

May/June 2014

# USGBC+

TRANSFORMING OUR BUILT ENVIRONMENT



## PAST

From grassroots efforts to industry leaders, Detroit's ruins are a thing of the past.

## PRESENT

Sustainable design is central to One World Trade Center's development.

## FUTURE

Adapting historic buildings into micro lofts offers an innovative urban housing model.

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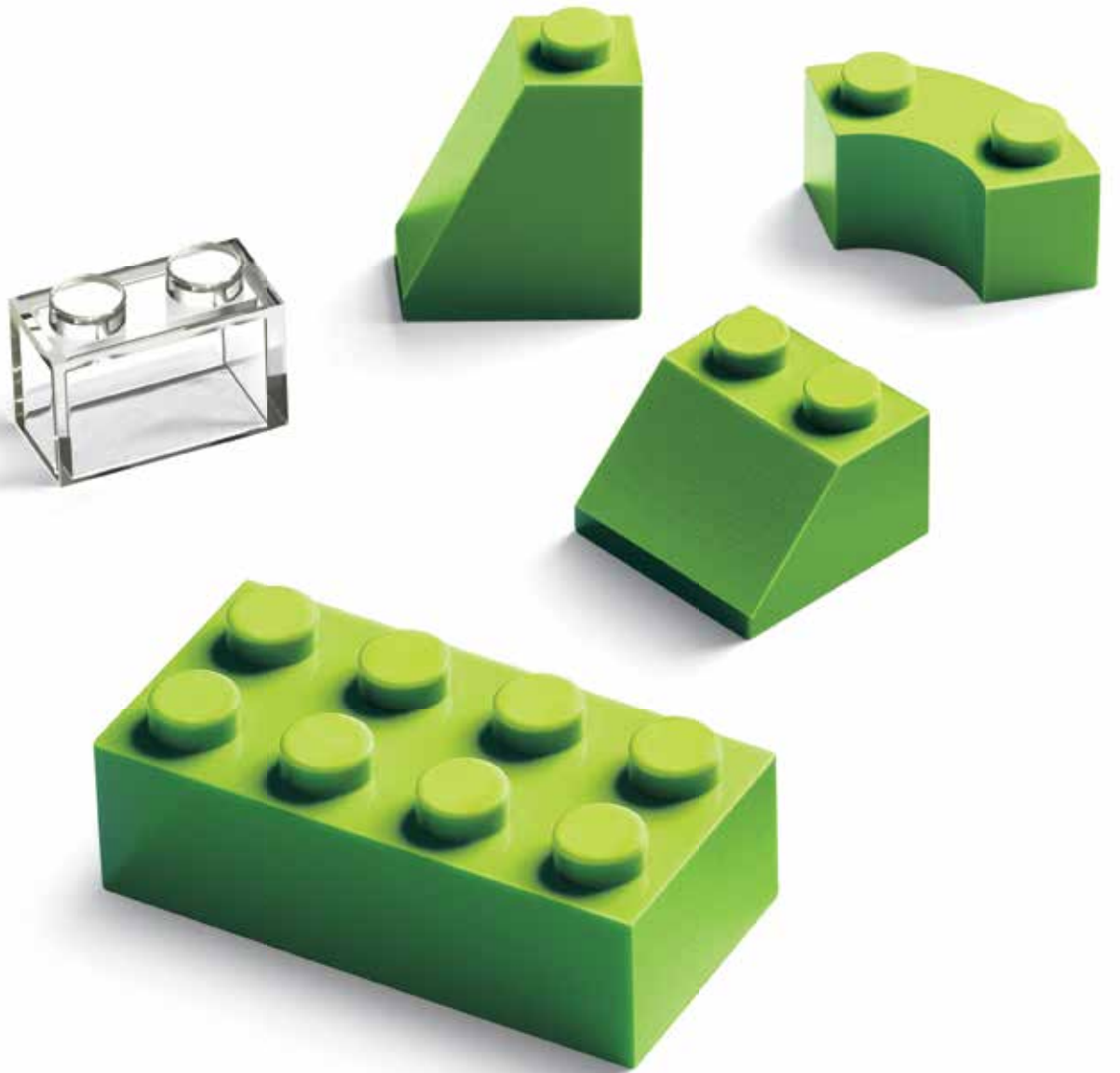
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**ON THE COVER**

The *Detroit Industry* fresco was conceived by Mexican muralist Diego Rivera in 1932-1933 as a tribute to the city's manufacturing base and labor force of the 1930s. The cover selection is a detail of the south wall.

*Courtesy of the Detroit Institute of Arts*



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*Detroit Industry, North Wall, 1932-33 (fresco), Rivera, Diego (1886-1957)  
Detroit Institute of Arts, USA / Gift of Edsel B. Ford / The Bridgeman Art Library*

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## CONTRIBUTING WRITERS

Mary Grauerholz  
Alison Gregor  
Holly Grosvenor, AIA, LEED-AP  
Jeff Harder  
Calvin Hennick  
Nadav Malin  
William Nutt  
Cecilia Shuttles

## CONTRIBUTING PHOTOGRAPHERS

Wojtek Arciszewski  
Greg Betz  
Bruce Byers  
Dan Cutrona  
Ara Howrani  
Ben Jacobsen

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## CURRENT LEED STATISTICS

AS OF APRIL 2014

Total commercial LEED projects globally ▶ **64,168**

CERTIFIED: **23,089**  
REGISTERED: **40,701**  
LEED FOR NEIGHBORHOOD DEVELOPMENT: **378**

Gross square footage of LEED projects ▶ **12.0 billion**  
Includes LEED-certified, LEED-registered

LEED for Homes Units ▶ **142,620**  
CERTIFIED UNITS: **54,537**





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# RED-HOT GREEN DESIGN



## CASE STUDY



Nashville Fire Department, Joelton Fire Station 30, Joelton, TN  
Architect: Thomas, Miller and Partners, PLLC  
Roofing Contractor: Donelson Roofing Co., Inc.  
Profile: Snap-Clad 16" aluminum panels finished in .032 Champagne

**A "green" Tennessee fire station is constructed as part of a larger plan for replacing aging fire halls.**

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# A **NEW** magazine worthy of USGBC's transformative members



**Rick Fedrizzi**

President, CEO and Founding Chair  
**U.S. Green Building Council**

**W**elcome to the inaugural issue of USGBC+, the U.S. Green Building Council's first-ever magazine for our valued members. That plus sign may appear diminutive, but it packs a huge punch. It signifies the work we do every day at USGBC to bring you the resources and support you need to take your green building efforts to unimagined heights. We're experimenting with new ways to bring you green building stories, strategies, and lessons, from the pages of this magazine to the new Education @USGBC portal (visit [usgbc.org/education](http://usgbc.org/education)). We're focusing on how buildings can serve as a pathway for healthier people, and we're expanding LEED's global reach more than ever.

And we're celebrating you, our members, with a magazine that showcases your phenomenal work and the green building industry's best and brightest minds.

#### **Some highlights from this inaugural issue:**

- We're sharing real talk about the revitalization of Detroit. The mural you see on the cover, *Detroit Industry*, conceived by Mexican muralist Diego Rivera in the 1930s, shows a crowd watching the creation of industry in Detroit. How does this relate to today? The entire world is watching Detroit rebuild itself, led by innovators like Reverend Ross, who is working with the Detroit community directly to rebuild the city in a sustainable way. Flip to page 24 for more.
- One World Trade Center's journey to LEED is celebrated in the ensuing pages, plotting an iconic and culturally significant building's path to sustainability.
- You'll find that our magazine includes sections named after the impact categories that guided development of the LEED rating system. From building a greener economy to enhancing human health and well-being, we're serving you leading sustainability strategies and thought leadership within every issue. Hold on to this copy! You might need it later when you're working through the LEED process.

Lastly, watch this space in our next issue, and in all issues going forward. We'll be featuring the best and brightest individuals who are taking the phrase "LEED ON," our current mantra, to a new level across industries and disciplines far and wide. Want to see your face here, or know someone who's changing the game? Have feedback on our first issue? Drop us a line: [editor@usgbc.org](mailto:editor@usgbc.org). This magazine is for you, and we're committed to making it the only one you need in order to keep your finger on the pulse of our crazy, thrilling, mile-a-minute industry.

We're **celebrating** you, our members, with a magazine that showcases your **phenomenal work** and the **green building industry's** best and brightest minds.

LEED ON,





# LEED ON

Kohl's, a leading retailer with more LEED®-certified projects than any other company, uses the program to meet their business goals. Better buildings, better business.

**Rebecca Sherman**  
Senior Manager of Sustainability  
Kohl's

[usgbc.org/LEEDON](http://usgbc.org/LEEDON)

Pictured: LEED Certified Kohl's Store, Aurora, CO



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# SITE Specific

A certified sustainable site, American University's School of International Service manifests the school's values

By William Nutt

Admissions offices cruised at a comfortable altitude as college enrollment boomed through the early 2000s. But in the face of decelerating college-age population growth, constricting budgets, and competition from online programs, today's traditional, four-year institutions are scrambling to find novel ways of attracting high-caliber students. Those that are offering sustainable learning environments are catching the eyes of prospective freshmen; in fact, 62 percent of college applicants in a 2013 Princeton Review survey indicated that a school's commitment to the environment would impact application and enrollment decisions.

American University (AU) in northwest Washington, D.C., boasts one of the country's most robust sustainability agendas. Not only has the school been featured in each of the Princeton Review's three guides to green schools, but it also most recently scored a perfect 99, placing it on the coveted Green Honor Roll with just 21 other schools.

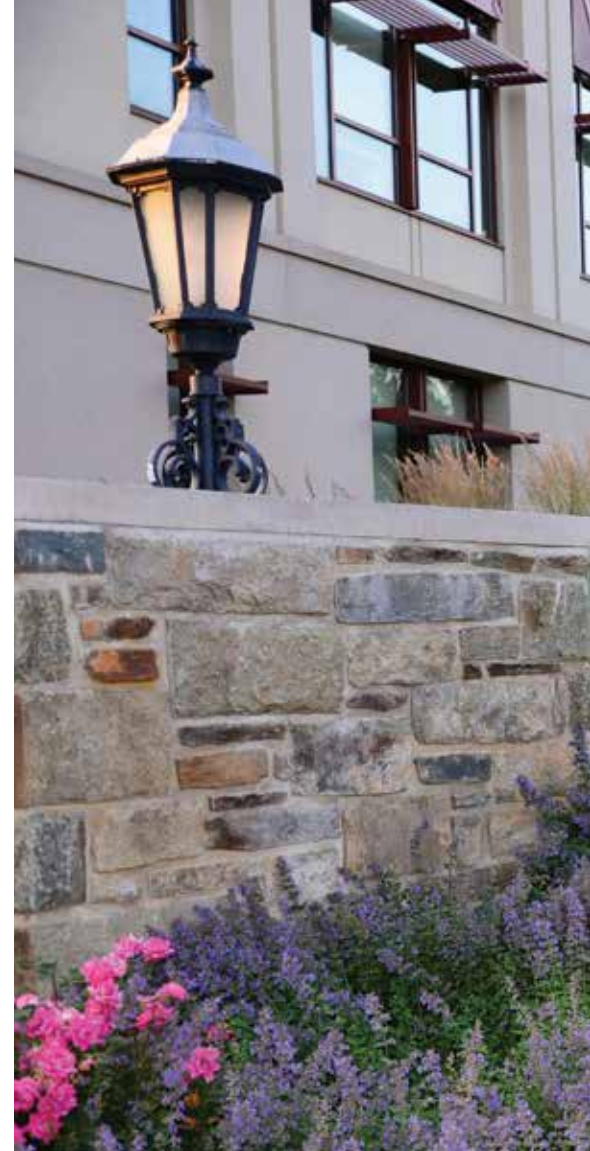
When Chris O'Brien joined AU in 2009 as its first Director of Sustainability, he leveraged the rich sustainability culture on campus to develop a program that deliberately integrates the built environment, academic programming, and student life. With the primary goals of green building, zero waste, and net-neutrality, the program's achievements and aggressive ambitions have propelled the university to the forefront of higher education sustainability.

Through reduction, reuse, recycling, and composting, American diverts 67 percent of its waste





*Natural daylighting through skylights and window walls is a key component to sustainability on campus. Photo courtesy American University.*



**American University achieved Green Honor Roll status through its sustainability efforts.** Photos courtesy American University / Henry Paul Davis.

from landfills, offering promising progress toward its goal of 100 percent waste diversion by 2020.

A 2,150-panel photovoltaic array spans seven roofs and generates approximately 500 kW of electricity. Along with the 174 solar thermal energy panels that heat water for showering and dishwashing, the array comprises the largest urban combined solar system on the east coast, according to the EPA.

"As part of our commitment to net-neutrality, we want to produce as much renewable energy as possible," O'Brien says.

In addition to its waste diversion efforts, the school aims for carbon-neutral operations by 2020. It currently purchases Green-e-certified renewable energy credits equivalent to the electricity it sources from the grid.

Facilities operators use ENERGY STAR portfolio manager to track and reduce energy use, and more than 30 buildings on campus are currently pursuing LEED certification, each striving to achieve LEED Silver or higher.

American's first LEED-certified building, the School of International Service (SIS), earned LEED Gold in 2011 and features a 27 kW photovoltaic solar array, dual-flush toilets, waterless urinals and low-flow plumbing.

O'Brien describes the philosophy behind the project: "It was conceived as a reflection of the values of the academic endeavors it contains. The dean at the time wanted the building to reflect one of his values in international affairs, which is transparency."

This value is manifested in exposure to natural light throughout the building.

"The dean's office is prominently located at the entrance of the building with windows on all sides. A passerby can look right inside," O'Brien adds.

Daylighting, of course, enhances the occupant experience and reduces energy use as well. Such integration between sustainability, academic programming, and the physical structure is evident throughout the SIS project.

Perhaps most notable, however, is the project's exterior features. A former impervious parking lot, the 1.8-acre site is certified by the Sustainable Sites Initiative (SSI), a collaboration between the American Society of Landscape Architects, the Ladybird Johnson Wildflower Center, and the United States Botanical Garden. SIS is one of only three higher education pilot projects to earn two stars.

Sustainable sites employ land-use strategies that preserve or restore the natural services of healthy ecosystems, focusing on



hydrology, soils, vegetation, materials, and human health and well-being. Strategic vegetation choices, for example, can maximize carbon dioxide absorption, reduce irrigation needs, lower costs associated with urban heat islands, and help manage runoff. These strategies can be applied to sites with and without buildings, from national parks to office parks to transportation rights-of-way.

Perched just a few miles from one of America's dirtiest rivers, the SIS site was developed to address water pollution, which stands among the most pressing environmental issues in the District of Columbia and the broader Chesapeake Bay Watershed.

The project team excluded turf from the design and selected native and drought-tolerant plants to avoid the use of potable water for irrigation. Aiming to collect and recycle all stormwater, the site processes approximately 66,000 gallons a year for fire suppression, plumbing and irrigation. A cistern collects rainwater from the building's roof to be used in toilets, and stormwater detained onsite is reduced and filtered through green roofs, bioretention, and vegetated buffers.

Staying true to the university's commitment to integrate sustainability into campus life, locally harvested boulders surround the building for seating, fostering interaction with nature and

engagement with the campus community. Site users are encouraged to harvest and consume the edible plants throughout the site, including Korean perilla leaves, Rainbow Swiss Chard, and various herbs, which are pollinated by the 50,000 honeybees housed in the aviary atop the building.

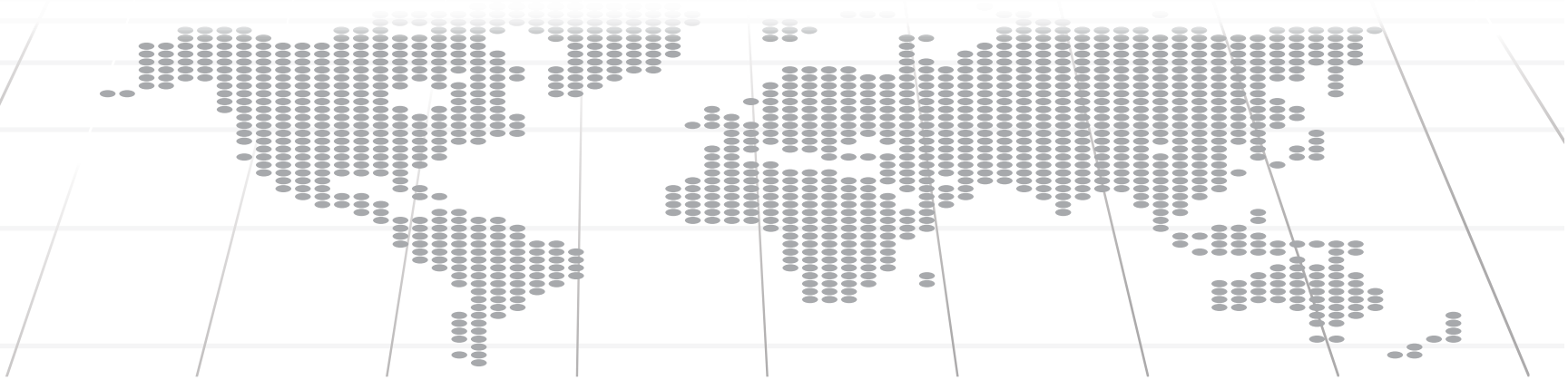
Students played a role in the site's development from its inception. By recommending materials based on their social responsibility implications, they applied lessons learned in the classroom to real-world scenarios, and witnessed the implementation of their choices.

As sustainability becomes an even greater priority for prospective students, such examples of merging sustainability initiatives with the student experience are helping to ensure recruitment success for American University. Of the seven schools and colleges at AU, six already have degrees or programs directly tied to sustainability, which have undoubtedly attracted students who would have otherwise opted for an alternative institution.

As the university chases its ambitious sustainability goals for 2020, O'Brien will continue cultivating a culture of sustainability for the people who live, work, and play on campus—further distinguishing AU from other institutions. ●



# GO for the GREEN



## Bank of America offers the first corporate green bond in the U.S.

By Mary Grauerholz

The first corporate “green” bond in the country is doing more than helping to create a more sustainable future—it is pleasing its investors. Bank of America Corporation introduced the bond based on a public financial commitment to the environment, and to answer the calls of investors who wanted more socially conscious investment choices. The resulting projects—think ecological construction, geothermal energy, lighting retrofits in public buildings, and more—are pleasing investors with a vision of a more sustainable world and good financial returns.

Bank of America introduced the three-year fixed-rate bond, with \$500 million in aggregate principal, in fall 2013. It was years in the making, says Suzanne Buchta, Global Co-head of Green Debt Capital Markets at Bank of America Merrill Lynch, from the company’s Manhattan office. It was a natural evolution for the institution, she says, springing from a long-term financial commitment to build a portfolio of socially conscious investments.

The bond will help finance certain assets that are included in a 10-year \$50 billion green business initiative that Bank of America rolled out in 2012 to address climate change, reduce demands on natural resources, and advance lower-carbon economic solutions.

The first conversation about the bond was in 2011, Buchta says, when her team was working on green bonds for the World Bank. As she says, “We got to thinking about one for our own bank.” Many other institutions had had the same idea, but as Buchta says, “For us, it was sitting down and doing the work that was necessary.” Several months of work followed, from determining which projects to invest in to targeting the investor base.

The bond sharpens Bank of America’s profile as a leader in capital markets, Buchta says. Among the investors are TIAA-CREF, the California State Teachers’ Retirement System, and BlackRock. “There was also strong demand, so we were able to attract



## The resulting projects of the green bond are pleasing investors with its vision of a more sustainable world and good financial returns.

good financing levels," she says. "It was demand-driven." Another goal was to reach new investors, and that has been a big success; approximately 10 percent of total investors are newcomers to the institution's market.

Buchta has long nurtured an interest in environmental construction and was accredited as a LEED Green Associate several years ago. Her Manhattan office building, in fact, was the first LEED Platinum Core and Shell building in New York City. The timing of the introduction of the green bond was perfect for her, she says. "I was getting very passionate about environmental initiatives."

The funds will be used to finance energy-efficient projects that feature renewable energy in solar, wind, and geothermal. The projects stretch from coast to coast, ranging from energy-saving lighting retrofits in government buildings, to heating and cooling in public housing and new insulation in public schools.

One \$16 million project in California is providing funds to finance the conversion of 30,000 high-pressure sodium cobra head streetlights to Light-Emitting-Diode (LED) streetlights in Oakland, one of the first municipalities in the country to implement big-scale street lighting LED conversion. The project is expected to bring a bundle of benefits, including energy savings, greater functionality, more jobs, and even less crime, brought about by the benefits of better visibility on city streets.

The environmental impact of the green bond is obvious through this California project. Clearly, it is also a good business decision. The bond was over-subscribed, with potential investors outweighing supply, says Jerry Dubrowski, a spokesperson in the company's Charlotte, N.C., office. "We had a pretty broad base of investors who wanted to participate in the offering," he says. "Generally speaking, it appears there is more interest in environmentally friendly [investments] today. This bond is supportive of that."

The bond is part of a larger commitment that Bank of America has to the environment, the 10-year business initiative. "When we announced that we would invest \$50 billion in climate change and lower carbon economic solutions, we basically put a flag in the ground," Dubrowski says. "This \$500 million green bond offering is complementary to that commitment."

Philosophically, the green bond has recharged Bank of America Corporation staff. "It was something new to think about," Buchta says. "It's a project that people are proud to be a part of." ●

### QUICK FACTS

**Total costs for materials and labor:**

\$15 million, with funding for the conversion project provided by the energy savings

**Number of installation crews: 2**

**Total number of cobra head streetlights in Oakland: 30,333**

**Total number converted as of March 14, 2014: 28,207 (93 percent)**

**Manufacturer:** General Electric

**Where LED lights are manufactured:** North Carolina

**Distributor:** Graybar Inc.

**Contractor:** Amland Corp.

**Sub-Contractor:** Aeko Consulting

“I’d say LEED’s objective is to be responsive and responsible in an environment—responsible behavior, responsible architecture.”

– HENRY CHAO



# Preventive Medicine

A discussion with HOK’s Henry Chao on what makes a healthy building.

By Jeff Harder

Healthcare in the United States is undergoing major changes, with the underpinnings of the system shifting away from simply treating incidents of illness toward promoting overall health and well-being. And for architects like Henry Chao, design principal for the global healthcare practice at the international firm HOK, this shift provides an opportunity to create hospitals and facilities that contribute to this broader purpose. Chao’s most notable projects have included the Ohio State University Wexner Medical Center Expansion in Columbus, Ohio; the Cleveland Clinic Miller Pavilion in Cleveland, Ohio; Kuwait University College of Science in Kuwait; and Ng Teng Fong (Jurong) General Hospital in Singapore. Here, he speaks about subtle design decisions that change perceptions of illness for the better, the parallels between planning hospitals and planning cities, and LEED’s role in fostering a 21st-century sense of what it means to be healthy.

No one would ever make a fuss if someone was going to a city library. No one would make a fuss if someone was just going to the neighborhood park. If you heard that someone went to the hospital, why should that be a big deal? It shouldn’t be. And [we need] to make sure it isn’t.

A hospital by itself can easily have 12 to 16 different individual departments. Each department has five or six different sections. And healthcare architects need to understand what they do, how

they do it, how they relate to each other, how they connect with each other. It is an incredibly functional constraint. The beauty of a hospital is that the architect needs to take the essence of medicine, take the essence of healing, and the essence of science, interpret it, adopt it, express it in a way that it can communicate with its surrounding in a reciprocal manner... it is a two-way dialogue. Each hospital needs to speak about health in a manner that the community can accept and understand.

If you think about the inside of a hospital, a floor plan can be [the same size as] one or two football fields. There’s the circulation, the wayfinding—people always talk about hospital wayfinding being bad and I don’t blame them, because it’s such a complex environment. With each block and each department, it’s like a mini-city. I’ve found that a lot of times, between a hospital space planner and a city planner, there’s a lot of similarity in terms of the amount of information that has to be juggled, balanced, and negotiated. Basically, it takes a designer who is not afraid of a lot of data to tackle a building like a hospital.

After I joined HOK, one of my larger projects was at Ohio State [the Ohio State University Wexner Medical Center Expansion], where we’re dealing with a 1.2-million-square-foot cancer center, with the vision not to treat cancer patients as though they have done something wrong or

**HOK’s \$1.1 billion revitalization of the Ohio State Wexner Medical Center campus includes construction of the new 276-bed James Cancer Hospital and Solove Research Institute and Critical Care Center. Aiming for LEED Silver certification, the design integrates space for research and education on each patient floor.**

Right: Rendering courtesy of HOK/Moody-Nolan.





Rendering courtesy of HOK/Moody-Nolan.

made a mistake, but to treat cancer as just part of a stage of life. And in fact, that's what it is. That notion coincides with a major shift in the healthcare environment—and I want to take away the word “care”—the health environment in the United States that's happening right now. We're trying to switch from a solely episodic disease treatment health system into preventive and health maintenance and a healthy living society. That's a tremendous thing, and we as architects have a tremendous opportunity to contribute.

When I was a young architect, the first thing I ever learned about cancer center design is that we need a separate doorway in and out for cancer patients. For years, in healthcare architecture for cancer centers, it was always a separate door. Not only a separate door, but separate parking, separate everything—you don't want to embarrass these people right? But Ohio State thought that when you have a separate door, you're actually stigmatizing [cancer patients]. As if they're so different—almost like, “I have cancer—I can't even go through the front door. I have cancer—I look so bad that I have to be hidden from public view.” So Ohio State said no to that. They actually put very simple, convenient parking access for everyone. They put a waiting lounge for the people to have a little privacy, but it's the same entry, everybody comes in and goes out in the same place. And that actually inspired me.

At Ohio State, the chemotherapy center has great views of open spaces. We created a family and conversation area because a lot of times, when one person gets sick, it's like their entire family gets sick. Having those conversations becomes important. So when the patient and family want to connect with each other, we don't isolate them. I actually thought that was a tremendous breakthrough. The building will probably be completed by this fall, I think, and I can't wait.

When I was growing up, I didn't understand so-called preventive care. I didn't go see my dentist, didn't get an annual check-up. But my daughter, growing up in this society, knows she needs to go

see her dentist every so often to make sure her teeth are good, go to her annual check-up to make sure her health is good, and she takes the responsibility to do that. I think that's great. I think this generation is going to fundamentally change how we perceive health and healthcare. And they'll understand that getting proper healthcare is our civic right, and keeping proper health is our civic obligation. In the so-called care environment, whether it's a hospital or a clinic, now it's taking on a fundamental shift in identity: the big white elephants, the big grey buildings that sit in the community now need to be seamlessly linked, connected, weaved into the fabric of community life on a daily basis.

I see LEED as a means to an ultimate objective. LEED is never the objective [itself]. The ultimate objective is a healthy environment. Even saying a healthy environment is very limiting—I'd say LEED's objective is to be responsive and responsible in an environment—responsible behavior, responsible architecture. Health just happens to be part of it. My feeling is that LEED has been a very effective tool: it's become a mechanism that is to a great extent measurable, and it's in the marketplace. If our client wants to have that recognition, that becomes an incentive to push our industry to move toward responsible architecture and responsible design, and I think that's wonderful.

Healthcare facilities deal with the most traumatic moments of people's lives: when you're born, when you're sick, and when you're actually leaving the world. It's an emotion-filled environment. But by doing work for a healthcare facility, when you sit down across the table from the healthcare providers—the doctors and nurses—you are talking to a group of very smart, well-educated, well-read people. When I sit down with them, the conversation is always about how I can make an environment the most conducive to better their practice—which is, in general, saving people's lives. That is absolutely fascinating to me.

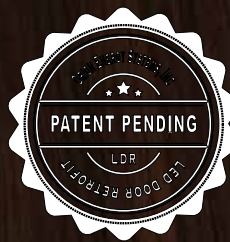
To be a healthy person, you need to be in a healthy environment. And a healthy building is just part of it. ●

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# Building Industry Goes PHOTOTROPIC

Like plants growing toward sunlight, designers are reaching for a way to illuminate the unseen health hazards and environmental footprint of building materials.

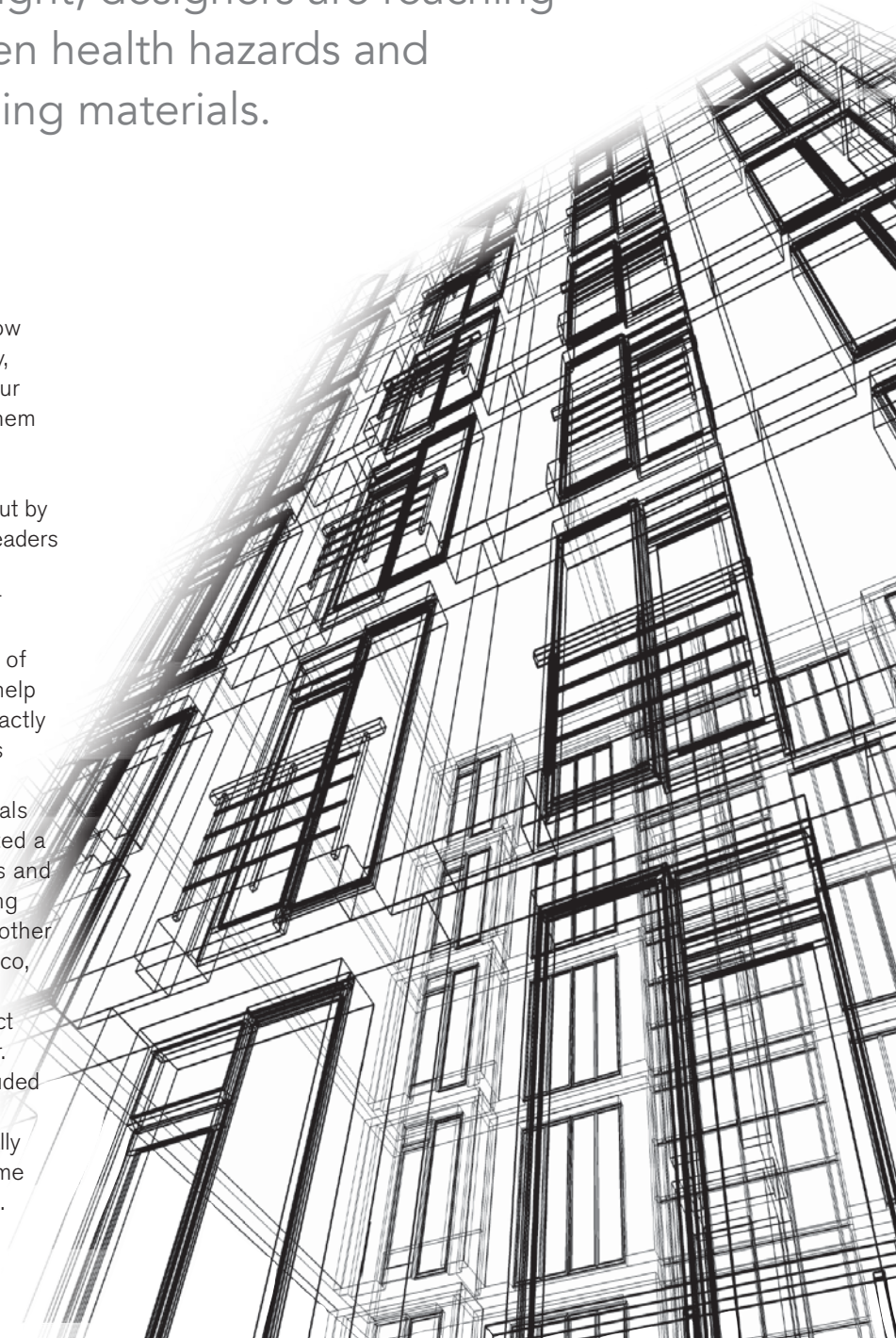
By Nadav Malin

In 2013, 30 major architecture firms sent letters to all their material suppliers demanding transparency. “We need to know what’s in the products we’re specifying,” claims Russell Perry, FAIA, director of SmithGroupJJR’s Washington, D.C. office. “Our clients have a right to know these things and I’d like to help them find out,” he adds.

As a board member of the newly formed Health Product Declaration Collaborative, Perry was impressed by a letter sent out by the Dallas-based firm HKS, so he called on sustainable design leaders from other architecture firms to write similar letters, threatening to eventually ban products without content disclosures from their material libraries and educational programs.

After joining Perry’s letter-writing campaign, Rand Ekman of CannonDesign in Chicago heard from suppliers who needed help understanding what was behind this new demand and how exactly they should comply. In response, Ekman invited manufacturers to meet with designers from his firm and others for “an open conversation about how manufacturing and design professionals can partner in this endeavor.” The face-to-face meetings created a lot of good will by demystifying the content disclosure process and revealing ways manufacturers could be supported while making the changes needed to comply. Inspired by Ekman’s success, other firms replicated that model in Washington, Dallas, San Francisco, and elsewhere.

It wasn’t only demand from large firms that motivated product manufacturers to divulge the make-up of their products, however. Public comment drafts of LEED v4 beginning early in 2012 included a new credit encouraging the disclosure of a product’s chemical constituents and health hazards. When the new credit was formally adopted as part of LEED v4 in November 2013, USGBC put some additional muscle behind the burgeoning transparency campaign.



## Deep Roots

The push for transparency in building products has a deep-rooted history. Its origins can be traced back to a number of sources, including:

- The seminal cradle-to-cradle framework developed by architect William McDonough and chemist Michael Braungart. cradle-to-cradle calls for all materials to be recyclable endlessly, either through composting as “biological nutrients” or in industry as “technical nutrients.” This goal requires the elimination of toxic substances from both nutrient cycles.
- Hazard-avoidance credits in the Green Guide for Healthcare, which were subsequently adopted into LEED in a modified form. These credits focus primarily on mercury and other heavy metals.
- The proliferation of ingredient “red lists” or substances to be avoided within specific programs. The best known example is the Living Building Challenge’s red list, which most project teams find to be the most demanding requirement of the very rigorous program. The design firm Perkins + Will has also been a leader in this area, posting its “Precautionary List” of substances that are to be avoided if possible ([transparency.perkinswill.com](http://transparency.perkinswill.com)). The shift from a list of banned ingredients to wholesale disclosure of what a product is made of is welcomed by leading manufacturers because it provides them with an opportunity to engage their customer in a more collaborative conversation about product choices.
- Demand from a few influential companies, most notably Google, that directed designers working on their projects to find out what’s in the products they’re specifying and eliminate certain substances.
- The experience of product researchers at my own firm, BuildingGreen, who struggled for years to obtain the information needed to factor health and ecological toxicity concerns in our GreenSpec screening. This frustration led us to collaborate with the nonprofit Healthy Building Network to create the Health Product Declaration Open Standard.

## More than Ingredients

Transparency isn’t just about ingredients—it’s also about the environmental footprint of a product in terms of greenhouse gas emissions, water consumption, and resource depletion. For many years now, some companies have been using environmental life-cycle assessment (LCA) to inform their product development efforts, but until we have consistent rules for what to include in the scope of those LCAs and how to report the results, it’s not possible to compare products on that basis.

The environmental product declaration (EPD) format aims to address those problems by providing a consistent reporting framework for life-cycle assessments that are completed in conformance with standard product category

rules, so all products are measured using the same assumptions. The new LEED v4 rating system introduces a new credit for products that come with EPDs.

In Europe, government agencies help manage the environmental product declaration rules, ensuring that there is only one set of rules for each product category. There is no similar government function in North America; however, some competing sets of product category rules have started to emerge, which defeats the goal of creating a level playing field. In partnership with UL Environment, USGBC has stepped in to identify the most robust and consistent rules and to endorse the EPDs that comply with those rules. While some industry players—especially those who backed alternative category rules—are unhappy about USGBC picking winners in this way, it does help prevent chaos in the marketplace.

## Choking on Alphabet Soup

The alphabet soup of new reporting formats is not easy, even for the most dedicated specifier, much less designers and contractors with many other priorities. And each new label or declaration represents added paperwork for manufacturers, who are already overwhelmed by the load: “When I hire a person now, it’s for documentation—it’s not to make the product better. That’s a travesty,” says Steven Kooy, global sustainability manager for the office furniture company Haworth.

To avoid scaring off mainstream designers and contractors, the industry must move quickly toward a single, integrated product declaration format that includes content from EPDs, HPDs, as well as information on the impacts of resources extraction and habitat disruption, which are much harder to measure and thus not captured effectively by current reporting mechanisms.

Such an integrated label could, in theory, also incorporate metrics on the social fairness of product. Of mainstream North American players, only the International Living Future Institute has tried to tackle that aspect of a product’s impacts with its “Just” label.

## Transparency Everywhere

The building industry is not alone in moving toward being transparent about the make-up of its products. There are parallel initiatives in automotive and electronics—although most of these programs provide information within the supply chain, stopping short of the end user.

No doubt, barriers do still remain. There are still real and perceived concerns about divulging trade secrets and potential liability that comes with more awareness about hazards in the products we sell, specify, and install. However, these obstacles are no threat to the momentum that has been created. Keeping specifiers in the dark about potential health and environmental impacts is no longer the acceptable default. By letting the sun shine on what’s truly inside the products we use, we’ll all be better off. ●



**GREEN**



**CITY**

# DETROIT IS DYING,

People love to make sweeping proclamations about Detroit. Depending on whom you listen to, Detroit is in ruins, or Detroit is back. Detroit is the worst city in America, or Detroit is the new Brooklyn. Detroit is a hip town, or Detroit is a ghost town.

WRITTEN BY **Calvin Hennick**

**A**s Detroit rebounds from its lowest lows, some see the opportunity to make sustainable building practices key to the city's rebuilding efforts. But can a place built on the back of the internal combustion engine really become a hotbed of green development?

With 139 square miles of land and a population of around 700,000 people (down drastically from its peak of nearly 2 million in 1950, but still enough to keep the city ranked ahead of Boston, Seattle, and Washington, D.C.), Detroit is large enough to accommodate whatever story angle outside observers are interested in mapping onto it. A photographer sent to snap pictures of blight will see nothing but abandoned buildings. A reporter sent to cover urban agriculture will see nothing but community gardens and farmers' markets.

And so, when people start whispering in your ear about how Detroit is poised to become a model city for sustainable development, it's easy to be a little skeptical at first—to think that maybe this is just another angle. Detroit is, after all, a city with ample surface parking downtown but meager mass transit options; a city that still, in 2014, doesn't have curbside recycling for all of its residents; a city that greets visitors on their drive into town with a giant Uniroyal tire by the side of the freeway, backgrounded by smokestacks belching into the sky.

But Detroit is also a place where open space is plentiful and land is cheap; a place where a scarcity of resources makes the idea of reusing materials and saving on energy costs particularly attractive; and a place where residents—who've spent years reading about how the decline of the auto industry sealed their own doom as well—are eager to prove that there's life in Detroit after the assembly line.

"I think it's real," says Jeff Gaines, chairman of the board of directors for the U.S. Green Building Council's Detroit Regional Chapter, of Detroit's projected green boom. "I think what you're seeing is that the younger folks are demanding it and some of the more savvy folks are seeing the benefits. To me, sustainable

development is really smart development. If we are going to try and get the city back on its feet, I think we want to do it in an intelligent way. We're talking about doing things in a much more lean manner and on a much smaller scale than we've done them before."

On an official level, the city's 350-page urban planning document, "Detroit Future City," calls for improved public transit, increased density and walkability, better lighting efficiency, the creation of landscapes that actively clean the air and water, and other green features. And a number of building projects in the city and region have been awarded Leadership in Energy & Environmental Design (LEED) certification, including Henry Ford Hospital in West Bloomfield, Habitat for Humanity in Pontiac, and Strategic Energy Solutions in Berkley.

But much of the buzz in Detroit surrounds the work of small groups, individuals, and organizations outside of City Hall: activists in the city's neighborhoods working on small solar projects and community gardens, business investments that are bringing people back to downtown, and an influx of young social entrepreneurs who consider sustainability an important part of their bottom line.

"We have finally reached a point where we have an open blueprint," says Gaines. "Before, we always had all sorts of encumbrances in the way. There was always a reason why we couldn't do this or why we shouldn't do this. We're at a point now where we can really start to re-map where we want to go. If we want to recycle, if we want to put in mass transit, we probably have a better shot of doing it now than we ever have."

"While other cities may be further along than Detroit in implementing sustainable building practices our projects tend to have a 'green boutique' feel to them that might not translate elsewhere," says Jacob Corvidae, a former member of the regional chapter board and the interim executive director of a nonprofit group focused on sustainable development. "Our feeling is that when we have sustainability solutions that work in Detroit, anybody can use them," he says.

In other words: If it works in Detroit, it can work anywhere.

# DETROIT IS RISING.

“ I feel like [the city] is coming back. I see more people out there volunteering for things. You have more people getting involved. It'll be back in a couple more years. I know that for a fact.”

– YOLANDA ELEY, MEMBER OF THE GREATER WOODWARD COMMUNITY DEVELOPMENT CORPORATION'S BLIGHT REMEDIATION TEAM

“ Adaptation and resilience are two keys to success for a sustainable future. We have to adapt to climate change. And we have to pick ourselves back up and be successful despite the challenges. Those are two qualities that the people of Detroit have more of than anybody else in this country. We have been adapting for decades.”

– EMILE LAUZZANA, DIRECTOR OF ENERGY AND SUSTAINABILITY FOR THE DETROIT PUBLIC SCHOOLS

“ I think in order to develop an area that has so many significant financial challenges, you're going to need to be very, very careful about where money is spent. And when you spend money on sustainable areas, often you see a payback.”

– PEGGY BRENNAN, CO-FOUNDER OF THE GREEN GARAGE, A DETROIT CO-WORKING SPACE FOR “TRIPLE BOTTOM LINE” BUSINESSES THAT FOCUS ON ENVIRONMENTAL AND SOCIAL MEASURES, IN ADDITION TO PROFIT





# Community Activism

“How much more do you want to see?” asks Reverend Joan C. Ross, driving past block after block of blighted homes in Detroit’s North End. “I hate showing people this stuff. They go back and this is what they write about. They don’t write about all the great ideas coming out of Detroit. They write about this.”

**“Yeah, we cut down the grass, but you can cut down grass, and if you don’t change people’s outlook, if you don’t change their perspective, then cutting down the grass means nothing. It’ll just grow back.”**

– REVEREND JOAN C. ROSS



**Left: Green activist Reverend Joan C. Ross stands in front of “progress house” in Detroit’s North End, which has been rehabilitated using green practices.**

**Right: Volunteers work on the upkeep of the property.**

Photos: Ara Howrani. [www.howranistudios.com](http://www.howranistudios.com)

**R**oss, whose close-cropped hair is dyed to match her stylish red eyeglass frames, came to Detroit 30 years ago to become a McDonald’s franchisee. She later co-owned a local nightclub and only went to school to become a minister in 1999. She preaches in a nondenominational service at an Episcopal church each Sunday and she’s an outspoken advocate for the North End, her language veering toward the unprintable when she talks about outsiders’ perceptions of her neighborhood.

She’s also a fierce defender of the city’s image, and she makes it clear that she doesn’t want to be party to yet another article focusing solely on blight.

In truth, no one needs a tour guide to find bombed-out buildings in Detroit. They’re everywhere, a fact that has been painstakingly documented in slideshow after Internet slideshow. (This phenomenon has been derisively dubbed

“ruin porn,” and it reached its peak sometime around 2009, when *VICE* published an article titled “Something, Something, Something Detroit.” The story took lazy journalists to task for parachuting into the city and depicting its decrepitude while ignoring any signs of progress or stability.)

What’s shocking isn’t so much the boarded-up homes, or the homes that have been left open without boards, or the ones where all the windows are broken, or the ones that have no windows at all, or the ones covered in graffiti, or the ones whose porches have completely collapsed, or the ones resembling dumpsters with trash spewing out into their yards. You’ve seen these. You’re prepared for these. No, what’s shocking are the houses next to them—the ones with a fresh coat of paint, flower boxes on the windowsills, or kids’ bikes leaning against a fence. The ones cropped out of the “ruin porn” photos.

Many people talk about the city being a “blank slate” or “fresh canvas” on which Detroiters can create anything they want. But driving through the North End, it’s clear that there’s no such thing as a blank slate. There’s only what’s here. These homes are just a few miles from downtown, right off Woodward Avenue—the city’s “spine”—and unlike some farther-flung neighborhoods, the North End has not turned into an urban prairie. Plenty of people remain, people who never left no matter how bad things got, people still trying to make a go of it in Detroit even as the world around them literally falls apart.

Standing among these still-making-a-go-of-it homes is 250 Alger Street, a rambling six-bedroom house on one of the neighborhood’s better blocks (at around 2,500 square feet, the structure is actually on the smallish side for the North End, once a seat of African-American wealth in the city). Ross, until recently, was executive director of a group called the Greater Woodward Community Development Corporation, which bought the house in 2010 and rehabbed the property using green techniques.

Although this “project house,” as Ross calls it, is certainly in better shape than many of the surrounding homes, a visitor wouldn’t necessarily guess at first blush that this is a “home of the future.” The kitchen is decades beyond dated, and some of the bedrooms’ lusterless hardwood floors are splattered with paint. But visitors can catch a glimpse of the cutting-edge in the home’s systems and also in its story.

The house had been abandoned and pillaged before Ross’s former group snagged it for \$5,000, and it was redone using repurposed materials. The trim work comes from other abandoned houses, including two reclaimed piano legs that adorn the passageway between the living room and dining room. A greywater system collects water from the bathroom sink and uses it to flush the toilet. Outside, there are solar panels on the roof and when rain falls, some is captured for irrigation and much of the rest is harnessed by rain gardens to help keep water out of storm drains.

“Green is our future,” Ross says. “So if we’re going to look toward the future, we have to start teaching. It has to start with something simple that people can see. They can walk around this house, they can see a solar panel



Photo: Ara Howrani. [www.howranistudios.com](http://www.howranistudios.com)

and they can begin to see into the future. They never thought about climate issues. They never thought about a rain garden as a way of protecting the Great Lakes water basin and not overloading the storm drains. They never saw that. But if they walk through a project house and see this stuff in action, then it brings the future closer to them, today.”

Funded by a grant from the Kresge Foundation, the Greater Woodward Community Development Corporation trains people—most of them unemployed, some of them homeless—in the ways of sustainable development. Trainees are compensated with stipends or in the form of “sweat rent” (free lodging at the project house) and work in one of five teams. One team does blight remediation, one rehabs properties, one works on solar projects, one deconstructs old homes to keep usable materials out of landfills, and one restores wood windows to help conserve energy and lower heating bills.

In addition to the project house, the organization has installed solar panels at a local farmers’ market (the panels power the fans in the market’s hoop house). Ross also plans to work with another group to install solar-powered lawn lights in the neighborhood to help supplement the city’s notoriously spotty street lighting system. The achievements are impressive. But, in a neighborhood with more than its share of problems, ranging from crime to chronically underperforming schools to substandard city services, why the emphasis on going green?

## Ross says she sees practical benefits to sustainable practices—the potential to improve the quality of life and cut costs for people in the neighborhood.

**Left: Ross works to transform the perception of her town from blight to hope.**

**Below: Detroit's revitalization includes the development of community gardens where residents can grow their own food.**

Photo: Wojtek Arciszewski

Ross says she sees practical benefits to sustainable practices—the potential to improve the quality of life and cut costs for people in the neighborhood. Urban agriculture isn't a fad or a hobby here; it's a reliable way for people without access to good grocery stores to get fresh produce. Solar panels and window repairs won't just save the environment, they'll also save people money on their energy bills. And, Ross hopes, the trained workers will eventually use their acquired skills to open their own small businesses.

"One of the guys on the team told me his only hope was to see Detroit in his rearview mirror," Ross recalls. "That's how bad it was for him. And when we started the program, he felt there was some hope, that there was a future."

William "Bud" Eley, who stands 6'10" and played professional basketball overseas for a number of years, works on the organization's blight remediation

team. "To me, green is the number one thing," he says. "It's cleaning up. What better place to start cleaning up than your own community?"

"People come outside and thank us a lot," Eley continues. "You give kids something to do, someplace to play." His cousin, Sophia Eley, says the group's work has had a noticeable impact. "When I left [the city] in 2005, it looked terrible," she says. "When I came back, you could tell somebody had made a change."

For Ross, getting people involved in the community is even more important than the blight team's work boarding up vacant homes or mowing untamed lawns. "We try to empower people to get their voice back," she says. "They have a right and a responsibility to this community. Whatever it is, it is what it is because of them too."

"Yeah, we cut down the grass," Ross adds. "But if you don't change people's outlook, if you don't change their perspective, then cutting down the grass means nothing. It'll just grow back." 🌱





# Downtown Development

Standing 10 stories above Campus Martius Park—the downtown hub from which several of Detroit’s main thoroughfares spoke off in different directions—Bruce Schwartz points around the circle, identifying which buildings are owned by Bedrock Real Estate Services. Bedrock is the real estate arm of the Rock Ventures “Family of Companies,” of which Quicken Loans is the flagship.

**H**e points to the 25-story circa 1930 First National Building, the 26-story One Woodward, Chase Tower, Chrysler House (formerly the Dime Building), and finally 1001 Woodward. The company doesn't own every building downtown; it only seems that way.

"There was a skyscraper sale going on!" announces Schwartz, a compact and energetic man with peppery stubble and black, plastic-framed eyeglasses whose lenses darken when they're exposed to sunlight. He wears a plaid scarf, a colorful lanyard, and a black pork pie hat—his trademark, which has somehow made its way, in silhouette form, onto Quicken's branded mortgage documents.

Although Schwartz gives tours of the company's downtown properties, he's not an ordinary tour guide. His business card identifies his nebulous-but-important-sounding title as "Detroit Relocation Ambassador." Even in the workaday world of home lending offices, he's the life of the party, unable to walk more than a few feet without stopping to greet somebody with an enthusiastic, "What's up, my man?" This kinglike confidence is owed, in part perhaps, to the identity of the first friend Schwartz made when he moved to Detroit as a child: Quicken founder and chairman Dan Gilbert.

Schwartz gazes down at Campus Martius from a social media command center set up in a room designed to look like half of the NBA's Cleveland Cavaliers home court. And, although hip and unique office spaces are practically mandatory for Gilbert's companies, this is more than just a whimsical touch: Gilbert owns the Cavaliers. (Nationally, he's probably best known for the scathing missive he posted online hours after superstar LeBron James announced he was leaving the Cavaliers for the Miami Heat. In the note, Gilbert called James "heartless," "selfish," and "disloyal" and made a less-than-prophetic all-caps guarantee that the Cavs would win a title before James did.)

The Rock Ventures Family of Companies is an eclectic bunch of more than 100 companies, each of which seems to have less to do with the business of making home loans than the last. In addition to the Cavs (plus a couple of minor league sports teams), the family includes Northcentral University, an Arizona-based for-profit school; Protect America, a home security firm; Wedit, a service that lends digital cameras to marrying couples and offers editing services on the photos snapped by their guests; Rockbot, a social jukebox app for restaurants and bars; and several racetracks and casinos.

**Left: Quicken founder Dan Gilbert has revamped many old buildings in downtown Detroit.**

**Below: Quicken Loans social media command center is fashioned after half the basketball court where the Cleveland Cavaliers play in Detroit.**

All photos courtesy of Quicken Loans.





Top and right: The culture at Quicken is playful and creative. Gilbert's hope is to recreate Detroit into a technology powerhouse.

Opposite page: Although Gilbert has not gone after LEED-certification in his downtown office buildings, he does employ sustainable practices in the rehabilitation process.



Bruce Schwartz dons a pork pie hat and is known as the "Detroit Relocation Ambassador."

In 2010, Gilbert began moving his employees from the suburbs to downtown and started buying up real estate with the aim of turning the once-desolate city center into a thrumming high-tech hub. The pace and scope of this project have been breathtaking. In four years, he's gobbled up more than 40 properties, investing around \$1.3 billion in the process. And he's not done buying yet.

"We're actively still pursuing properties," says Scott Collins, project director at Bedrock. "We really are in a mode where we need more assets to be able to offer our clientele. It's a great problem to have."

Bedrock is largely quiet about its efforts around sustainable development, and hasn't yet pursued LEED for any of the buildings it's redeveloped in Detroit. But, simply by virtue of how much property he owns, Gilbert will have a large say in how much green building happens (or doesn't happen) downtown.

The corporate culture of Rock Ventures is centered around 20 or so "isms"—pithy little sayings ranging from the commonsensical ("Every second counts") to the inscrutable ("We eat our own dog food"). The one that Collins, trim and perpetually smiling, repeats over and over again when discussing sustainability is perhaps the most basic: "Do the right thing."

"We're about doing the right thing and not necessarily needing something to hang on the wall to say we're doing the right thing," Collins says, pointing to high-efficiency systems the company has installed as it renovates buildings, such as variable refrigerant flow heating and cooling systems. Bedrock is also saving energy—and money—by using "smart" monitoring systems, which give the company the ability to control energy use remotely via mobile devices.

Collins also argues, not unreasonably, that the company deserves some credit simply for redeveloping so many buildings rather than letting them rot. "Instead of tearing some of them down and starting over, we're reusing them," he says. "We've purchased some that have sat idle for 20, 30 years. Literally, I go into buildings where I'm climbing

***In 2010, Gilbert began moving his employees from the suburbs to downtown and started buying up real estate, with the aim of turning the once-desolate city center into a thrumming high-tech hub.***

over rubble to see what the facility even looks like, and then we turn it into a Class A office space that is full of tenants and full of life. It's unbelievable."

When sustainable practices run up against one of the company's other priorities, sustainability doesn't always win. A prime example is the company's practice of intentionally leaving its skyscrapers well lit at night. "Believe it or not, it just generates a feeling of life and of business. It says, 'Hey, we're back,'" Collins asserts. "To walk down Woodward Avenue at night and to have lights on around you is an invigorating feeling. Even if it flies in the face of energy savings, it's the shot in the arm that the city needs."

USGBC's Jeff Gaines is largely deferential when discussing Gilbert. "Could he be doing things a little bit more efficiently, could he be doing things a little bit more sustainably? Probably," Gaines allows. "I think he could. But we've had so many people come through here, take a look, and then walk away. And he's stuck it out. He hasn't just stuck it out on one project; He's stuck it out on dozens and dozens of projects with more to come. You can't argue with that, when so many people have ducked and said, 'That's too much for us.' "

Many of Bedrock's buildings that had been vacant or close to it for years are now nearly 100 percent occupied. The company has more than 12,000 of its own employees working downtown and says it has recruited more than 100 other tenants. The spaces Bedrock has created are gleaming and undeniably funky. In the basement of the Chrysler House, former bank vaults are now conference rooms, their enormous locks left in place. Outside one of these rooms, a life-size statue of a horse wears a yellow-and-red striped scarf and stands next to a portrait of Abe Lincoln wearing kaleidoscopic sunglasses.

"We have approached [Gilbert]," Gaines says. "His comment to us was, he's moving very fast. If we can keep up with him, he's interested. But if we can't, we need to move out of his way. I think we have to make the compelling argument that we're not going to slow you down, but we're going to help you out in the long term."

Bedrock officials themselves describe the company as having very little patience for delays or red tape. As Collins points out, "I've been involved with jobs that are LEED certified, and they have a timing component that is not conducive to the speed at which we work."

On the tour, Schwartz shows off Chase Tower, once a "brown bank building" with drab carpeting and fixtures. The interior is now open, airy, and filled with pops of color. One floor is filled with a sea of loan officers chatting busily into their headsets, their desks adorned with cardboard cutouts of their faces (the wall decal and graphics company Fathead is another of Gilbert's properties).

Schwartz points out a single strip of mock ceiling tiles lining the exterior of the expansive room, a concession to regulators who insisted that Bedrock preserve at least the appearance of the building's old drop ceiling in order to qualify for historical

preservation tax credits. It's clear that Schwartz views this as an eye-roll-inducing level of bureaucracy, and it seems unlikely that the company will agree any time soon to subject itself to paperwork and inspections that aren't absolutely mandatory.

"We know what we want, and we want to do 'green' stuff," Schwartz says, making quotation marks in the air with his fingers. "But at the same time, we're not waiting around for others to make decisions on what the rules are. We're going forward." 🍁







# Accidental Environmentalist

Phillip Cooley is an accidental environmentalist. He and his partners weren't green, he says, when they set out to open Slows Bar-B-Q, a restaurant in Detroit's Corktown neighborhood. "I didn't even know what deconstruction was," he says. "We started studying it afterwards. But we went dumpster diving for the material that we had already thrown out because we didn't have the money for new material. That's why all of Slows is made from reclaimed material—once we started milling it, we started realizing its beauty."

**T**he restaurant opened in 2005 and was startlingly successful, eventually garnering a *New York Times* write-up and other press coverage. The articles focused not so much on the food (which most people agree is very good) but on the fact that someone had invested in Detroit—directly across from the dilapidated Michigan Central Station, no less, perhaps the biggest "ruin porn star" in the whole city—and it actually worked. It also didn't hurt, certainly, that Cooley was young (he's still only 36) and photogenic (no reporter can resist mentioning his former career as a male model in Europe).

Cooley tries to use locally sourced meats and environmentally friendly to-go containers; however, he tried out waterless urinals but gave up on the

experiment when people complained about the smell. At a second Slows location, he wanted to use geothermal energy but the costs turned out to be prohibitive.

Unsatisfied with staying in his own corner, the entrepreneur serves on the boards of a number of local organizations and has also organized special dinners at abandoned buildings, turning the symbols of Detroit's decay—for a night, at least—into social hotspots.

If Dan Gilbert has helped make Detroit a more profitable place to do business, and if Joan Ross has helped make it more livable and affordable, then Cooley has done his part to make the city hip again.

After two and a half hectic years of managing Slows, Cooley hired a new general manager and



**Previous spread: Former model Phillip Cooley returned to his hometown in 2005 to open Slows Bar-B-Q and stayed to help recreate abandoned warehouses into communal office space.** Photos: Ara Howrani. [www.howranistudios.com](http://www.howranistudios.com)

turned his attention to other projects, mostly centered around his newfound do-it-yourself environmentalism. He's helped organize the revitalization of Roosevelt Park, which sits between Slows and the abandoned train station, and for a time he worked with other entrepreneurs individually, helping with architectural drawings and carpentry.

In 2011, Cooley bought a 30,000-square-foot warehouse for \$100,000 and turned it into a co-working space called Ponyride, where businesses and nonprofits that agree to participate in community outreach and education programs pay cut-rate rents. Cooley worked with other entrepreneurs to refurbish the warehouse using reclaimed materials, elevating it from merely industrial to industrial chic. The wood floor of the basement dance studio, for example, came out of a local high school.

"I love the idea of collaborating, and I love the ideas of participation and partnership," Cooley says. Ponyride now houses (among other things) a couple of small clothing companies, a

metalsmith shop, and a company called Beard Balm, whose website warns that its products "may cause excessive beard."

Nine seamstresses work busily in a Ponyride studio on the day that their employer, nonprofit organization The Empowerment Plan, wins the Diane Von Furstenberg People's Voice Award, which comes with a \$50,000 prize.

The Empowerment Plan only makes one product, a coat that turns into a sleeping bag. Founder Veronika Scott invented the coat for a college design project and her group gives them out to homeless people free of charge. On warm days, wearers can roll up the coat and, with a couple of snaps, transform it into a sort of sling bag to carry their possessions. Each coat costs about \$100 to produce, with operations funded by grants and donors (among them Dan Gilbert, who gave \$250,000 after meeting Scott at a charity event).

When Scott first brought the coat to a homeless shelter, a woman told her, "Lady, your coat is great, but we don't need



In 2011 Cooley created Ponyride, a co-working space for businesses and nonprofits. Much of the building material to rehab the warehouse is recycled. The tenants who participate in community outreach programs can reduce their rent. One business at Ponyride is a metalsmithing shop that refurbishes old sewing machines for the nonprofit organization that makes sleeping bag coats for the homeless.

coats; we need jobs," and so The Empowerment Plan now hires all of its seamstresses out of shelters, starting them out at \$10 an hour for training.

"This is something that they can count on—full-time work," says Julie Benac, the organization's cheery and bespectacled director of production. "Within six months, they're usually in housing."

The group also holds classes for the women, teaching them computer skills and how to write a résumé. "If they want to stay with us, great, but we want nothing more than for them to go on to a better job," says Benac.

Although The Empowerment Plan's focus is on social justice—rather than on sustainability—Benac says that the organization's shoestring nature demands thrift and encourages collaborative work. Around a year ago, someone at General Motors called and was looking to get rid of a bunch of leftover fluffy material from inside car doors. Scott repurposed the fluff as insulation in the coats' liners. Carhartt donates the coat's rugged outer material

but at one time also donated old sewing machines. They had odd bits of metal soldered onto them, making them difficult to use, so Ponyride's metalsmith shop refurbished them. "It's been the most amazing collaboration," Benac says. "You have all these unrelated businesses that seem to have nothing to do with each other but you find ways to work together."

This sort of interconnectedness is central to Cooley's vision for sustainability. He points out that Henry Ford, by paying his autoworkers (an at-the-time astounding) \$5 per day, helped to create a stable middle class that could afford to buy his cars. In the same way, Cooley says his own business stands to benefit from being surrounded by a thriving neighborhood. "For us, the long-term sustainability of our business is about the long-term health and sustainability of our community," he says. "I think that's why we reinvest into the community and give back. We don't want to be a business that's here for one year, two years, five years, ten years. We want to be here for a long time." 🍀

# THE NEW NARRATIVE

There's too much going on in Detroit for a single story to contain it all. Cooley isn't the only person to start a co-working space with a sustainable focus, just as Gilbert isn't the only businessperson investing in downtown and Ross isn't the only community activist working on green projects. The three of them represent three very different segments and yet each one is vital to the city's recovery.

It's an open question, though, whether these different groups will ultimately be able to work together, or if their competing priorities and interests will result in losers as well as winners in the years ahead.

Some have dubbed Dan Gilbert's huddle of downtown buildings "Gilbertville," and although the term is usually used as a descriptor, it's difficult not to hear echoes of "Pottersville," the dystopian alternate reality from *It's a Wonderful Life*, in which a slumlord reigns over an entire town after scooping up all the property when it was cheap.

Gilbert is not building slums. He's largely been lauded for making real investments and jumpstarting commerce downtown rather than sitting on property and leaving it undeveloped. Even Cooley—hardly a poster child for deep-pocketed developers—calls him a "hero."

But Ross is more skeptical. In particular, she speaks with bitterness about the M-1, a planned 3.3-mile rail line that will run from downtown out to Grand Boulevard but won't reach out into the city's farther-flung neighborhoods, most of which are poor, predominantly black, and starved for good transit options.

Particularly riling, Ross says, is the fact that a maintenance station for the line is planned in the North End but residents won't be able to board at the station. "You're not serving my community but you're impacting my community," she says and then jokes, "It only moves at 11 miles an hour so just slow it down and we'll jump on."

In an email, M-1 spokesperson Sommer Woods says that North End residents will be able to access the line via other stops in the neighborhood, and that one of the stations is only two and a half blocks from the maintenance station. "The streetcar will connect downtown to the North End," she says.

Despite the current bumper crop of cheap real estate, Ross also fears the specter of gentrification, worrying that the people

who stayed in Detroit even at the city's nadir may eventually be pushed out of their homes—or, at least, that they will miss out on most of the benefits of the city's recovery. "We've been through the worst of times in Detroit, and we ought to be able to be here in its rebirth," she says.

While Detroit's population is more than 80 percent black, the people here are largely white, with a median age hovering around 30. It raises the question of whether the benefits of Bedrock's investments are reaching the people who've lived in the city for decades or if they're largely flowing to suburbanites and transplants.

Perhaps it's not a fair question. It's not Gilbert's job to find employment for every former autoworker in town, any more than it's his job to lead the charge for a green building boom in the city.

Race is a current running through virtually every conversation about Detroit—a city whose history is littered with phrases like "white flight" and "race riot." Talking to people here, one gets the feeling that—even in a green revolution—the most important colors might be black and white.

Consider the use of the phrase "urban pioneer," sometimes applied to Cooley (although he doesn't use it himself) and other social entrepreneurs. It may seem, at first, to be an innocuous celebration of people who are willing to live and work in Detroit at a time when some people are still scared to even drive into the city. But really, it's a loaded term, seeming to suggest that the (mostly black) people who were in the city before Cooley don't really count.

Ponyride communications manager Christianne Sims, who is black and a lifelong Detroiter, says she and her friends sometimes mock what they call a "Hipsterpher Columbus" mentality in some young (mostly white) outsiders who think they can come into the city and "save" the natives.

"I was just at a PR event yesterday, and everybody said, 'Detroit is a blank slate.' It almost had this Manifest Destiny type tone behind it," Sims says. "Like, 'Oh, I can come to Detroit and do what I need to do.' There was almost a takeover sound in the voice. No one has that same tone when it comes to doing things in other cities."

For any differences or disagreements or competing visions for the city's future, most Detroiters seem to be able to agree on at least one thing. They're ready for a new narrative to emerge, for the bold proclamations about the city—if people insist on making them—to at least start trending toward the positive. "The media doesn't focus on this side of the story," Schwartz says about the rapid redevelopment of downtown. "They focus on the ruins. The ruins are an old story."


"Oftentimes people write the story slanted, that we're not doing anything," Ross says. "And it's always slanted that someone from the outside has to come in. We have a lot of skills, a lot of talent, but a lot of times, it's the resources we lack to get the job done."

Cooley says it's fair for outsiders to present the challenges faced by the city, but that the story shouldn't stop there. "We do have struggles," he says. "And we have to be honest about them so we can move past them together. At the same time, just dwelling on the same thing we already know about, over and over again, that's not journalism. That's sensationalism."

Detroit still has a long way to go. If the city is to become the green building Mecca that some are predicting, then the work that's happening now will be only the beginning. But what's put onto paper won't matter nearly as much, ultimately, as what's put into practice.

What comes next will be decided by Detroiters: the ones who invest their money, the ones who rally their communities, the ones who pick up hammers and saws, the ones who lobby for mass transit and alternative energy, the ones who plant zucchini and peppers in their backyards, the ones who recycle, the ones who design energy-efficient buildings, the ones who spend an hour and a half on the bus each way to get to their jobs, and the ones who look at a vacant property and see potential instead of a problem.

Outsiders won't write the ending to this story. They will. 🌱



**“I think we’re on the verge of uniting all these separate people who are doing sustainable things into one. The challenge is getting everybody to work together. We’re talking about a huge city. But if we can get everybody working together, I think there’d be no stopping us.”**

– MARGARET MATTA, CHAIRWOMAN OF THE GREEN SCHOOLS ADVOCACY COMMITTEE FOR U.S. GREEN BUILDING COUNCIL’S DETROIT REGIONAL CHAPTER





Reaching New  
**HEIGHTS**

Declared the tallest building in the U.S.—  
**One World Trade Center**  
is on track for **LEED.**

WRITTEN BY **Alison Gregor**

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In the intense dialogue surrounding security at the new World Trade Center site, the fact that One World Trade Center will be one of the greenest super-tall buildings in the United States is often overlooked. The where and how of protecting this 104-story building, which stretches to 1,776 feet with its spire antenna, has been discussed extensively, but architects say they've also put a lot of thought into how to protect the environment itself from this three-million-square-foot behemoth of construction.

Architect David M. Childs of Skidmore, Owings & Merrill designed the tower, which was initially developed by Silverstein Properties, but handed over to the Port Authority of New York and New Jersey in 2006. Even recent political turmoil involving this



#### BUILDING FEATURED **One World Trade Center**

**Location** New York, New York

**Project Completion** 2014

**Site Area** 75,000 square feet

**Project Area** 3,500,000 square feet

**Number of Stories** 104

**Building Height** 1,776 feet

**LEED Certification Rating** Gold Projected

governmental entity and New Jersey's Chris Christie doesn't seem likely at this point to derail the lofty mission of completing one of the world's greenest super-towers—a goal mandated by the World Trade Center site's original visionaries.

"In the World Trade Center guidelines back at the beginning of the whole process, sustainability was part of the mission given to us by the stakeholders, the governor, the developer, and the Port Authority," says Kenneth A. Lewis, a Skidmore, Owings & Merrill managing director who has handled the project for the firm.

"Every building at the World Trade Center site—including five skyscrapers, the memorial, museum, performing arts center, and transportation hub—is going for separate certification under Leadership in Energy and Environmental Design (LEED), the ubiquitous green building program developed by the U.S. Green Building Council (USGBC). One World Trade Center is attempting to achieve a Gold certification," Lewis says.

The process began with everyone on the design team sitting in a room and brainstorming to determine which green features the tower should incorporate.

"We had to broaden our usual net to find out what was going on with sustainability and how we were going to deal with the issue," he says. "In the same way we dealt with life safety and security, we reached out to the Lawrence Berkeley National Laboratory, other research institutions, our peers, and asked, 'What's going on?'"

"We let the design community know we were interested in hearing about issues—not just about energy savings, but also about the city and urban work life and what was going on in the community."

**Previous spread: One World Trade Center speaks about the future and hope as it rises upward in a faceted form filled with, and reflecting, light.**

**Below: Upper floors of One World Trade Center offer awe-inspiring views of the city and beyond with oversized panels of low-iron glass.**

*Rendering courtesy of One World Trade Center.*



One World Trade Center's energy consumption was of major importance for its sustainability. Experts frequently cite buildings as consumers of about 40 percent of the world's primary energy, while being responsible for 40 percent of global carbon emissions, according to the Rockefeller Foundation and DB Climate Change Advisors. "But the carbon footprint of New York City's buildings, many of which are old with outdated systems, is much larger, with buildings accounting for as much as 75 percent of carbon emissions in the city," says Ken Levenson, an architect and expert in green building technologies and president of NY Passive House.

One World Trade Center will be one step short of the next innovation in sustainable super-tall buildings: "net zero" structures that produce their own energy, taking no energy from the grid. While One World Trade Center will use the grid's energy, 100 percent of that energy will come from renewable sources.

“You can choose to purchase green energy—it costs you more, but you can ask for it,” Lewis says. “It happens to be that New York has great renewable energy sources in the northern part of the state, primarily from hydro-power.”

Initially, the tower was designed to incorporate wind turbines and solar panels on its upper-floor decks, but those ideas were jettisoned when the tower went through a re-design, Lewis says. The tower’s sleek, tapering design couldn’t accommodate a wind farm. “We went through an entire re-design,” he says. “You can see how hard it would be to achieve with the building’s current shape and form.”

Designers decided to forego solar panels for several reasons. Since the tower’s roof is so small and already loaded with gear, there was no space for solar panels on a horizontal surface, Lewis says. While architects considered incorporating “building integrated photovoltaics,” where the solar technology is actually imbedded in glass panels on the building’s facade, that type of vertical photovoltaic technology is still too expensive to offer the return on investment needed for a classic office building, he says.

“We had hoped there would be photovoltaics, and we do believe in photovoltaics,” Lewis says. “But the return on investment, which is a measure that developers and builders use, just has not gotten there. It’s gotten closer, much closer, but energy costs haven’t gone up that quickly, and the cost of these systems hasn’t come down enough.”

However, One World Trade Center will have elevators with regenerative braking, meaning that the kinetic energy generated by the brakes as they operate will be used or stored.

“We hear about regenerative braking in the Toyota Prius,” Lewis explains. “It’s actually been in elevators for a while, but the technology just keeps getting better and better.”

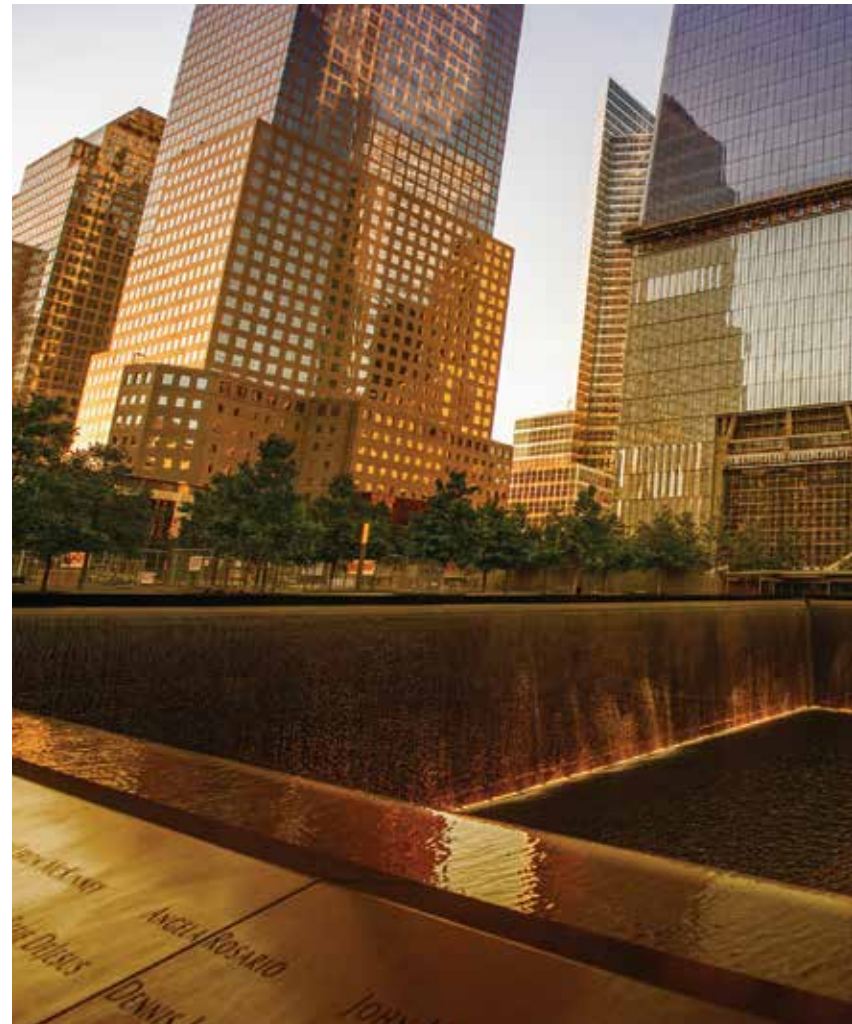


Architect David M. Childs of Skidmore, Owings & Merrill and designer of One World Trade Center. Image courtesy of SOM / © Greg Betz.

Overall, One World Trade Center’s energy performance will exceed building code requirements by 30 percent, architects say. Besides contemplating ways for the tower to generate its own energy, architects also considered methods of making the building more energy efficient by reducing energy consumption. To that end, the tower will have a co-gen, or combined heat and power unit, whose excess heat is captured and used as it generates electricity.

One of the biggest innovations in the tower to reduce energy usage is oversized panels of low-iron glass in the curtain wall that are at once strong, secure, and allow maximum daylighting in the building’s interiors. Daylighting means that on sunny days, light-dimming devices kick in to save energy. The glass panels, which are approximately 5 x 13-1/2 feet and were designed by architects working with industry experts, span the full floor height with no mullions, reducing the amount of aluminum used and achieving 90 percent daylight on the floors.

“We really believe that by maximizing daylight, you not only reduce the amount of lighting that people use, but also people’s general well-being increases,” Lewis says.



A memorial to the victims of 9/11, large reflecting pools mark the footprint of the original twin towers and collect rainwater for reuse.

Another important quality of the glass panels is a low-emissivity coating that reflects the heat of solar radiation, keeping the tower from cooking on torrid summer days and reducing the energy needed for cooling. The tower uses low-energy appliances, the most important ones being variable-speed fans and pumps.

"The bulk of the spaces will use variable-speed fans because sometimes you just don't need as much air, for instance at night," he says. "So it's based on occupancy."

Part of the tower's challenge was its lengthy development process of over a decade, but architects were also able to use that to their advantage. At the start of the process, energy-efficient LED lighting didn't seem plausible, but with evolutions in technology, the lights are now affordable enough to outfit almost the entire tower with them—even the beacon.

"The beacon is a great story of industry catching up with us, so instead of xenon lamps, which are incredibly high-energy users, the ones you see in Vegas and Memphis, we can now use LED lights after some brilliant guys in Boston came up with a way to embed them in cylindrical plastic," Lewis says.



Another focus of energy reduction is the tenancy in the tower, which will have over 9,000 people in it on a daily basis. A state-of-the-art building management system, will be used by the Durst Organization, which will run the building. Thousands of "data points" throughout the tower will monitor indoor air quality and energy usage. Lewis points to experiments showing that when an energy meter is installed in a home to record energy use, the home's owner tends to become more energy conservative.

"Every single tenant in One World Trade Center will have their own meter, so they can see how much energy they're using," he says, and tenants will, of course, be billed accordingly.

Besides its many features meant to minimize energy consumption, One World Trade Center also incorporates a host of other sustainability strategies. For example, water conservation is important, and all plumbing fittings are low-flow. Also, the tower and each of the buildings at the World Trade Center site has its own system of tanks for capturing and storing rainwater to be used for cooling purposes as well as fire protection and irrigation. The large, square reflecting pools marking the footprint of the original twin towers are, in fact, used for rainwater collection. As well, One World Trade Center's half-acre of plaza uses xeriscape, or water-conserving landscaping, to reduce water usage. Plants, such as purple lovegrass, fragrant sumac, and prairie dropseed, will be spray- and drip-irrigated. "That reduces the amount of water that is lost into the sediment and just sort of sits there," Lewis says.

The materials in One World Trade Center were also critical regarding its sustainability mission. For instance, the building used so-called "green concrete," with coal fly ash, which architects had to go back to the lab to develop while also trying at the same time to almost triple the concrete's strength, Lewis says. This "liquid steel"



**Managing director Kenneth Lewis of Skidmore, Owings & Merrill.**  
Image courtesy of SOM / © Bruce Byers.



was then used for the building's core. Many of the other materials in the building, from gypsum boards to ceiling tiles to glass, are made from post-industrial recycled content. "When you use recycled materials, you're not releasing more carbon into the atmosphere, and you're using less energy to produce the material," Lewis says.

Any materials containing volatile organic compounds (VOCs) that leach from materials and cause health problems were banned; and most wood and wood products were certified by the Forest Stewardship Council, which means they came from responsible sources and not endangered trees or forests.

Because the construction process can be as potent a source of environmental impact as the finished building, especially to neighbors, many sustainable practices were incorporated into the construction site, Lewis says. A recycling program was set up, and most of the construction waste at the site has been recycled, with very little going into landfills. Steel workers used composting toilets while they were on site.

One area benefited in particular from public input on the project. The architects were approached by two nonprofit groups, Clean Air Communities and Northeast States Center for a Clean Air Future, at the beginning of the project to discuss the city's asthma epidemic and suggest the use of ultra low-sulfur fuels in fixed onsite equipment and trucks to reduce nitrogen oxide and particular emissions in the air of the surrounding community.

"There's a sense that the asthma epidemic in New York was due to all the particulate matter that was floating around, the regular diesel fuel, construction waste, and just the detritus of society, so we decided to do our part in reducing that," Lewis says.

At the time, there was only one supplier of the fuel, located in New Jersey, so the two groups and the Port Authority funded a pumping station at the World Trade Center site. Still, construction companies were worried that the fuel might damage their machines or the machines wouldn't be able to generate enough horsepower, so it was very much an experiment, Lewis says.

"Now, it's anecdotal, but we're hearing that their machines are actually lasting longer with this low-sulfur fuel," he says. "Everybody brings ideas to the table, and this was a great one."

Because the World Trade Center site has access to 12 subway lines, about 90 percent of its tenants, workers, and visitors will arrive via public transportation, disembarking at the site's new transportation hub. Tenants and workers may also be given incentives to commute by bicycle or carpool, while the site will also have outlets to plug in electric vehicles, so transportation is another "monster green feature" of One World Trade Center, Lewis says.

While One World Trade Center hasn't yet earned LEED-certification, architects, who will finish up their part in the building this spring, are working on the process. Lewis says he anticipates certification sometime around October: "We want to open it up and have the LEED plaque on the door." 🍷

**Top left: The west concourse of the World Trade Center opened this year.**

**Bottom left: The marble lobby is sheltered with concrete walls more than two feet thick. The concrete is slotted to allow daylight into the space.**

**Right: Eight interlocking triangles create the façade of One World Trade Center. Steelworkers used recycled cars and refrigerators in the construction of the building. The 22-ton spire topping the super-tall structure acts as an LED beacon of light and can be seen for miles.**

Renderings courtesy of One World Trade Center.





# Lofty Idea



The micro loft concept transforms old buildings into cutting-edge urban dwellings.

WRITTEN BY **Holly Grosvenor, AIA** | BUILDING FEATURED **The Arcade Providence, Providence, Rhode Island**

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**Architect** Northeast Collaborative Architects | **Developer** Granoff Associates | **Cost** \$8 Million | **Completed** October 2013



**Many architects have made great strides in changing social environments by matching old buildings with new uses and altering assumptions about how we live.**

**T**he uncelebrated everyday building stock that occupies acres of urban land throughout the country has often been considered outdated and too expensive to upgrade, and their present-day fate is frequently the wrecking ball.

However, there is good news for these “buildings-from-a-different-era.” These buildings hold intrinsic value as effective agents of carbon reduction. And although preservation has at times been an uphill battle, micro lofts are one example of a successful marriage between a new purpose and an old structure. More than the sum of its parts, this type of development not only enhances the use of a renovated building but also inspires revitalization of inner cities.

The term micro loft refers to a small living space—600 square feet or under—complete with all the elements of an apartment: a living space, kitchen, bath, and bedroom. As an example, the Arcade, the recently completed project in Providence, Rhode Island, has 48 micro loft units ranging in size from 225 to 600 square feet. The majority are simply furnished with a single chair.

“The Providence Arcade is probably the single most important example of commercial architecture in Providence, and a building of national significance. The reopening of the Arcade is a monumental, much-longed for occasion, and a great gift to the residents of the city.”

– JAMES HALL, DIRECTOR OF THE PROVIDENCE PRESERVATION SOCIETY

Page 50: Andrea Torizzo, J. Michael Abbot, and Holly Grosvenor, Northeast Collaborative Architects, Providence, Rhode Island.

Photo: Dan Cutrona

Page 51: The historic Arcade façade retains its Ionic temple theme designed in 1828 by Russell Warren. The building was America’s first three-story interior commercial center. Photo: Ben Jacobsen

Left: A glass skylight illuminates the interiors of the building, offering natural daylight throughout the multi-level space. Photo: Dan Cutrona

Right: The top two floors are reserved for micro lofts, while the street level contains a pedestrian walkway and shops. These units are energy efficient because they are small and easy to heat and cool—and also use natural light. Rendering: NCA



All other furniture is built into the unit in the manner of a ship’s cabin, including a Murphy bed. Most importantly, micro lofts provide an affordable place to live and are ideal for students, individual residents, young couples, and remote employees. Another important factor: Micro lofts offer a sense of ownership and participation in the local neighborhood. A bustling commercial center provides balance to the small quarters—a key component for the project’s success.

Many mixed-use micro loft projects are inherently energy efficient. Micro loft developments are often situated in older

buildings, the reuse of which requires no demolition and rebuilding or construction of infrastructure. They are also typically located in urban areas complete with access to public transportation. High-density living reduces the use of cars and fuel as the residents can walk or bicycle the convenient distance to stores, classrooms, and offices. The Arcade includes Providence’s first bicycle garage.

Under the glow of a large glass skylight, the micro lofts at the Arcade are within walking distance of restaurants, entertainment, and shopping. Originally designed by Russell Warren

“The reopening of the Arcade is an exciting development for Providence. This project breathes new life into America’s oldest indoor mall and one of our city’s most historically significant buildings, with a mix of retail, restaurants, and affordable housing for young professionals in the heart of downtown Providence.”

– ANGEL TAVERAS, MAYOR OF PROVIDENCE



The micro lofts range in size between 250 and 600 square feet. Each dwelling offers a kitchen, full bath, sitting area, and bedroom. Built-in beds and shelving offer space-saving techniques. Rendering: NCA

in 1828 as an interior pedestrian street, the historic building was the first three-story “atrium style” commercial center built in the country before the age of public elevators. The upper tiers of the building were accessed by exterior stairways.

The conversion takes advantage of privacy in the upper levels and allows the residents to have a relationship with the public street and businesses below. The resulting community of private and public space bustles with activity. With card key access to shared walkways above the public way, the Arcade residents live in a new kind of urban dimension, one of autonomy with a shared sense of participation in the larger city.

The apartments are small by any definition, and apart from the low rent, it might be considered a hardship to live with such restrictions on space. Windows on the outside walls for each unit serve to relieve the closeness of the space, and the daylight atrium brightens the living space, making it feel bigger than the containing walls. The challenge to micro loft residents is to embrace the new concept and the significant change in lifestyle. And if actions speak more than words, the long waiting list to occupy the 48 units is proof that the interest is high and the future bright for this new concept.

New structures that are designed to be energy efficient typically outperform old structures because they leverage modern technology, materials, and strategies from the outset. On the other hand, the “make new” approach faces a dilemma of net energy return. New construction of any kind requires energy and resources. Estimates show that it takes between 20 and 60 years for a new, energy-efficient home to offset the same amount of energy that was expended during construction, according to an entity called the Preservation Green Lab funded by the National Trust for Historic Preservation. From this theoretical perspective of measuring total global energy, it is understood that it takes energy to become efficient. Or does it? There may be other ways to build a more energy-efficient lifestyle that would net a more positive result.

One tactic to reduce energy usage in existing buildings is to upgrade various elements, like a home’s insulation. Through this approach, bit by bit, a building can gradually reach the goal of overall efficiency without undergoing radical change.

The market for preservation through repurposing requires human energy to succeed—and the creation of this new paradigm needs design talent sensitive to the local community and market-wise tenacity for success. A creative approach to promote re-use and preservation of existing buildings might make all the difference in achieving an energy-efficient future—and the micro lofts at the Arcade do just that. 🌱

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# Green Sprouts in Detroit Public Schools

**The Detroit Public Schools and the regional chapter of the U.S. Green Building Council are working together to promote environmentalism among students.**

By Calvin Hennick

**M**ario, a fourth-grader at Detroit's Bunche Preparatory Academy and a member of the school's Green Team, needs only a little prodding before he agrees to perform a song he wrote celebrating environmentalism. He's nervous, but he's too excited about recycling, gardening, and conserving energy not to share.

"All I see is green, green, green, no matter what. I've got green on my mind, you can never give it up," he finally raps, a bit breathlessly. "All see is green, green, green, and if you're going green, put your hands in the air."

Mario and the other members of the school's Green Team are pint-sized ambassadors for the planet. Wearing special badges, they patrol the halls of their school, making sure teachers shut the lights off when they're not using their rooms and reminding them to unplug computers and other appliances before school vacations. They also keep an eye out for water leaks and identify incandescent lights that can be switched out in favor of more efficient bulbs. The program, called the Go Green Challenge, is in its second year, and about half of the district's schools are participating. Last year, the program saved the district around \$400,000 in energy costs.

Meanwhile, the Green Schools Advocacy Committee of the U.S. Green Building Council's Detroit regional chapter has been raising awareness of environmental issues in schools through its own programs. The chapter sponsors a statewide art contest in which students show—through drawings—ways that their schools are or could be green, has worked to build greenhouses at three Michigan schools, and has developed a website to help teachers incorporate environmental issues into their lessons.

Also, seven Detroit schools that have been built or renovated since 2009 are







*Housed in a new \$22.2 million LEED Silver Certified building, Earhart Elementary-Middle School is located on Clark Park in the vibrant Mexicantown area of Detroit. Large windows for natural light complement state-of-the-art technology in each room.*

on track to receive—or have already received—Leadership in Energy & Environmental Design (LEED) certification.

Together, the school system and the USGBC Detroit regional chapter have helped spark a green renaissance of sorts in the schools, says Margaret Matta, chairwoman of the regional chapter's green schools committee. "Green is new [to the Detroit schools], but it's starting to snowball," Matta says. "It's really catching on. A lot of it has to do with the kids. The kids get it. They want to learn more, and they're pretty excited about things." The art contest drew 700 entries last year, including one from a girl who convinced her dad to start recycling at his business. "We hold a little luncheon for the winners, and someone said, 'Well, that's 700 conversations about why a school should be green,'" Matta says.

The primary goal of the Go Green Challenge isn't to save the district money, but to boost student achievement, says Emile Lauzzana, director of energy and sustainability for Detroit Public Schools. The district provides learning objectives about sustainability that teachers can fold into their curriculum, and Lauzzana argues that energy-efficient schools make for a good learning environment. "If a student is [sitting] by an exterior wall, and it's drafty and it's cold, that student's not going to be able to concentrate as much," Lauzzana notes.

At Bunche, five fourth-graders on the Green Team sit around a table in science teacher Diana Koss's classroom, talking about how much fun they've had making salsa with garden-grown vegetables, creating seed necklaces, and collecting and recycling thousands of milk cartons.

Koss's room is a miniature forest, with aloe, spider plants, and six-inch-tall pine trees growing in pots at each of the room's tables and around the perimeter. Bird feeders hang outside the windows.

Koss is working with an outside group to bring a butterfly garden to city-owned property adjacent to the school, and she's hoping to bring single-stream recycling to the school next fall. She currently takes materials from her classroom home to recycle them.

Students at the school were given water-efficient showerheads to take home, as well as timers to help them take shorter showers. The students on the Green Team say they now pester their parents to recycle. When Lauzzana asks them if they'd be willing to care for their own individual tomato plants, they shout a giddy "Yes!" in unison.

"They're the ones who are going to make a difference in our society," Koss says. "I'm giving them the tools to be good citizens and take good care of the earth, but the world depends on them." ●

**Page 57: Margaret E. Matta, chairwoman of the USGBC's green schools committee.**

Photo: Ara Howrani. [www.howranistudios.com](http://www.howranistudios.com).

**Left: Winners of the DPS Go Green poster contest. Artists, clockwise from top left: Joseph Powell, 9th grade, Cass Technical High School; Cierra Cooper, 7th grade, Marquette Middle School; Marlana Pina, 5th grade, Earhart Academy; Jermaine Tripp, 12th grade, Cass Technical High School; Shaheeda Khalique, 2nd grade, Davison Elementary School; Dwayne Thomason, 7th grade, Mason Elementary-Middle School.**

# Incubator of Green Home Policy

## Cincinnati becomes an incubator of green home policy innovation.

By Cecilia Shuttles

Ohio is well known for its leadership in green building—impressively, it leads the nation with 150 LEED-certified K–12 schools. The city of Cincinnati uses its home state’s forward-thinking policies to full advantage, taking the state-granted authority to incentivize green building and running with it.

In 2006, Cincinnati enacted the Community Reinvestment Area Residential Tax Abatement Program—in short, a tax abatement program that encourages property improvements via renovations or the construction of new homes. Promoted under the headline “Save Money, Live Well,” the program was enacted to achieve four main policy intentions: stimulate community revitalization, retain city residents, attract homeowners, and reduce development costs for for-sale and rental projects. Here’s how it works. Any resident within the Cincinnati city limits who is renovating or building a new home that increases the property’s value by a minimum of \$2,500 (for one- and two-unit structures) and \$5,000 (for three-unit structures) can apply for the abatement. (Properties composed of more than four units are considered commercial and can also apply for tax abatement through a corresponding program.)

Once the improvement is complete, the property owner submits an application to the city that is reviewed based on documentation of cost, work completion, and LEED certification (if sought). Finally, the application is forwarded to the Hamilton County Auditor’s Office, which then assesses the improvements and finalizes the abatement’s approval. The end benefit: property owners pay taxes on only the property’s original value, not the improved value, for a time span of either 10 or 15 years.



Now for the innovative part: Since 2007, the program has offered increasing maximum abatement amounts based on the level of LEED certification achieved, if any. For new construction projects permitted after January 31, 2013, the maximum abatement ranges from \$275,000 for up to 15 years for LEED Certified homes to an unlimited abatement value for up to 15 years for LEED Platinum homes. The same maximum abatement values apply to renovations for up to 10 years. (See the tables opposite for all abatement and LEED-certification values.) Overall, the city of Cincinnati estimates that the tax abatement program has saved participating taxpayers \$21.8

million for LEED and non-LEED projects since 2007. Of the 192 single-family homes that applied for LEED certification, 79 are LEED Certified, 87 LEED Silver, 20 LEED Gold, and 6 LEED Platinum. The city’s 2013 program survey found that 40 percent of participating property owners said the tax abatement allowed them to allocate at least an additional \$50,000 to their budget. The study also found that owners of LEED-certified homes were more likely than owners of non-LEED-certified homes to say that the tax abatement allowed them to increase their original budget by at least \$50,000. “We are proud of LEED’s proven track record for the conception, design,



*Westfalen Lofts consists of three rehabilitated properties with a total of eight units, featuring two-story condominiums and a four-story townhouse. The development was completed by John Hueber Homes and Northpointe Group.*

Photo credit: Sara Bedinghaus, Cincinnati Center City Development Corporation

and validation of green homes,” says Roger Platt, senior vice president of global policy and law at the U.S. Green Building Council. “In this case, both state and local leaders have recognized the unique role they play in encouraging the revitalization of Ohio’s communities. “Make no mistake about it,” he continues, “Cincinnati’s policymakers see green as far more than energy efficiency. The tiered nature of this incentive is structured to recognize that LEED-certified homes address a broad range of environmental and health imperatives, making LEED-certified homes more desirable places to live and more desirable structures for governments to promote.” ●

#### New Construction

LEED Certification Level	Substantially Complete Building Permits Received On or Before January 31, 2013		Substantially Complete Building Permits Received After January 31, 2013	
	Maximum Abatement	Term	Maximum Abatement	Term
<b>Non-LEED Certified</b>	\$309,515	10	\$275,000	10
<b>LEED Certified</b>	\$562,792	15	\$275,000	15
<b>LEED Silver</b>	\$562,792	15	\$400,000	15
<b>LEED Gold</b>	\$562,792	15	\$562,000	15
<b>LEED Platinum</b>	No Limit	15	No Limit	15

#### Renovation

LEED Certification Level	Substantially Complete Building Permits Received On or Before January 31, 2013		Substantially Complete Building Permits Received After January 31, 2013	
	Maximum Abatement	Term	Maximum Abatement	Term
<b>Non-LEED Certified</b>	\$309,515	10	\$275,000	10
<b>LEED Certified</b>	\$562,792	10	\$275,000	10
<b>LEED Silver</b>	\$562,792	10	\$400,000	10
<b>LEED Gold</b>	\$562,792	10	\$562,000	10
<b>LEED Platinum</b>	No Limit	10	No Limit	10

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