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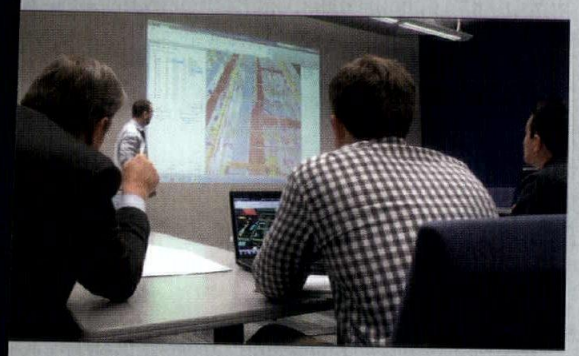

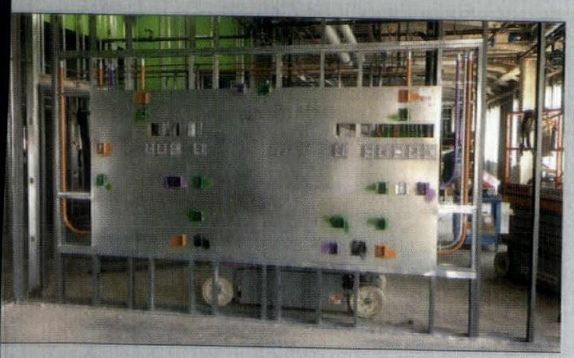

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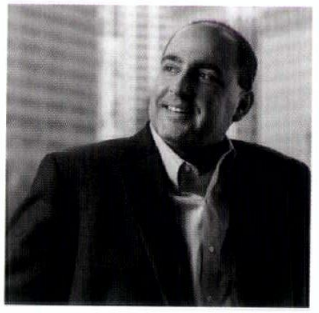

PHOTO BY JOHN STURDY

What we do today in art and architecture we could not have done 25 years ago.

We know more about the materials that go into our buildings. We know how to make our projects more accessible for all. And we know how to make them less harmful to humanity —on multiple levels.

This has taken what is called "systems thinking."

Systems thinking is the process of understanding how the interrelation of things influence one another within a complete entity, or larger system. Because of this approach, our tools have evolved, giving us a more holistic view of our creations and giving us more freedom to creatively solve problems.

This approach applies itself to all things and not only architecture.

A recent news story reported on three newborns facing certain death due to a condition called tracheobronchomalacia. Researchers from the Universities of Michigan, Utah and Pittsburgh were able to save their lives with 3-D printed throat implants, designed to allow the airways to move and stretch slowly to match the growth of the windpipes. The implants were made from a polymer called polycaprolactone, which biodegrades over the course of three to four years when exposed to bodily fluids, but is strong enough to grow in place and keep each child's airway open. Doctors expect all three children, now between 17 months and three years old, to have fully developed, functioning and normal windpipes as they grow.

Technology has allowed us to create responsive tissues. This same technological impulse has allowed architects to create better, responsive environments. These are places that perform better, use less resources, and respect our health and environment. If we continue to push in this direction, we will continue to make a drastic difference.

Thanks to evolution in design technology, the constraints of drawing with just ink and Mylar have dissolved. The computer has removed the barriers between our tools and our imaginations. Thank you, Alan Turing, for starting the journey.

This year marks the 25th anniversary of the Americans with Disabilities Act (ADA). This act has had a profound impact on architecture. First we had a steep learning curve, then a prolonged period of correction, and now, we instinctively create encumbrance-free environments for those who are physically challenged—and for all people. Thank you, Senator Tom Harkin, for starting a revolution.

We have better products to build with because we demanded better, and the manufacturers met that challenge. In turn, we have created a healthier environment. Thank you, Ray Anderson, for thinking big.

Let us continue on this path and foster this type of collaboration and evolution.

*"The arts are a manifestation of man's intelligence and therefore follow the evolution of their time." — Lucio Fontana*

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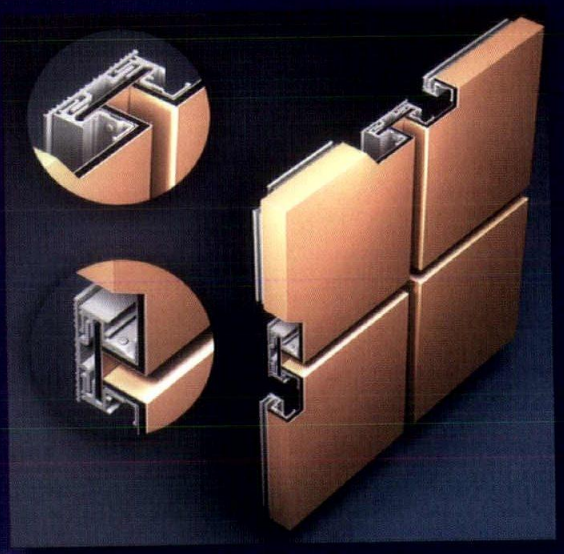

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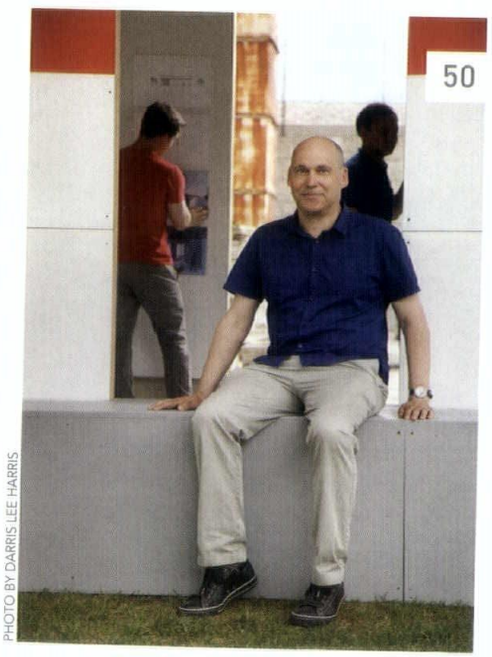


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ON THE COVER

*The manufacturing floor of Method's "South Side Soapbox" factory*

PHOTO BY METHOD

## FEATURES



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# NEW MARIANO'S ELIMINATES A CHICAGO FOOD DESERT

## The site for a Mariano's in Bronzeville has special significance for the community

RENDERING COURTESY OF JOHNSON & LEE, LTD.

*The new Bronzeville Mariano's will bring a much-needed grocery store to a community that has been labeled a "food desert" in the past.*

**AFTER DRIVING THROUGH THE BRONZEVILLE NEIGHBORHOOD WHILE SEARCHING FOR A NEW GROCERY STORE LOCATION**, Bob Mariano, chairman, president and CEO of Milwaukee-based supermarket chain Roundy's—which owns and operates the growing Mariano's Fresh Market brand—knew he wanted his next store to be in the lot on the corner of Pershing Road and King Drive.

He reasoned his choice of location would not only be good for business but also combat a problem in many of Chicago's communities: food deserts. Research done by food policy researcher Mari Gallagher and her team at the Mari Gallagher Research and Consulting Group named Bronzeville, among many other West and South Side neighborhoods, a food desert, which the United States Department of Agriculture defines as an urban or rural area without ready access to fresh, healthy and affordable food.

Gallagher is enthusiastic about the impact Mariano's will have on Bronzeville in providing residents a greater ease of access to fresh fruit and vegetables. She believes the store has the potential to be a "game changer" as a result of its location and will likely attract more retailers.

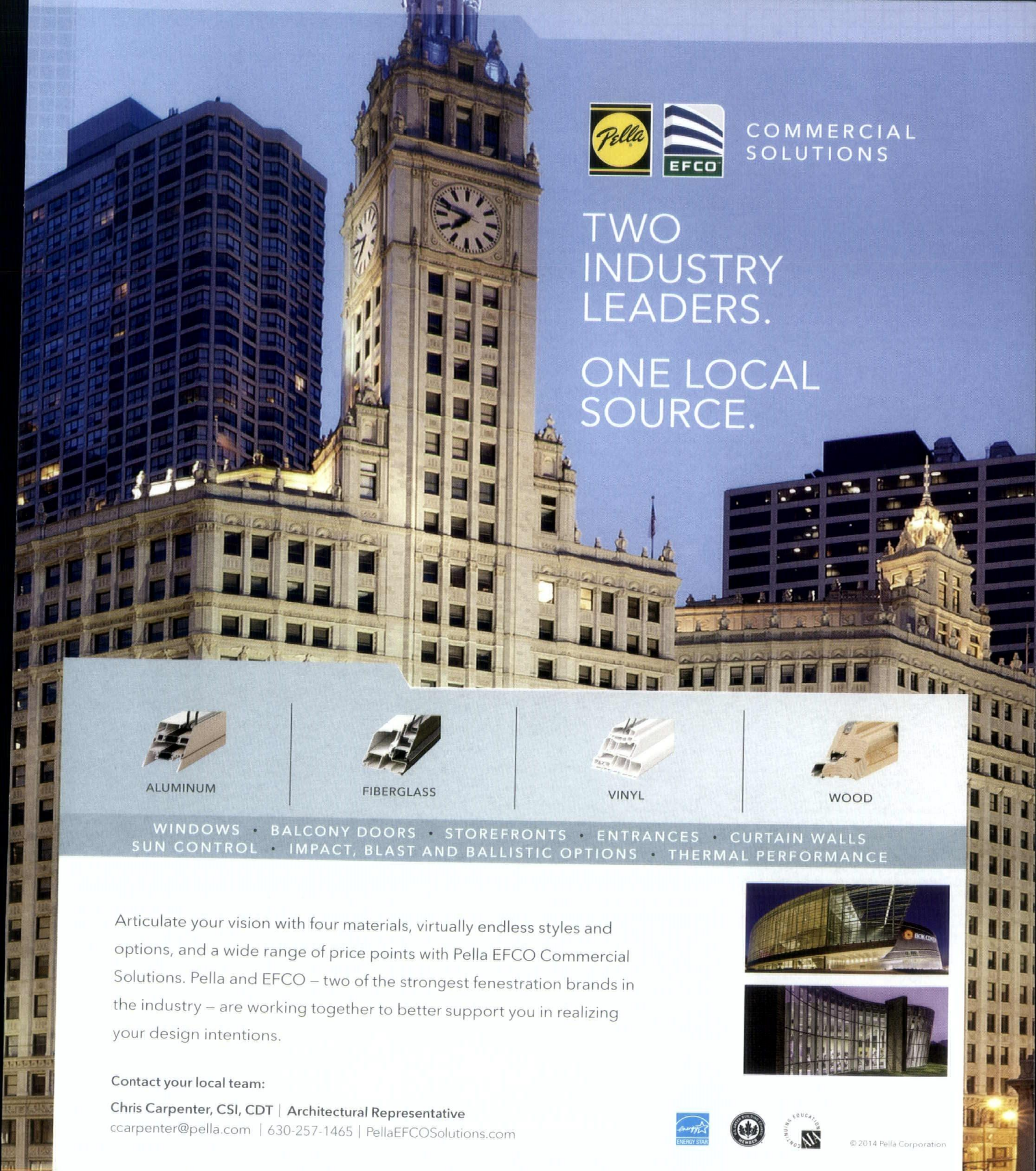
"A high-end store like Mariano's will be very interesting for the community and attract more options," Gallagher says. "'Like' attracts 'like' in a positive direction. When a community doesn't have grocery stores, it repels grocery stores."

> "THE INTENT WAS NOT TO TRY TO COMPETE WITH THE HISTORIC FABRIC OF THE BOULEVARD, BUT TO DIFFERENTIATE FROM IT."
>
> — DAVID DOIG

Groundbreaking on the Johnson & Lee-designed structure was held in January of this year. The one-story building is slated to be 75,000 square feet, and an 8 ft. trellis on the roof will give the building height to stand out in the area. Colored masonry and a mural will decorate the south side of the building that faces Pershing Road.

Philip Johnson, FAIA, principal of Johnson & Lee and lead designer of the Bronzeville Mariano's, notes an additional aspect of the site that makes it special: its history. The new location is where the Ida B. Wells Homes, a Chicago Housing Authority (CHA) public housing project that was constructed in 1941, once stood. The U.S. Department of Housing and Urban Development completed demolition of the housing project in 2011.

Collaborating with Johnson & Lee on the project are contractor Safeway Construction and Chicago Neighborhood Initiatives (CNI), a community development organization that works to strengthen low-to-moderate income Chicago neighborhoods. CNI President David Doig worked with Johnson and 3rd Ward Alderman Pat Dowell to plan for the new building and its impact on the community. As they discussed design and function of the store and its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surrounding spaces, it was imperative for the design of the store to acknowledge and complement the area's history and architecture.

"One of the things we're trying to do is respect the boulevard," Doig says. "We've brought the building right to the hard corner rather than the typical approach."

Part of the plan for helping integrate the new Mariano's store into the Bronzeville area is through artwork that will be displayed on a fence surrounding the parking lot. "We're planning to do some artwork that will go along Pershing Road, using images of Bronzeville and historic figures of Bronzeville," Doig says.

While the planned artwork around the store incorporates the history of the neighborhood, the store itself has a "very sleek and modern" design, according to Doig. "The intent was not to try to compete with the historic fabric of the boulevard but to differentiate from it," he says.

To help the building fit in with its surroundings, Johnson says they plan to use materials that are found in neighboring structures, including a stone base and face brick. Part of the modern look is adding scale to the building and using plenty of clear and colored glass.

Echoing Mariano and Gallagher's enthusiasm for the project, members of the Bronzeville community have also expressed excitement about how the decision to build a Mariano's in their neighborhood will further develop the area.

*by Chelsea Sherlock*


RENDERING COURTESY OF JOHNSON & LEE, LTD.

*A rendering of the southwest corner of Mariano's in Bronzeville.*

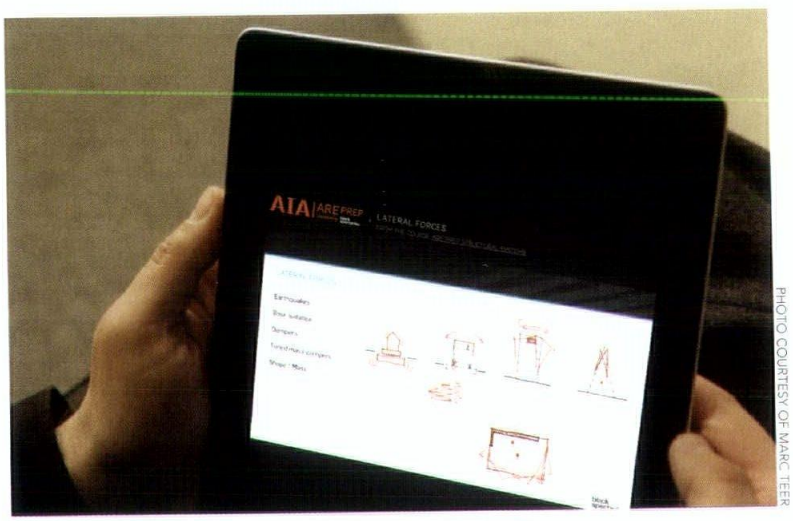



PHOTO COURTESY OF MARC TEER

# PREPPING FOR THE ARE

## AIA Chicago online ARE prep course goes national

**IT WAS ONLY LAST YEAR WHEN AIA CHICAGO PARTNERED WITH BLACK SPECTACLES, AN ONLINE ARCHITECTURE EDUCATION COMPANY, TO LAUNCH THE WORLD'S FIRST WEB-BASED PROGRAM** to help architects pass the Architecture Registration Exam (ARE). Now, as a result of the recently announced partnership between AIA National and Black Spectacles to offer the courses as an official AIA product, the program is poised to grow from its nascent beginnings in Chicago.

Marc Teer, AIA, an architect with a knack for film production and web programming, founded Black Spectacles in 2010 and launched the website's first courses, which focused on software, in 2012. At around the same time, AIA Chicago was also thinking about developing an online course for the ARE.

"I thought, 'We have amazing architects here in Chicago. What if we partnered with some of them to build courses that we could offer online, to help folks learn software, and offered it at an affordable price?'" Teer explains of the program's beginnings.

"I've been running an in-person ARE class since 2010 at AIA Chicago. We had people who wanted to attend but were not able to because they were outside of Illinois," says Joan Pomaranc, program director, AIA Chicago. "So, the question was, how do we make our course available to people outside of Illinois?"

According to Pomaranc, AIA Chicago tried partnering with various groups to develop the course and found the right fit with Teer. "Marc had already started his Black Spectacles business, and we knew him very well. He's been a committee leader [at AIA Chicago] and we've stayed in touch with him through AIA Chicago activities," Pomaranc says. "It was a very comfortable relationship."

To develop the course, Teer and Mike Newman of SHED Studio—who was teaching an ARE course at AIA Chicago—expanded Newman's curriculum for the new online course.

"We spent many Saturdays and Sundays together in the conference room at AIA Chicago—[Marc] with all of the equipment and me with all my sketches of drawings," Newman says. "We would pick a topic, I would get prepared for it during the week, and then we would plow through and make it happen."

The course is broken up into seven sections, which correspond to the seven parts of the ARE. The sections are then broken down into smaller, 5-10 minute long, topical video lectures led by Newman. The courses vary in total duration,

with the shortest running about four hours and the longest running close to 11 hours. For $99 per month, users are given unrestricted access to all ARE prep tutorials on the Black Spectacles website, which allows them flexibility in how they utilize the resource.

bKL Architecture's Laura Crane, co-chair of the Young Architects Forum at AIA Chicago, noted how beneficial the online course has been for her and her colleagues. "I use it. I've told some of my peers and they use it, and we've all agreed that it's either a really great introduction, or a really great wrapup," says Crane, who recently passed her fourth exam.

As a complement to the courses, and to add in some sense of camaraderie with fellow online course takers, Black Spectacles launched a series of live webinars that take place once every other month. "We partnered with the Young Architects Forum, and every other month we go to a different architecture firm, where Newman does a one-hour seminar for the firm's employees as well as attendees from Chicago's architecture community," Teer says.

> "IT'S INTERESTING THAT A PROFESSIONAL ORGANIZATION LIKE THE AIA CAN PARTNER WITH A PRIVATE COMPANY TO HELP THEIR MEMBERS. THIS HAS PROVEN TO BE A VALUABLE PARTNERSHIP FOR BOTH OF US."
>
> — MARC TEER

Black Spectacles also simultaneously broadcasts the session live on its site for free, giving viewers the opportunity to get immediate responses to their questions. According to Teer, there have been hundreds of participants to the webinar.

The success of the full program has led to a partnership with AIA National, making the program now available to an even larger audience. The course, now rebranded as "AIA ARE Prep: Powered by Black Spectacles," is offered as an official product of AIA National and was announced in May. And although it is still only available on the Black Spectacles website, the program is offered at a discounted rate to all AIA members and can be accessed through the AIA National site.

The program continues to grow from its beginnings as an AIA Chicago offshoot. Teer and Newman plan to expand the online offerings to include a broader range of topics, as well as interviews and other types of videos to help people view the information in different ways.

"It's interesting that a professional organization like the AIA can partner with a private company to help their members," says Teer. "You don't see it very often, but this has proven to be a valuable partnership for both of us."

*by Williette Nyanue*

# REVIVING THE ARTISTIC SPIRIT

## In Bronzeville, a historic structure is transformed into live/work artists lofts

**THE BRONZEVILLE ARTISTS LOFTS ON THE SOUTH SIDE IS THE ONLY LIVE/WORK DEVELOPMENT** in the Bronzeville neighborhood. The building occupies the site of the former Jones Brothers Ben Franklin store, once the largest African American-owned department store in the country.

The husband-and-wife team of Wrap Architecture, Cheryl Noel, AIA, LEED AP, and Ravi Ricker, AIA, LEED Assoc., became involved with the adaptive resuse project after Three Corners Development selected their proposal. Revere Properties and Three Corners developed and managed the site's transformation into 16 open-loft apartments, which were completed in June 2014.

The development had heavy institutional support from 3rd Ward Alderman Pat Dowell, who selected the site for rehabilitation through the federally funded Neighborhood Stabilization Program. "These investments made by the City of Chicago, Revere Properties and Three Corners will help stimulate the economy of 47th Street and give new life to an important retail corridor," said Dowell at the beginning of the project.

Noel and Ricker, working with structural engineer Joe Farrugia of GFGR Inc. Architects Engineers, immediately identified issues that were different from what the city's reports relayed. "There was a series of walls that appeared to be

PHOTO COURTESY OF WRAP ARCHITECTURE

*The rehabilitation of this historic building in the Bronzeville neighborhood was made possible through the Neighborhood Stabilization Program and led by 3rd Ward Ald. Pat Dowell.*

load-bearing but were actually clay tile walls," says Noel. "By removing them, we would be given a huge opportunity to open up spaces within the building."

The team recommended the removal of the non-load-bearing walls to bring out the uniqueness of the building. Structurally, the 1920s-era building was found to be somewhat of an anomaly for its time. The interior of the building is that of a bridge, Ricker explains, and the third floor was a truss that spans the length of the space. The second floor and ceiling of the first floor (13 feet in height) are "hung" from the top truss of the third floor via a 2-inch threaded rod, cast iron joint "hangers," and massive 3-inch steel plates and nuts, according to Matt McClay from Madison Construction, who served as general contractor in a joint venture with Revere Properties.

The building had been sitting empty since the 1990s and was severely deteriorated by the time Wrap Architecture's work began in earnest. Although the architects were well-versed in building renovations, even they became uncertain of their ability to bring this particular structure back to life.

After some structural changes to the building and removal of unnecessary partitions, Ricker says they were able to determine what was original to the building and what had been added over time. Some of those structural changes included removing loft support beams that were 140 years old and replacing existing stairwells that were not to code for egress. They were swapped out for two masonry and steel shafts with newly dug interior structural foundations. To create the open floor plans and dramatic spaces, the unique timber truss structural system was exposed, and an emphasis was placed on durable finishes, soundproofing and energy efficiency.

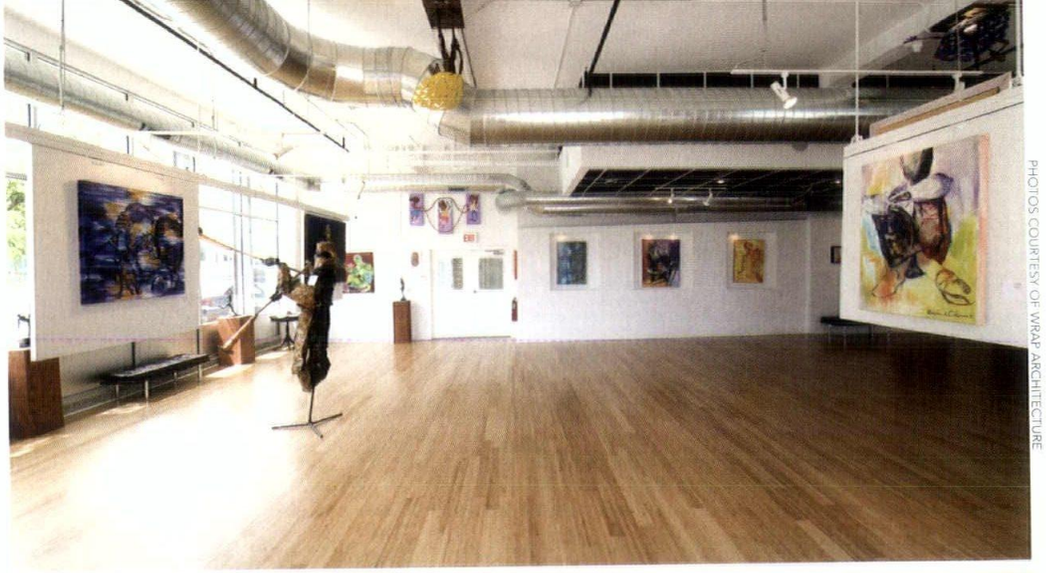
"The existing structural wood beams on the uppermost third floor span 35 feet, from wall to wall, with no column supports," adds McClay. "This W-shaped construction created the bridge-truss design, with 16 inches of square heavy timber beams spanning, in height, from the floor to the ceiling, crisscrossing the living spaces and corridors."

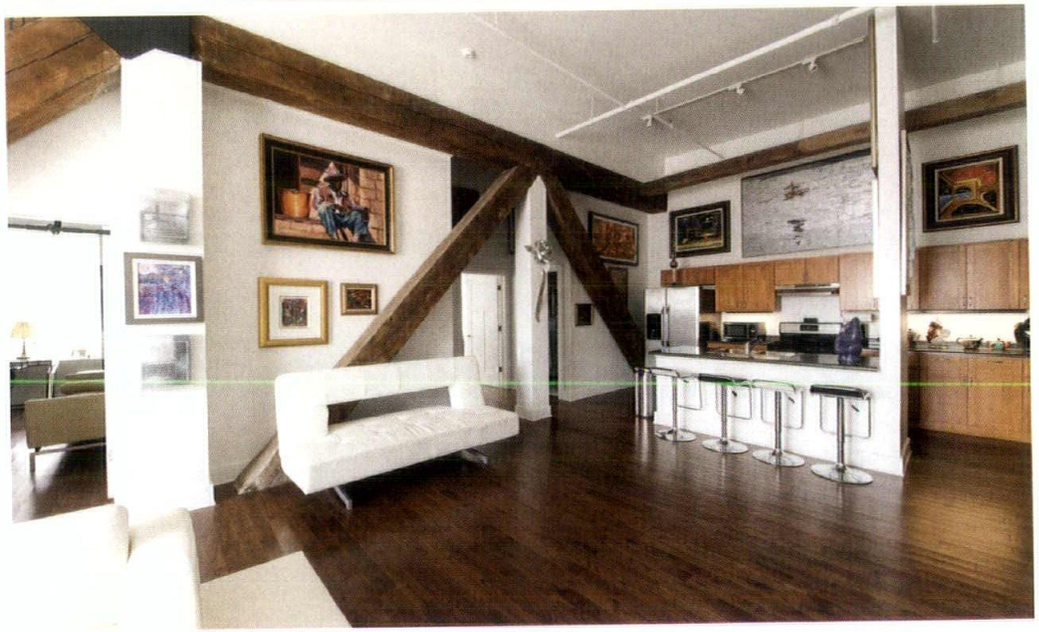
Inside the finished Bronzeville Artists lofts, there are live/work spaces on the second and third floors above first-floor commercial tenants, which currently include a shared-artist workshop for residents and the Gallery Guichard art gallery.

Dowell, the alderman who championed the development, believes the Bronzeville Artists Lofts have immensely helped enliven the neighborhood. "The Bronzeville Artists Lofts and Gallery Guichard honor the Bronzeville community's cultural history, and it provides new opportunities for emerging artists" she says.

Ricker cites the finished lofts as a case in point of what adaptive reuse can do for a neighborhood. "Too often, there's an instinct to tear stuff down and build new, and we're losing the fabric of our city and the character of our city because of that," he says. "We're not historical preservationists, and I don't think every building needs to be saved, but this is an extraordinary building for its time. I think the way that it was reused is serving the community in a really unique way that new construction couldn't have done."

*by Sara Elliott*





PHOTOS COURTESY OF WRAP ARCHITECTURE

**ABOVE** *The new Bronzeville Artists Lofts houses 16 apartments for resident artists, as well as the Gallery Guichard art gallery.* **RIGHT** *The building had been abandoned since the 1990s and was once home to the Jones Brothers Ben Franklin store.*

BEFORE

# GLASS | goes green

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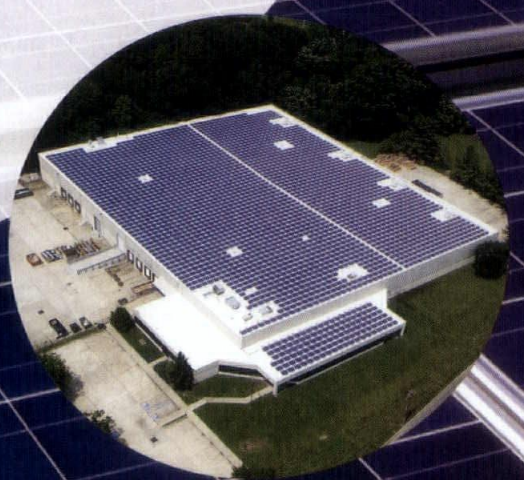

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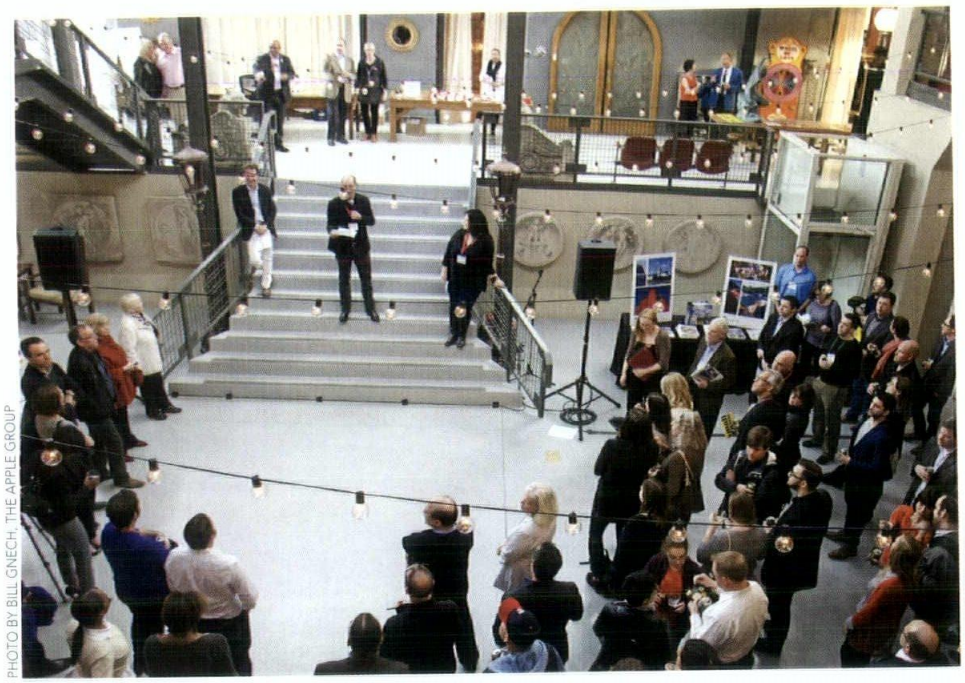


PHOTO BY BILL GNECH, THE APPLE GROUP

## AIA Chicago's Fifth Annual Small Projects Awards

On Friday, May 1, AIA Chicago and its Small Practitioners Group hosted the fifth annual Small Projects Award ceremony and reception at Architectural Artifacts in Chicago's Ravenswood neighborhood. The awards program honors the best work from firms with fewer than nine licensed architects and/or architectural interns, and seeks to raise public awareness of the value that architects bring to small projects.

More than 400 participants packed the party, where beer courtesy of Revolution Brewing was imbibed and the eight winning projects were exhibited alongside all of this year's entries. All of the award-winning projects and submissions from 2015 can be viewed online at **www.aiachicago.org/spa/**.

SUBMISSIONS FOR NEXT YEAR'S AWARDS WILL BEGIN IN FEBRUARY 2016.

## 2015 Roche Scholar to Study Impact of "Political Urbanism" in Ecuador

Janina Lissette Sanchez, a graduate student at the University of Illinois at Chicago College of Architecture and the Arts, has been awarded the 2015 Martin Roche Travel Scholarship by the AIA Chicago Foundation. Established in 1926, the Roche Travel Scholarship provides a Chicago architecture student with a $5,000 grant to complete a self-designed overseas independent study of a relevant architectural subject.

With the scholarship, Sanchez will be traveling to Ecuador to investigate and measure the effects of the country's Revolución Ciudadana (Citizen Revolution) on its urban development. After years of political turmoil, Ecuador has been transformed over a 30-year period of stability, in which "El Plan del Buen Vivir" ("The Plan for Good Living") has unleashed a massive amount of government investment in infrastructure and development. Sanchez will travel across the country to document how 'political urbanism' is manifested in the built environment.

The Martin Roche Travel Scholarship is administered and chosen by the board of the AIA Chicago Foundation, AIA Chicago's nonprofit charitable arm dedicated to supporting activities that promote the profession and the larger architecture and design community. Selection is based on individual merit as evidenced by strength and relevance of independent study plan, faculty recommendation, academic background, personal and professional achievement, and general indication of future promise in the profession.

PHOTO COURTESY OF JANINA SANCHEZ

*Janina Lissette Sanchez, the 2015 Martin Roche Travel Scholar, will travel to Ecuador to study its urban development.*

## AIA Chicago and Rebuilding Together Lead Volunteer Group

National Rebuilding Together Day is an annual event organized by the nonprofit Rebuilding Together, in which volunteers work together to renovate homes belonging to elderly, disabled and low-income homeowners.

AIA Chicago and Rebuilding Together Metro Chicago volunteers joined forces on Saturday, April 25, for a day of home repairs in Maywood.

Repairs this year included replacing tile, countertops and appliances in the kitchen, as well as adding grab bars and railings around the home. The group also painted four rooms and exterior trim, repaired damaged joists, and installed columns in the basement.

FOR MORE ON REBUILDING TOGETHER, PLEASE VISIT **WWW.REBUILDINGTOGETHER.ORG**.


PHOTO BY BILL GNECH, THE APPLE GROUP

*AIA Chicago and Rebuilding Together volunteers gather in front of the the Maywood home they repaired as part of National Rebuilding Together Day.*

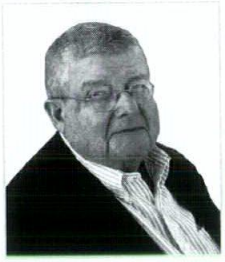
Applications are now being accepted for AIA Chicago's highly successful Bridge mentorship program, which pairs emerging professionals and AIA College of Fellows members. Applications are due Aug. 7, 2015, and the program will run from August to November.

**VISIT WWW.AIACHICAGO.ORG/COMMUNITY/BRIDGE FOR MORE INFORMATION.**

bridge AIA CHICAGO

PLEASE SEND YOUR NEWS TO:
info@aiachicago.org

**The Ragdale Foundation** announced the winning design for its third annual Ragdale Ring competition. "Shaw Town" by Design With Company, the architectural team of Stewart Hicks and Allison Newmeyer, was selected for its contemporary interpretation of the original Ragdale Ring open-air theatre designed by Howard Van Doren Shaw in 1912. The design includes specific architectural details from Shaw's buildings in the Chicago area, such as Market Square in Lake Forest and the Quadrangel Club at the University of Chicago. Design With Company was awarded a $15,000 production grant to fund the project and a design/build residency of up to three weeks at Ragdale in Lake Forest.



**Stanley Tigerman, FAIA,** was appointed as a fellow of the Society of Architectural Historians (SAH). Tigerman has been a member of SAH since 1978.

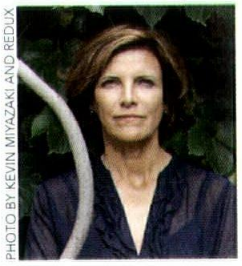
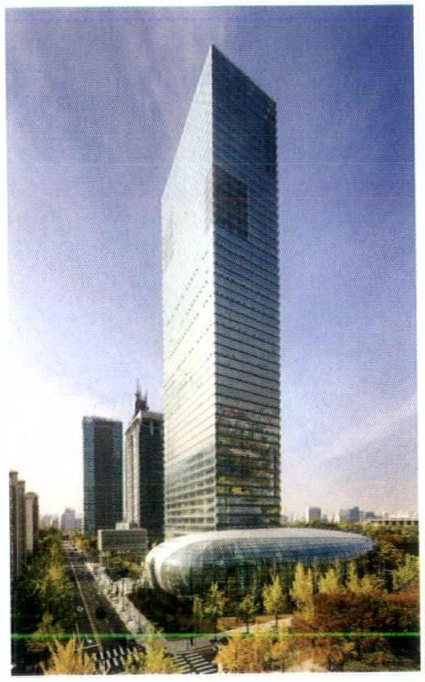


PHOTO BY KEVIN MIYAZAKI AND REDUX

Studio Gang Architects' **Jeanne Gang, FAIA, LEED AP,** (left) and **Carol Ross Barney, FAIA,** (right) of Ross Barney Architects, were appointed by Mayor Rahm Emanuel to the leadership commission for Great Rivers Chicago, a project with the Metropolitan Planning Council to develop a long-term vision for Chicago's riverfront.

**Adrian Smith + Gordon Gill Architecture** received two Civic Trust Awards for 2015. The British-based awards program honor projects that demonstrate high-quality architecture or design, have demonstrated sustainability, are accessible to all users, and have made a positive cultural, social or economic contribution to the community. AS+GG was honored for its FKI Tower (pictured) in Seoul, a 116,000-square-meter, 50-story tower with a unique skin to help reduce internal heating and cooling loads, and the Waldorf Astoria in Beijing, a 176-room hotel featuring a bronze exterior that creates a self-shading frame to minimize solar heat gain.




**Tigerman McCurry Architects** is designing the new education center at the Fernwood Botanical Garden and Nature Preserve in Niles, Mich. The 5,000-square-foot building features light-filled twin wings, Flora and Fauna, that are designed to allow for multiple views of the surrounding nature. Bowstring trusses expose the structural system, while corrugated metal siding slides across the curved roof and down the sides of the wings. Geothermal wells will be used to contribute to the building's sustainability.

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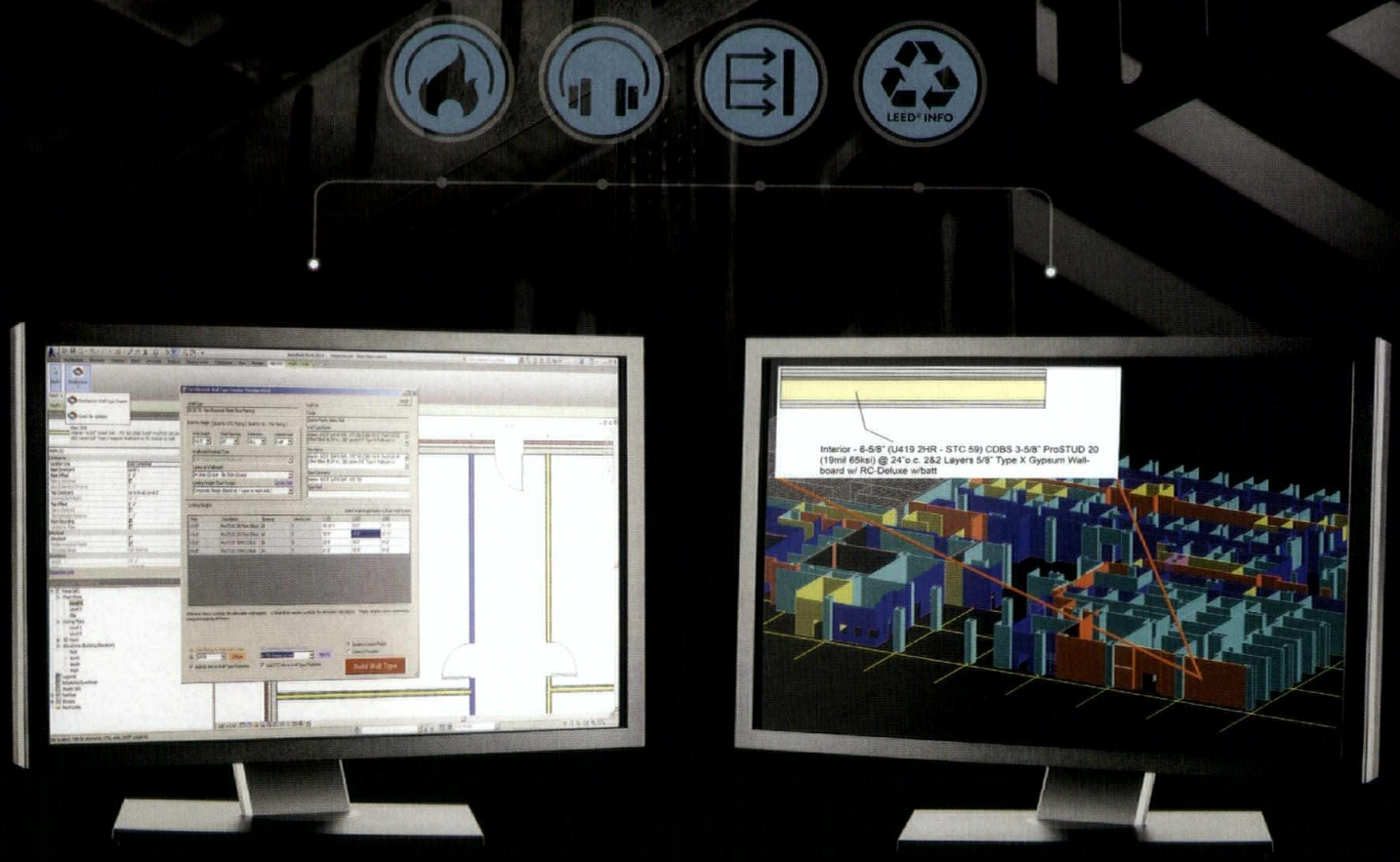


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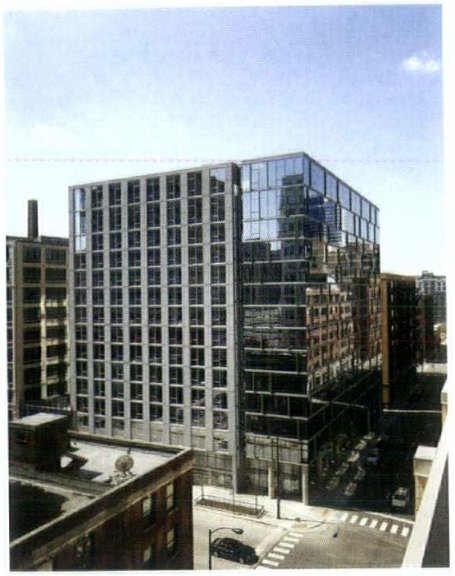
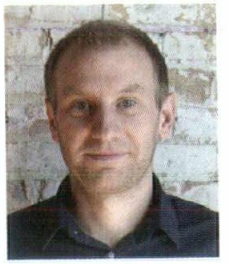


**Thomas Roszak, AIA,** designed the new JeffJack Apartments located at the corner of Jefferson and Jackson on the outskirts of the Loop. The 15-story, 190-unit building features a design that reflects the neighborhood's past while portending its future: a glass façade with bright green mullions fronting West Jackson Boulevard interacts with the Jefferson Street-facing façade that references the area's manufacturing heritage.

**VOA Associates** announced the following:

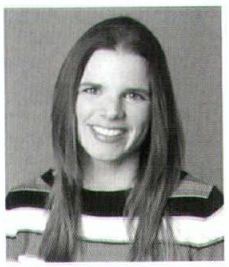
- Candace Small, AIA, LEED AP BD+C, EDAC, was promoted to senior associate. She will continue to work with VOA's healthcare clients.
- Bethany Johnson, AIA, LEED AP BD+C, was promoted to vice president.
- Grace Rappe, AIA, LEED AP, joins the Chicago office after serving as capital architect for Chicago Public Schools.

**Perkins+Will** received a 2015 National Planning Excellence Award for a Planning Firm from the American Planning Association. The award honors firms that have produced works of distinction that continue to influence the planning profession.



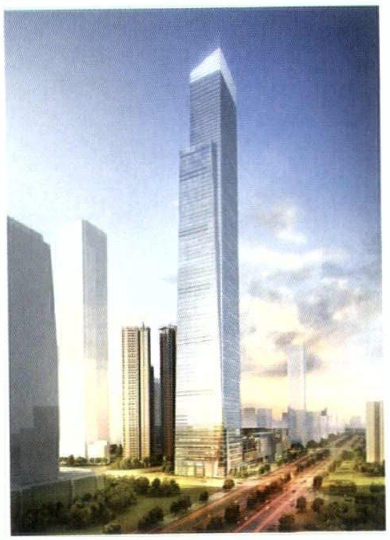
**Andy Lietz, AIA, LEED AP,** joined TEAM A as project manager in March. He was previously at bKL Architecture.


**HDR** was chosen to create the new simulated medical environment and healthcare technology incubator called the AMA Interaction Studio at MATTER. The facility will go beyond traditional medical office space and explore how new clinical concepts and technologies will influence healthcare interactions in a future physician practice. Central Region Healthcare Director, **Abbie Clary, AIA,** will serve as project principal.



**Susan Heinking, AIA, LEED AP O+M,** has joined Pepper Construction Co. as its new director of high performance sustainable construction. Heinking was previously at VOA Associates.

Construction on the **Goettsch Partners-designed** Nanning China Resources Center Tower has begun. The 255,000-square-meter, 445-meter-tall mixed-use project, located in the capital of the Guangxi Province, will be the tallest building in Nanning upon completion and was designed to LEED-NC Gold standards.



The Magnificant Mile Association has named **Randall Kurzman, AIA,** as co-chair of its Signage and Urban Design Committee. He was previously chair of the Practice Management Committee, and is founder and principal of Kurzman Architecture.

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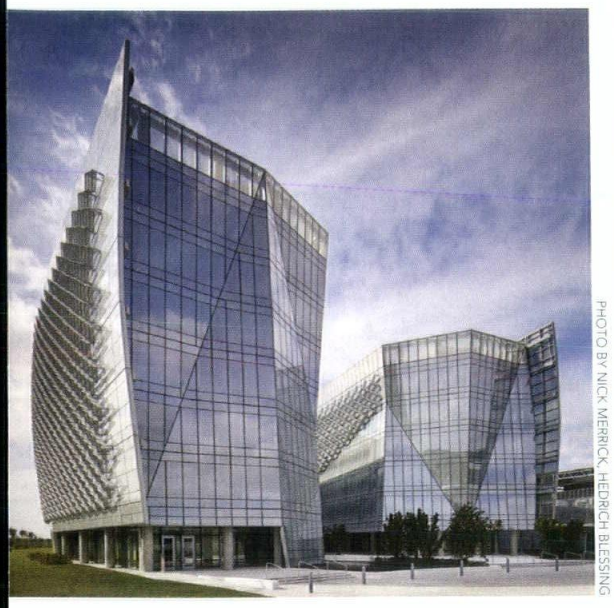


PHOTO BY NICK MERRICK, HEDRICH BLESSING

**Krueck + Sexton Architects** completed a 375,000-square-foot new federal office building in Miramar, Fla., for the FBI's Miami operations. Developed under the GSA's Design Excellence Program, the campus was designed to allow for maximum daylight and views and integration with the natural wetlands of the neighboring Everglades.

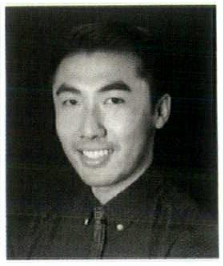
**Cook Architectural Design Studio**, led by Charles Cook, AIA, moved its headquarters to 150 N. Wacker.

**Ryan Biziorek**, LEED AP, was promoted to associate at Arup. He leads the Chicago branch's acoustics, AV and theatre consulting practice.

**Gensler** appointed the following as principals at the Chicago office:

- Robert Clough, FAIA
- Brian Vitale, AIA
- Tama Duffy Day
- Anne Gibson

**Valerio Dewalt Train Associates'** Hao Phung, Assoc. AIA, was appointed to vice president of the grand council at Alpha Rho Chi, a national professional co-ed fraternity for architecture and allied arts.



*"Abraham Lincoln: The Man" and "Jean-Baptiste Pointe DuSable" are part of the Talking Statues Chicago exhibit.*

Supported by the Richard H. Driehaus Foundation, the **Talking Statues Chicago** public art exhibit will open across the city in August. Those passing by a 'Talking Statue' can use their smartphone to scan a nearby plaque and receive a call from the likes of Abraham Lincoln or Copernicus. The statue monologues are commissioned in partnership with a group of Chicago theaters and produced by Sing London, a British arts organization. Chicago will be the first city in the United States to produce the exhibit, after it piloted in London in 2014.

**Michael Lundeen, AIA,** was appointed to principal at Legat Architects.

**Solomon Cordwell Buenz** received the 2015 Outstanding Sports Facility Award from the National Intramural-Recreation Sports Association for the Sports + Recreation Complex at Loyola University Chicago. The complex was built in four phases from 2011 to 2014 and is seeking LEED Silver certification.

PHOTO BY DAVE BURK, HEDRICH BLESSING

**RTKL's** Lori Mukoyama (top) was promoted to vice president and Emmanuel Bancesco (above) to senior associate vice president at the firm.

UI Labs' **SOM-designed** Digital Manufacturing and Design Innovation Institute opened this past May. The 64,000-square-foot facility on Goose Island will house university and industry partners in manufacturing and offers spaces for digital manufacturing innovation, research and collaboration, and workforce development.

PHOTO BY CHRISTOPHER BARRETT PHOTOGRAPHY

**Wight & Company** promoted James Mark, Jr., AIA, (left) and Brad Paulsen, AIA, (right) to senior vice presidents at the firm.

**Michael Schwindenhammer, AIA, LEED AP,** joined DLR Group as leader for the Retail/Mixed-Use Studios in the Midwest, and will also play a key role for the national retail team.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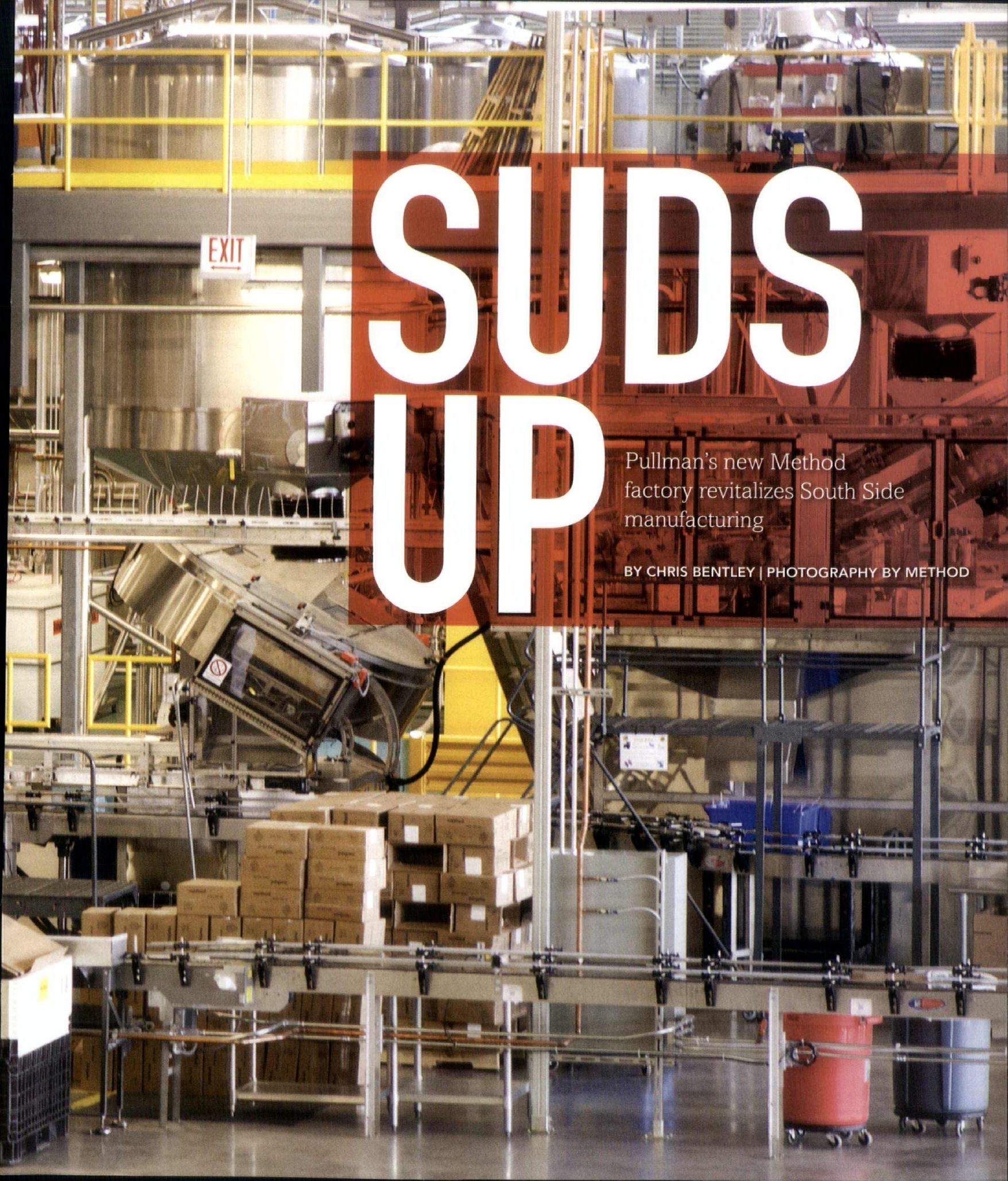



# SUDS UP

Pullman's new Method factory revitalizes South Side manufacturing

BY CHRIS BENTLEY | PHOTOGRAPHY BY METHOD

There are a few telltale signs that you're entering an industrial area.

The air gets heavy with an acrid odor, homes and shops give way to tundras of parking, smokestacks cut an imperial profile across the sky.

The new plant at 720 E. 111th St. defies those expectations.

Method Home Products manufacturing in Chicago's Pullman neighborhood projects an almost cuddly public presence, perhaps not too out of character for a green cleaning products factory already lovingly nicknamed "the South Side Soapbox." Instead of a smokestack, a wind turbine rises 230 feet into the air. The site is just blocks from a residential neighborhood, and its property borders a busy shopping center. And even better than lacking that typical industrial musk, it actually smells good—whiffs of baked bread waft over from the Dutch Farms plant next door.

"This is a modern factory. It doesn't conform to peoples' preconceptions of what a factory means," said Roger Schickedantz, LEED AP, director and architect at William McDonough + Partners, who led the design team of the project.

It's a fitting metaphor for their client, who also bristles at corporate convention. San Francisco-born Method calls itself a "pioneer of premium planet-friendly and design-driven home, fabric and personal care products." They make all-natural, brightly colored detergents from biodegradable ingredients, packaging it all in recycled plastic bottles bearing fragrances like white rosemary, ginger yuzu and the margarita-inspired lime + sea salt.

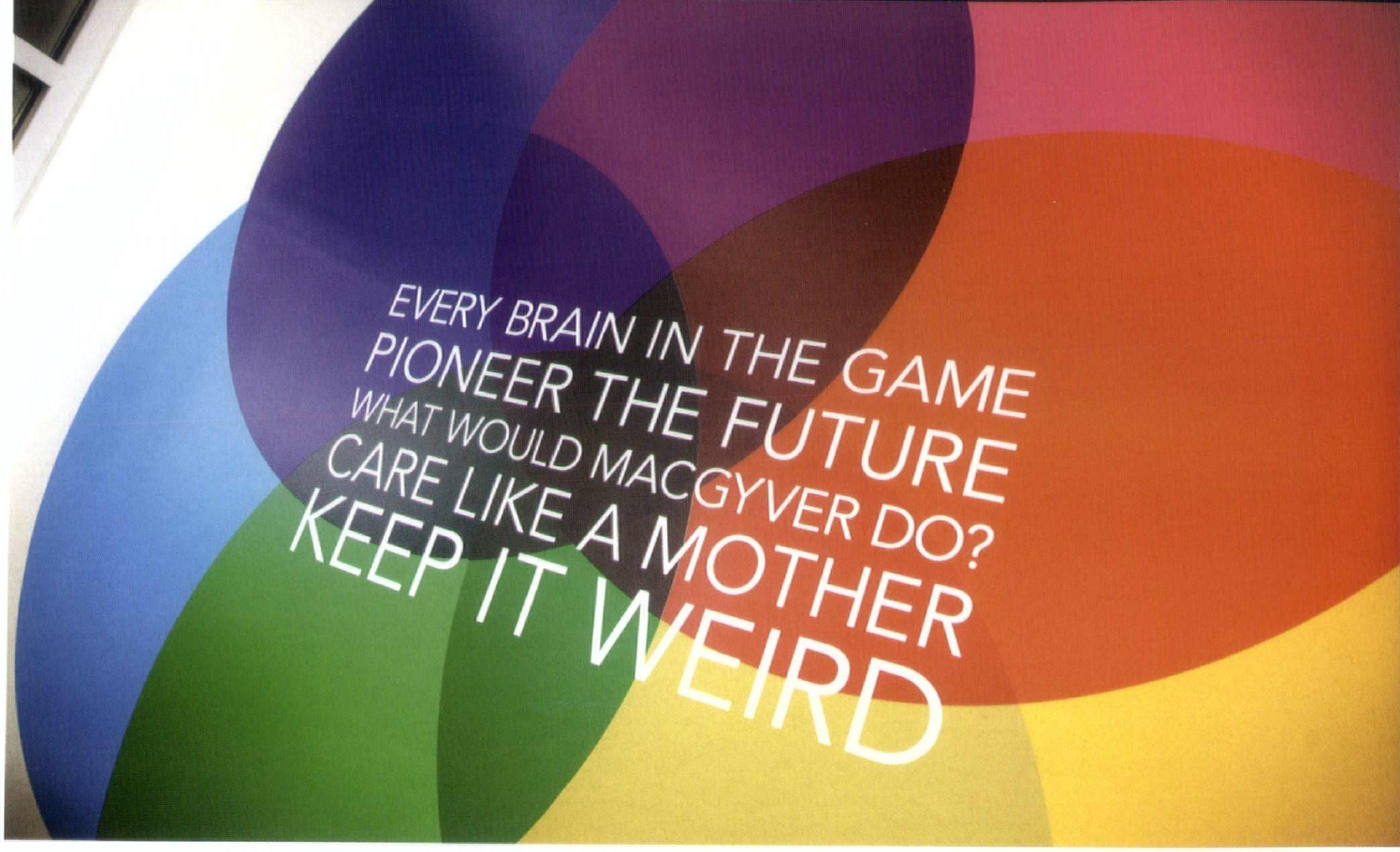
Just 15 years after Adam Lowry and Eric Ryan began mixing their own detergents in beer pitchers in their San Francisco flat, the childhood friends now have their own factory and roughly a third of the green cleaning market. Looking comfortable in jeans and white converse sneakers, Lowry recalls a time when Method had just $16 to its name. But the two Detroit-area natives persisted.

"I believe if you run your business more sustainably, it will help your bottom line," says Lowry, who left a job as a climate scientist at the Carnegie Institute to start Method.

In 2012 Method was sold to Belgian green cleaning giants Ecover, creating what they claim is the largest green cleaning company, with revenue reportedly more than $200 million. But they remain a registered benefit corporation legally beholden to social and environmental promises in

> "This is a modern factory. It doesn't conform to people's preconceptions of what a factory means."
>
> — Roger Schickedantz, Willam McDonough + Partners

The Method factory's façade presents a friendly, welcoming presence to the public, highlighting its position as a neighborhood anchor and as an example of a new type of manufacturing facility. Over 20 million bottles per year of Method products are anticipated to be produced at the facility.




addition to their bottom line.

The $30 million South Side Soapbox is Method's first plant and the only manufacturing facility the company owns. Its clean, white box—where 70 percent of production, or 20 million bottles of Method's overall production is expected to take place by the end of the year—is a far cry from the Ryerson Steel plant that occupied the site most recently. The principles that undergird the company's "humanifesto" ("good always prevails over stinky") echo throughout the building's design.

The company hired McDonough + Partners—Lowry says he met firm principal Bill McDonough through the architect's other company, McDonough Braungart Design Chemistry—and immediately identified with their "cradle-to-cradle" design philosophy. That closed-loop sensibility informs everything Method does. Plucking one of Method's teardrop-shaped bottles from a hopper in the hand soap assembly line, Lowry points out a barely perceptible gray tint in the plastic, an artifact of its 100-percent-recycled origins.

Most of the plant's electricity is generated on site. Between the 600-kilowatt, refurbished windmill—imported from Germany—and two massive "solar trees" whose photovoltaic panels track the sun's path across the sky, Method could actually gather more energy than it needs on some days. With net metering, it hopes to sell some of that back to the grid.

In addition to its low-impact, efficiency-minded layout, the plant's design is also driven by a desire for transparency. Managers and workers on the factory floor share the same break room, and are connected by sightlines through ample interior windows. Large, south-facing windows welcome daylight from a new park along 111th Street that helps Method retain all of its stormwater on site. McDonough's Schickedantz says he was surprised early on when the company decided not to erect even a chain link fence for security.

"They said they wanted to exhibit trust and belief in the community," Schickedtanz says, adding that much of the site's 16 acres are open to the public. "It's a way of tying the building into the neighborhood so that people feel engaged."

The project's most impressive greenery will be on its roof. New York-based urban farmers Gotham Greens is currently building out what they hope will be the largest rooftop greenhouse in the country. Forty-five local hires working more than 70,000 square feet of growing space will churn out leafy greens and other produce, a portion of which


Motivational credos are scattered throughout the manufacturing and office areas, reinforcing the social mission that undergirds Method's manufacturing process.

Ald. Anthony Beale says his office's "phones are jumping" with people interested in developing hotels, retail and possibly another factory in Pullman now that it's back in the public eye. He calls Method's local commitment "a perfect marriage" for community development already underway.

will go to local food pantries. The rest will be sold at grocery stores and farmers markets throughout the Chicago area.

The rest of the roof is gleaming white, deflecting solar gain. Elsewhere, splashes of orange, turquoise and purple brighten industrial details, from the loading docks to the park-facing façade. Despite its myriad design choices, from low-VOC finishes to separate circulation for the rooftop greenhouse, the Soapbox's design was intended to be humble, says Schickedantz.

"There's not a lot of elaborate design or features that would add a lot to the cost," he says. "We don't particularly see it as architectural with a capital A."

Already up and running with nearly 60 workers on the factory floor—the plant is expected to employ 100 at full capacity—Method is en route to fulfilling some lofty goals. They aim to run the industry's first LEED Platinum-certified plant, primarily hiring locals in a neighborhood hard hit by deindustrialization, crime and the foreclosure crisis.

Those hires include Barbara Harbaman, who grew up in Bronzeville but is a longtime resident of Pullman. She had bounced around from job to job, working at Michael Reese Hospital before its demolition and later for her church, but says the factory floor at Method is the first place she's been excited to come to work every day. "We're all like family here," says Harbaman, who describes her job as "a mover and a maker" on the assembly line.

Could the plant spur more manufacturers to return to Pullman? Andy Ondracek, the plant's senior director of manufacturing, hopes so. A Chicago native, Ondracek lost his job at Unilever when the multinational food company shut down its Melrose Park plant. He says Method is part of a new generation of manufacturers.

"It's the closest thing to working in the tech industry, but still in consumer products," he says.

Method's clean, technological savvy is a new direction for Pullman, but in a way it echoes the neighborhood's 19th-century origins as an industrial town serving the needs of railroad car manufacturer the Pullman Palace Car Company.

"There are a lot of parallels one could draw between 19th-century manufacturing and a 21st-century, environmentally sensitive plant," says Michael Shymanski, president of the Pullman Historic Society. In addition to an interest in state-of-the-art technology—Pullman had its own utilities, including a system that recycled wastewater to fertilize crops—Shymanski says Method follows a tradition of corporate responsibility.

"It's a corporate philosophy," he says. "George Pullman [Palace Car Company founder and the town's namesake] was trying to positively influence the lives of workers and their families and trying to create a good, healthy environment


Splashes of color, from the banners that ring the entranceway (above) to the loading docks (left), soften the industrial details.

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CONTRACTOR // SUMMIT DESIGN + BUILD

ARCHITECT OF RECORD // HEITMAN ARCHITECTS

STRUCTURAL AND MEP ENGINEERS // KJWW

CIVIL ENGINEER // SPACECO

LANDSCAPE ARCHITECT // NORRIS DESIGN

RENEWABLE ENERGY CONSULTANT // BURO HAPPOLD

HEALTHY MATERIAL ASSESSMENTS // MBDC

ROOFTOP GREENHOUSES // GOTHAM GREENS

GREENHOUSE MANUFACTURER/ INSTALLER // NEXUS

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for them to work and live."

As President Barack Obama put it last December, when he was in town to name Pullman's historic district a national heritage area, "George Pullman wasn't just the namesake of the place where his workers lived, he was also their boss, and their landlord, and their mayor, and their superintendent, and their sheriff." That paternalism drove him to create an empire from scratch, but it also bred an intransigence that sparked labor strikes, first after the 1893 recession and later when the Brotherhood of Sleeping Car Porters went on to become the nation's first union of black workers recognized by a major company. In the end the modern labor movement staked out hard-fought victories with Pullman as its proving ground.

Today some see the area as a crucible for grassroots neighborhood revitalization efforts. Ald. Anthony Beale says his office's "phones are jumping" with people interested in developing hotels, retail and possibly another factory in Pullman now that it's back in the public eye. He calls Method's local commitment "a perfect marriage" for community development already underway.

"When we went to Washington and lobbied for the national monument, we were able to hang our hat on the neighborhood revitalization," Beale says. "It lets you know the neighborhood is on the move." CA

# LET THERE BE LIGHTNESS

Erie Health extends lifeline to old buildings with adaptive reuse projects

BY DENNIS RODKIN | PHOTOGRAPHY BY CONNOR STEINKAMP, STEINKAMP PHOTOGRAPHY

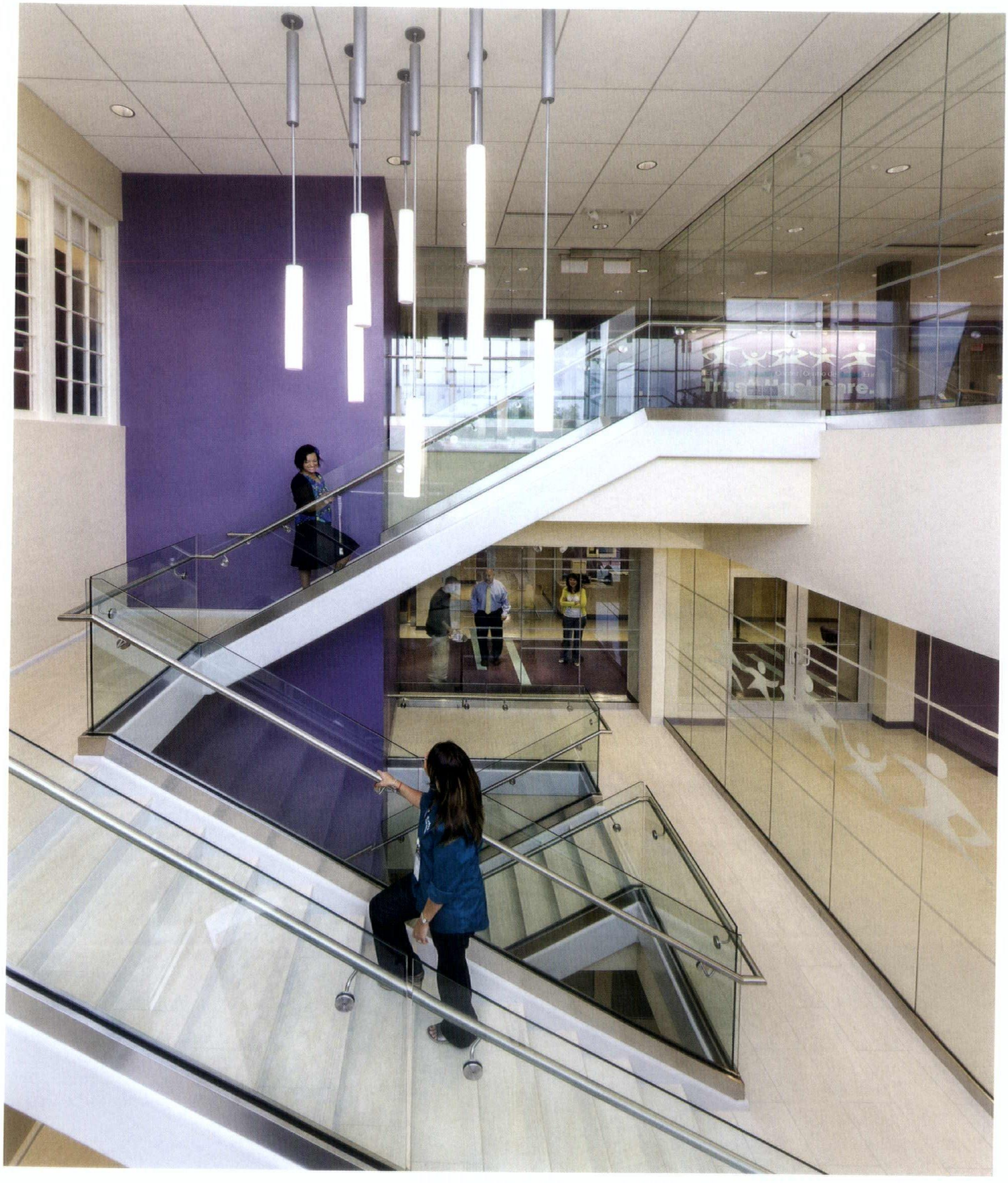
Public spaces in the Evanston and Waukegan facilities offer a bright welcome to patients. **LEFT** The window bay in Evanston was extant but broken up by dividing walls. **RIGHT** The staircase in Waukegan is housed in a new, glass-enclosed projection from the face of the original building.

When a team from Legat Architects and Erie Family Health Center walked through the mansard-roofed bank building that bulged out of an otherwise flat-fronted strip mall on Waukegan's Grand Avenue, it had stood empty for years.

Outside, it presented a dark and intimidating face to the parking lot, but inside it was full of marble, dark cabinetry and a grand curving staircase like one a bride might glide down in a movie wedding. Coupled with its central location—easily reached by bus, car, bike or on foot—the visiting team agreed it was a great spot to house Erie's first Lake County location.

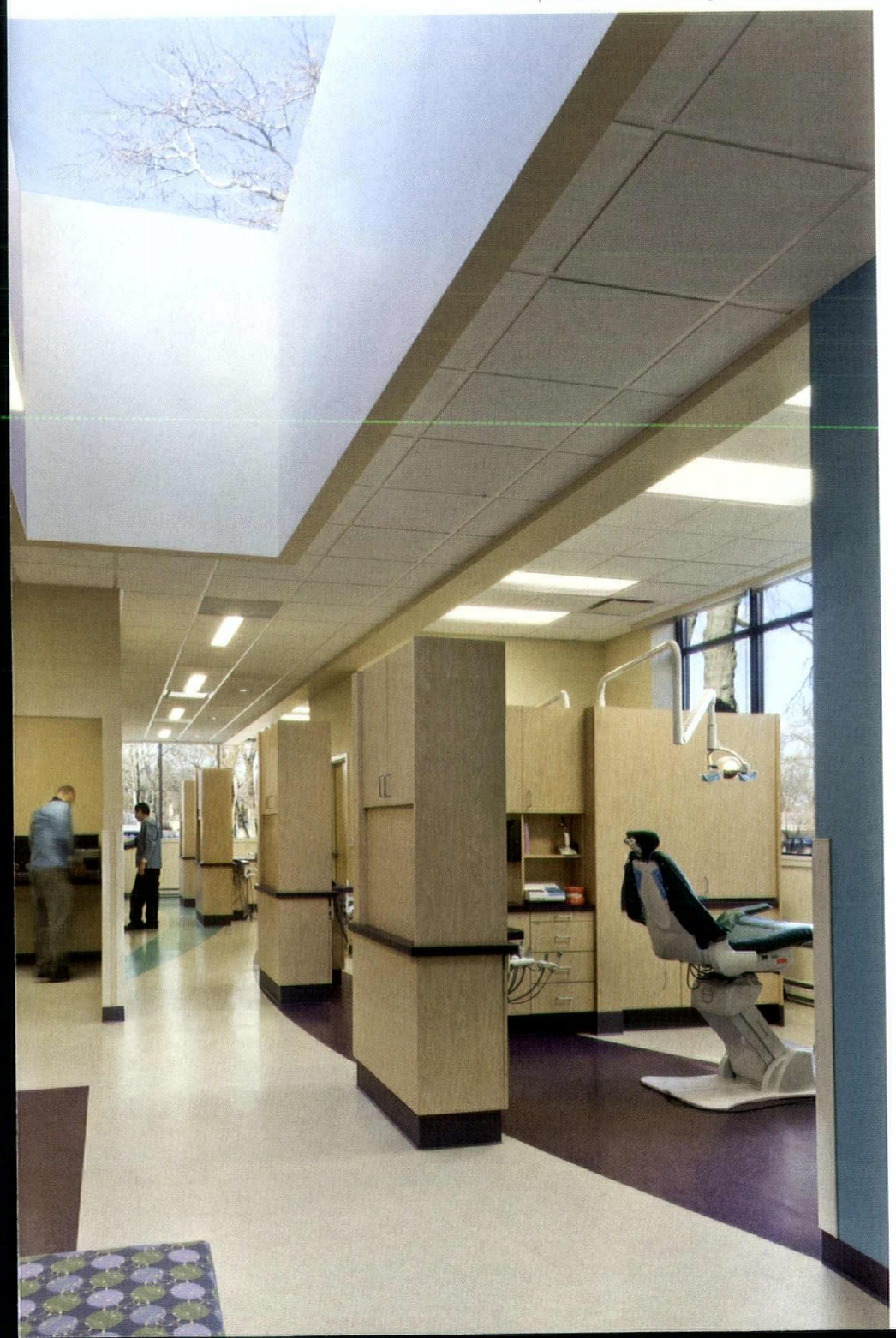
The Chicago provider of health and wellness programs for under- and uninsured people has 11 locations in the city that are "nestled within their communities," said Cheryl Schutte, director of health center operations for Erie. "For us to be here, central to this community in Waukegan, was the best idea."

The challenge for Legat, then, was to flip the building's personality from inward-looking, like a bank that wants to present a feeling of clubby security, to outward-looking, like a clinic whose mission is to invite and welcome people who may have felt left out elsewhere.



The challenge for Legat was to flip the building's personality from inward-looking, like a bank that wants to present a feeling of security, to outward-looking, like a clinic whose mission is to invite and welcome.

The design of the new facilities emphasized openness, to inspire confidence among the clinics' patients.



Out went the marble, the dark wood and the bridal staircase. And out went the front wall of the building—as in out toward the street, about three feet farther than the building used to go. A glass-enclosed projection two stories high brings transparency, natural illumination and a sense of motion to an otherwise traditional façade.

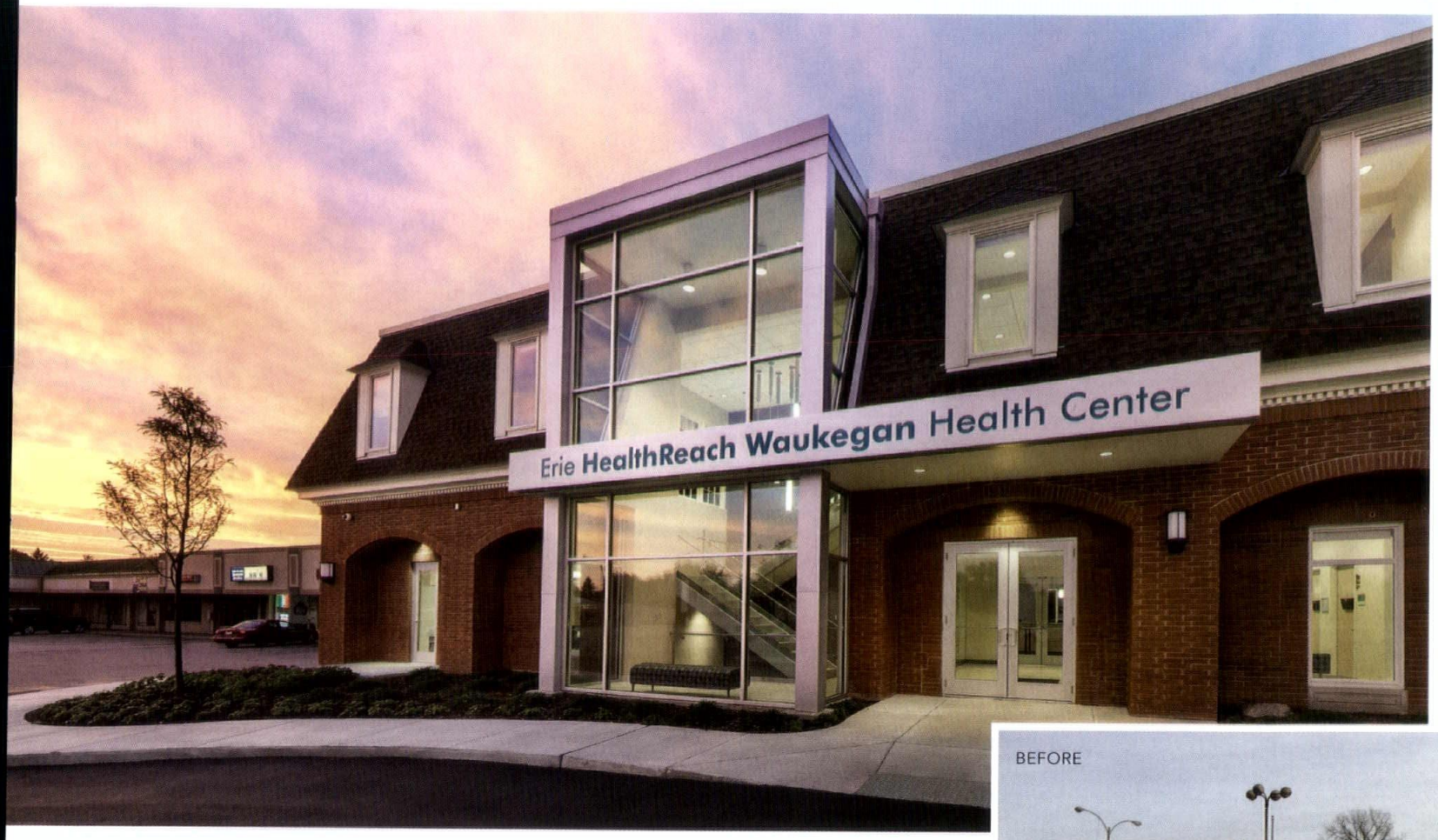
"It's a beacon of sorts that injected some life into a dormant building," said Casey Frankiewicz, AIA, LEED AP, the Legat principal who captained the design. "Cost kept us from doing a completely new envelope, but we could focus the change with one large piece that said something different was going on inside this building."

Standing about 30 feet down an internal hall from the new piece of the building, Frankiewicz points out daylight that has penetrated this far. "It used to be very dark back here," he said. "All very shut off from the outside."

This sleek modernist insertion into a throwback brick façade set the tone for the rest of Legat's transformation of the 25,000-square-foot former bank, which opened in July 2014. Throughout the interior are light finishes and an emphasis on openness, but not a complete obliteration of the building's old details. Bank vaults on two floors, which would have been expensive to rip out, were polished up and are now used as staff spaces; and a long horizontal window where drive-up tellers used to work now frames a neat view of a new landscaped yard beside the building.

Legat worked a similar turnaround for Erie in Evanston a year earlier, turning a 1940s industrial space that had been a warren of rooms into a crisp new health facility that would be Erie's twelfth. There, the building had a large bowed glass wall that had been partitioned up so that the windows illuminated several small rooms. Legat combined them into a large, sunny lobby that offers an abundant welcome. That 16,000-square-foot rehab was completed in November 2013, with the same light and open character.

In both cases, Frankiewicz said, "the building is





The insertion of a two-story glass enclosure enlivened the dreary façade of the former bank building in a strip mall.

Reaching out has been integral to Erie Family Health Center's mission since it was formed in 1957 in Chicago's West Town community by a group of Northwestern University physicians. The organization now serves about 12,000 patients in 44,000 visits a year.

reaching out to the community."

Reaching out has been integral to Erie Family Health Center's mission since it was formed in 1957 in Chicago's West Town community by a group of Northwestern University physicians. The organization now serves about 12,000 patients in 44,000 visits a year, Schutte said. Its clinics provide primary care, dental care, behavioral health counseling, education on pregnancy, diet and fitness, and other services. "Rather than being reactive to conditions or to illnesses, they promote a different, preventative lifestyle," Frankiewicz said.

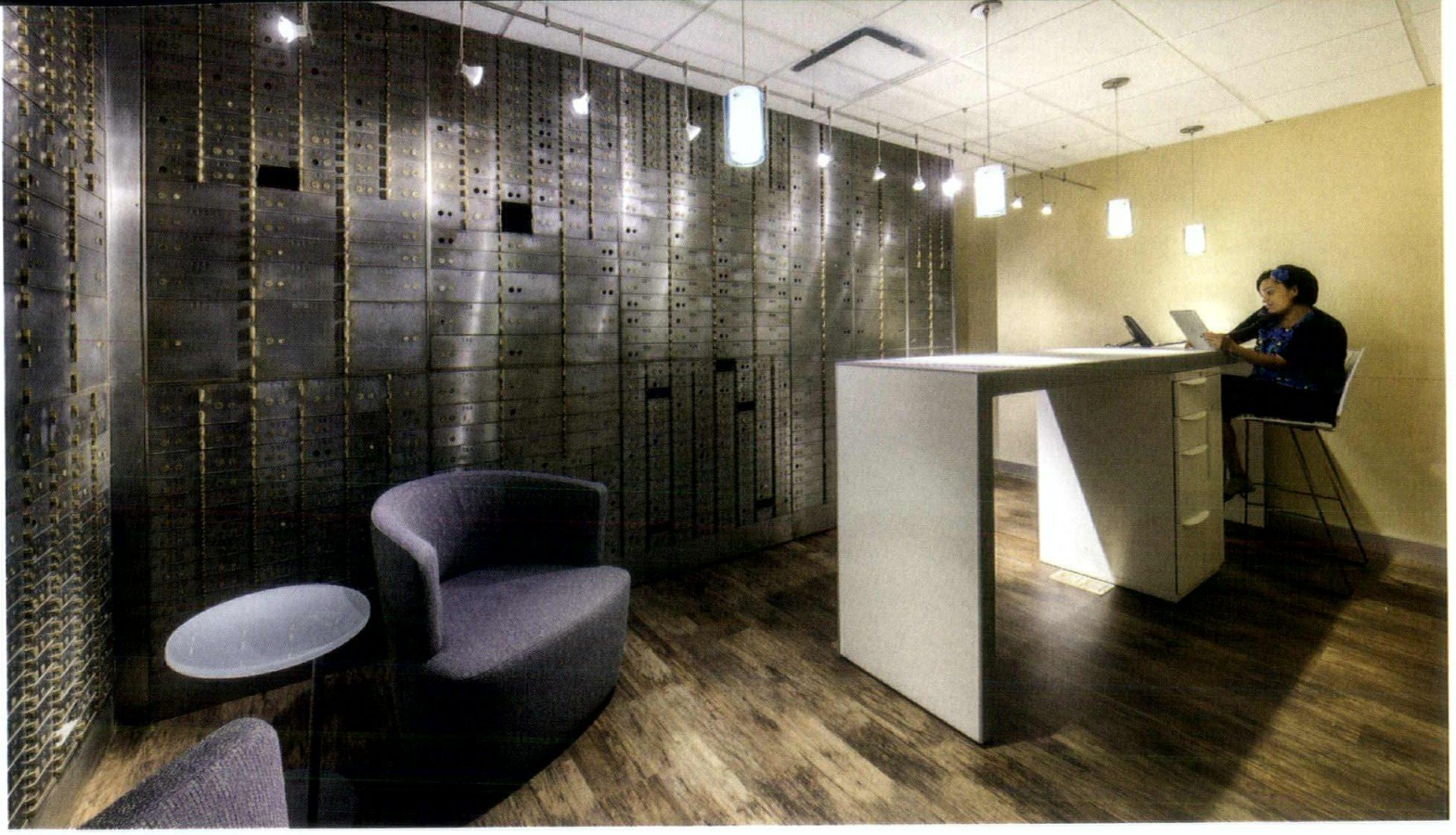
The glass addition in Waukegan promotes that character in more than just a visual way. The staircase it contains, rising from a sunny mini-lobby at street level up to the main lobby one flight up, is so well located—and so attractive—that Schutte said patrons frequently skip the elevators.

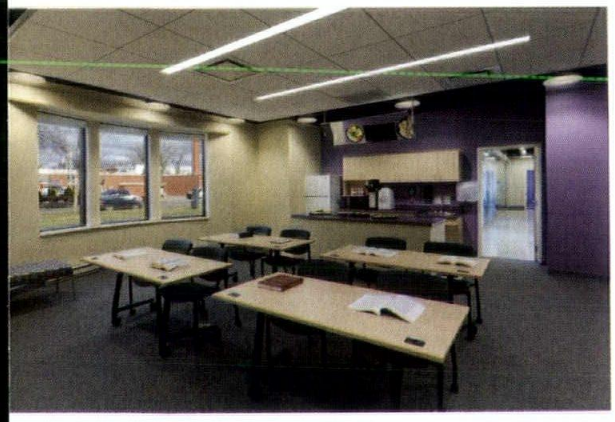
Both the Waukegan and Evanston centers sport the purple and blue of the Erie brand palette as well as big servings of glass, both transparent and frosted. Nurses' stations, physician work areas, dental bays and other spaces are largely open, with suggestions of enclosure, such as vertical strips of frosted glass or colored soffits that extend down a wall and turn to become a tabletop. Generally, the two facilities' interiors are quite similar, the intention being to provide a familiar setting for patients who might have reason to switch from one Erie facility to another, Schutte said.

But the Waukegan facility has two holdovers from its original incarnation that can't be replicated at any of the other clinics: the re-purposed vaults.

With concrete walls about 15 inches thick, "they would have been hard to demolish," Frankiewicz said, "so we decided to have some fun with them."

The steel doors, fittings and fronts offside





**ABOVE** In the Waukegan building, an employee lounge has a unique wall treatment held over from its old use as a vaul—the safety deposit boxes' old doors, and voids where some doors were missing.

**BELOW** Along with exam rooms and other medical spaces, Erie's facilities include community rooms like this one in Waukegan, complete with a kitchen for demonstrations of healthful cooking.

deposit boxes were all cleaned up, but whatever was missing wasn't replaced. As it is now, the steel surfaces gleam, but there are holes where some lock sets, safe deposit boxes and other details would have been. "It gives you a feeling of history, of some things being taken away and not brought back," Frankiewicz said.

For safety reasons, each vault's door has been affixed to the wall next to the doorway (to prevent the possibility of a door being shut inadvertently), but otherwise, a visitor has the impression of walking into a polished-up old bank vault, the kind of thing that might happen in a hip restaurant or nightclub, not in a health clinic.

"We were fortunate that they were too heavy to get rid of," Schutte said.

Another hint of the building's former identity was kept for no reason at all other than for the heck of it: two Federal Deposit Insurance Corp. stickers are still affixed on a window.

Built out by Skender Construction, the Waukegan and Evanston facilities were both designed for expansion, either with space finished but not yet used or with some space left unrehabbed until it's needed. Both contain community rooms for teaching classes in nutrition, prenatal care and other topics, and tech hookups to the Chicago facilities for web conferencing and teleconferencing across the Erie network.

All those connections are important, but as Schutte said, Legat's work on the two buildings already established a primary connection for each facility: "They look out to the community and say, 'Welcome.'" CA

OWNER // ERIE FAMILY HEALTH CENTER

ARCHITECT OF RECORD // LEGAT ARCHITECTS

GEN. CONTRACTOR // SKENDER CONSTRUCTION

MEP ENGINEER // GAGE CONSULTING ENGINEERS

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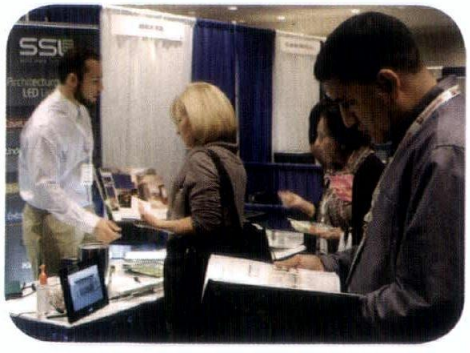


# An Overlooked Modernist:
# The Work of Edward Dart

## A LOOK AT A LASTING MIDCENTURY LEGACY

TEXT AND PHOTOS* BY
MATTHEW SEYMOUR
*UNLESS OTHERWISE NOTED

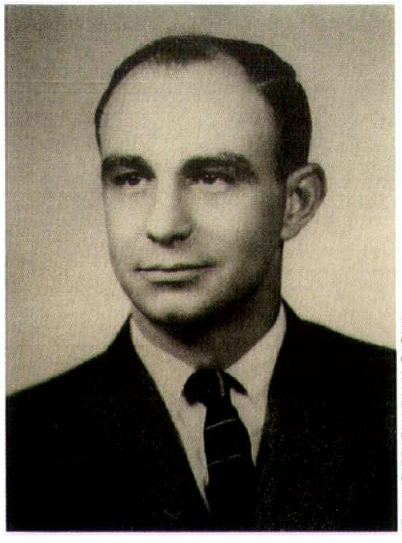


PHOTO VIA AIA MEMBERSHIP FILE

Edward Dart, date unknown

Although best known for his distinct church designs, and at one time referred to as Chicago's leading church designer, midcentury modernist Edward Dart's work never rested on just one type of project. His buildings—located primarily in the Chicago area—include numerous homes, churches and several commercial buildings. Dart carved out a signature style, namely due to his sensitivity to materials and understanding of each project's site, that left a defining contribution to the modernist convention. Despite this broad body of work, Dart remains largely unknown outside of the Chicago architecture community.

Edward Dupaquier Dart was born on May 28, 1922, in New Orleans. Following high school, Edward Dart attended the University of Virginia and eventually Yale School of Architecture. The architects Dart was exposed to while at Yale introduced him to the modern architecture of the 1940s and ultimately influenced the development of his design philosophy. These architects included Pietro Belluschi, Marcel Breuer, Richard Neutra, Louis Kahn, Eero Saarinen and Paul Schweikher.

When Dart finished school in 1949, he began working for Edward Durell Stone in New York City. Shortly after, Dart moved to Chicago to begin working for Paul Schweikher, whom he knew from Yale, at the firm of Schweikher and Etling in suburban Roselle. Dart worked with Schweikher for only a few months and then began practicing on his own. In the 14 years that Dart had an independent practice, he designed 88 buildings.

In 1965, Dart joined the prominent firm of Loebl, Schlossman & Bennett, which then became known as Loebl, Schlossman, Bennett & Dart. Dart designed 31 buildings with the firm, including what is considered to be one of his best designs—St. Procopius Abbey in Lisle, completed in 1970. In the same year, he became the principal architect of Water Tower Place on Michigan Avenue in Chicago. Dart, who became a member of the American Institute of Architects in 1954, was named a fellow of the AIA in 1967.

### CHURCH ARCHITECT

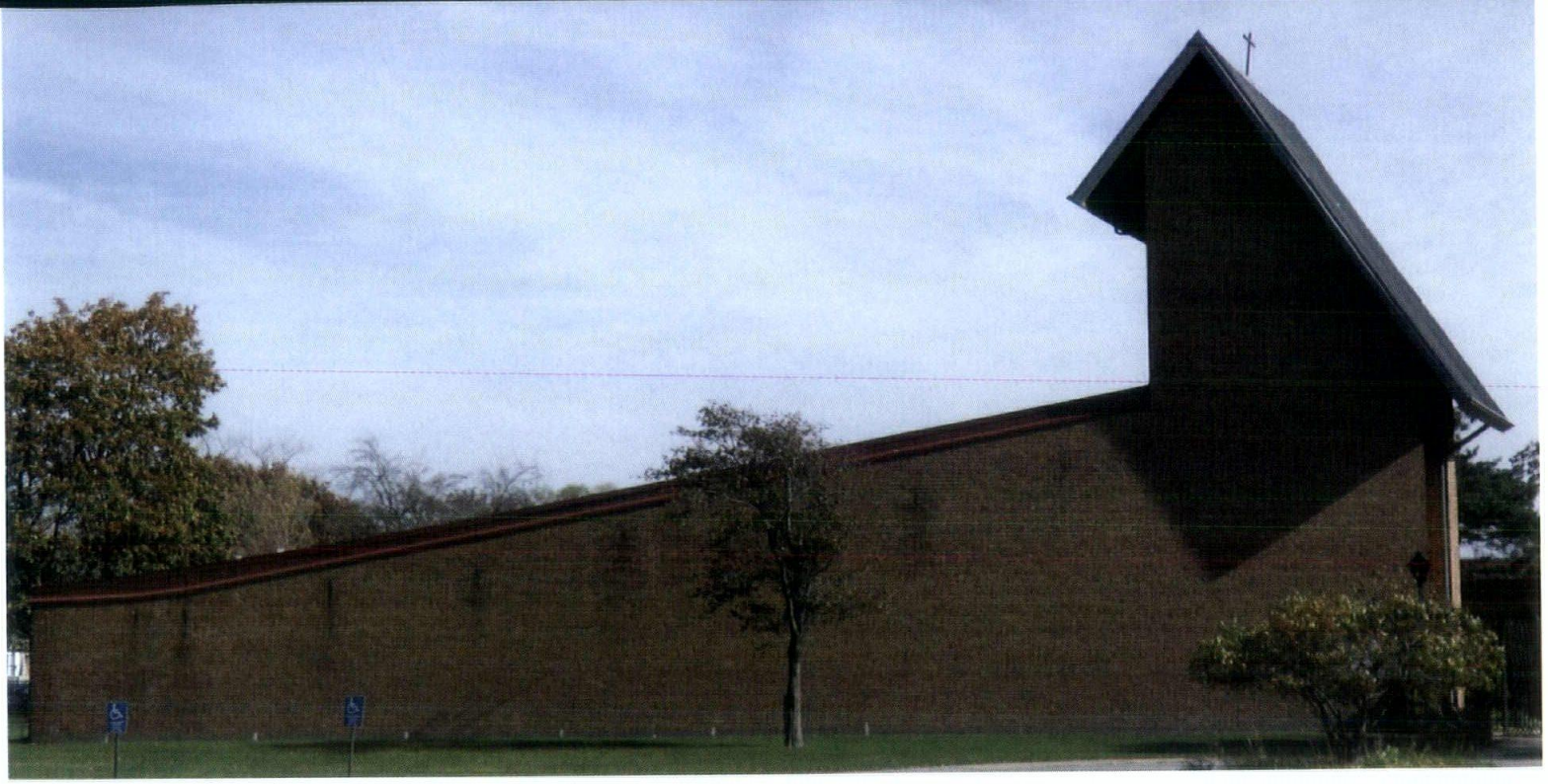
From the early 1950s to the mid-1960s, Edward Dart designed 26 churches that were constructed primarily in the Chicago area. The majority of the churches were designed in developing mid-century communities, and were smaller buildings with small but growing congregations.

Most churches are clad in Chicago common brick, yet no two Dart-designed churches are the same. Lansing Presbyterian, for example, features an asymmetrical folded roof, and the walls of the sanctuary are set at angles. The House of Prayer Church in Country Club Hills is a series of blocky masses. St. Michael's in Barrington features a unique bell tower that flares out at the top.

Perhaps the most intriguing aspect of Dart's church designs are hidden light sources, which allow cascades of natural light to wash down the interior brick walls of sanctuaries, creating an ethereal feeling in the space. At First St. Paul's in Chicago, the hidden clerestory windows on the rear portion of the half-cylinder-like tower portion light the altar area from above. Hidden side windows light the altar at St. Michael's, while the rest of the sanctuary is lit by clerestory windows. At St. Ambrose's in Chicago Heights, the asymmetrical roof allows for clerestory windows and, to allow more light into the sanctuary, Dart incorporated hidden windows into the eaves.

Windowless walls of common brick and stripped-down decor, as can be seen in the

Sanctuary at St.
Procopius Abbey Church,
1967-1970, Lisle



Lansing Presbyterian Church, 1961, Lansing

majority of Dart's designs, forced congregants to focus on worship. Most of his churches only feature clear clerestory windows that provide a distinct light source, but also do not allow any distractions from the outside world. The Dart-designed sanctuaries from the early part of his career are smaller, open spaces that ultimately allow for more personal—and spiritual—interaction.

## DART RESIDENTIAL DESIGN: DISTINCTIVE SITES, MATERIALS AND SPACES

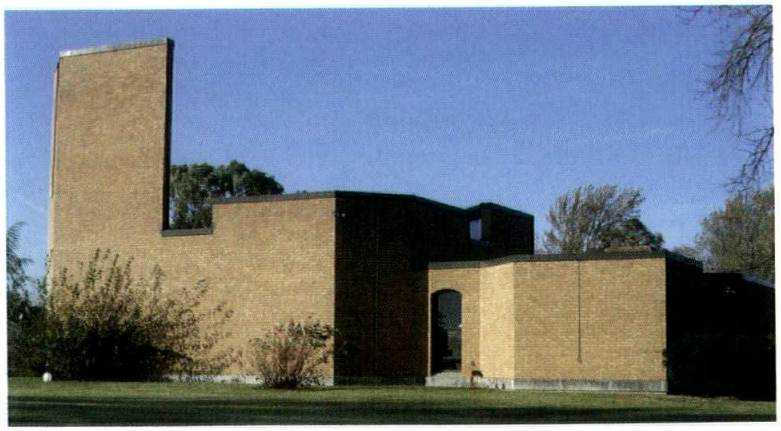
Dart designed over 50 custom homes in the Chicago area before joining Loebl, Schlossman & Bennett. Each house is distinct and incorporate natural materials like brick, wood and stone, inside and out. The majority of the residences are situated carefully on their sites to allow the inhabitants to interact with nature through large windows.

A notable residence from this part of Dart's career is the Henry K. Beard House from 1956. It was featured in several magazines and was an AIA award winner in 1960. Dart combined Chicago common brick with steel and glass to create a distinct modern house. The overall form of the house is horizontal, which is emphasized in the broad overhangs and the flat roof, and it maintains a strong connection with the ground. The gently sloping site, which features several towering oaks, allows for an open parking area beneath the house, which is initially hidden from view as the house is approached.

In 1962, Dart designed the Richard Henrich House in Barrington, which is strategically perched atop a wooded hill overlooking a lake. The three-story residence is clad completely in Chicago common brick and has floor-to-ceiling windows throughout. Verticality is stressed and

**LEFT** House of Prayer Lutheran Church, 1963, Country Club Hills

**RIGHT** Henry K. Beard House, 1954, Barrington"



can be seen in the brick piers, yet there is a strong horizontal presence that can be seen in the flat roof surfaces at different levels.

The interior of the house is a series of spaces that flow into each other, and like the exterior, both verticality and horizontality are stressed. For example, the stairway to the upper levels is open and leads to catwalks on both levels that are open to the space below. Interior floors are covered in slate and wood, and walls are clad in brick and plaster. The house represents Dart's views on the use of materials and space—from the site to the exterior massing and the interior spaces, every aspect of the house has been designed to the greatest extent possible.

One of the highlights of Dart's career was the 1964 home that Dart designed for his family on Dundee Lane in Barrington. Situated on a knoll overlooking a large pond, the house stood like a monument to Dart's concept of what architecture could be. The upwardly projecting central bay featured an asymmetrical folded roof with a side-facing gable. Protruding wings on either side of the central bay angled gently downward as though they were extensions of the hillside they were built upon. Chicago common brick and wood shingles were the primary exterior cladding materials. Unfortunately, the exterior of the house was altered beyond recognition in 2010.

The interior of the home was a series of spaces that flowed into each other. Wood posts and beams criss-crossed the large, main living space and Chicago common brick carried in from the outside. The house was built on the foundations of a demolished barn, so it is possible that the interior space was designed with barn features in mind. John Schlossman, who became a friend of Dart's when Dart joined the architectural firm of Loebl, Schlossman & Bennett, said of the house on Dundee Lane: "The only client he [Dart] had to please was himself, and his unique attitude toward interlocking, open spaces and materials—which Ed would say 'bore the imprint of man'—was in great evidence."

The incorporation of site, materials and use of space—a design philosophy—are what Schlossman was alluding to when he commented on the Dundee Lane house. Dart's prolific career is defined by this distinct design philosophy. CA

*Matthew Seymour is a project manager for Central Building and Preservation in Chicago, who completed his master's thesis in preservation on the work of Edward Dart.*

Richard Henrich House, 1962, Barrington

Edward Dart House, 1964, Barrington

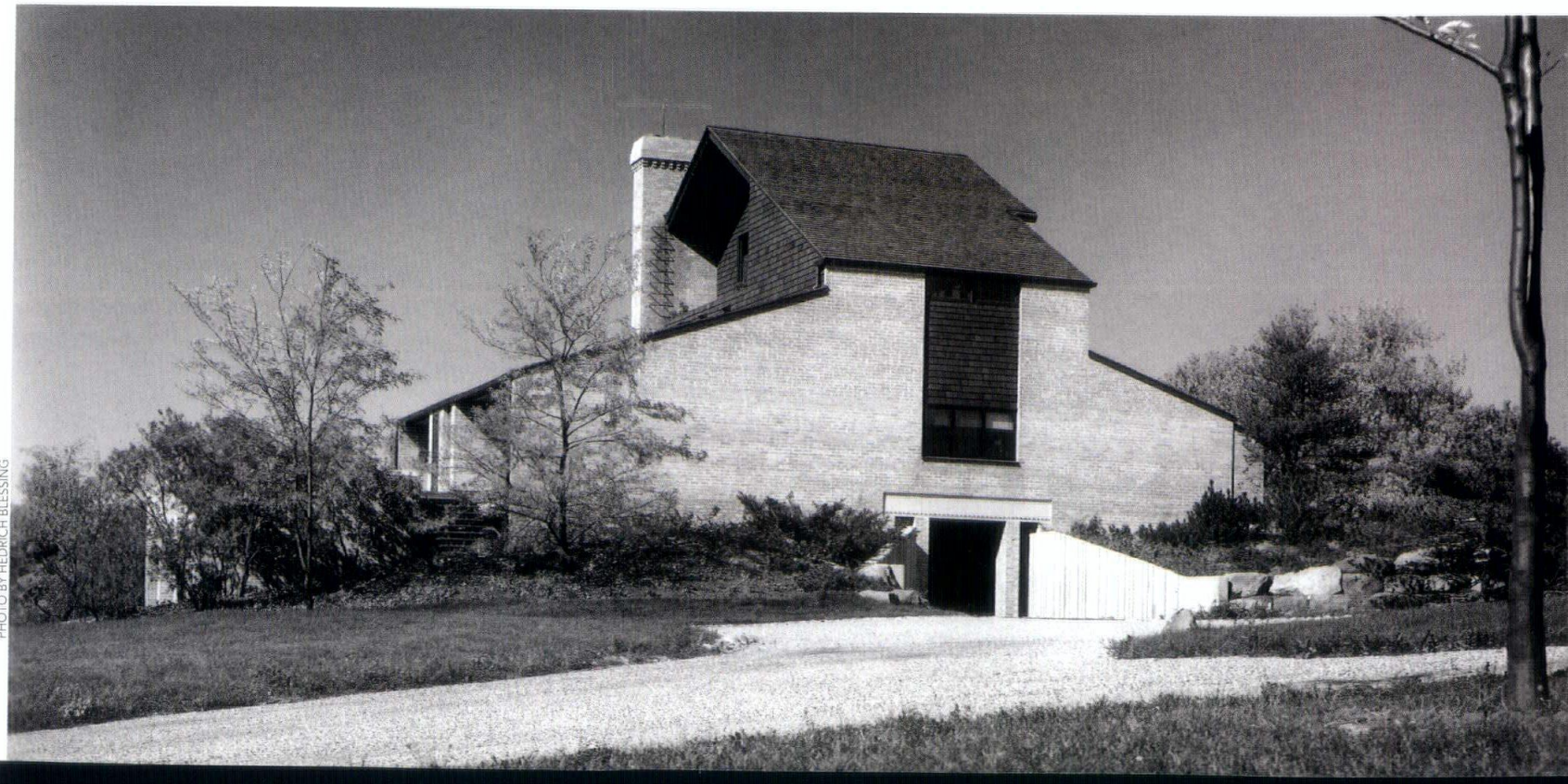


PHOTO BY HEDRICH BLESSING

# USING ENERGY MODELING TO INCREASE PROJECT VALUE

BY THULASI NARAYAN, LEED AP

1 CREDIT

**LEARNING OBJECTIVES**

After reading this article, you should be able to:

- EXPLAIN the basic concept of energy modeling as a process that allows project stakeholders to understand the predicted energy use/energy cost of a building before it is actually built.
- DISCUSS three attributes of a successful project energy strategy, including pushing the owner's and project team's aspirations while demonstrating successful payback over time.
- DESCRIBE how to create a project's energy-use profile using a variety of available options.
- LIST the key factors to be considered in setting up an effective request for proposals for an energy-modeling bid.

NOTE: This article is excerpted from the February 2014 issue of *Building Design+Construction*. For the complete AIA/CES course—and to complete the 10-question exam for the opportunity to earn 1.0 learning units—go to:

**WWW.BDCNETWORK.COM/ENERGYMODELING**

**CREATING AN ENERGY MODEL AND COST PROFILE EARLY IN THE DESIGN PROCESS**—using lightweight tools and resources such as energy use intensity data, Department of Energy (DOE) commercial benchmark model data, photovoltaic and solar thermal sizing tools, and ASHRAE, Core Performance and other energy codes—can provide direction to the building team and generate consensus around an energy-efficient design that saves time and money.

Energy modeling is familiar to most building teams involved with green building projects or those that are applying for utility financial incentives. This course explores how to increase project value through energy modeling and shows how to identify the most viable energy strategies for your project. It details why it is important to conduct energy modeling during early design, and how to conduct quick payback and net present value analyses.

Energy modeling is a process that allows project stakeholders to understand the predicted energy use and energy cost for a building's operational phase before it is actually built. It involves creating a thermodynamic computer model that mimics a building's energy need, given the fluctuating external weather, the occupants' usage patterns and functions in the space, and the energy used by building systems such as lighting and air conditioning.

The outcome of the energy-modeling process will allow the building's stakeholders to weigh the long-term cost impact of design decisions and arrive at an energy-efficient design that has a positive cash flow over time. More importantly, such a process guides building teams in creating a robust energy strategy for the project that aligns with the overall project goals and feeds into the project's retail marketing and long-term valuation strategy.

The most successful energy strategy has three attributes:

1. It should push the boundaries of the owner's and project team's aspirations while demonstrating successful payback over time.
2. It should have the backing of all project stakeholders.
3. It should align with the project's overall sustainability goal.

The best time in the design process to maximize all three attributes is in the Schematic Design (SD) stage. During SD, the design and ownership team members are in a highly collaborative mode. The design is not yet set in stone—there is room for creativity and change. The budget is somewhat flexible and provides an opportunity to shift costs between different building components.

This creates a valuable opportunity for the building team and the owner to develop a cutting-edge energy strategy that aligns with the project's overall sustainability goal and thereby creates a personal stake for everyone to see the strategy succeed.

By front-loading the energy-modeling process to create an energy strategy for the project, individual energy measures tend not to get deleted as the design progresses. The selected energy measures become a tightly knit set that complement each other with a pre-established understanding of the first cost and payback involved.

Compare this to compliance modeling, which typically starts at the Construction Drawings (CD) stage, is very reactive and tends to adopt a scarcity approach to find incremental energy savings.

With SD energy modeling, compliance modeling can be used as a method to backcheck strategy achievement and demonstrate compliance with codes or to utilities for financial

incentives. In addition, compliance modeling will become less arduous, since a basic model would already be available that can then be updated during 100% Construction Documents for submission to the appropriate entity.

Note: Compliance energy modeling is generally conducted at the end of the design stage to demonstrate the design energy-cost savings compared to the local energy code or other standard energy codes such as ASHRAE.

## THE 9 STEPS TO EFFECTIVE SD-LEVEL ENERGY MODELING

In order to create a highly effective energy strategy, the building team and the owner must first determine if the energy strategy for the project should include any predetermined energy goals, such as a specific energy-savings target for utility incentives or code compliance, green building certification or the owner's marketing strategy. The process can then be broken down into nine steps:

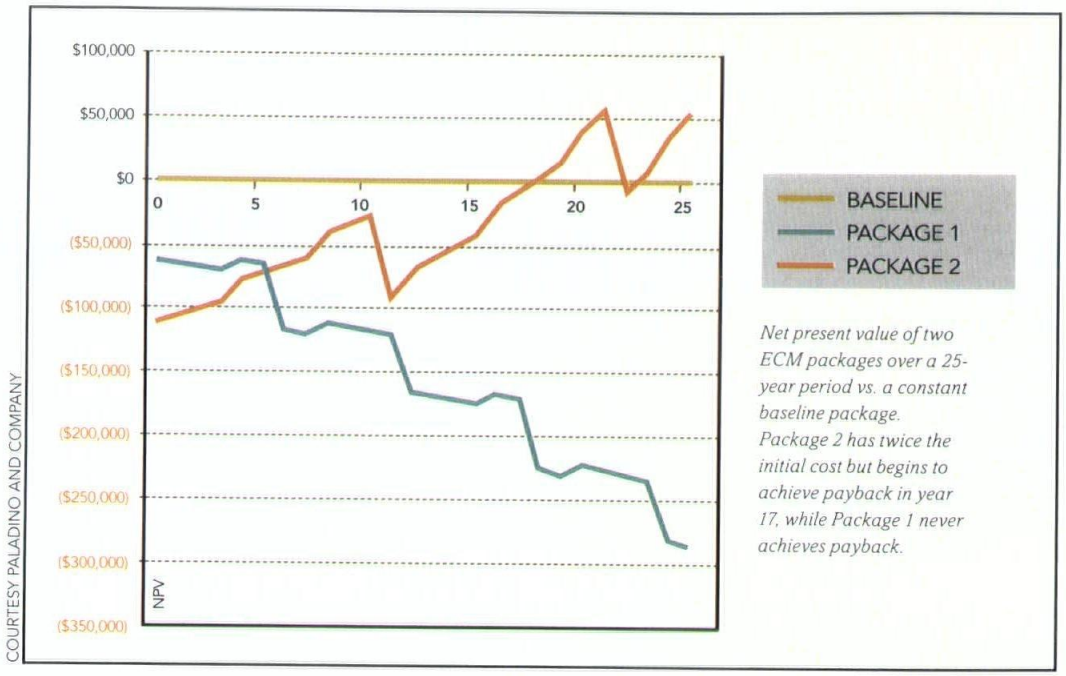
**1. Create the project's energy use profile.** Creating the energy use profile will highlight where the building's highest energy-impact areas are. For example, in an office building, the plug loads and cooling energy use are usually the major end uses; however, if a building has a large public/private garage, the garage lighting can represent as much as 10-15% of overall project energy use.

**2. Identify energy conservation measures (ECMs) for the major end uses.** Review the energy profile to identify the project's two or three major end uses, which may vary depending on the building program. Then research ECMs applicable to these major end uses. It is very important to develop a list of ECMs that your building team can use as a starting point for brainstorming an energy strategy for the project. The DOE and its Office of Energy Efficiency & Renewable Energy (EERE) provide good resources for ECMs that apply to different building types. You should also review case studies on the USGBC website to gain insights into proven measures that are being used currently. See Resources at www.bdcnetwork.com/energymodeling/resources for specific links.

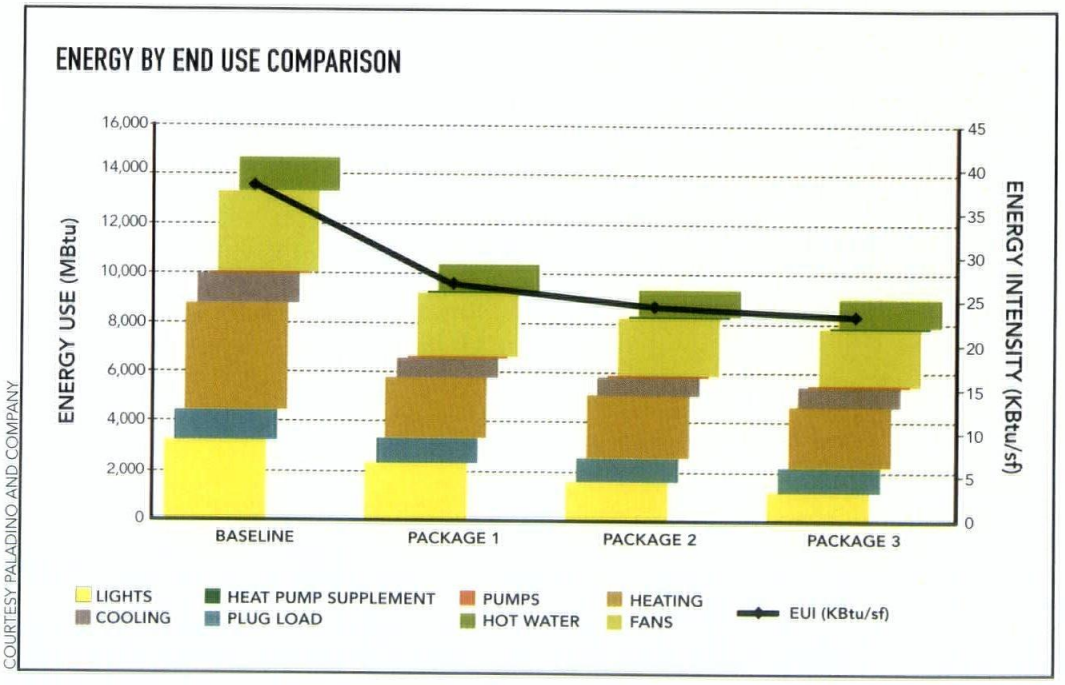
**3. Calculate the savings for each ECM.** Use spreadsheet calculations or energy modeling to determine the energy savings for each ECM. Apply energy-cost data published by the U.S. Energy Information Administration (EIA) or obtain applicable tariff rates published by the local utility to calculate energy cost savings for each ECM. Also calculate the greenhouse gas impact of each measure using the GHG emissions for utility grids that are published by EIA and consolidated by Energy Star in a quick reference table.

**4. Create ECM packages.** Using energy-cost savings and level-of-effort and cost-to-implement ECMs, designate each ECM as "low-hanging" or "advanced." Set up the analysis findings into stacked packages that build on top of each other. A low-hanging package would include all the low-cost ECMs that are within easy reach for the team to implement; an advanced package would include all the higher-cost ECMs that are cutting edge or beyond what is deemed usual practice.

Next, identify each ECM based on who would




*Net present value of two ECM packages over a 25-year period vs. a constant baseline package. Package 2 has twice the initial cost but begins to achieve payback in year 17, while Package 1 never achieves payback.*




*Bar graphs show absolute energy use and energy intensity for three ECM packages vs. a baseline. Together, the three packages can reduce project energy intensity from 38 KBtu/sf to 23 KBtu/sf.*

### 3 ECM PACKAGES VS. BASELINE

| | Annual Energy Use (MBtu) | % Energy Savings | Energy Use Index (KBtu/sf) | Annual Energy Cost ($) | Annual Energy Cost ($/sf) | % Energy Cost Savings | LEED EAc1 Points |
|---|---|---|---|---|---|---|---|
| Baseline | 48,221 | n/a | 53.1 | 1,366,462 | 1.50 | n/a | n/a |
| Package 1 | 32,663 | 32% | 36.0 | 1,122,692 | 1.24 | 17.8% | 5 |
| Package 2 | 31,470 | 35% | 34.6 | 1,080,736 | 1.19 | 20.9% | 7 |
| Package 3 | 31,220 | 35% | 34.4 | 1,071,940 | 1.18 | 21.6% | 7 |

benefit from that particular ECM's savings. ECMs that obtain savings in owner-operated areas—such as corridors, lobbies, garages—would fall under "Owner ECMs"; those benefiting tenant energy bills—Energy Star appliances, reduced lighting power demand in tenant spaces—would fall under "Tenant ECMs."

**5. Conduct the payback analysis for each package.** Obtain first-cost information for each measure, and calculate life cycle payback for each low-hanging and advanced package. To do this, you will have to conduct life cycle payback and net present value calculations.

Life cycle payback is a methodology that can help you select the most cost-effective design alternative over a particular time frame. The methodology addresses not only typical owner concerns of design effectiveness and construction cost, but also reflects future costs associated with maintenance and operations and product replacement. Life cycle payback looks at the value of a capital project or procurement decision over time, thereby overcoming the limitations of first-cost analysis.

Net present value (NPV) is the future amount of money that has been discounted to reflect its current value. NPV calculations for ECMs should take into account the first-cost investment, energy cost savings over time, yearly utility rate increases, operations and maintenance escalation, and future replacement costs.

A life cycle payback calculation differs from simple payback in that the latter just looks at the first cost investment and replacement cost. NPV provides a more accurate picture of the expected payback by taking into account such factors as the future value of money, fluctuations in the cost of energy or labor, and the effect of alternate investments in place of investing in the selected ECMs.

A number of online NPV and life cycle payback calculators are available. While the online calculators have default values for the following parameters, it is best to customize these values for each project.

*Discount rate:* This is the expected rate of return for an alternate investment instead of investing in the selected ECM—3.5% is a good value to use. However, we recommend checking with the project owner for the exact discount rate to be used in the NPV analysis. Owners with high-risk investments may use a higher discount rate. Federal and state projects may use a lower discount rate, since their investments are usually low risk and hence will have a lower rate of return.

*Utility rate increases:* The U.S. EIA is a helpful source for utility escalation rates for various fuel types.

*O&M escalation:* The Bureau of Labor Statistics' Producer Price Index is a good source for changes in the rate of O&M labor costs over future years.

*Analysis period:* Owners of self-occupied buildings—universities or hospitals, for example—will typically use a range between 20 and 30 years for the NPV analysis period, whereas developers of speculative office buildings will use a much shorter analysis period, at most 10 to 15 years. It's important for you to ask the project owner for the preferred analysis period for your project.

**6. Present your findings to the entire team.** Publish a findings report with your recommended energy goal and ECM packages. Include your findings on energy cost savings and payback periods. List any points for energy savings in LEED, Green Globes or other rating systems. Identify the applicable number of points and include in the information set provided to the owner and design team as part of the energy study.

**7. Finalize your energy strategy to meet the project's energy goal.** Conduct a mini-charrette with the entire team (including the owner, if possible) to finalize the project's energy goal and strategy. Focus on the level of effort for each ECM, available technologies and their level of adoption in the market, specific products (by brand and model), and maintenance and installation barriers. Track which ECMs get buy-in from the team and which are deemed too innovative or difficult to pursue, and why.

**8. Incorporate your recommended strategies in the project design.** Publish the final strategy memo showing the list of agreed-upon ECMs and the cumulative energy savings. Also indicate if the project energy goal is achievable, along with the expected payback in years.

Then convert the agreed-upon ECMs into actionable design specifications. For example, an ECM to achieve 0.12 W/sf lighting in the garage might be specified as "Use LED or T8 fixtures in the garage to achieve 0.12 W/sf lighting power density."

Finally, create an energy story writeup that can be included in the project's sales documents.

**9. Complete your compliance modeling.** At 50% CDs or at the end of the construction drawings stage, use the project documents to complete the compliance modeling for the project to backcheck the strategy and determine if you have achieved the project energy goal. Once your SD energy modeling is complete, required modeling for the rest of the project should be a much simpler undertaking. In brief, the scope involves:

- DD level – Update the energy model and any hand calculations based on selected ECMs
- CD level – Build a full-fledged energy model, complete compliance modeling and documentation
- Start/end of construction – Backcheck to correct for any changes in the design

### HOW ENERGY MODELING TO INCREASE VALUE WORKS IN A REAL PROJECT

To see how this process works in the real world, let's walk through a typical case—a

150,000-square-foot multifamily residential project in Los Angeles with a two-level, 120,000-square-foot underground garage, a 15,000-square-foot retail component (grocery store) on the ground floor and a goal of 30% energy savings.

To understand the project's energy use profile, the team used eQUEST energy modeling software to simulate the project's predicted energy use and end-use profile. We used ASHRAE 90.1-2007 assumptions and the Energy Star Multifamily High Rise (MFHR) Program Requirements to fill in missing design information.

Major end uses with opportunities for energy reduction were in the apartment and garage lighting, apartment cooling and fan energy use. The team identified the following Owner ECMs (in green) and Tenant ECMs (in blue) for major end uses:

*Apartment lighting:* To achieve a 35% lighting power density reduction compared to ASHRAE 90.1-2007 in corridors and public spaces, we called for lighting motion sensors in the apartment corridors and Energy Star–qualified light fixtures for all hard-wired lights, corridor lighting and public areas.

*Garage lighting:* To achieve deep savings here (<0.12 W/sf), we recommended using lighting motion sensors in the garage.

*Cooling and fan energy use:* ECMs included a high-efficiency building envelope—a roof with a U-value of 0.03, an exterior wall with a 0.04 U-value, glazing with a center-of-glass U-value of 0.3 and a wall assembly with a 0.48 U-value.

*Other cooling and fan energy use ECMs* included air-source heat pumps in dwelling units; 100% heat-recovery OA units with direct-expansion cooling and gas heating to provide conditioned outside air to corridors and directly to apartment units (with ventilation air disconnected from heating/cooling); WiFi-enabled thermostat controls for dwelling units; Energy Star–qualified exhaust fans in dwelling unit bathrooms; and VFD fans with CO control in the garage.

To create the ECM packages, the above ECMs were segregated into Tenant and Owner ECM packages based on first cost and level of effort. Savings from Owner ECMs (below, in green) can be built into the life cycle analysis for the owner; savings from the Tenant ECMs (below, in blue) can be leveraged as unique selling features for potential clients.

We then calculated the combined savings from the two packages, which achieved a total energy savings of 31%. Thus, the design met its energy goal.

Finally, we converted the recommended strategies into design inputs:

- Use R30 rigid insulation for the roof, R19 batt insulation for the walls, and Solarban 60 or equivalent glazing with thermally broken metal frames and fiberglass spacers.
- For the apartment corridor lighting, have 20% of lamps stay on all the time, make 80% on an occupancy-sensor trigger.
- In the garage, use LED or T8 lighting, with dual lamps on separate circuits, to achieve the 0.12 W/sf lighting power density.
- Specify air-source heat pumps with a minimum SEER 15 rating.
- Specify the following sequence for CO sensors in the garage:
  - <35 ppm – fans off
  - >50 ppm for more than 3 minutes – low-speed fan
  - >150 ppm for more than 3 minutes – high-speed fan

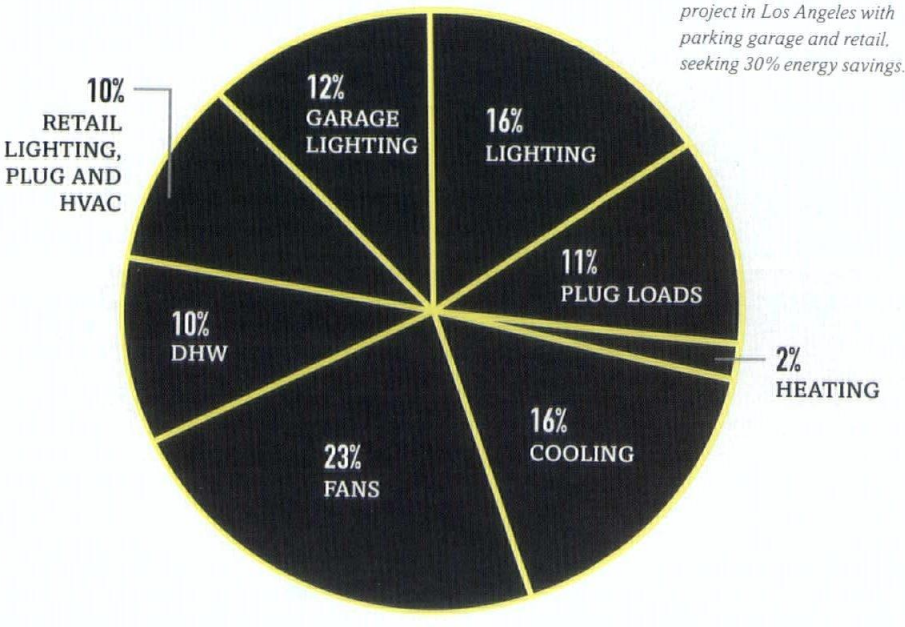
## MAKING THE CASE FOR EARLY DESIGN ENERGY MODELING

As we have seen, conducting energy modeling at the Schematic Design phase of a project adds substantial project value by allowing the building team to identify the energy conservation measures with the most impact, and requiring the least effort. This process also helps script a comprehensive energy story for the project that can be used to gain client buy-in and in the project's marketing efforts.

Early-stage analysis allows owners to identify additional budget for ECMs or to trade budget between building components to achieve an overall efficient building at the same cost. It creates an opportunity to implement one or two cutting-edge technologies to build the case for future projects. It gives owners sufficient time to do test studies and undertake site visits to gather intelligence around systems or technologies that may be unfamiliar to them. Finally, SD energy modeling establishes a path to success for achieving a project's energy goal. CA

*Thulasi Narayan is a green building consultant at Paladino and Company in Seattle.*

### CASE STUDY: SD ENERGY USE PROFILE




*Energy use profile for a 150,000-square-foot multifamily project in Los Angeles with parking garage and retail, seeking 30% energy savings.*

# GLASS HOUSES

## Breaking the complexity of glass design

BY ANTHONY CINNAMON AND JOSHUA FREEDLAND

Although seemingly a simple material, glass can be a complex façade element.

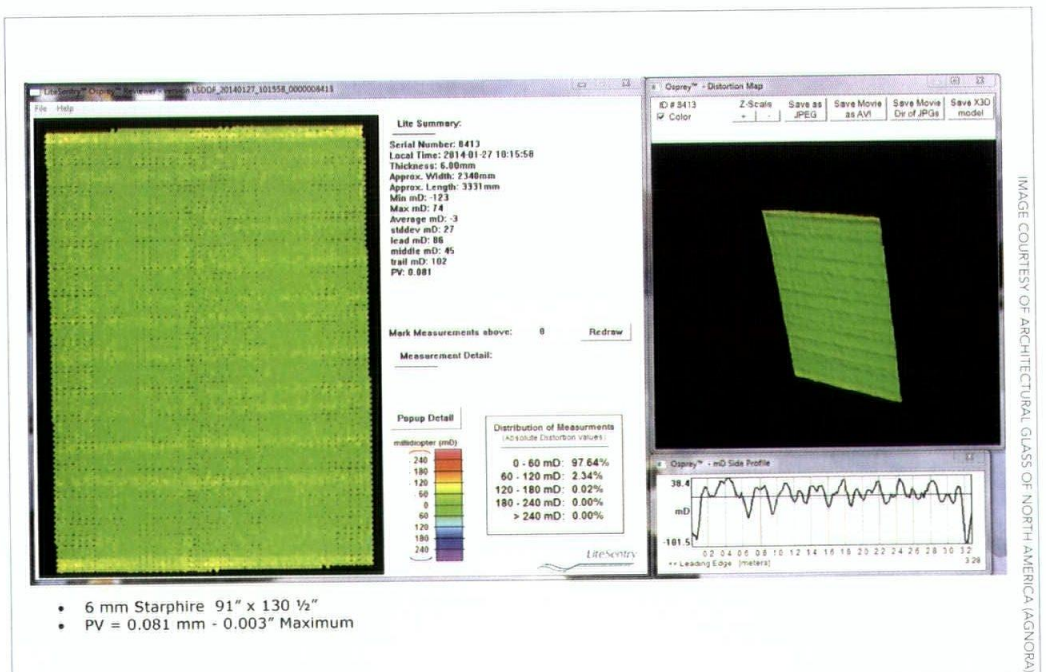
Glass represents the majority of the surface area on many large-scale projects, and glass selection may be one of the most significant decisions in terms of the appearance and performance of the building. On historic preservation projects, the decisions are further complicated with a desire to maintain the building's original appearance while improving performance to current standards of safety and energy. Specifying glass includes not only selecting the glass type—i.e., annealed, laminated, heat-strengthened or tempered—but also considering performance and aesthetic characteristics, including reflective and low-emittance (low-E) coatings, tinting, warm edge spacers, and monolithic or insulating glass units.

The factors involved in choosing glass are an integral part of the overall building performance. However, with all of the available options comes potential problems and pitfalls for the architect. Often the architect may feel constrained by industry standards or the proprietary information provided by manufacturers and suppliers. The architect needs to employ a thorough understanding of the project requirements, industry standards and test methods to help facilitate the selection and quality of the glass.

Primary among the concerns of owners of historic and new buildings is the visual appearance of the glass. A recent project at Mies van der Rohe's Farnsworth House required replacement of a broken piece of original polished plate glass that extended from the ceiling to the floor. Polished plate glass was used in the early to mid-twentieth century and is characterized by its optical clarity and lack of distortion. Unfortunately, polished plate glass is no longer available for architectural uses, and contractors today will not reinstall plate glass due to safety concerns. After a careful review with the owner, the National Trust for Historic Preservation, tempered glass was selected as the replacement to meet their project requirements.

One concern with tempered glass is the possibility of visible distortion as a result of localized bow and warp, edge kink, and evidence of roller wave from the tempering process. Roller wave distortion is defined by the Glass Association of North America (GANA) as "waviness imparted to horizontal heat-treated glass while the glass is transported through the furnace on a roller conveyor. The waves produce a distortion when the glass is viewed in reflection." When the glass sheet is heated up in the tempering furnace, the glass softens and sags between the intermittent rollers that support it in the tempering furnace. This sag is subsequently locked in, or "frozen" into, the glass as the cooling (quenching) cycle begins at the end of the heat-treatment process.

In ASTM C1048-12 "Standard Specification for Heat-Strengthened and Tempered Flat Glass," roller wave is included among several examples of optical (perceived) distortion in heat-treated glass, the perceived magnitude of which can be further influenced by a number of factors not associated with the heat-strengthening process.




- 6 mm Starphire 91" x 130 ½"
- PV = 0.081 mm - 0.003" Maximum

IMAGE COURTESY OF ARCHITECTURAL GLASS OF NORTH AMERICA (AGNORA)

**FIGURE ONE** *An optical scan of a glass lite shows visual distortion in millidiopters. This scan of a piece of glass shows minimal visual distortion as a result of the tempering process.*

Although ASTM C1651, "Standard Test Method for Measurement of Roll Wave Optical Distortion in Heat-Treated Flat Glass," provides a method for measurement of roller wave distortion, there is no recognized industry standard, including ASTM C1048, which specifies allowable limits for peak-to-valley measurements of roller wave distortion.

Further complicating quality control, the test method of measuring roll wave distortion in ASTM C1651 has largely been replaced by measuring actual optical distortion rather than physical techniques previously used. Typically, specifications are still referencing peak-to-valley measurements to establish project-specific criteria of roller wave distortion rather than the newer optical test methods for evaluating optical distortion (Figure 1). Even with the newer test method, ASTM C1048 states that "Consultation with suppliers and the viewing of full-size mock-ups, under typical job conditions and surroundings, is highly recommended for evaluation of reflective distortion" (Paragraph 7.3.6). In addition, to minimize the effect of roller wave distortion, the lites should be set with the roller waves horizontal to the sill of the window. This way, anyone passing alongside the building will not sense the repeating pattern of the image distortion.

**THE FACTORS INVOLVED IN CHOOSING GLASS ARE AN INTEGRAL PART OF THE OVERALL BUILDING PERFORMANCE. HOWEVER, WITH ALL OF THE AVAILABLE OPTIONS COMES POTENTIAL PROBLEMS AND PITFALLS FOR THE ARCHITECT.**

Prior to shipping the glass for the Farnsworth, optical scans were provided to the project team for review. After the measurements of the optical distortion were accepted, the glass was shipped and installed. The project was considered a full scale mock-up to establish the acceptance criteria for future glass replacement. Subsequently, the peak-to-valley measurements of roller wave distortion were measured in the replacement glass as well as previously installed tempered glass units.

After a review of optical measurements, physical measurements and a full-scale trial, the appropriate glass criteria can be selected for a project. The issue of visual distortion is only one factor in the selection of glass which demonstrates the complexity of glass design. CA

*Anthony Cinnamon and Joshua Freedland are associate principals at Wiss, Janney, Elstner Associates, Inc.*

# POSITIONING PULLMAN

## Collaborative ideas workshop for America's newest national monument

BY RICHARD WILSON, AIA

Pullman National Monument is a must-see treasure of the South Side. The formerly independent industrial town, now a landmark Chicago neighborhood, was entrusted last February to the National Park Service via a presidential proclamation.

There is much to celebrate in the area because of this. Yet, there are also many questions about what's next for this National Historic Landmark District, and what the new designation means collectively for the Pullman neighborhood, the neighboring Roseland community and the larger Lake Calumet region.

AIA Chicago was pleased to support the National Parks Conservation Association (NPCA)— with support from the Richard H. Driehaus Foundation, Chicago Community Trust, and Alphawood Foundation—in the conduct of a three-day community design workshop from April 16 to 18 in Pullman, in an effort to start addressing some of these questions. The purpose of the workshop was to engage the public in discussions with the Chicago design community regarding opportunities for enhancing the park visitor experience while leveraging the new national designation to advance important community development goals.

AIA Chicago organized a technical team of architects, landscape architects, city planners, economists and engineers to lead the planning process. The groups took inspiration from the collaborative accomplishments of Pullman's original design team: architect Solon Spencer Beman, landscape architect Nathan Barrett and civil engineer Benzette Williams, who came together in 1879 to lay the foundation of the town.

> PULLMAN IS POSITIONING ITSELF TO WELCOME PEOPLE FROM AROUND THE WORLD AS A RESULT OF ITS NEW NATIONAL MONUMENT STATUS.

The workshop weekend began with a well-attended community meeting on a Thursday evening at the historic Greenstone Church to introduce the planning process and to provide opportunities for one-on-one discussion with members of the design team. The following day, the technical team spent the day at the Hotel Florence envisioning design and policy concepts to enhance the function and appearance of the district, while addressing business and job growth, environmental stewardship and regional connectivity.

On the last day of the workshop, a public open house was held in the north wing of the Pullman Factory building that was attended by nearly 400 participants. The open house offered the opportunity for the technical teams to talk through their findings and report on their recommendations with the community. The conversations then centered on fine-tuning the produced content, aligning goals and priorities, and identifying stakeholders that can help advance implementation.

In full, the design workshop focused on four main areas of concern and produced concrete ideas as takeaways from the intensive design process:

- **Access and Connections:** Designers envisioned using historic Pullman train cars in a functional capacity—perhaps used as Metra train stop shelter—and in general, devised strategies for managing traffic across vehicular, train, bicycle and pedestrian modes.
- **Historic Preservation and Adaptive Reuse:** Participants considered strategies for commemorating important buildings that have been lost—or programming buildings in need of renewal—as well as strategies to incorporate landscape design, streetscape enhancements and new construction guidelines, all based upon the historic design of the neighborhood.
- **Community Development:** Designers worked through strategies to handle the expected increase in tourism as a result of the national monument designation and to identify ways to increase local businesses, grow career paths

*The original layout of the town was assessed in contrast to conditions today, to identify opportunities for interpretive commemoration of lost structures and landscapes.*

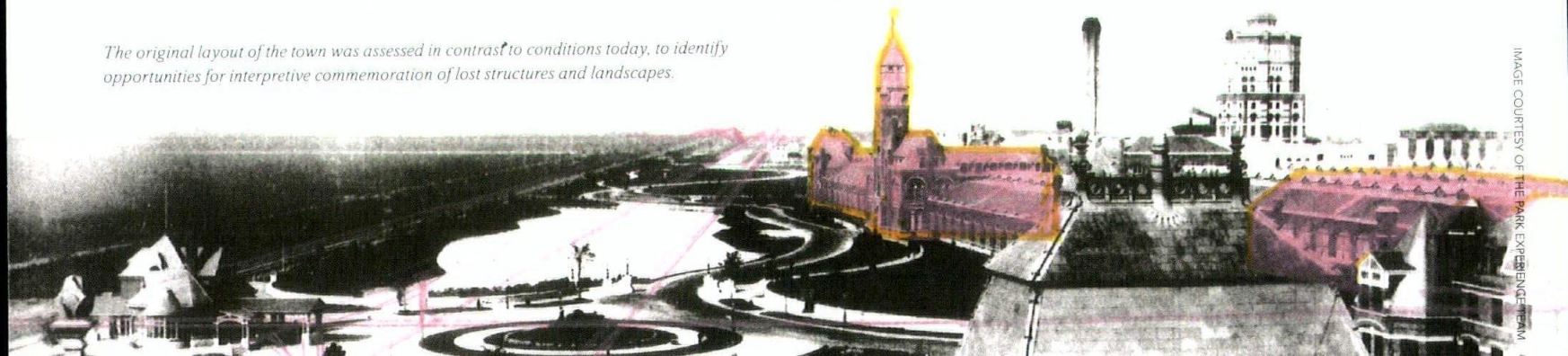


IMAGE COURTESY OF THE PARK EXPERIENCE TEAM

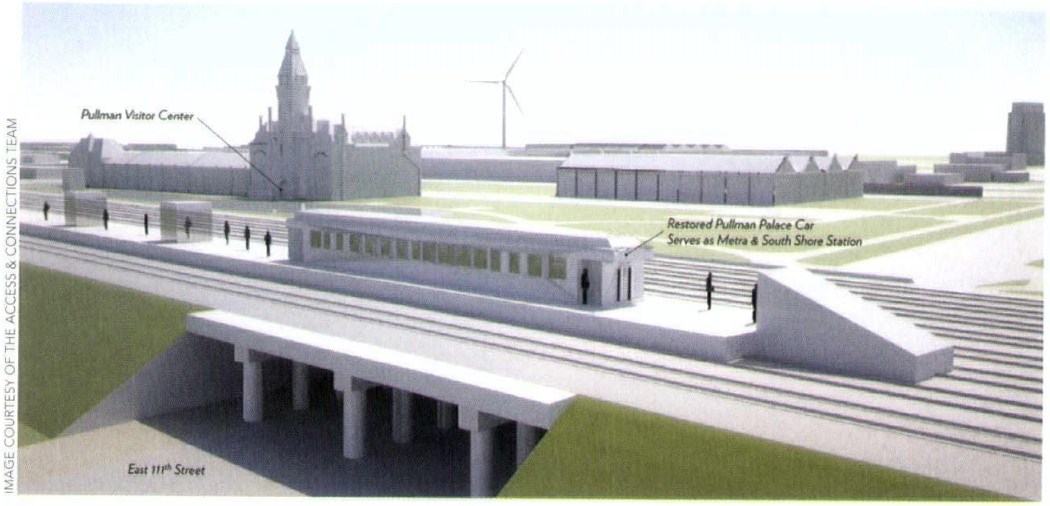



IMAGE COURTESY OF THE ACCESS & CONNECTIONS TEAM

*This image depicts the concept of using historic Pullman train cars for commuter stations to create unique railscape and arrival experiences.*

for local youth and integrate with larger plans of the Lake Calumet region while situating Pullman as a new southern gateway to the city of Chicago.

- **Park Experience:** Participants discussed and planned strategies to help visitors explore and enjoy the site. These plans could include self-guided park visitation routes that convey stories of factory and neighborhood life to integrate the area's past with its present.

Based upon public feedback from the open house, the technical team is now refining the content and preparing print-ready illustrations and text that will be incorporated into a summary publication and made available via a dedicated website hosted by AIA Chicago and NPCA.

Pullman is positioning itself to welcome people from around the world as a result of its new National Monument status. As one of the first "National Urban Parks" in America, Pullman is an important development for the National Park Service as it approaches its centennial celebration in August 2016, and the lessons learned at Pullman could help shape policy over the course of the next 100 years. CA

*Richard Wilson is director of city planning and urban design with Adrian Smith + Gordon Gill Architecture.*

# THE CODING ARCHITECT

## Creating architectural apps to help manage projects

BY THOMAS BOEMAN, AIA

Coding is a popular topic in the media today. State legislatures are considering requiring coding in school curricula, and advertisements for coding camps are common. Where does coding fit in an architect's set of skills?

I'm an architect and self-taught coder. I've been coding in some form since I first worked with CAD. My experience suggests it's not for everyone, but the curious shouldn't be afraid to dive in. If you're a project architect intimate with the details of your CAD or BIM software and responsible for maintaining the integrity of your project deliverables and workflows, coding can be a valuable skill.

Coding examples from my work include AutoCAD and BIM customization and the development of the iPhone app, ArchiCalc.

Several years ago, while using AutoCAD to plan law offices in 71 South Wacker, my team quickly discovered how tedious it was to work in a building with a curved floor plate. Whenever something was moved or copied to another location on the plan, it had to be rotated as well to stay aligned with the building geometry. In response, I wrote simple AutoCAD "LISP" commands so that every move or copy change in the plan would automatically rotate the object based on its new location. We added these custom commands to the AutoCAD menus for the team. The time saved over three years of production on the project made the coding well worth the effort.

ArchiCalc is a more ambitious example. ArchiCalc is a foot/inch calculator app for working fluidly between imperial and metric units. I first developed ArchiCalc for the Palm OS handheld back in 2000, in response to my architect wife Susan's frustration with the quality and cost of calculator apps available. It was a daunting task, even foolish, but I was motivated by curiosity and an "I can do it" determination. It was popular in a very niche market. The advantage I had over developers of similar apps was a thorough understanding of what I, as both an architect and user, wanted from the app, not that I was a better programmer.

There are strong reasons to code. Most CAD and BIM software is designed to be as general purpose as possible, yet they don't do everything we want. Thankfully, many of these applications provide tools for customizing the software to meet your specific needs through coding.

Common coding tasks for the architect include:

**Automating a workflow.** If you have a repetitive process that can be described in very specific steps, it can probably be automated through coding.

**Automating standards.** Build your office standards into your tools and they will enforce themselves.

**Adding a new feature to an application.** You may find Revit or AutoCAD is missing an obvious feature, or you may need a feature unique to your practice. Coding can be used to add custom features.

**Sharing information between two applications.** Sometime it's useful to transfer information from one application to another, such as from Revit to Excel. This can often be done through coding.

**Creating a whole new application.** This is by far the most challenging. However, if you have a good idea for an application and have developed the skills to get there, try it.

The best place for the architect to begin coding is within CAD or BIM applications. Start with simple macros or scripts. Explore the menus and search for the words Developer, Script, Add-in or Customization. You'll soon discover the built-in tools and resources available online, including sample code that you can often modify to meet your needs.

Programmers interact with applications like Revit, AutoCAD and Microsoft Office products through an API, or application interface. We all interact with software through the graphic user interface (GUI), which includes the menus, buttons and other components of our devices. Like the GUI, the API is an interface, provided with some applications, that provides a way to communicate to the application via code.

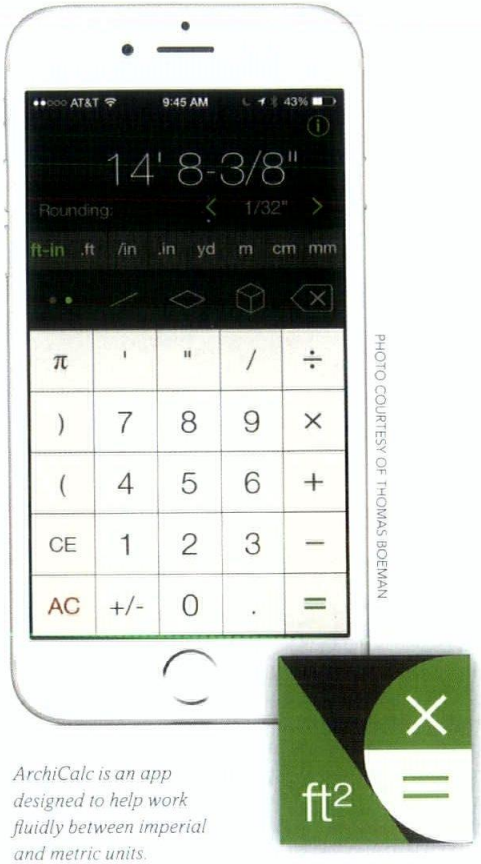



PHOTO COURTESY OF THOMAS BOEMAN

*ArchiCalc is an app designed to help work fluidly between imperial and metric units.*

Becoming effective at coding takes time, and no one is likely to pay you for the hours it takes to learn how to do it or to debug a troublesome macro. But if you enjoy getting under the hood of your software, then consider coding. There is nothing to fear, and it's exciting the first time you run a macro or script and you see the results show up on the screen. You may even have fun in the process. CA

*Tom Boeman is a co-founder of Boeman Design, LLC.*

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## INDEX OF ADVERTISERS

# A GLOBAL IMPRINT

## Frank Flury's Design/Build Studio at IIT is influencing students and leaving a mark all over the world

"Transformative!" is how Maria Miller, a 2014 IIT grad now employed at JAHN, describes the impact of Frank Flury's Design/Build Studio at IIT. "The hands-on construction experience I gained transformed my view of architecture and was the best preparation for the fast-paced environment where I work," she said. Under Flury's leadership, seven permanent building projects in five different countries have been designed and built by IIT architecture students since 2006. Flury, who moved to the United States from Germany in 2000, is an associate professor at IIT and has taught at the Rural Studio of Auburn University. Projects by Flury's IIT students have been recognized through publication and with design awards from AIA Chicago.

***Zurich Esposito:*** *How does the teaching you do reflect your own training?*
**Frank Flury:** I trained as a carpenter in the German apprenticeship program and worked several years in the trade as a certified professional carpenter. I built the homes of my parents and my brother. I love construction and the way buildings come together. I am also trained as an architect (Master of Architecture, University of Karlsruhe) and practiced in Germany for more than 10 years. My interest and experience in design and construction led me to the field of design/build in an academic setting.

***ZE:*** *Where are you and your students heading this summer, and to do what?*
**FF:** Fourteen students and I are going to Indonesia to the village of Jabung, a rural area next to Magetan, East Java, to build a small clinic for an elementary school and the local community, which we designed this spring. We built and exhibited a full-scale mock-up on IIT's campus for the year-end open house event.

PHOTO BY DARRIS LEE HARRIS

*Zurich Esposito speaks with Frank Flury inside the IIT campus model of Design/Build Studio's latest project. The permanent building will be constructed this summer in Jabung, Indonesia.*

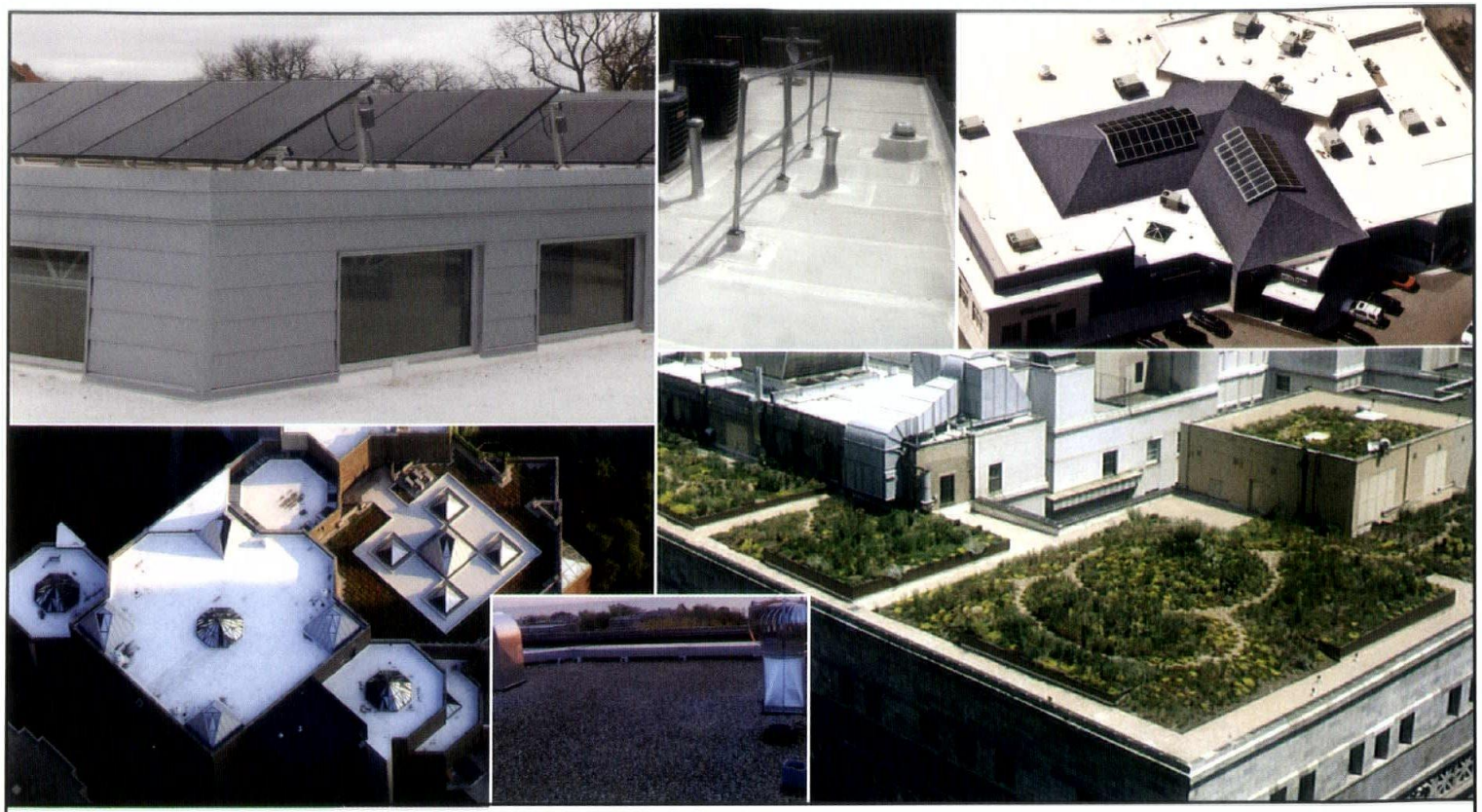
***ZE:*** *What materials will you use and how do you get them?*
**FF:** We use local materials such as brick and locally harvested wood. The building is entirely funded by the students' fundraising initiatives, such as food sales on campus. Support has also come from the Indonesian community in Chicago, as well as friends and family. Fundraising is crucial to the success of these projects, and we are always looking for additional support.

***ZE:*** *How long will you be in Indonesia?*
**FF:** We will be there for almost three months, including field trips in the country to Borobudur Temple and a four-day trip to Bali. We will stay in very modest quarters, with four students sharing a room. Members from the local community will cook for us.

***ZE:*** *What do you hope your students learn through the experiences your class provides?*
**FF:** That design and construction cannot be separated. It is very helpful for a student of architecture to build a project they have designed. The students learn to work in a team and all the other skills you need to be an architect in today's global work. We begin with a research component where we study the country's physical condition, history, politics and local vernacular, typologies and local building systems. In addition the students learn about fundraising, cost estimates, time management and efficient building techniques. All the buildings have to be economical, sustainable and long-lasting. All of this has to be done in a very short time period.

***ZE:*** *It sounds like comprehensive training and experience.*
**FF:** Our projects are more than buildings, they are all about building community and long-lasting personal relationships. The building phase is very intense with extremely long working hours, most of the time working through weekends. Different cultures and habits demand from the students the ability of adaptation, and also the appreciation of difference not being a threat but an opportunity. I am always amazed at how open the students are for new challenges and how quickly they are able to adapt and learn, specifically in situations where they live in a different culture.

***ZE:*** *What do you, as an architect and instructor, gain through these experiences?*
**FF:** For me, I see myself as part of the team. I learn as much as the students do. To live for a limited time in a world with almost no access to the outside world, no phone calls, limited email access, no meetings, no lectures, concerts or other distractions, and do one thing and do it as well as you can, is a really luxurious life. CA



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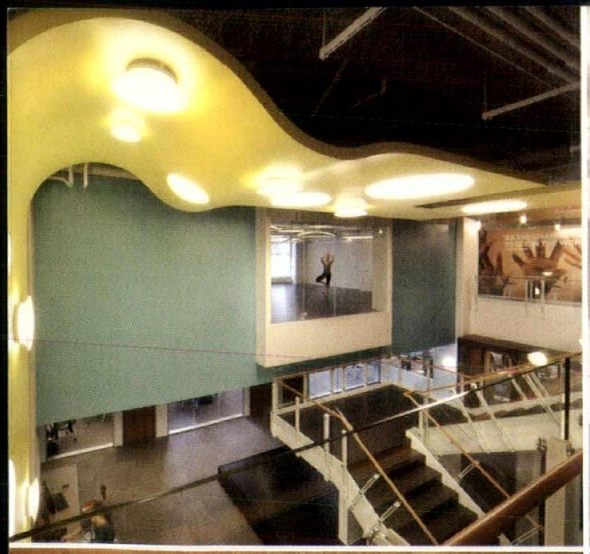
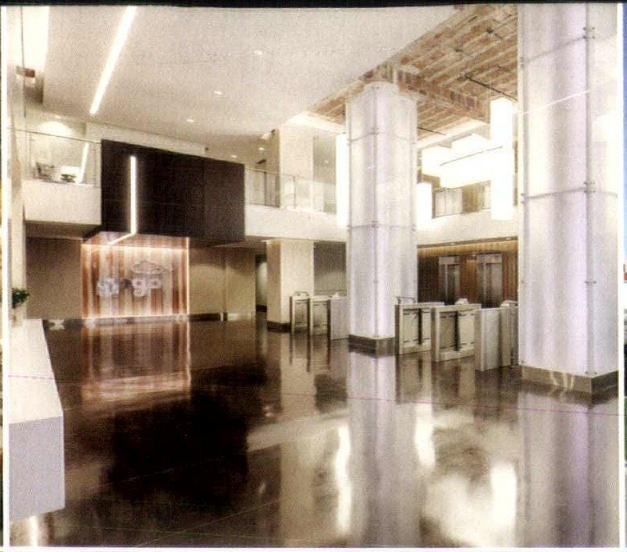


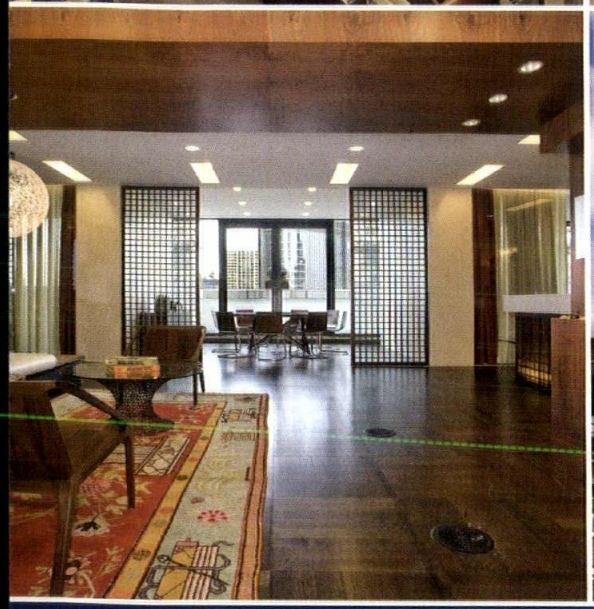

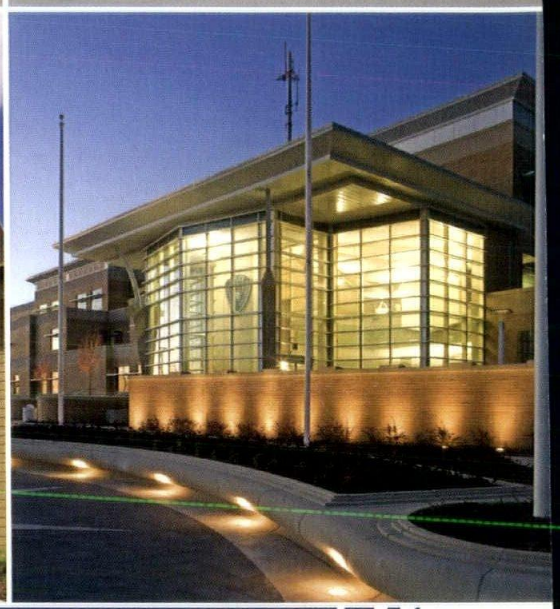

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