea that absolute knowledge and certainty are possible. While *LFLV* became a manifesto of postmodernism, with many prescriptions and a critique of Las Vegas as an environment, Vinegar believes it deserves a more open and expansive reading. He suggests that we should key in on the ambivalence and uncertainty of Venturi et al.; it is best to look nonjudgmentally at the city and try to learn from it.

Vinegar notes that *LFLV*'s contributions are broad and have had important impacts. The terms of the debates about Modernism changed: the duck vs. the decorated shed and the discontinuity between interior purpose and exterior form; the equation of signs and meanings and the idea of reading the environment and the building; and the initiation of text-based architecture. The book also introduces newer methods of diagramming the phenomena of place, as well as the notion that the vernacular isn't necessarily historical; it can be contemporary, harboring thematic and visual richness. It is not surprising that a book with such a broad sweep became so influential in the academy as well as in the profession.

Vinegar's book is rich in its content and ideas, while his writing is frequently arid and occasionally impassable. But revisiting *LFLV* in this more open way and viewing it, as he says, as a starting point rather than an end, will be refreshing and rewarding.

Reviewed by Stanley Stark, FAIA



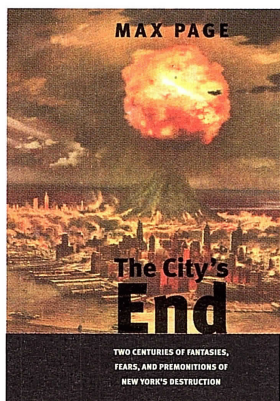
The City's End: Two Centuries of Fantasies, Fears, and Premonitions of New York's Destruction, by Max Page. New Haven, CT: Yale University Press, 2008. 280 pp. \$37.50.

This book explores why New York City is so frequently called upon to be the vessel for dramas of disaster and destruction. Since the city began to experience its explosive growth in the post-Civil War decades and achieved economic and social hegemony, there has been a feeling of exuberance at the city's power and despair at its ten-

dency to destroy its past and rebuild, according to author Max Page, an architectural historian. The city's raw power and dynamism have also generated fear that it is an organism out of control, at odds with nature.

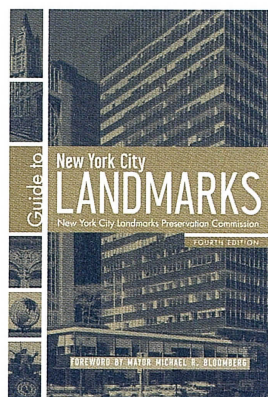
Since then, every era has concocted its own fantasies of New York's destruction, whether the city was tilting and sinking under its own weight during its rampant financial successes and busts in the late 19th century, or getting shelled by the German navy during the military preparedness scares of the 1910s. The Great Crash of 1929 yielded a series of dystopian fantasies stemming from collective fears that New York harbored the worst of Western civilization. The Great Depression produced King Kong, the greatest of the monster invaders; the realistic fictional attack of Orson Welles's *War of the Worlds*; and the hero Superman. During the era of postwar success, the threats and anxieties multiplied, and New York was repeatedly destroyed and reborn.

The roller-coaster ride through apocalyptic movies, novels, TV series, and video games continues to the post-9/11 era. A big part of the enjoyment of this book is how enthralling that ride actually is. We experience the vulnerability of the city as well as its underlying resilience, as we continue to teeter on the edge of annihilation. But underneath the giddy fun is a cautionary tale for the design professions: do not underestimate how fragile this place is.



Reviewed by Stanley Stark, FAIA

Guide to New York City Landmarks, Fourth Edition, by New York City Landmarks Preservation Commission. Foreword by Mayor Michael R. Bloomberg. Hoboken, NJ: John Wiley & Sons, 2008. 464 pp. \$32.95.



While New York City continues to shed its last layers of accumulated grit like a molting skin, the Landmarks Preservation Commission has been feverishly adding to its inventory of designated buildings and neighborhoods – some 1,972 structures since the last published guide – many of them in newly designated historic districts outside of Manhattan.

This fourth edition updates the guide by incorporating the past five years of the commission's activities. It reveals an increasing interest in areas further away from the Manhattan core, such as the garden apartment district of Sunnyside, Queens; 19th-century manufacturing and industrial buildings; new additions of 20th-century architecture, such as several of the mammoth Depression-era recreation centers and pools built by Robert Moses; and lesser known works by Frank

Lloyd Wright in Staten Island and Marcel Breuer in the Bronx.

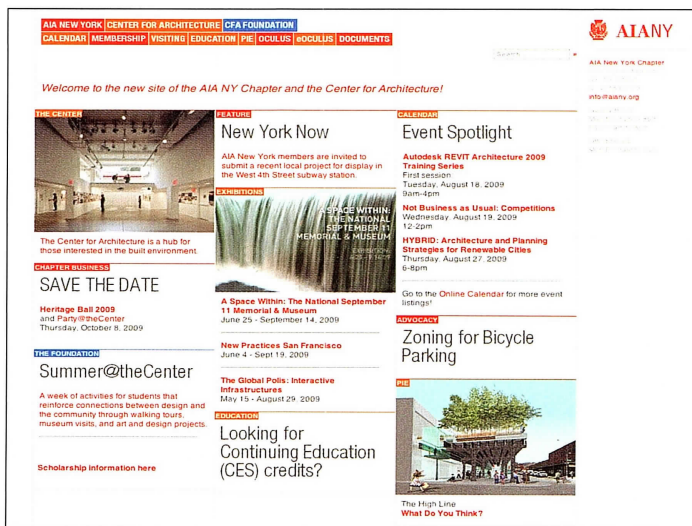
The concise, compact paperback guide hews to a just-the-facts tone and artfully artless photography that depicts the buildings as you might remember or see them while casually wandering around the city. The vast catalogue of dates, names, and architectural styles is supplemented by well-presented maps that lend themselves to neighborhood walking tours, as well as an occasional thematic page with more historically-oriented commentary.

Reviewed by Daniel Heuberger, AIA, LEED AP

Click Here: www.aia.org, www.aiany.org
Get A Makeover

With the changing face of design and architecture, both AIA National and AIA New York have revamped their websites. Offering a more graphic and interactive interface, the websites have more pop with their tri-column layouts.

AIA.org features a banner that flashes the latest news on architects, projects, and statistics about the AIA. The website is successful at highlighting individual architects and firms, as well as tools and resources for architects. AIANY.org draws attention to the wide range of events and exhibitions at the Center for Architecture. Most prominent are links to information about the Center itself, its exhibitions, and the Public Information Exchange (PIE). Public outreach is the focus of AIANY's home page.



While the redesigned websites are vastly superior to previous iterations, there is still room for improvement. Information that is useful to members is not always intuitively easy to locate. At AIA.org, the "For Members" section requires a login that does not always work the first time. On the AIANY website, it is difficult to tell the difference between AIANY and the Center for Architecture. Both websites have a wealth of information useful to architects and nonarchitects, and my advice is to spend time perusing the links to get acquainted with all that AIA and AIANY have to offer.

Reviewed by Jessica Sheridan, Assoc. AIA, LEED AP

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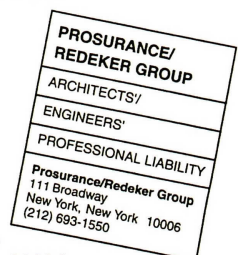
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Sarkozy dans le Métro

Last Words

Rick Bell, FAIA

Executive Director

AIA New York Chapter

"The translation is very important, OK?"

Yutaka Tadokoro in *Lost in Translation*

"We need a change in our philosophy of urbanization."

French President Nicholas Sarkozy

"If we are designing cities, and urban communities and suburban communities around two-hour commutes, then we are destined to continue down the course of climate change. And mass transit not only is far more environmentally sound, but with oil prices sky high...it gives individuals...an alternative."

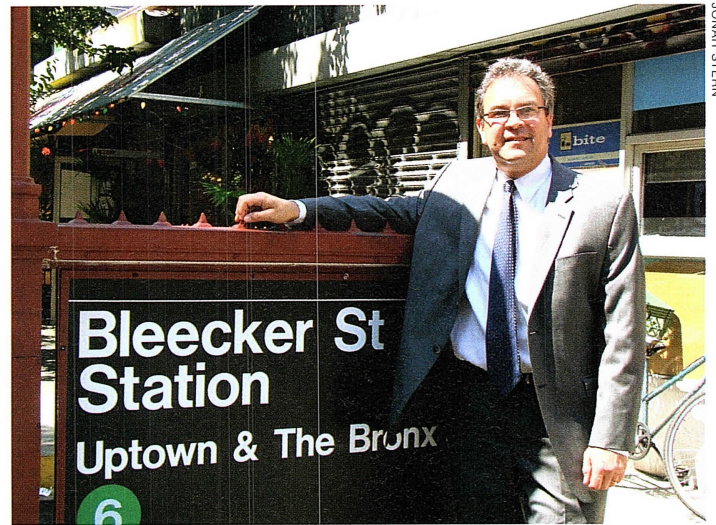
U.S. President Barack Obama

Once you learn to ride a subway you never forget how to do it. The same is not true of language skills, which atrophy without use. What about competing green languages, LEED, BREEAM, Green Globes? Do they equally calibrate carbon-footprint reduction metrics? Does any language convey the same meaning in regard to architecture and its impact on the environment? Dutch Green Building Council representative Stefan van Uffelen said they do not, in recently announcing the selection of the Building Research Establishment's Environmental Assessment Method, created in the United Kingdom in 1990, as the standard for defining green buildings in the Netherlands. What we build is influenced by which green language we speak, since, according to semiotician Gwenaëlle de Kerret, every architectural message "is a network of meaningful relationships."

As the need for carbon-footprint reduction becomes increasingly important worldwide, architects and political leaders look to four types of interventions: code requirements, regulatory preclusions, incentivized outcomes, and facilitating guidelines. In New York City, for example, the Energy Code is mandatory; the burning of particular types of fossil fuels is not permitted; TransitChek programs incentivize subway use; and the LEED guidelines developed by the U.S. Green Building Council facilitate market penetration.

Cities can learn from each other about the value of incentives versus regulation, particularly in lean times. For example, Paris and New York are similar in density and reliance on transit systems that allow their metropolitan areas to be significantly greater in population than their city centers. The Paris metropolitan area (Ile-de-France) measures 5,605 square miles and has over 12.7 million people, significantly more than the 2.1 million within the 41 square miles bounded by the *périphérique* ring road. The New York region as a whole has a population of 18.8 million in 6,720 square miles. There are 8.36 million people in the city's 305 square miles, with 1.6 million living in Manhattan.

The success of each metropolis is a function of the linkage of inner-city mass transit with regional rail. Public transit use in NYC is augmented by the TransitChek incentive program, by which pre-tax



JONAH STERN

dollars are deducted from income to purchase subway fare or regional rail tickets. The American Recovery and Reinvestment Act added tax savings of \$1,000 or more a year to working Americans who commute by transit, according to TransitCenter, Inc., a nonprofit that promotes mass transit use. The law increased the amount of pre-tax income that workers enrolled in employer-sponsored commuter benefits programs can use to pay for mass transit from \$120 to \$230 per month. "Providing an incentive to attract more commuters to take mass transit will go a long way towards reaching our energy and climate-stabilization goals," according to the Metropolitan Transit Authority. "By removing some three million drivers from the roads each day, the MTA already avoids more carbon emissions than 648,000 acres of forest absorb." New York's subway system carries an average of 4.68 million passengers a day, a 50-year high. Paris has over 4.5 million riders a day, served by its 16 lines.

Apart from planning mass transit improvements, New York has become much more bicycle- and pedestrian-friendly. In the report "World Class Streets: Remaking New York City's Public Realm," Mayor Michael Bloomberg writes: "Mass transit- and pedestrian-oriented cities like New York help reduce suburban sprawl and the higher level of carbon emissions that come with it."

As the AIA New York Chapter's Architecture Week this year focuses attention on the pleasures of our park system, walking the High Line, and bicycling up to the Guggenheim, we might stop and reflect on the subway. Think globally, take the local.

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