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retrofit

On Fire:

A Historic Firehouse Property Now Is a Remarkable Hospitality Destination

+ More Hospitality and Entertainment Projects

TREND ALERT: a return to low-tech

THIS ISSUE FEATURES AUGMENTED REALITY.

See Page 12

UNCONVENTIONAL THINKING

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For a full case study about the RITE Touch and to find other retrofit solutions visit adamsrite.com/solutions.

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ASSA ABLOY, the global leader in door opening solutions

New RITE Touch Wireless Lock Solution for All-Glass Doors Helps Protect Valuable Video Production Office Space

Clear Online Video is a full-service video agency based in Phoenix, Arizona. The team at Clear Online Video is focused on providing customized, online video content and marketing strategies for driving online video distribution, search engine and metrics optimization, and social media engagement for their customers.

Anyone familiar with video production knows there's a lot of very expensive, highly portable equipment involved: DSLR cameras, lenses, laptops, microphones, light packs, to name a few. Located within a modern hybrid shared office space, with common-use foyer, kitchen and warehouse areas, the managers at Clear Online Video wanted to tighten up security for their offices and production suites.

"In the facility, there are five individual company spaces that share a large common area in the middle with a kitchen and other resources," said Stjepan Alaupovic, Creative Director & Producer, Clear Online Video. "Each of the offices have very nice glass windows and glass doors. There's an excellent trust factor among the tenants, but there's a lot of visibility and a lot of common traffic throughout the building."

Alaupovic and his team were looking for a solution to better secure their spaces during business hours. The facility has an alarm system and is secure after hours, but as employees are in meetings, out on a media production shoot, or even just out to lunch, they wanted an easy-to-use, reliable solution that wouldn't interfere with daily operations, or detract from the elegant, modern office decor.

To meet the needs of this unique application, Alaupovic reached out to Russ Anderson, Training Manager for Adams Rite, who recommended the RITE Touch RT1050L surface-mount, digital lock system, providing flexible, keyless access control for single or pairs of all-glass doors. Perfect for indoor applications, the easy to install surface-mounted RITE Touch RT1050 series combines elegant

aesthetics with the latest touch screen technology, to harmonize style and security.

"We're very happy with the RITE Touch solution. The locks look great, and are working perfectly for us. They're just what we needed."

"With the non-destructive way the locks install, our landlord was happy with the installation. There's no damage to the glass at all," said Alaupovic.

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Circle No. 3

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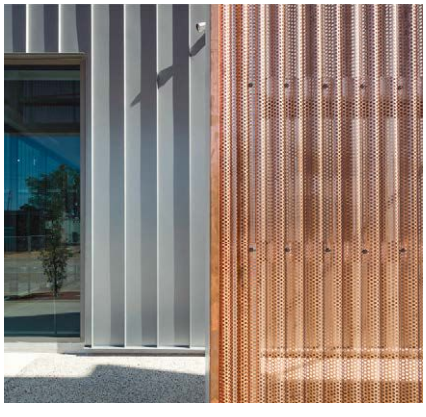
Ballet Memphis, Memphis, TN Architect: archimania General contractor: Grinder, Taber & Grinder, Inc. Installing contractor: Ralph Jones Sheet Metal
Profile : Snap-Clad, perforated Snap-Clad, perforated Corrugated Color: Zinc, natural copper material Photo: courtesy of archimania



Perfect Performance

"We wanted to make the project dynamic and energized. The copper screen looks more solid during the day and perforated at night when lights are on behind it—enhancing the urban experience within the entertainment district."

-Todd Walker, FAIA, Principal, archimania

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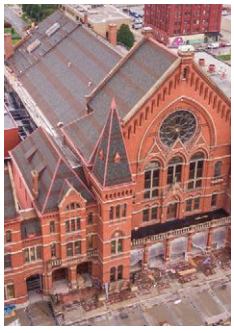
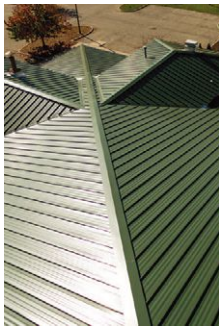
feature projects

FIVE-ALARM RENOVATION

A historic firehouse property is the basis for an ambitious renovation and remarkable hospitality destination.





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PERUSE HOSPITALITY AND ENTERTAINMENT PROJECTS FROM AROUND THE GLOBE:

- Fahrenheit, Hyatt Place Uptown Charlotte, N.C.
- Cincinnati Music Hall, Ohio
- Grand Hall at Westlake Gardens, Indianapolis
- Budweiser Beer Park, Paris Las Vegas Hotel & Casino
- Hampton Inn, Maple Grove, Minn.
- Black Eyed Distilling Co., Fort Worth, Texas
- Fogo Island Inn, Joe Batt's Arm, Newfoundland, Canada
- Crouch End Picturehouse, London

cover

COVER PHOTO: **JASON KEEN**

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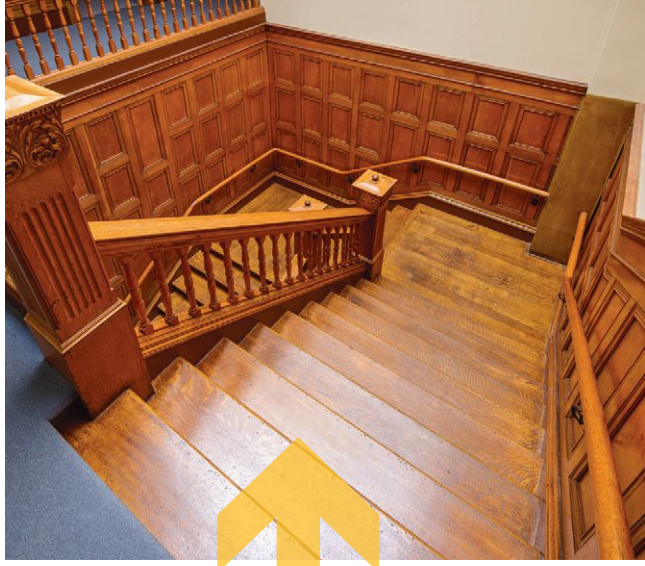

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A MEMORABLE STAY

When my husband Bart and I travel, we have a few requirements from the hotels we choose. I like breakfast to be included with our stay, and my husband expects a pool. I learned early in our marriage that these are non-negotiable items. Bart loves to swim and wants to be able to do so no matter where we vacation. And I enjoy leisurely weekend breakfasts catching up with my family over food I don't have time to prepare during the week. Because vacation is like an extended weekend, I think breakfast is the perfect way to start each day. Then, of course, Bart and I expect clean and quiet rooms, comfortable beds, privacy, security and a great location. These necessities easily can be found at many mid-priced hotel brands.

However, if you ask either of us what our favorite hotel stay has been since being married, we'd tell you it was a hotel that didn't have a pool or complimentary breakfast (though it did have our other requirements). Our favorite stay was at the Historic Park Inn Hotel in Mason City, Iowa. Opened to the public in 1910, it is the last-remaining hotel in the world designed by Frank Lloyd Wright. After serving Mason City in varying capacities, the building was abandoned for more than 30 years before a committed group of citizens obtained funding (about $20 million) and restored it to its original purpose. (Read the story in ***retrofit***'s March-April 2015 issue, page 28, or bit.ly/2JDHb1I.)

The novelty of staying in a Wright-designed space was not lost on us. We truly enjoyed the historic aspects of the hotel and our room, and we were impressed with the hotel's 21st century amenities, like heated bathroom floors. We loved socializing with Mason City locals in the bar, and Bart says the hotel's restaurant, 1910 Grille, served him one of the best steaks he has had in his life. What the Historic Park Inn Hotel has that can't be replicated in a new building is character and history, and that's why we remember our stay so clearly and why we keep telling people about the hotel (and hope to go back).

This issue of ***retrofit*** is full of similar hospitality venues, the kind that inspire and delight while encouraging visitors to learn about a community's past and invest in its future. For example, the Foundation Hotel, Detroit, combines two adjacent historic buildings—one of which originally was the headquarters for the city of Detroit Fire Department—into a 95,000-square-foot, 100-key boutique hotel along with a bar and restaurant. Although there are many compelling adaptive-reuse projects in Detroit, this one stands out and that's why it's our "Cover Story", page 24.

Not every retrofit can take place in a building as interesting as a former firehouse; therefore, building owners and designers understand the value of incorporating unique objects in their building projects and telling stories with these objects. Robert Nieminen, ***retrofit***'s contributing editor, writes in "Trend Alert" that the movement toward handcrafted items in today's buildings is underscoring "appreciation for artistry and craftsmanship that adds another dimension to interiors" to, likely, balance the technology that is ever-present in our buildings and our lives. Read the story on page 82.

Although escaping technology isn't easy, even in today's most comfortable, home-away-from-home hospitality venues, the mid-priced hotel brands now are offering a richer, more historic experience to those travelers who want to remain loyal to specific chains. For example, Hilton's Curio Collection includes refurbished historic hotels and retrofitted buildings in locations around the world. I think it would be nice if upon check-in, the front-desk agent handed a weary traveler a warm chocolate-chip cookie while explaining how to log onto the Wi-Fi. To someone like me, who makes food an important part of vacation, that's way more memorable—and comforting.

CHRISTINA KOCH
Editorial Director

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GUESTROOM ACOUSTIC CONTROL

CONTRIBUTING WRITERS

Panama Bartholomy is director of the Investor Confidence Project (ICP), a program of Green Business Certification Inc., Washington, D.C. ICP has developed a global underwriting standard for energy-efficiency projects. In "Business" page 20, Bartholomy explains the program and ICP's Investor Ready Energy Efficiency Certification, which is designed to increase confidence in the predicted energy and financial savings for building owners and investors.

A historic Detroit firehouse and an adjacent building have become the Foundation Hotel, a unique hospitality experience for Detroit's residents and guests. **Kevin Blind** (left), vice president of commercial operations at Sachse Construction, a Detroit-based construction management firm licensed in all 50 states, and **Todd Sachse**, the company's CEO and founder, provide a behind-the-scenes look at what it took to renovate the property in our "Cover Story", page 24.

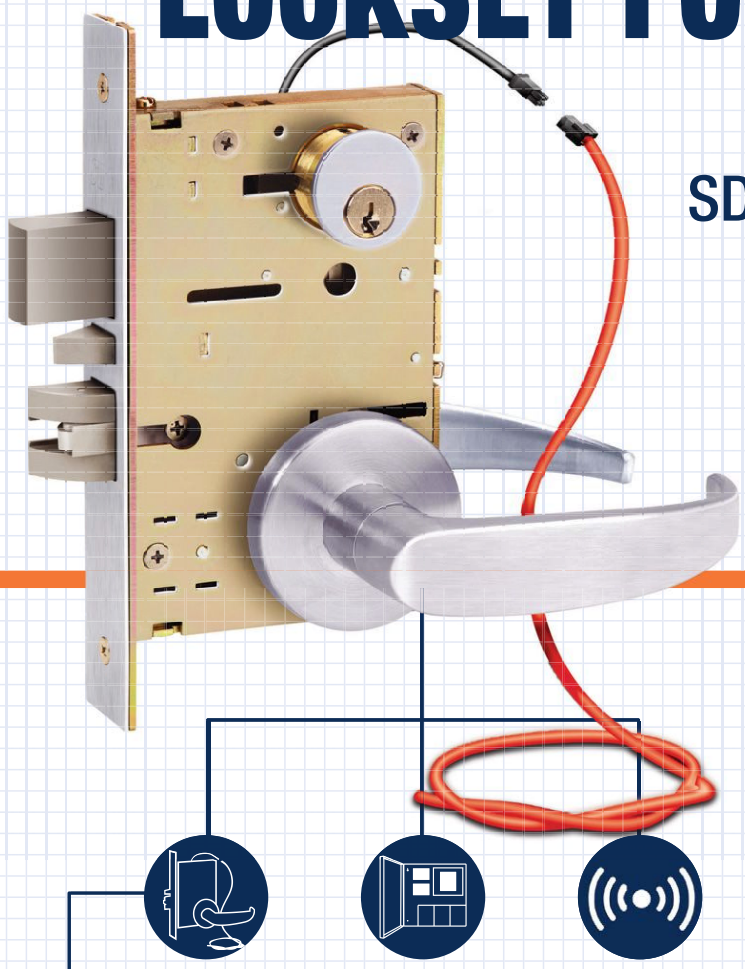
Aubrey Swift, AIA, CEM, CxAP, LEED AP O+M, building enclosure commissioning authority at dbHMS, Chicago, combines more than 35 years as a technical architect on adaptive reuse and historic-preservation projects with proven enclosure commissioning and building-science skills to bring a true generalist's knowledge to risk mitigation and optimizing envelope designs. As such, he presented at the inaugural **retrofit conference** in 2017 and, in this issue's "Component" section, page 48, discusses what you should expect from an enclosure commissioning consultant.

Allen Barry, who writes about architecture and sustainability from Chicago, shares the story of Building 23, a former church in The Brewery complex—once the 21-acre site of Pabst Brewing Company in Milwaukee, Wis. Today, the converted church features a beer hall and restaurant on the second floor, where the sanctuary once was, and a small batch brewery on the first floor allowing visitors to once again drink a freshly brewed Pabst in Milwaukee. Read the article in "Transformation", page 58.

KJ Fields, a Portland, Ore.-based ***retrofit*** contributor, writes about the 21c Museum Hotel in Durham, N.C., in "Transformation", page 64. Having created a series of 21c Museum Hotels across the U.S., the owners have a passion for integrating contemporary art into daily life, and their unique programmatic approach turned Durham's landmark Hill Building into a hotel activated by public gallery spaces.

John D. Lesak, AIA, LEED AP, FAPT, is a principal and **Lindsey Miller**, AIA, LEED AP, is an associate architect at Page & Turnbull, a national architecture and preservation firm with offices in Los Angeles, Sacramento and San Francisco. In "Mixed Use", page 72, they describe the iconic Carson Block Building's revival in Eureka, Calif. The 1892 building required Page & Turnbull to lead trainings to help subcontractors accurately restore features to meet the Secretary of the Interior's "Standards for the Treatment of Historic Properties, Standards for Rehabilitation".

HYBRID MORTISE LOCKSET FOR PRIVACY



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BUILDING ENTRANCE SECURITY

Before 9/11, the emphasis for most buildings was on openness and ease of entry. In an era of increased threats from unauthorized visitors, building owners are taking security much more seriously. One of the best ways to keep a building safe is to secure the entrance. New technology allows security professionals to more effectively screen and manage who comes in and out of a building. By blending the latest security tech with smart design, owners can secure their buildings without losing that sense of welcome.

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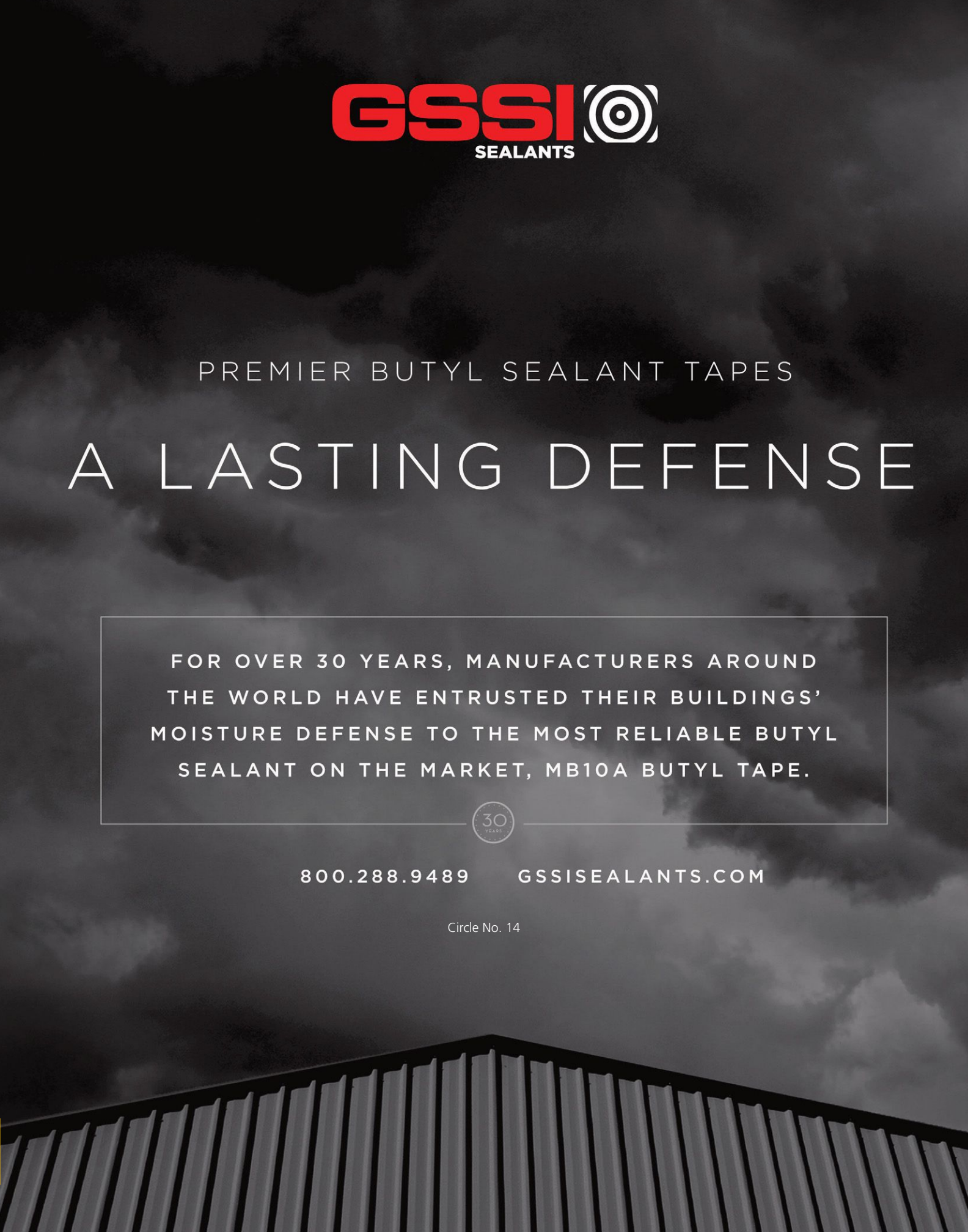
Nassau Veteran's Memorial Coliseum's Collaborative Transformation

Manufacturer Guidance

John Cerone, associate principal of SHoP Architects; Vlad Sobot, president of Sobotec Fabrication; and Tom Seitz, director of Strategic Accounts with 3A Composites Americas describe their collaborative efforts using Alucobond PLUS on the newly renovated coliseum in Uniondale, N.Y.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NEWS

Study Will Determine How Indoor Environments Affect People

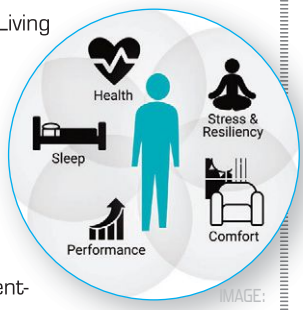

IMAGE: WELL LIVING LAB

The Rochester, Minn.-based Well Living Lab has announced an extensive three-year scientific research plan to identify how indoor environments affect five significant facets of people's lives: health, performance, stress and resiliency, sleep, and comfort. Studies will examine these factors for homes, workplaces and independent-living communities. A critical component of the research is the interplay of elements, such as sound, lighting, temperature and air quality, all of which can be altered in various combinations to uncover positive, neutral and negative effects on people.

"Our responsibility is to advance the science by conducting human-centered research that can be used in practical ways," says Brent Bauer, M.D., medical director of the Well Living Lab and director of medicine for the Rochester-based Mayo Clinic's Complementary and Integrative Medicine Program. "It's our belief that favorable outcomes can be realized, which will have long-term benefits for people's lives."

A variety of experiments will be reviewed, approved and monitored by the Institutional Review Board of Mayo Clinic. The plan identifies research aims and questions to be explored, such as:

- How office workers respond to artificial lighting that simulates natural light, not just at work, but also how it may change their ability to get sufficient sleep at home.
- How changes in environmental conditions affect sleep and stress.
- What types of interventions can increase cognitive performance and improve job satisfaction.

This research agenda will further build on the results of the Well Living Lab's latest study findings, now published as an open-access article in Building and Environment. The study reported that temperature, noise and lighting in open-office environments affect employees' ability to get work done. This was a proof-of-concept study that demonstrated the strength of living-lab methodology in measuring realistic occupant responses to select environmental changes in an open office.

The study consisted of eight working-age participants who spent 18 weeks in a simulated work environment in which acoustics, lighting and temperature were manipulated in numerous combinations, and the findings were based on occupant responses to surveys and in-depth interviews.

"We want to understand the effect of environmental conditions and combinations of conditions to improve health and wellbeing, including performance, comfort, stress and resilience, and sleep," Dr. Bauer continues. "This study is just the beginning. We will continue to explore the relationship of environmental factors in the workplace and at home."

The direction for this scientific exploration was solidified by Mayo Clinic and New York-based Delos, as well as the lab's scientific advisory board with members from academia and governmental institutions. Learn more at welllivinglab.com.

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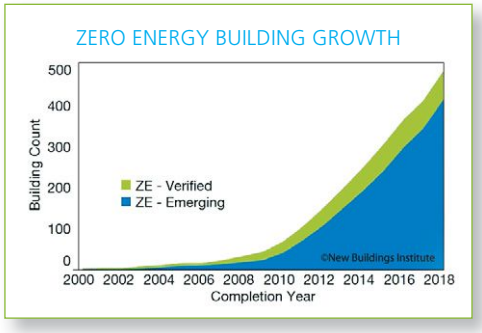
NUMBER OF ZERO ENERGY BUILDINGS INCREASES BY 700 PERCENT SINCE 2012

The Portland, Ore.-based New Buildings Institute's (NBI's) 2018 zero energy (ZE) buildings list includes nearly 500 verified and emerging zero energy buildings across the U.S. and Canada—a 700 percent increase since NBI began tracking projects in 2012. Private-sector investment now represents nearly half of all buildings on the list.¶ ZE buildings are ultra-low energy buildings that consume only as much energy as is produced through renewable generation resources. The list is part of the 2018 Getting to Zero Status Update and ZE Buildings List, which can be found at bit.ly/2JoEf8X.¶ ZE buildings exist in 44 U.S. states and four Canadian provinces. California is the frontrunner in ZE building activity with Oregon boasting the second largest count. California's energy policies, energy-reduction goals, and effective utility programs, as well as Oregon's Path to Net Zero efficiency program and incentives are driving their rapid uptake in ZE buildings. The Northeast and Southwest regions saw the highest growth with more than a 90 percent increase in buildings since 2014. ¶ The 482 buildings represented total more than 45 million



square feet of commercial space and include 67 verified projects (with at least one year of energy use and production data to prove ZE performance) and 415 emerging buildings (with a stated goal of zero energy, but not yet completed, fully occupied, or still working to attain ZE performance). ¶ "Since the construction of the Center for Sustainable Landscapes, Phipps has added a modular net-zero energy building and is in the process of retrofitting an existing property for net-zero performance as part of a Living Campus, showcasing three very different types of buildings at the peak of efficiency," explains Richard V. Piacentini, executive director, Phipps Conservatory and Botanical Gardens in Pittsburgh. Learn more about this facility at bit.ly/2JlierA. ¶ To learn about other trends identified in the study of buildings in NBI's tracking database, visit newbuildings.org.

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ENERGY-EFFICIENCY CERTIFICATION

The Investor Confidence Project Is Scaling Investment in Energy Efficiency

WRITTEN BY **PANAMA BARTHOLOMY**

According to the Washington, D.C.-based U.S. Energy Information Administration, residential and commercial buildings consume nearly 40 percent of U.S. energy. (See bit.ly/2IVXYN2.) Efficiency retrofits are a clear opportunity for the market to improve performance, identify cost-saving opportunities and demonstrate environmental responsibility. To make these buildings more energy efficient requires roughly $279 billion of investment and would result in more than $1 trillion in energy savings over 10 years.

The U.S. retrofit industry as a whole is estimated to be in the $20-billion range (bit.ly/2I8j61u). Capital remains available and there is interest in these types of projects from investors and building owners; however, energy-efficiency projects have a reputation for failing to deliver and until now there has been no recognized way to mitigate the potential investment risk. A global initiative called the Investor Confidence Project (ICP) has worked with industry leaders to create standard protocols and a certification for increasing investor and owner confidence in the expected environmental and financial returns of these efficiency retrofit projects. (Learn more about ICP at www.eeperformance.org.)

ICP's Investor Ready Energy Efficiency (IREE) Certification program provides project developers with a roadmap for developing more reliable and higher-quality projects using industry-accepted best practices. With the support of philanthropic funders and reflecting a broad stakeholder engagement process, ICP and its IREE certification were conceived, incubated, developed and deployed by the Environmental Defense Fund, New York. The program was recently integrated into the global portfolio of green business rating systems administered by Washington-based Green Business Certification Inc. (GBCI), which is the global certifying body for the LEED green-building program. As green investing continues to drive change in the building industry, GBCI's rigorous approach to project certification is helping ICP scale investments in energy efficiency around the world.

Embracing Standardization

New York-based Time Equities, the owner of a 52-year-old commercial building in Lower Manhattan called Maiden Lane, worked with Flywheel, an international energy-management company headquartered in the U.S., to create a cost-effective project development plan to retrofit Maiden Lane's outdated and inefficient building systems. The team worked to comprehensively reduce energy consumption, enhance infrastructure reliability and improve tenant comfort. Using ICP protocols provided Flywheel with a tool to incorporate industry-accepted best practices and standards into its project plans along with standardized documentation to help unlock capital for efficiency. In total, just over $3.67 million was invested with an annual cost savings of $525,000, resulting in a seven-year payback period and 37 percent energy savings. The project

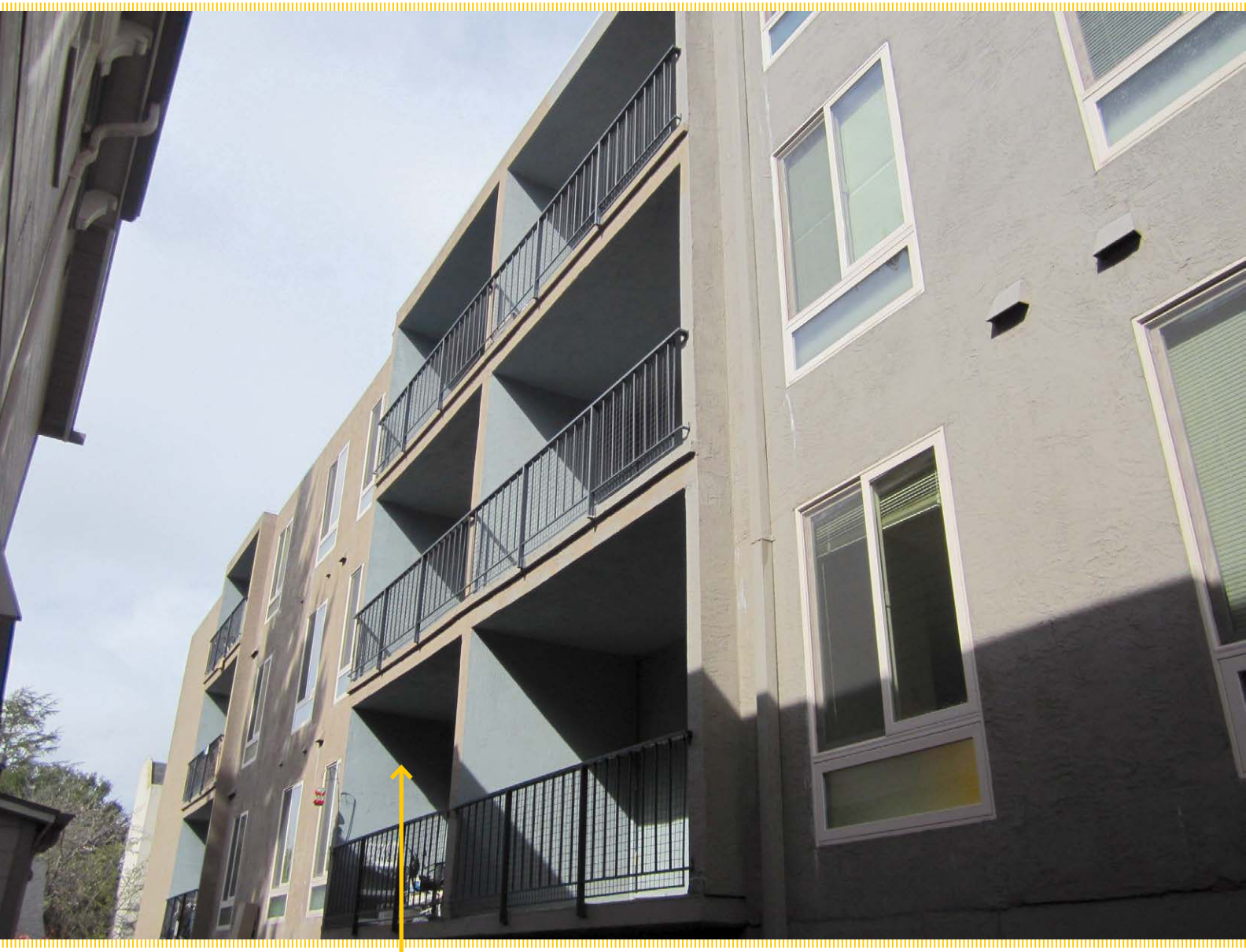
ICP's Investor Ready Energy Efficiency (IREE) Certification program provides project developers with a roadmap for developing more reliable and higher-quality projects using industry-accepted best practices.

The team behind upgrades at Maiden Lane, a 52-year-old commercial building in Lower Manhattan, is using ICP protocols to incorporate industry-accepted best practices and standards into its project plans along with standardized documentation to help unlock capital for efficiency.

In total, just over $3.67 million was invested in the Maiden Lane project with an annual cost savings of $525,000, resulting in a seven-year payback period and 37 percent energy savings. The project also has a 27 percent projected reduction in greenhouse-gas emissions.

PHOTOS: **INVESTOR CONFIDENCE PROJECT**

THE IREE CERTIFICATION REPRESENTS THE ENERGY-EFFICIENCY SECTOR'S FIRST CONSISTENT AND TRANSPARENT PROCESS TO ENSURE ENERGY PERFORMANCE AND INVESTMENT RETURNS.



In Berkeley, Calif., a 49-unit multifamily residential building owner worked with the New York-based Association of Energy Affordability to deliver efficiency upgrades using the ICP protocols as it pursued IREE certification.

also had a 27 percent projected reduction in greenhouse-gas emissions.

The ICP protocols have proven valuable for multifamily projects, as well. Arverne View, a 1-million-square-foot multifamily complex in New York, underwent energy-efficiency upgrades as part of the New York State Energy Research and Development Authority's (NYSERDA) Multifamily Performance Program (MPP). Bright Power, a leading energy-services company, leveraged NYSERDA MPP incentives and proposed a comprehensive retrofit that took into account energy efficiency and non-energy saving benefits to residents, staff and property. The project plan incorporated the procedural and documentation requirement of the ICP protocols and received ICP's IREE certification, which enhances the confidence of investors and building owners in predicted project energy savings and financial performance. The project

anticipated energy-based savings of $585,200, providing a simple payback period of just more than six years. The actual measured energy savings has been calculated at 31.3 percent with more than $900,000 saved to-date.

In Berkeley, Calif., a 49-unit multifamily residential building owner worked with the New York-based Association of Energy Affordability (AEA), a non-profit technical services organization specialized in energy-efficient buildings, to deliver efficiency upgrades using the ICP protocols as it pursued IREE certification. The project included installation of low-flow water fixtures, LED lighting upgrades, a boiler plant upgrade, replacement of washing machines with ENERGY STAR models, improvements to the ventilation system and more. The project also qualified for the Bay Regional Energy Network rebate program. In total, the project received $70,350 in investment, plus $36,750 in local incentives, resulting in only a four-year payback period and 25 percent energy savings.

Confidence in Efficiency

The availability of capital seeking to invest in energy-efficiency projects around the globe has been increasing at a rapid pace. Deploying these investments achieves a triple bottom line goal of positive economic, social and environmental impact. However, energy-efficiency financing is chronically underutilized and actual investment in cost-effective projects today is only a fraction of its true potential. A critical aspect of closing this investment gap is providing efficiency opportunities with a high degree of standardization, predictability and scale.

In the past, the sector has lacked an industry standard assessment process and projects were developed without an agreed-upon methodology, resulting in a loss of investor confidence. This has led to an inability to accurately predict project performance and has hampered energy-efficiency investors of all kinds, from building owners to energy service companies to insurance providers. The fact that in 2013 only 1 percent of all U.S. investments were made in energy-efficiency projects illustrates the unrealized opportunity here.

There are six ICP protocols that can be applied to almost any commercial and multifamily projects of various scopes and scales. Project teams using ICP protocols or seeking IREE certification must follow defined procedural and documentation requirements that address the full life cycle of a project, including energy baseline development; savings calculations; design, construction and verification; operations, monitoring and maintenance; and measurement and verification.

The Maiden Lane project utilized a comprehensive energy audit for heating, cooling, air distribution, water distribution, lighting and the controls systems for the entire building that satisfied the requirements of the ICP large commercial protocol. The IREE certification that Maiden Lane received validated the predicted energy savings and project potential, which provides confidence for all project investors.

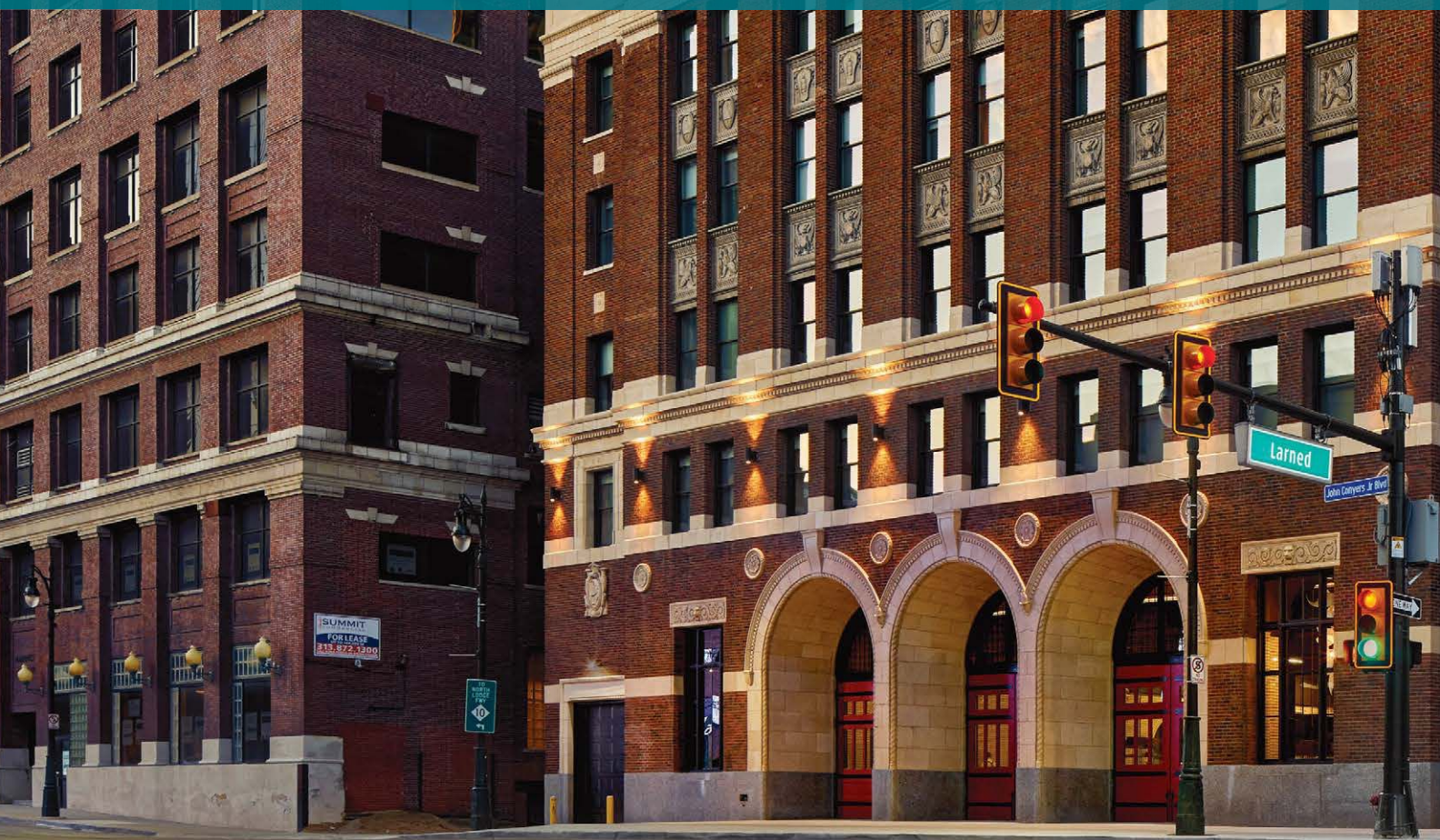
Andy Brooks of AEA reaffirms ICP's mission, stating: "ICP creates a standard approach to implementing energy-efficiency projects across a broad spectrum of building types. The protocols provide the investment community with the confidence that projects will yield actual benefits and results similar to those that were predicted."

The IREE certification represents the energy-efficiency sector's first consistent and transparent process to ensure energy performance and investment returns. If the industry is to scale to the level required to truly impact the environmental effects produced by the built environment, it is crucial that building owners and investors have confidence that projects will deliver on both environmental and financial levels. The Investor Confidence Project was initiated to provide this confidence and continues to expand its reach across the industry on a global basis.

Projects interested in pursuing IREE certification can visit www.eeperformance.org to register.

A Historic Firehouse Property Is the Basis for an Ambitious Renovation and Remarkable Hospitality Destination

FIVE-ALARM



RENOVATION

WRITTEN BY | **KEVIN BLIND & TODD SACHSE**

The circumstances in Detroit are uniquely suited to a boom in historic renovation opportunities. The city is not only in the midst of a continuing urban revival, but Detroit has a relatively large number of historically or architecturally significant buildings. Even in this "target-rich environment," however, some historic renovation projects stand out.

One such project is the recently completed Foundation Hotel renovation. The downtown Detroit project is an outstanding example of how a historic property can be transformed into a compelling space, combining historic artistry and architecture with contemporary conveniences to create a distinctive hotel property with a memorable and defining sense of place.

Creating the new Foundation Hotel required converting and combining two adjacent historic buildings (one of which was originally the headquarters for the city of Detroit Fire Department) into a unified 95,000-square-foot, 100-key boutique hospitality property–complete with an enclosed first-floor restaurant and bar. The finished project encompasses the Pontchartrain building at 234 W. Larned Street and fire department building at 250 W. Larned Street–originally built in 1882 and 1929, respectively.

Examining the process the design and construction team took to complete the project, including the unexpected challenges and the exciting opportunities for inspired

PHOTOS: **JASON KEEN** (unless otherwise noted)

Retrofit Team

CONSTRUCTION MANAGEMENT // Sachse Construction, Detroit, www.sachseconstruction.com

ARCHITECT // McIntosh Poris Associates, Birmingham, Mich., www.mcintoshporis.com

HISTORIC CONSULTANT // Kraemer Design Group, Detroit, thekraemeredge.com

DEMOLITION // DKI International, West Bloomfield, Mich., dkidemolition.com

MASONRY AND MASONRY RESTORATION // RAM Construction Services, Detroit, www.ramservices.com

CONCRETE FLATWORK // Culver Development LLC, Sterling Heights, Mich., www.culverdevelopmentteam.com

STRUCTURAL STEEL // American Steel Construction Inc., Livonia, Mich., (734) 855-4328, and Nelson Iron Works Inc., Detroit, nelsoniron works.com

ROOFING // Butcher & Butcher Construction Co. Inc., Rochester Hills, Mich., www.bbconstruction.com

NEW DOORS // Rayhaven Group, Livonia, www.rayhaven.com

WINDOW, GLASS AND DOOR RESTORATION // Blackberry Systems Inc., Kalamazoo, Mich., blackberrysystems.com

PLASTERING // Russel Plastering Co., Ferndale, Mich., (248) 543-6575

CERAMIC TILE // Wolverine Stone Co., Warren, Mich., www.wolverinestone.com

FLOORING // Turner-Brooks Inc., Madison Heights, Mich., (248) 548-3400

PAINTING AND WALLCOVERING // Detroit Spectrum Painters Inc., Warren, detroitspectrum.com

CONCRETE POLISHING // Michigan Specialty Coatings, St. Clair, Mich., mscfloors.com

SALVAGED/RECLAIMED MATERIAL AND MILLWORK // Architectural Salvage Warehouse of Detroit, www.aswdetroit.org, and MOD Interiors, Ira Township, Mich., modinteriors.com

ROUGH CARPENTRY // George I. Landry Inc. dba Landry Carpentry/Millwork, Detroit, www.landrycarpentry.com

FINISH CARPENTRY // Morrey's Contracting, Detroit, www.morreyscontracting.com

PLUMBING AND MECHANICAL // Goyette Mechanical Co. Inc., Flint, Mich., goyettemechanical.com

FIRE PROTECTION // Simplex Grinnell, Farmington Hills, Mich., www.tycosimplexgrinnell.com

preservation, reuse and repurposing, provides a behind-the-scenes look at what it takes to renovate a unique historic property and deliver an extraordinary hospitality experience for Detroiters and guests to the city.

FLEXIBILITY AND OPPORTUNITY

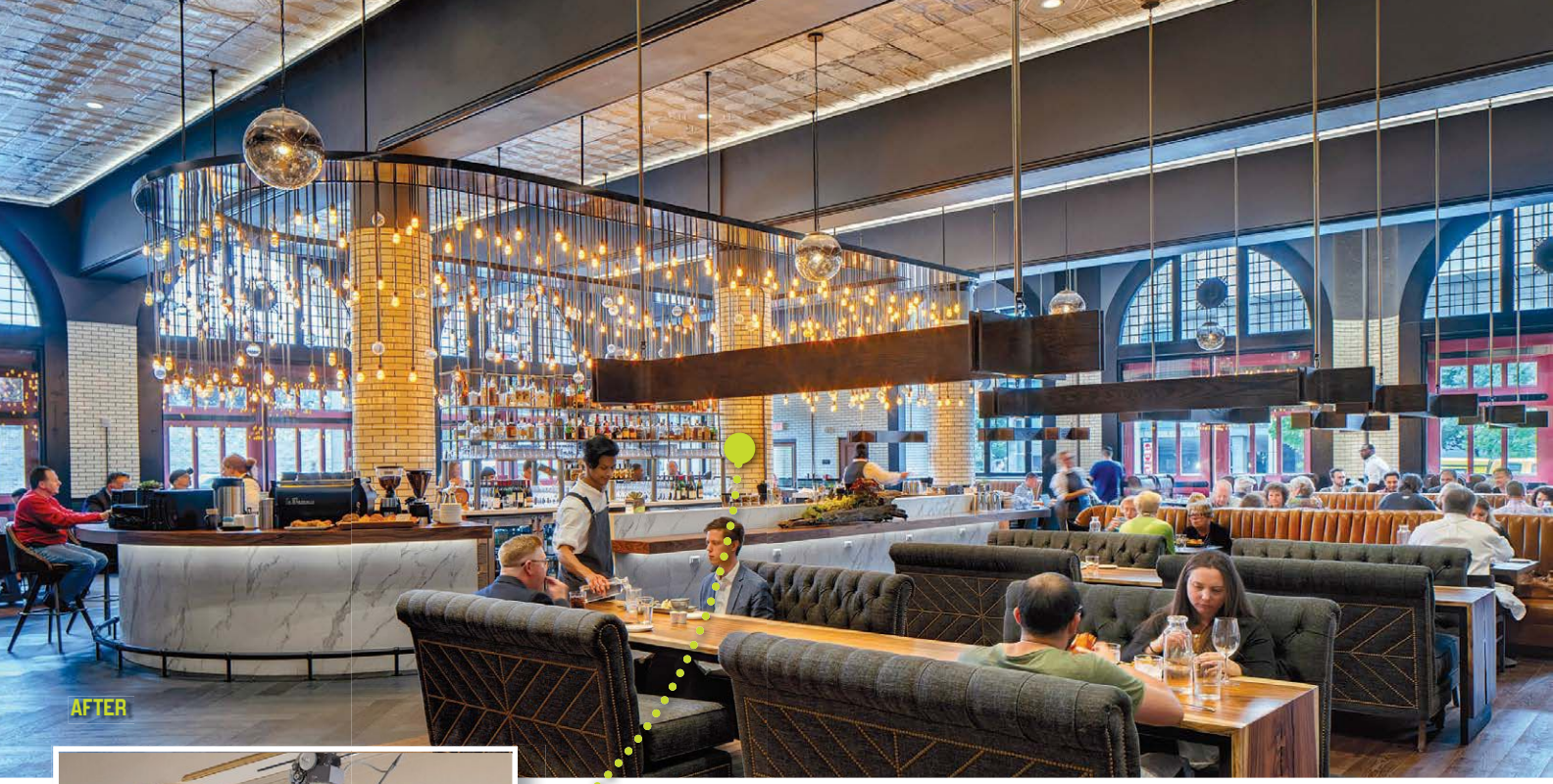
Whether it is a historic firehouse or another older property with architectural or cultural significance, successfully renovating a historic structure requires flexibility from all stakeholders. There is no one-size-fits-all formula for transforming a one-of-a-kind architectural landmark. Every project is different with its own character, its own challenges and its own opportunities. Professionals who work in this specialized space not only know to expect the unexpected but they welcome it. Oftentimes, the most inspired and evocative historic renovations are those that can skillfully navigate the obstacles presented by aging structures and dated materials while preserving the aesthetic and experiential potential delivered by period detail that is preserved and integrated into the updated design.

Structural integrity issues are common–almost inevitable. With the Foundation Hotel project, the north wall of the 234 building was discovered to be structurally unsound and had to be completely rebuilt. New steel supports were added to accommodate the new rooftop and fifth-floor banquet space addition. Structural concerns were not limited to the ceiling: The integrity of the existing floor was also a challenge. More than 50 percent of the floor joists had to be replaced because of either damage or rot. The first-floor of the fire department building concrete slab was post-tension concrete, which also presented issues with needed coring and the installation of through-floor structural steel.

When working with historic buildings, stringent guidelines and special approvals are always part of the process, and the Foundation Hotel project was no exception. The team coordinated closely with the State Historic Preservation Office (SHPO) to determine approved sightlines,

Essential historic elements were prioritized and preserved. For example, the trademark 500-pound red firehouse doors were removed, restored and reinstalled while original wall tiles in the lobby also were restored.


FOUNDATION
HEADQUARTERS



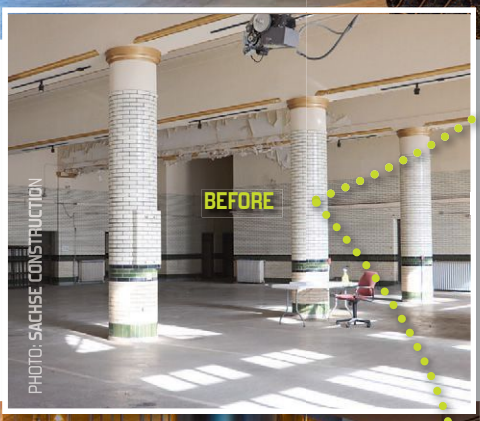


PHOTO: SACHSE CONSTRUCTION

Sometimes preservation efforts require some creative license. Inside the restaurant, a "new" tin ceiling was created that was salvaged from contemporaneous Detroit-area buildings. Using these reclaimed, repurposed and refinished tin ceiling tiles made it possible to put in the required hanging ceiling while maintaining the style and spirit of the property.

material finishes, glazing percentages and more. A detailed proposal package had to be submitted to SHPO and the National Park Service, Washington, D.C., outlining all proposed alterations or additions.

The irregular/nonstandard floorplans and infrastructure accommodations often mean that historic buildings also pose some difficulties when it comes to the design of individual rooms. The Foundation Hotel's 100 rooms had 54 unique layouts, creating a challenge for the architects at McIntosh Poris Associates, Birmingham, Mich. From a design perspective, flexibility and creativity helped to create the many different room layouts that were needed. From a practical standpoint, individual room plans placed in every room during construction helped minimize confusion and avoid mistakes.

TO PRESERVE AND PROTECT

Historic renovation work often requires creative solutions. It also presents some important and sometimes difficult decisions about what original elements to preserve and what is impractical, impossible, unsafe or simply not cost-effective to keep.

The goal is to retain as much historic detail and authenticity as possible from the building's original character without compromising the ability to create a comfortable, appealing and amenity-rich environment for guests. Detroit-based Kraemer Design Group served as the historic


BEFORE
PHOTO: SACHSE CONSTRUCTION
AFTER

Materials

ACOUSTIC CEILING TILE // USG, www.usg.com, and Armstrong Ceiling & Wall Solutions, www.armstrongceilings.com

ACOUSTIC WALL PANELS // Armstrong Ceiling & Wall Solutions

CARPET TILE // J+J Flooring Group, www.jjflooringgroup.com

CONCRETE VANITY FRONT AND BACKSPLASH // Dex Industries, dexindustries.com

CUSTOM LOGO WALK-OFF CARPET // Mats Inc., matsinc.com

ELECTRIC MIRROR // Seura, www.seura.com

ELEVATOR CAB HANDRAIL LEATHER // Garrett Leather, www.garrettleather.com

ELEVATORS // Otis Elevator Co., www.otisworldwide.com

FLOOR TILE AND SHOWER FLOOR TILE // Daltile, www.daltile.com

FLUSH-MOUNT LIGHTING // Restoration Hardware, www.restorationhardware.com

GLAZING CHANNEL AND METAL // C.R. Laurence Co. Inc., www.crlaurence.com

PAINT // Benjamin Moore, www.benjaminmoore.com

SERVER STATION (RESTAURANT) // Formica, www.formica.com

STONE VANITY TOP/BACKSPLASH // Wilsonart, wilsonart.com

VINYL TRANSITION STRIP // Johnsonite, www.johnsonite.com

WALL TILE // Ceramic Technics, ceramictechnics.com

WALLCOVERING // Simeone Deary Design Group, www.simeonedeary.com; D.L. Couch, www.dlcouch.com; and Slate Procurement, slate-pro.com

PHOTOGRAPHS OF HISTORIC DETROIT ARCHITECTURE ON CUSTOM WALLPAPER // Detroit Wallpaper Co., detroitwallpaper.com

WOOD FLOORING // Hakwood USA, www.hakwood.com, and Architectural Salvage Warehouse of Detroit, www.aswdetroit.org

consultant for the project, helping to determine which essential historic elements would be prioritized and preserved. That historical triage isn't just about creating a unique space; it's often an economic necessity. Many projects (including this one) are financially feasible when they qualify for and secure historic tax credits.

The Foundation Hotel's preservation efforts continued to the outside of the building(s) with a comprehensive exterior restoration that preserved and restored all original terra cotta and masonry elements. Custom molds were created and used to make matching pieces for areas of the hotel façade that had been damaged. Inside, original wall tiles in the lobby were restored, and corridors throughout the building retained their original plaster and terrazzo flooring.

On the third floor, the original commissioner's office was reimagined as the commissioner's suite, complete with existing wood paneling that was preserved with (in some cases) some minor repairs and restoration measures. A first-floor space that was most recently used as a firefighting museum has been repurposed as a private dining room, complete with original wood paneling, vaulted plaster ceiling and terracotta-tile flooring.

Other signature elements preserved and/or restored include the trademark 500-pound red firehouse doors that were removed, restored and reinstalled; the brass doors leading into the new front desk area and existing historic stairwell; and the existing marble wainscoting that remains on first-, third- and fourth-floor corridors, vestibules and along the interior walls of the center courtyard. Original marble also covers the walls of the historic first-floor elevator lobby and vestibule, where the ornate detail of the original plaster cove ceiling was subtly brought back to life by carefully painting the space in between the detailing. Cracked plaster and chipped paint were repaired in a way that allowed the original patina and character to be preserved. In fact, many minor cracks were only lightly painted over in a way that lets them remain visible.

Interior preservation and restoration efforts also included removing or protecting some materials to avoid damage during construction. Additional protective measures were taken while installing new

(continues on page 32)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Top: Custom-designed light fixtures and art installations from local artists help further the connection between the hotel and the city. Center and bottom: Corridors throughout the building retained original plaster and terrazzo flooring.

windows at the east elevation to preserve original artwork by Charles McGee, a prolific Detroit painter and sculptor who has contributed to the city's art scene for decades.

Sometimes preservation efforts require some creative license. Most historic wooden doors on the third floor of the property were retained, but some had to be replicated. All existing windows were replaced with exact replicas of the originals. A vintage carpet and desk were added to the lobby area. Inside the restaurant, a "new" tin ceiling was created that, while not a historic find from the building itself, was salvaged from contemporaneous Detroit-area buildings. Using these reclaimed, repurposed and refinished tin ceiling tiles (3,500 square feet of them) from in and around Detroit made it possible to put in the required hanging ceiling while maintaining the style and spirit of the property.

DISTINCTION AND CREATIVITY

One fascinating bonus to working with historic buildings is discovering unique features that can become a signature part of the renovated space. In the Foundation Hotel, an intact fireman's hose tower above a first-floor restaurant corridor spans all five floors of the project. Formerly used as a place to hang used hoses to dry, this vertical passageway is now home to a custom glass globe art piece.

Another unusual feature is the 3- to 4-foot-thick brick wall between the two buildings that had to be cored through. The wall actually tapers gradually with each level, narrowing to about 16 inches by the top of the structure, but it's a fascinating structural detail for guests–who can see just how thick the dividing wall is when they pass under the hose tower.

A little bit of creativity goes a long way–especially when you can find a way to reconfigure or reuse existing materials in interesting ways. For example, custom-created wooden headboards in each guestroom were built out of reclaimed wood, much of it salvaged from wood trim, wainscoting and doors from the building itself. Custom-designed light fixtures, photographs of historic Detroit architecture on custom wallpaper, and art installations from local artists help to further the connection between the hotel and the city.

Sometimes it's not just about knowing what to keep but what to discard. Multiple original safes were found throughout the building but, because the safe doors could not be saved (they contained asbestos), none of the safes could stay. The top-floor ballroom was in disrepair and was ultimately removed to make way for additional guestrooms.

When the completed Foundation Hotel project came online in Spring 2017, it immediately became a standout–not only in the city of Detroit, but among all historic hotel renovation efforts. From décor to detailing and from art to accents, the Foundation Hotel's historic connection to Detroit is clear, and the building's rich and remarkable history has been preserved as an essential part of the aesthetics, the architecture and the guest experience. The result, as online publication Curbed observes, is "an experience that celebrates Detroit's past while moving it into the future."

FAHRENHEIT, HYATT PLACE UPTOWN CHARLOTTE | N.C.

RETROFIT TEAM

ARCHITECT: Perkins Eastman, Charlotte, www.perkinseastman.com

CONSTRUCTION MANAGER: Cleveland Construction, Charlotte, www.clevelandconstruction.com

MATERIALS

There are six glass NanaWall SL 70 systems installed in this project. The SL70 incorporates a post between each door panel, adding structural strength and allowing the system to perform in larger sizes. It is highly durable and designed for high-traffic areas. The NanaWall SL70 is NFRC certified and can meet or exceed ENERGY STAR standards in all climate zones. Additionally, it has achieved high ratings in static and dynamic water testing.

In this project, the glass walls provide 160-degree views of the city, making Fahrenheit a Charlotte hot spot.

GLASS WALLS MANUFACTURER: NanaWall, www.nanawall.com

THE RETROFIT

The Hyatt Place Uptown Charlotte is located in the city center. It was originally built as a high-end condominium structure with plans for a pool and lounge area on the 20th floor. However, construction was delayed because of the recession of 2008. Seizing the opportunity to purchase the property at a low price, Cleveland Construction updated the building, including changing the top floor to a restaurant. Hyatt purchased the building and finished the project as a hotel, along with residences. Hyatt's restaurant Fahrenheit is open to the public and overlooks the entire Charlotte skyline.

VIEW THE NANAWALL DOORS IN ACTION AT FAHRENHEIT.

PHOTOS: **NANAWALL**


PHOTO: CERTAINTEED

CINCINNATI MUSIC HALL | Ohio

RETROFIT TEAM

ARCHITECT: Perfido, Weiskopf, Wagstaff + Goettel, Pittsburgh, www.pwwgarch.com

ROOFING CONTRACTOR: The Imbus Roofing Co. Inc., Wilder, Ky., imbusroofing.com

CONSTRUCTION MANAGER: Messer Construction, Cincinnati, messer.com

MATERIALS

The contractor installed designer asphalt shingles on the 225,000-square-foot, 139-year-old Cincinnati Music Hall. The shingles—Grand Manor luxury asphalt shingles—resemble a slate tile roof and were installed in a striped pattern using two colors, Stonegate Gray and Brownstone. DiamondDeck and WinterGuard underlayments provide weather protection.

SHINGLE AND UNDERLAYMENT MANUFACTURER: CertainTeed, www.certainteed.com

THE RETROFIT

The intricate project received the 2018 Gold QARC Award from the Washington, D.C.-based Asphalt Roofing Manufacturers Association.

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GRAND HALL AT WESTLAKE GARDENS | Indianapolis

PHOTOS: MCELROY METAL

RETROFIT TEAM

ARCHITECT: The Etica Group, New Haven, Ind., eticagroup.com

METAL PANEL INSTALLER: Master Steel Roofing, Elkhart, Ind., www.mastersteelroofing.com

MATERIALS

Architects chose McElroy Metal's 138T Shingle Recover roofing system. With this system, elevated clips are used to create an energy-saving ASV (above-sheathing ventilation) airspace between the original roof and the new standing-seam panels. The reduction of utility expenses will continue to save the event venue in years to come.

The standing-seam metal roof panels are finished in an Evergreen shade of Valspar's Fluropon PVDF architectural exterior coating. This Fluropon coating offers long-lasting protection, resisting ultraviolet rays, dirt and stains while maintaining color consistency.

METAL PANEL MANUFACTURER: McElroy Metal, www.mcelroymetal.com

COATINGS PROVIDER: Valspar Coil Coatings (becoming Sherwin-Williams Coil Coating), www.valsparcoilextrusion.com

THE RETROFIT

The Grand Hall received a new metal paneled roof in October 2016. After prices for replacement asphalt shingles proved out of budget, the team decided to use architectural exterior metal roof panels.


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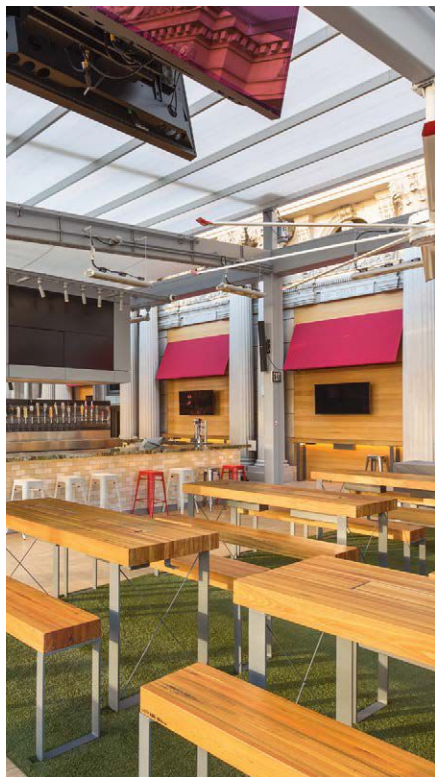
Circle No. 20



PHOTOS: **SEFAR ARCHITECTURE**

BUDWEISER BEER PARK, PARIS LAS VEGAS HOTEL & CASINO

RETROFIT TEAM

ARCHITECTS: Gensler Chicago and Gensler Las Vegas, www.gensler.com

GENERAL CONTRACTOR AND CANOPY INSTALLER: Austin General Contracting Inc., Las Vegas, austingeneralcontractingnevada.com

ENGINEER: GLR Engineers, Spokane, Wash., www.glrengineers.com

MATERIALS

Opened in February 2016, Budweiser Beer Park offers visitors year-round, all-weather use of the venue thanks to a retractable fabric canopy.

Las Vegas experiences, on average, approximately 300 days of sunshine per year. Because of the venue's western orientation, it required a solution offering shade during the day's peak and to ensure the area remained occupied in the event of rain. Additionally, it is situated at a highly trafficked point on the main Strip with a view of the famous Bellagio fountain. It was paramount that the canopy material be visually stunning.

The 3,444-square-foot canopy utilizes TENARA 4T20HF fabric—woven from ePTFE fabric and fluoropolymer-coated, making the PTFE inherent in the material. As a result, TENARA can be folded and unfolded in the retractable application without damaging its PTFE surface. It also is warranted to fold countless times without losing strength.

In terms of durability, TENARA Fabric is inert to ultraviolet rays and provides high resistance to material degradation. It offers a 15-year replacement warranty and is ASTM E84 Class A fire-rated.

FABRIC MANUFACTURER: SEFAR Architecture, www.tenarafabric.com

RETRACTABLE CANOPY MANUFACTURER: En-Fold from Uni-Systems, www.uni-systems.com

HAMPTON INN

Maple Grove, Minn.

PHOTOS: DRYVIT SYSTEMS INC.

RETROFIT TEAM

ARCHITECT: Ramaker Professional Services LLC, Sauk City, Wis., www.citiesedgearchitects.com

EIFS INSTALLER: W.E. Nelson Stucco Co., St. Paul, Minn., www.nelsonstucco.com

CONSTRUCTION SERVICES: Eagle Building Co., Minneapolis, www.eaglebuildingllc.com

EIFS DISTRIBUTOR: Lutz Co., Brooklyn Park, Minn., lutzcompany.com

MATERIALS

The facility owner, TPI Hospitality, relied on ReVyvit by Dryvit to completely renovate the building exterior. It required stripping off the original cladding to the studs and installing an Outsulation system to create a better performing, attractive building.

The following materials were used to update the cladding on the facility:

- Outsulation Plus MD System
- Custom Brick and textured acrylic finish in Sandpebble
- Backstop NT liquid-applied air and weather barrier

EIFS MANUFACTURER: Dryvit Systems Inc., www.dryvit.com

THE RETROFIT

The Hampton Inn was originally clad with thin brick adhered directly on top of a thin extruded insulation and insufficient weather barrier, all of which were poorly installed. As a result, the entire building was leaking and suffering from moisture intrusion, causing portions of the thin brick façade to fall off the building. That was more than enough to convince TPI Hospitality that the building was in need of a substantial renovation.

Mark Maves, general manager of the property, states after the renovation: “I’d like to stress how much more seal tight everything is. It’s tight, it’s clean, it looks fresh and new, and now we’ve even been through winter. We don’t have windows that have condensation on them … anymore. I think that during the year we’ve had this product on our building, we’ve probably reduced our energy costs by 25 to 30 percent, and that makes me very happy.”

BLACK EYED DISTILLING CO.
Fort Worth, Texas

PHOTOS: VIEGA

RETROFIT TEAM

PLUMBING CONSULTANT: O'Grady Plumbing, Fort Worth, ogradyplumbing.net

PLUMBING SUPPLIER: Morrison Supply, Fort Worth, www.morrisonsupply.com

MATERIALS

Owners Todd Gregory and Scott Billings purchased the distillery in August 2016 and knew there were a lot of items in the building that needed to be retrofitted. The basics of the plumbing were in place, but they had to replace a chiller, boiler and add a blending tank with a cooling jacket. They also needed a new air compressor and air lines.

Gregory and Billings have plumbing experience, so they planned to do much of the work themselves, which led Gregory to ask a contractor he knew, Randy Pair of O'Grady Plumbing, if he had a pipe threader they could borrow. Pair put him in touch with Viega Regional Manager Jaime Gomez.

"[Gomez] showed us the fittings and had a loaner set of tools we could use to retrofit," Gregory says. "It allowed us to do the retrofitting ourselves as we got the pipe in. We would install and build what we needed to fit the particular equipment and it was quick and easy to use the tools."

Gregory and Billings called on Pair to help advise or lend a hand, making sure they were using the right types of fittings for all the different lines they were running, including ProPress for chilled water, steam and compressed air lines in the distillery. They also used MegaPressG for natural gas lines.

"Threading didn't make any sense for them," Pair explains. "Press is a lot cleaner and then they wouldn't be putting oil in the system."

PIPING MANUFACTURER: Viega, www.viega.com

THE RETROFIT

Black Eyed Distilling Co. makes BLK EYE Vodka, a specialty vodka made with black-eyed peas and corn, sourced completely from Texas. It was discovered that black-eyed peas possess the starch needed to make fermented mash and yield a higher-quality alcohol, leading to an ultra-premium finish.

Black Eyed Distilling is located in a historic firehouse, built in 1911, retrofitted for the owners' needs. Production happens downstairs and there is a tasting room and offices upstairs. There also is a full bar where visitors can have a drink, whether it's the BLK EYE Vodka or a sorghum whiskey the owners make in very small batches.

BLK EYE Vodka quickly is gaining notoriety. In 2017, Black Eyed Distilling earned the Best Traditional Vodka and a Double Gold Medal award at the 2017 Global Spirit Awards, Best Domestic Vodka–Gold Medal at the 2017 The Fifty Best Awards, a Silver Medal from the 2017 San Diego Spirits Festival and a Silver Medal at the 2017 New York World Wine and Spirits Competition.

FOGO ISLAND INN

Joe Batt's Arm, Newfoundland, Canada

PHOTOS: **FOGO ISLAND INN**

RETROFIT TEAM

MANUFACTURER'S REPRESENTATIVE: Audio Systems Limited, St. John's, Newfoundland, (709) 754-2244

MATERIALS

Fogo Island Inn installed the LogiSon Acoustic Network—a networked sound masking, paging and music system—not only to help ensure guests enjoy excellent room-to-room privacy, but to provide a comfortable background sound for those used to living in urban areas with higher ambient levels.

Hotels typically install sound masking to cover unwanted sounds related to in-person and telephone conversations, electronic products, minibars, ice machines, elevators, HVAC, plumbing equipment, construction projects and doors shutting. However, soon after Fogo Island Inn was built, the inn's team realized noise control was needed to ensure the sounds of barking seals and crying seagulls did not disturb guests when they opened the windows to enjoy the fresh air.

A loudspeaker was installed above the wooden ceiling in each guest room and a hole pattern drilled beneath it to allow the sound to diffuse into the room. A keypad allows the guest to set the masking volume according to personal preference. The inn can page the guest rooms to provide voice clarification in emergency situations. Elevators and common spaces use the LogiSon system to not only distribute sound masking, but also music and to create natural soundscapes that complement the inn's wild North Atlantic setting.

ACOUSTIC NETWORK MANUFACTURER: LogiSon, www.logison.com

THE RETROFIT

Using wood as the primary material, Newfoundland-born, Norway-based architect Todd Saunders designed the five-star Fogo Island Inn for Shorefast, a registered Canadian charity dedicated to building economic and cultural resiliency on Fogo Island. The inn was built to assist with the island's economic and cultural survival. To this end, all surpluses from operations are reinvested in the community. In addition to 29 suites, the 43,000-square-foot property includes a dining room, bar, lounge, library, reading room, cinema, art gallery, meeting room and gym. The roof deck features wood-fired saunas and outdoor hot tubs.

PHOTOS: KALWALL

CROUCH END PICTUREHOUSE | London

RETROFIT TEAM

ARCHITECT: Panter Hudspith Architects, London, panterhudspith.com

MATERIALS

Panter Hudspith Architects replaced the original curtainwall and specified Kalwall for the front elevation. Unusually, the translucent cladding is fitted with a tight 6-inch-wide grid, known as Verti-Kal, which not only serves to emphasize height but is the first of its type in the United Kingdom. On this scheme, the Kalwall panels insulate to 0.78 watts per square meter, making the building sustainable. The building also now exudes a gentle glow at night.

Architect James Jeremiah comments: "It's the first time we've specified Kalwall and it fulfils our vision of retaining the modernist characteristics of the building. One of our original concepts for the building was of a zoetrope [one of the earliest forms of moving image] and there's a strong history of using transparency in films with people moving behind the shadows. We felt the Kalwall system was a very good fit for what we wanted to achieve."

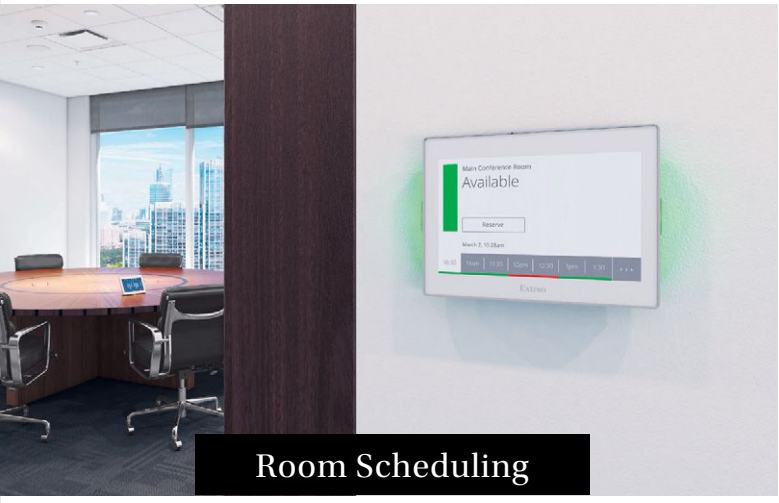
TRANSLUCENT CLADDING MANUFACTURER: Kalwall, www.kalwall.com

THE RETROFIT

Originally built as a factory in the 1950s, the Crouch End Picturehouse forms part of a wider initiative within the London suburb of Haringey, aiming to re-establish the area as one of London's cultural and arts centers. The result is a transformation of an ugly concrete building into a $9.75 million five-screen cinema complete with café, bar, restaurant and community rooms.

Panter Hudspith Architects recently was honored with three industry awards for the project's design: the 2016 Architects' Journal Retrofit Award for Leisure, Best Green Design from the Haringey Design Awards and the Architect of the Year (Sports & Leisure) from the Building Design Architect of the Year Awards.

In addition, the building's sustainable measures, including the Kalwall cladding, solar panels and a green wall, helped the building achieve a BREEAM (Building Research Establishment Environmental Assessment Method) rating of Very Good. BREEAM is the most widely used green environmental assessment method for buildings and communities in the UK.



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WRITTEN BY | AUBREY SWIFT, AIA, CEM, CxAP, LEED AP O+M


[1]

FIXING THE FAÇADE

Uncover Diagnostic Tools for Façade Remediation and Retrofits so You Can Get the Help You Need

[1] This community college classroom building features a steel curtainwall system that was leaking.

[2] The clearest case of a needed façade remediation results when the issue reveals itself through an obvious failure. Here the steel curtainwall members deteriorate from moisture intrusion.


[2]

Exterior walls of your existing building are in need of some type of remediation or retrofit. They may be experiencing performance problems—perhaps air leaks, moisture penetration or high energy bills. Or you are repurposing the building and now have different performance goals. The walls and windows can be hugely expensive to change. You will need help to investigate the problem, determine the cause and design a cost-effective, low-maintenance solution. Consultants in this realm use various titles, bring a variety of skills and certifications, and employ different methods and tools. How will you sort out what you need?

General rules are difficult. Wall and window systems are devilishly hard to assess. Much of these systems are opaque, literally and figuratively. The most complex computer simulations fall short of reproducing the actions of air, moisture and heat in actual wall materials. It's tough for any individual, or even a team, to master all the aspects of building science and practical know-how.

Still, there is a generally accepted methodology for a logical, comprehensive and cost-effective evaluation of exterior wall systems. Studies typically will include most of these steps:

1. Review of available documents
2. Personnel interviews
3. Visual survey of façade
4. Creation of inspection openings
5. Instrument recordings
6. Testing
7. Computer modeling
8. Report writing

What does this look like in practice? I was part of a team investigating a building, constructed in the late 1970s, that houses community college classrooms and sports a steel curtainwall system (see Image 1). In this case, the failure is readily apparent as water permeates the walls in Image 2.

(continues on page 50)

PHOTOS: dbHMS

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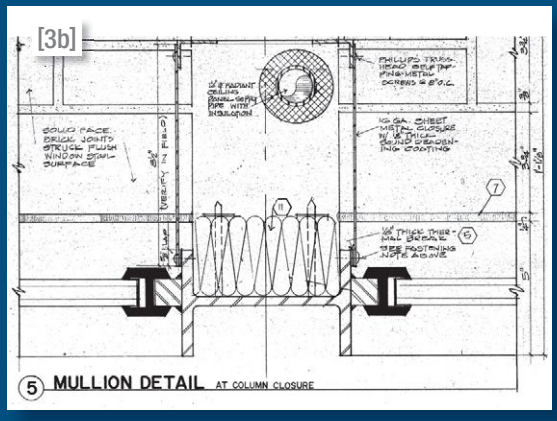
[3a]



[3b]


[4]


[5]

[3a-b] Fortunately, the original design drawings were available and well-crafted, clearly showing the insulated glass secured to the steel mullions with a rubber zipper gasket. [4] A classroom could be taken out of use and an area of the interior masonry bulkhead was removed to reveal the back side of the spandrel panel below the window. [5] A blower door installed in a classroom door lowers the interior pressure to simulate a 20-mph wind on the façade.

The owner assembled a team, including an architect, enclosure commissioning agent, and testing consultant to determine what and how much of the curtainwall to replace. The first step after the kickoff was to review all available documentation about the history of the wall, including design drawings and specs, shop drawings, previous studies, and maintenance and repair records. Then we interviewed knowledgeable staff.

The original design drawings were available and well crafted, clearly showing the insulated glass secured to the steel mullions with a rubber zipper gasket. (See Images 3a-b.) A careful field survey followed confirming, building-wide, that what could be seen matched the details. Still, the team wanted to confirm the interior wall structure and witness the deficits of the system in action if possible. This was a case for an inspection opening. Keep an open mind when your consultant says, "It is time to open a wall and force it to reveal its truth." A small investment, and some inconvenience at this stage, can save much larger costs in testing later.

Making the Invisible Visible

A classroom was taken out of use and an area of the interior masonry bulkhead removed to reveal the back side of the spandrel panel below the window (Image 4). A fan was mounted in the classroom door to lower the pressure in the room and simulate a 20-mph wind against the façade (Image 5). Water was then applied to the exterior using a handheld spray nozzle (per AAMA 501.2, "Quality Assurance and Diagnostic Water Leakage Field Check of Installed Storefronts, Curtain Walls, and Sloped Glazing Systems) or a spray rack (ASTM E 1105, "Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors,

View the **smoke penetration test**.

and Curtain Walls, by Uniform or Cyclic Static Air Pressure Difference"). Although water movement through walls is unpredictable, the leaks were apparent here. As an alternate to water, or to gain more information, theatrical smoke can be used to make airflow visible. In this case, both were used and each made dramatically clear that the zipper seal between the glass and the steel mullions had failed.

It was decided that a new glass retention system would be designed and retrofitted and, with all the glass replaced with argon-filled insulating units, the rest of the steel system could be refurbished.

A systematic process was followed that involved specific costly testing. You should know that it is rarely possible for consultants to determine, before beginning the investigation, what tests are going to be useful. When writing RFPs and budgeting, consider requesting unit prices for tests that seem likely to be needed and ask consultants to estimate the total cost for testing.

Note that the blower door tool, used here for a single classroom, is an excellent diagnostic tool for discovering air leakage for an entire building. (Whole building pressurization testing is now being required by some states for new construction.) It can give you an accurate idea of the overall airtightness of your building and, combined with theatrical smoke and thermal imaging, can help locate the holes.

YOUR CONSULTANT NEEDS TO BE LIKE THE FAMOUS POLICE DETECTIVE, COLUMBO, AND ALWAYS ASK ONE MORE QUESTION.

View a **dbHMS blower door** video.

Thermal Imaging

Do not overlook a simple, low-tech solution for finding and closing holes. For example, in a relatively new medical facility, the owner couldn't keep patient rooms much above 65 F on the coldest winter days and was inclined to blame the HVAC system designer, the energy model and the load calculations. But, diligently, he also consulted an enclosure specialist. Our consulting team followed a systematic evaluation process that began with the design drawings. The design looked sound and a survey of the building exterior exhibited no clues to difficulties. (See Images 6 and 7.)

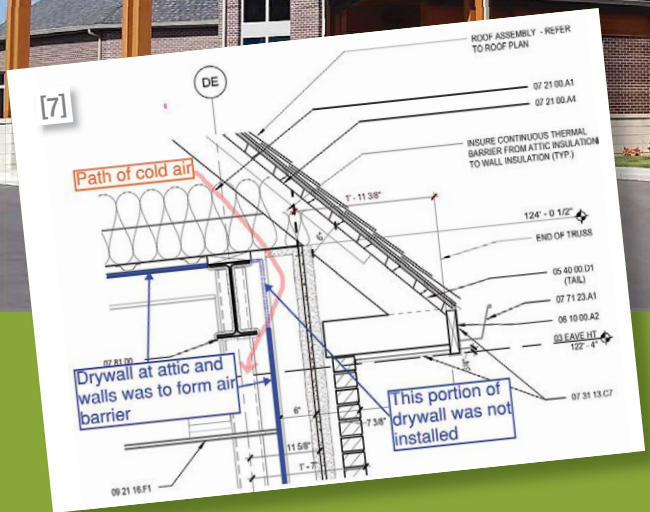
RETROFIT CONFERENCE

This article is based on a presentation that was given at ***retrofit***'s inaugural conference, which was held in Chicago in October 2017. Download Swift's presentation and learn about ***retrofit***'s second annual conference to be held in Charlotte, N.C., Oct. 9, 2018, at www.retrofitconference.com.

retrofit CONFERENCE'18

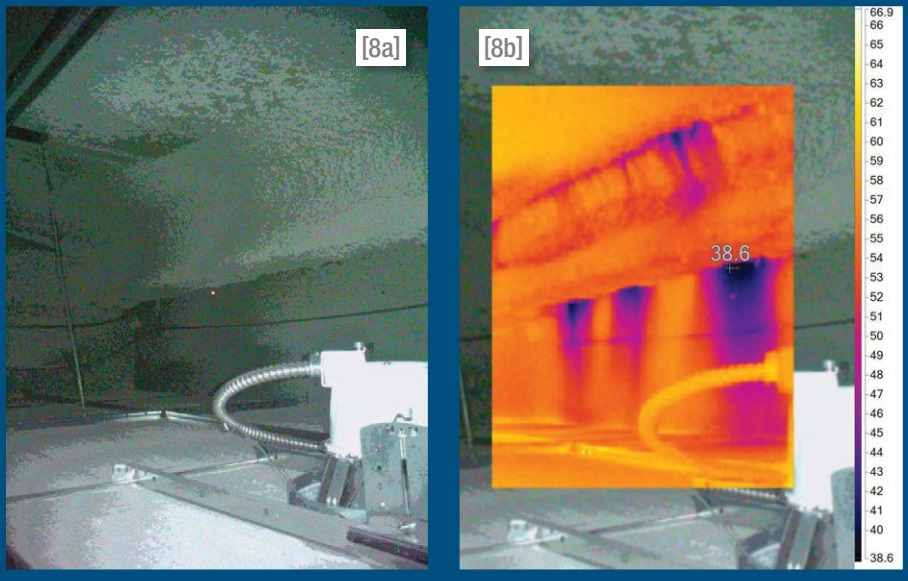
[6]

[7]



[6] This building's relatively new envelope revealed no indication of problems leading the owner to blame the HVAC system for the interior's cool temperatures. [7] A design section shows a drywall air barrier that is supposed to go behind a beam and join a drywall ceiling. This is the right idea but it is very difficult to install.

WHEN WRITING RFPS AND BUDGETING, CONSIDER REQUESTING UNIT PRICES FOR TESTS THAT SEEM LIKELY TO BE NEEDED AND ASK CONSULTANTS TO ESTIMATE THE TOTAL COST FOR TESTING.



[8a-b] Regular and IR camera images taken above the ceilings reveal a plume of 38 F air (represented by the dark violet color) descending into patient rooms where the exterior walls meet the attic. Note the color scale on the IR image.

A thermal imaging survey with an infrared (IR) camera, including areas above interior ceilings, revealed a plume of 38 F air descending into patient rooms where the exterior walls met the attic (see Images 8a-b). Closer inspection revealed key pieces of the air barriers had been omitted during construction, allowing the cold air to compromise comfort for the patients.

IR surveys are immensely valuable but you need a temperature differential between inside and outside for them to work; these surveys may not be effective in the mild seasons. Interpreting IR images requires training. You should ask for at least a level-2 certification from the Columbus, Ohio-based American Society for Nondestructive Testing for the technicians on your project. Be careful you don't receive a false impression from the bright contrasts of the images. Always insist on

[9] This masonry power plant building was to be repurposed into a student center.

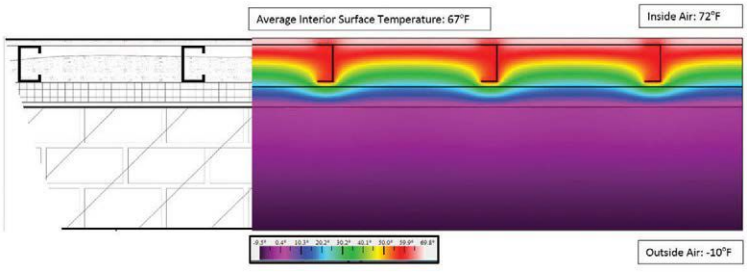
a color scale. The dramatic colors you see may represent only a few degrees of temperature variation.

Much has been written about air leaks and the need for tighter buildings. Don't let the fog of technical data about permeability and vapor retarders obscure the impressive truth that 10 times as much moisture can move through a 1-square-inch hole than can diffuse through 10 square feet of the cheapest vapor retarder the builder may have installed.

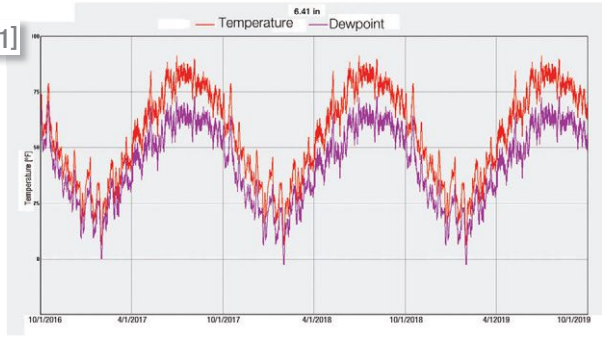
Retrofit for Today's Energy Standards

We always want to keep an eye on moisture movement in walls. What happens when we change walls that have been functioning well historically but no longer

[10] INSULATED: EXTERIOR WALL TEMPERATURE DISTRIBUTION



[11]



[10] The concept for insulating the existing 12-inch masonry walls was modeled to predict temperatures inside the brick façade. [11] The results of the WUFI model track the internal temperature in the brick over the seasonal cycles with the temperature at which water will condense.

meet the owner's goals? I worked with an owner who wanted to repurpose a historic masonry power plant into a college student center (see Image 9). The existing walls were solid brick, 12-inches thick, but uninsulated. How would we best retrofit to modern energy standards while keeping the risk of damage from freeze-thaw low? To solve this problem, our consulting team used two computer simulation tools to predict how walls should and could perform. The THERM model results, Image 10, estimate interior surface temperatures within the wall to compare different insulation retrofit methods and help the HVAC engineer confirm the comfort level of the occupants in different heating and cooling schemes.

In Image 11, a 2-dimensional WUFI model charts the relative humidity and temperature within the brick to try and predict freeze-thaw damage.

As with the IR camera tool, you must try to gauge the skills of the WUFI or THERM user. These models can be misleading and the dynamics of freeze-thaw damage to brick is complex (see bit.ly/2IwzmtU).

The study showed the bricks to be robust enough to insulate, and the improved wall thermal barrier had a dramatic effect on the selection of the HVAC to be installed.

(continues on page 56)

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What to Ask Your Prospective Enclosure Consultant

There are many more tools to be used and technology will continue to evolve new ones. Consider the following tools currently available:

1. Small inexpensive data loggers that can be put inside walls to record temperature and humidity.
2. Borescope and newer technologies for looking inside walls without destructive removals.
3. Drones that can do close-up imaging of higher buildings with little risk to field staff.

You don't need to understand all of these but ask your candidate consultant to outline the tools and tests they anticipate using.

Because of cost, legal and access considerations, few studies can be exhaustive. Make sure you let your consultant know your main areas of concern. In the absence of other agendas, importance of issues are most often ranked:

1) Indoor Air Quality (liability): Determine issues that could affect indoor air quality and therefore the health of occupants.
2) Moisture (material damage): Discover conditions that allow moisture where it does not belong and could lead to serious long-term damage to building materials.
3) Airflow and Pressure (poor comfort): Uncover air leaks and pressure problems that make it hard for the HVAC system to provide proper comfort in the space.
4) Improper heat movement (poor economics): Find thermal bridges and holes that ruin the economy of running the HVAC systems.

Become familiar with ASTM 2128, "Standard Guide for Evaluating Water Leakage of Building Walls", published in 2002. It was written around investigating water problems in walls but the methodologies apply to investigating air barrier gaps just as well. Ask your consultant to reference this standard in his or her proposal.

Shy away from hiring teams that seem confident they already have a solution. Review the eight steps listed at the beginning of this article before you hire. Avoid consultants who seem to want to focus solely on document research; there is no substitute for field work above ceilings, in closets and on scaffolds.

By the same token, be wary of a specialist who doesn't want to spend time collecting documents. Your consultant needs to be like the famous police detective, Columbo, and always ask one more question. Regardless of what title your candidate uses—skin architect, façade engineer, enclosure commissioning agent, building science specialist—and what tools he or she prefers, look for an awareness of the proper processes and the mind of a sleuth.

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PHOTOS: ENGBERG ANDERSON ARCHITECTS

BLUE RIBBON RETROFIT

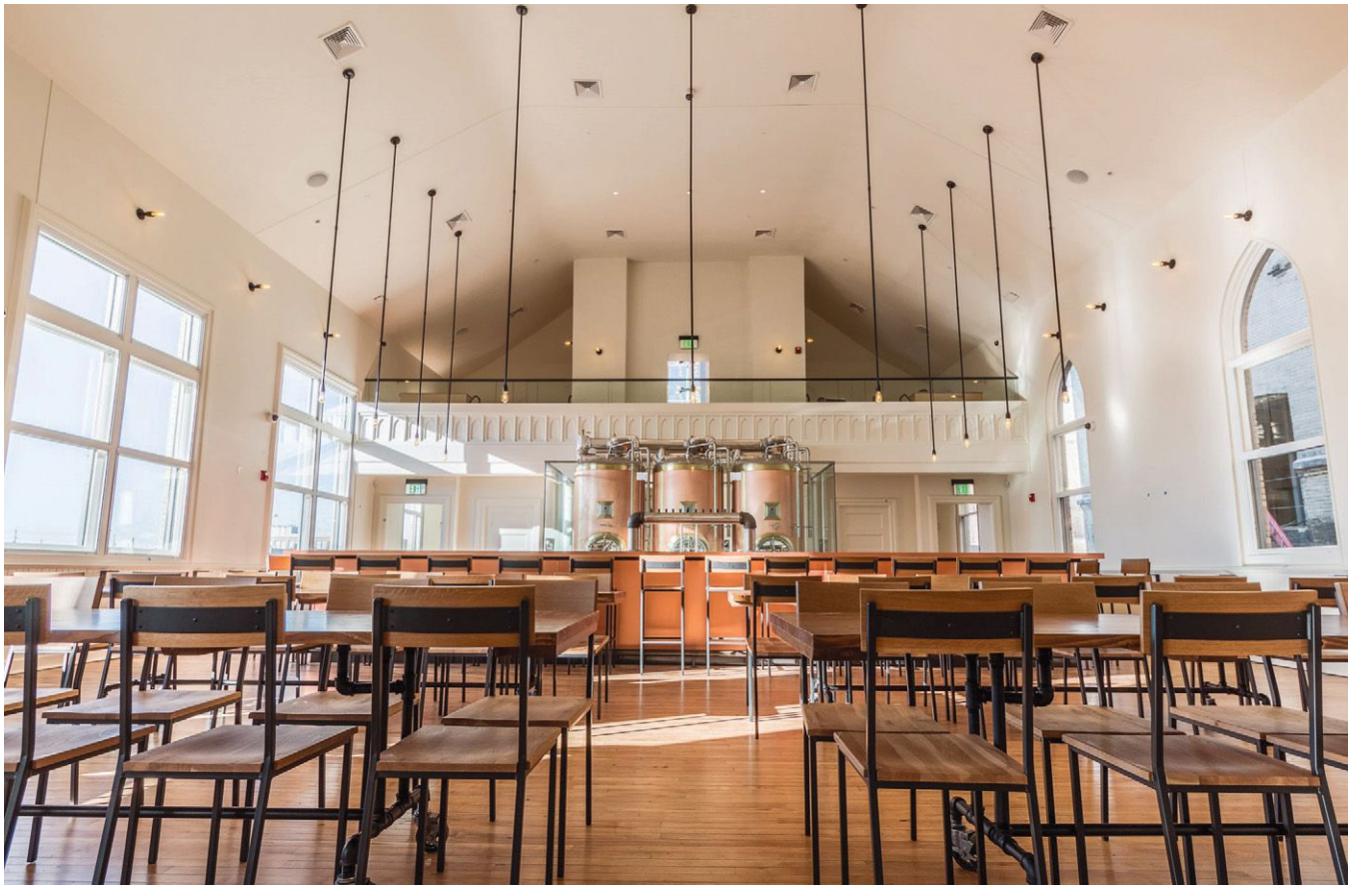
Building 23 Brings a Historic Dining and Social Venue to the Former Pabst Brewing Complex

WRITTEN BY | ALLEN BARRY

For more than a century, the city of Milwaukee has been known as the beer capital of the world. The city was incorporated in 1846 and by 1880 nearly a third of Milwaukee's population was made up of German immigrants. From their homeland, the Germans brought beer halls and a culture of brewing beer.

One of those early immigrants to Milwaukee was a man named Frederick Pabst, who established his eponymous brewery in 1866. His beer became famous and won a Blue Ribbon at the Columbian Exhibition World's Fair in 1893. The Pabst brand has bragged about that award ever since.

The Pabst Brewing Company has long been an important part of the city's DNA. Pabst was



one of the country's first macro breweries, and its impact can still be felt all around the country today. Whether from faded bar signs hearkening back to the company's heyday or present-day hipsters sipping on a bottle of PBR at an alt-rock show, Pabst remains in the national consciousness.

Brewery District

As times and America's beer tastes changed, much of the once sprawling 21-acre Pabst Brewing campus started falling out of use in the mid-1990s and sat vacant for years. Recent efforts have revitalized the Pabst complex into a hip, uniquely Milwaukee neighborhood, known simply as The Brewery. The district includes new and historic buildings that feature apartments, a hotel, two new breweries, restaurants and taverns. There are parks on the campus, as well.

A relatively recent renovation to join The Brewery complex is known as Building 23. The converted church features a beer hall and restaurant on the second floor, where the sanctuary once was, and a small batch brewery on the first floor. An outdoor beer garden in the rear provides additional customer seating when the weather permits.

The building was originally constructed in 1873, not as part of any brewing operation, but as the First German Methodist Episcopal Church. The Pabst Brewing Company took over the building in 1898 and it was transformed into a restaurant, beer hall and concert venue called the Forst Keller restaurant. It was home to many of Milwaukee's prevalent German societies.

As part of Pabst's manufacturing complex, the space was designated Building 23 and it was often used for company events, meetings and training. The number 23 can still be seen painted above the door at the main tower entrance and remains part of the building's identity. Forst Keller was closed in 1971, but Pabst continued to use the building sporadically at least through the late 1990s.

Historic Focus

As parts of the Pabst complex were revitalized, the old church in the southwest corner

Constructed in 1873 as the First German Methodist Episcopal Church, **Pabst Brewing Company** took over the building in 1898 and used it for company events, meetings and training. Today, the converted church features a beer hall and restaurant on the second floor and a small batch brewery on the first floor.

To the eye, the appearance of much of the building remains historic, even if modern materials and techniques were used behind the scenes to achieve the look.

of The Brewery district came into focus for reuse. The building's owner, Blue Ribbon Management LLC, and tenant, Pabst Brewing Company, approached Engberg Anderson Architects, a local design firm with a solid track record for historic-preservation projects and historic tax credit work.

"We began design work in the spring of 2015. The property is in a locally designated neighborhood, so this project had to go through a city review with the Milwaukee Historic Preservation Commission [HPC] to obtain a Certificate of Appropriateness," recalls Mark Ernst, partner with Engberg Anderson Architects. "The intent of the project was to retain and restore as much of the original historic fabric as possible and still provide a code-compliant, commercial venue above a small batch brewery on the first floor."

Part of the reason for bringing in a design firm with a historic-preservation background was because it was very important to walk a balance between bringing a modern energy to the building while still maintaining a deep respect for its past.

"Much of the design was controlled by the historic-preservation process," says Jason Raiten, architect with Engberg Anderson Architects. "We needed to be sensitive to the historic building fabric to satisfy the State Historic Preservation Office [SHPO] and the National Park Service, the governing bodies for the HPC. Designing and constructing to these standards were the frontline issues for the project."

(continues on page 62)

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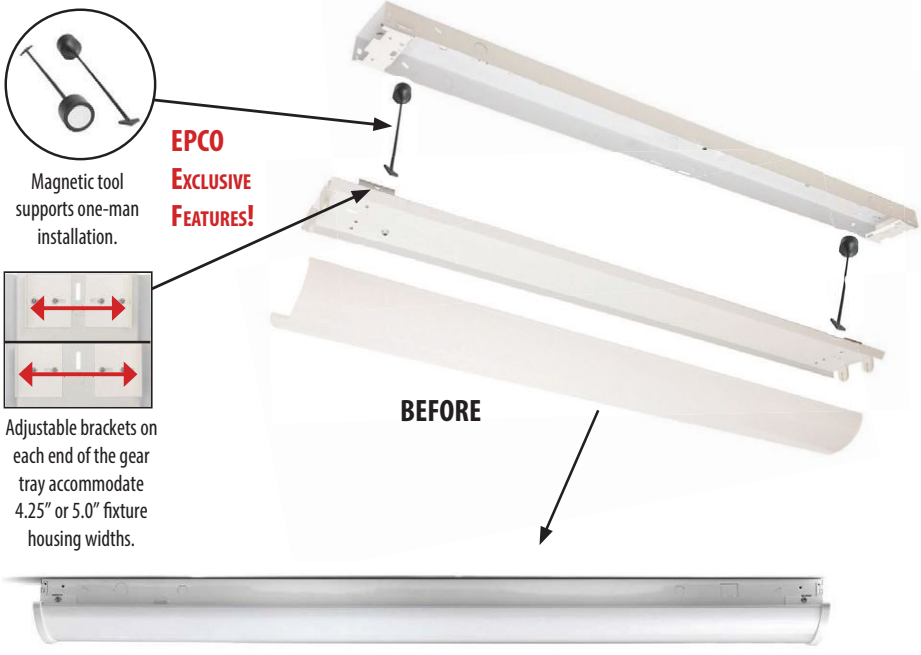

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Great attention needed to be paid to every detail to give the renovation a warm, historic feeling. "The roofing was replaced with traditional wood shingles. Interior floors were retained and restored," Raiten continues. "All plaster walls were repaired or replaced with matching smooth painted surface. The board and batten ceiling in the ground-floor space was carefully removed and returned after the mechanical equipment was installed."

"After discovering the balance of the building above the ground floor was a masonry veneer building, we had to find a way to stabilize the masonry without installing ties from the exterior side of the envelope," Ernst explains. "This was solved by installing masonry ties from the back side and clipping them to the structure."

Old and New

To the eye, the appearance of much of the building remains historic, even if modern materials and techniques were used behind the scenes to achieve the look. "We had to maintain all the original wood windows and reinstall replicas in some openings where they had been removed," Ernst continues. "There was quite a bit of water and fire damage to the structure that the structural engineer had to mitigate with designed repairs. The exterior masonry had to be meticulously cleaned with methods approved by the SHPO representative."

A 1,000-square-foot addition provided the space to meet current needs while still echoing the historic nature of the building. It now houses a modern kitchen, ADA bathrooms and more.

"The original architecture inspired the southern addition," Raiten says. "The addition needed to be functional and cohesive in materials and design without detracting from the original church. An elevator was installed providing accessibility and ease of use to the tap-room kitchen. To provide a clear delineation between old and new, a sliver of glass was used between the original building and new addition."

Retrofit Team

ARCHITECT // Engberg Anderson Architects, Milwaukee, engberganderson.com

GENERAL CONTRACTOR // KM Development Corp., Milwaukee, (414) 274-2800

STRUCTURAL ENGINEER // Pierce Engineering Inc., Milwaukee, www.pierceengineers.com

MECHANICAL / ELECTRICAL ENGINEER // JF Ahern, Milwaukee, www.jfahern.com

WINDOW / CARPENTRY RESTORATION // Titan Building Co., New Berlin, Wis., www.titanbuildingcompany.com

MASONRY RESTORATION // RD Woods Co., West Allis, Wis., www.rdwoods.com

Brewing Sustainability

In addition to fitting into the historic fabric of the neighborhood, the Building 23 retrofit was also designed to work in harmony with the natural environment as much as possible. Sustainability was a point of emphasis throughout.

"The project is in a LEED neighborhood, so conservation contributed to the design without compromising the historical-preservation process," Ernst says. "While stormwater-conservation methods were already in place, the addition uses modern elements for thermal performance. Interior storm windows were applied to the historically restored wood windows, and LED lighting was exclusively used in the building's lighting design."

Smart design and new technology enabled the project team to bring energy efficiency and the benefits of modern building operations to the facility.

"Balance is always top of mind on projects like these," Raiten says. "Discovering the second-floor framing was a timber structure with a masonry veneer allowed us to add insulation in the exterior walls. Most of the equipment for a modern facility is housed in the new addition. This includes the elevator, HVAC equipment and a fully equipped kitchen."

Cream of the City

Bringing a 19th century building into the 20th century, of course, required several other upgrades and touchups. For example, the chimneys were found to be leaning toward the building and needed to be stabilized with rebar and concrete to prevent further movement. And a piece of the brewery's history is present in the outdoor beer garden, which incorporates reclaimed iron gates from the original facility in its design.

Like other buildings in The Brewery, Building 23 stands as a monument to the history and cultural fabric of Milwaukee. Beer, and specifically Pabst beer, is a big part of that heritage.

"With the desire to bring Pabst Brewing back to Wisconsin, custom brewery equipment was designed to be installed after the historic restoration of the ground-floor space was completed," Ernst says. "Enjoying a Pabst in the outdoor beer garden is a truly Milwaukee experience."

The renovated facility opened to the public in April 2017. Residents and visitors to the city alike have been drawn to this vibrant, historic neighborhood, and the revitalized Building 23 has been a success. It won the HPC's Cream of the City Award for Historic Renovation in 2017.

"The overall reaction to this project has been overwhelmingly positive," Ernst says. "The mayor and city aldermen have been very pleased with the outcome."

> "Enjoying a Pabst in the outdoor beer garden is a truly Milwaukee experience."
>
> —Mark Ernst, partner, Engberg Anderson Architects

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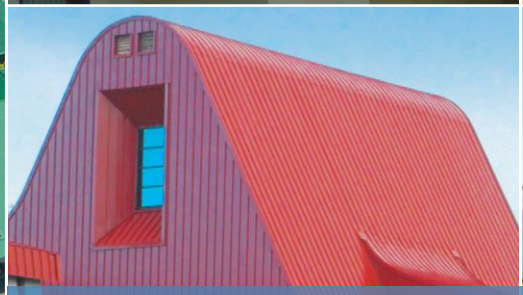

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MIXED MEDIA

WRITTEN BY | KJ FIELDS

Contemporary Art and Art Deco Converge in an Innovative Hotel

PHOTOS: CHRIS COOPER (unless otherwise noted)

21c Museum Hotels' Founder Steve Wilson shares his vision in this short video.

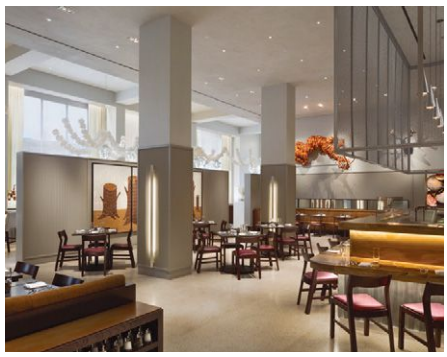
Art Deco was a highly progressive design movement in its day, but the architects of Durham, N.C.'s 1937 Hill Building could scarcely imagine the vanguard displays that now inhabit the structure. Bringing new vibrancy to an underserved area of downtown, the 134,025-square-foot 21c Museum Hotel in Durham combines the panache of Art Deco elements with eye-catching contemporary art.

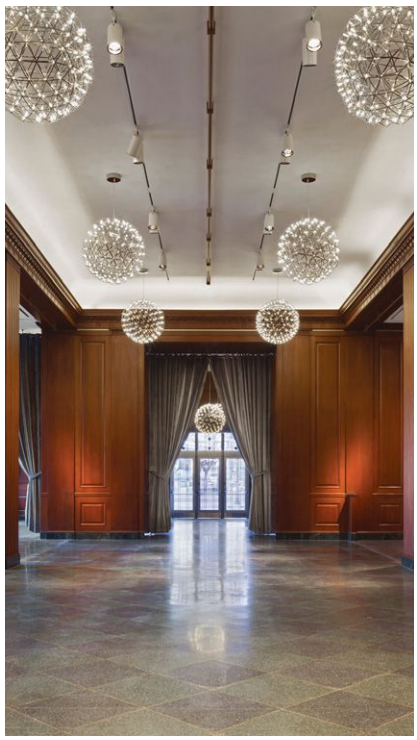
The owners of 21c Museum Hotels have a passion for integrating contemporary art into daily life, and their unique programmatic approach turned the Hill Building, formerly the Home Savings and Trust Company, into a hotel activated by public gallery spaces. The building was a Durham landmark because of its 17-story stepped architecture and the fact that it was designed by Shreve, Lamb & Harmon—the architects of New York's Empire State Building. When the New York-based design team at Deborah Berke Partners, led by Principal Terrence Schroeder, first envisioned the project's adaptive reuse, they instantly saw the symmetry between the spirit of Art Deco and 21c's mission. "The Art Deco style was bold and it celebrated the 20th century," Schroeder affirms. "21c celebrates the 21st century with vivid, often provocative, works that encourage people to explore contemporary art."

Evoking an Era

Intact Art Deco finishes lend sophistication to 21c Museum Hotel Durham. For example, the elevator lobby is clad in green marble with terrazzo floors and a decorative aluminum leaf plaster ceiling. "The aluminum leaf is a bright metallic counterpoint to the green marble," Schroeder says. "A lot of our design work was to highlight the character of the Art Deco items we found and stitch together a holistic experience with contrasting spaces for art."

Designers located original drawings that detailed windows, radiator





INTACT ART DECO FINISHES LEND SOPHISTICATION TO 21C MUSEUM HOTEL DURHAM. FOR EXAMPLE, THE DOUBLE-HUNG STEEL SASH WINDOWS REMAIN, PRESERVING THE BUILDING'S CHARACTER AND GARNERING HISTORIC TAX CREDITS.

RETROFIT TEAM

ARCHITECT AND INTERIOR DESIGNER // Deborah Berke Partners, New York, www.dberke.com
- Deborah Berke, FAIA, partner
- Stephen Brockman, senior principal
- Terrence Schroeder, principal
- Stephen Lam, project manager
- Virginia Gray, designer

ARCHITECT OF RECORD // Perfido, Weiskopf, Wagstaff + Goettel Architects, Pittsburgh, www.pwwgarch.com

MEP ENGINEER // KLH Engineers, Fort Thomas, Ky., www.klhengrs.com

ENGINEER // Stewart Inc., Raleigh, N.C., stewartinc.com

CIVIL CONSULTANT // Coulter Jewell Thames, Durham, N.C., cjtpa.com

LIGHTING CONSULTANT // IlluminationWorks, London, www.illuminationworks.com

ACOUSTICAL CONSULTANT // Babich Acoustics, Pittsburgh, (412) 228-0917

CONSTRUCTION MANAGER // Skanska, Durham, www.usa.skanska.com

STRUCTURAL SYSTEM RENOVATION // Phillips Iron Works, Raleigh, www.phillipsiw.com

RESTORATION OF EXISTING LIMESTONE AND POLISHED GRANITE CLADDING // Baker Restoration, Raleigh, bakerroofing.com

ROOFING CONTRACTOR // Baker Roofing, Raleigh, bakerroofing.com

THE OWNERS OF 21C MUSEUM HOTELS HAVE A PASSION FOR INTEGRATING CONTEMPORARY ART INTO DAILY LIFE, AND THEIR UNIQUE PROGRAMMATIC APPROACH TURNED THE HILL BUILDING ... INTO A HOTEL ACTIVATED BY PUBLIC GALLERY SPACES.

covers, wood paneling and decorative work throughout the building. Beautiful terrazzo flooring in different colors and patterns still remained (sometimes only in fragments) on 15 of the building's 17 floors. The top two stories are not served by the elevator; they housed mechanical equipment and unoccupied space, which they continue to do today.

The upper floors were formerly offices that divided nicely into the hotel's 125 guestrooms. Few of the original Art Deco touches survived in these areas other than small portions of flooring and aluminum metal grillwork covering the openings of the in-wall radiators. "We retained and refurbished the decorative grillwork and refurbished the terrazzo flooring," Schroeder says. In guest rooms, the designers kept the floors exposed and added area rugs. Throughout the building, they selected color palettes that either accentuate the floor colors or provide warm contrasts. "We used metallic tones like silver and copper to add hints of glamour while keeping the atmosphere very modern," Schroeder notes.

Programmatic Collage

Incorporating the hotel's lobby, restaurant and ballroom all on the ground floor became impossible because of limited space. Schroeder and the team examined a number of design scenarios and decided to move the lobby to the second floor, which had been open office space. The front entrance leads to the marble elevator lobby where guests rise to the second floor to check in. Around the corner from the elevators, a historic staircase offers guests another intriguing access route. "21c commissioned a video art installation of Western sunsets along the staircase," Schroeder recalls. "The color changes on the screens are very dynamic and the stairwell is lined with mirrors to magnify the effect."

The Hill Building is on the National Register of Historic Places. The adaptive reuse project received tax credits from the North Carolina State Historic Preservation Office, Raleigh, and federal historic preservation tax incentives from the National Park Service, Washington, D.C. One tax-credit stipulation was that the team had to maintain the original double-height volume of the ground floor's former 4,450-square-foot department store, which also had a mezzanine. The team designed this space, just south of the main entry, into a restaurant.

THE HISTORIC BANK VAULT WITH ITS SAFETY DEPOSIT BOXES NOW ENCASES ART AND LOUNGE SEATING THAT ENTICES PEOPLE TO LINGER.

Constructed for the Home Savings and Trust Company, the Hill Building was a Durham landmark because of its 17-story stepped architecture and the fact that it was designed by Shreve, Lamb & Harmon—the architects of New York's Empire State Building.

MATERIALS

STEEL AND GLASS HOTEL ENTRY CANOPY // Acurlite System, acurlite.com

SURE-WHITE EDPM MEMBRANE // Carlisle Syntec Systems, www.carlislesyntec.com

STOREFRONT AND GUEST ROOM TERRACE DOORS // Kawneer, www.kawneer.com

SWITCHABLE GLASS IN PUBLIC RESTROOM // Paragon Architectural Products, glassengineer.com

VANISHING TV (21c suite and restaurant lounge) // Seura, www.seura.com

NEW DOORS, HOLLOW METAL DOOR FRAMES AND DOOR HARDWARE // Engineering Specialties, (704) 933-9496

FIRE-RATED CURTAINWALL AND DOOR // Aluflam, www.aluflam-usa.com

CUSTOM INVISIBLE MILLWORK DOORS (ballroom, art vitrine and coat closet), CABINETWORK AND CUSTOM WOODWORK // Cleora Sterling Corp., www.csterling.com

HOTEL ELECTRONIC LOCKS // VingCard Elsafe, www.assaabloyhospitality.com

ACOUSTICAL CEILINGS // Fellert NA, www.fellert.com

PAINT // Sherwin-Williams (throughout), www.sherwin-williams.com, and Scuffmaster ScrubTough (typical guest corridor), scuffmaster.com/scrub-tough

ZINC (RESTAURANT AND BAR) // HandCrafted Metal, www.handcraftedmetal.com

WALLCOVERINGS // Arc-Com Fabrics (spa), www.arc-com.com, and Wolf Gordon (21c suite), www.wolfgordon.com

FLOOR AND WALL TILE // Nemo Tile Co. Inc., www.nemotile.com, Daltile, www.daltile.com, and Stone Source, www.stonesource.com

BRENTWOOD STONE (bar and garde manger countertop) // Architectural Minerals & Stone, www.architecturalminerals.com

HISTORIC VAULT ART FLOOR TILE // BANK (Unswept Floor Series): Leslie Lyons and JB Wilson

RESILIENT FLOORING (spa and fitness area) // Lonseal Loneco Midnight, lonseal.com

OFFICE FURNITURE // Innerplan, innerplan.com

CASE GOODS // Kimball Hospitality (guest rooms), www.kimballhospitality.com, and Cheng Meng Furniture Beachwood Collective (public area), chengmengfurniture.com

UPHOLSTERY AND SEATING // Carson's Hospitality, carsonshospitality.com

DIMMING SYSTEM, LIGHTING CONTROLS // Cooper Control, www.cooperindustries.com

PLUMBING FIXTURES // Hansgrohe (guest rooms), www.hansgrohe-usa.com

ENERGY MANAGEMENT // Inncom by Honeywell (guest rooms), www.inncom.com

The new restaurant's bar and dining countertops are quartzitic sandstone quarried near Brentwood, Mo., chosen because the stone's color complements the hues in the terrazzo floor.

Single-use restrooms now line the mezzanine. "We made the route to the restrooms circuitous so people are led on a journey through artwork. You can take the video-art-installation stairwell that eventually leads to the lobby or the elevators, which make you pass through the mezzanine's art gallery," Schroeder explains.

The restrooms themselves are surprising. When the door to each restroom is open, both the door and accompanying wall area are transparent. Once a user steps inside and locks the door, the glass becomes translucent for privacy, thanks to switchable glass controlled by electrical circuit.

On the north side of the first floor, the hotel's ballroom took over the original banking hall, a grand 2,670-square-foot space paneled in lustrous floor-to-ceiling pecan wood.

The historic bank vault with its safety deposit boxes still exists on the lower level. In keeping with 21c's theme of creative exhibitions, the gleaming metal space now encases art and lounge seating that entices people to linger.

Exterior Aesthetics

To preserve the original character of the building, the historic tax credits mandated

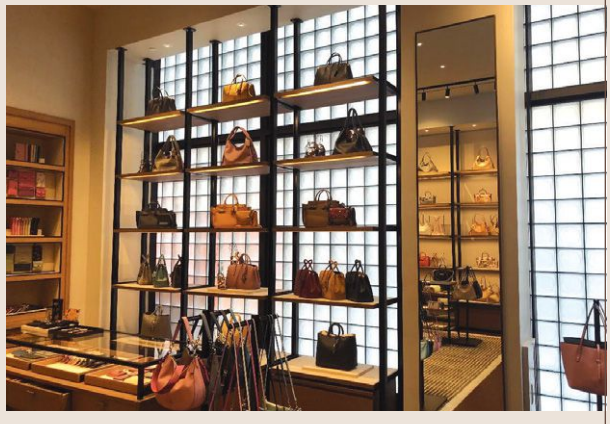
(continues on page 70)

To Fashion a Statement on New York's 5th Avenue, Coach® Chose the IBP Glass Block System.

To create a dramatic new exterior for their flagship store on America's most famous retail avenue, the design team opted for the vintage appeal and soft interior lighting of glass block. To meet the constraints of construction work on 5th Avenue, they chose the mortarless, aluminum grid system from IBP.

"Using mortared glass block would have required a week just to set 50 foot tall scaffolding. The IBP system was constructed off-site and the entire installation took one week," said Steve Boesch, VP, GBA Architectural Products + Services.

The lighting effect on product displays is dramatic, showing products bathed in natural light without the background distractions of clear glass. The success of the retrofit has prompted Coach to incorporate glass block–and IBP–into the design of newer stores.



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Stuart Vevers, Coach Creative Director | William Sofield, Studio Sofield, New York, NY

that the team retain the double-hung steel sash windows. "The windows were beautiful and we wanted to keep their aesthetic, but they weren't environmentally sensitive." The team performed energy modeling and centered on a variable refrigerant flow (VRF) system as the most energy-efficient way to condition the spaces. Although the Durham climate is temperate, each glass lite was recaulked to give the window the best possible seal from the elements. For safety reasons, the windows are no longer operable.

Aluminum panels between the steel sash windows on the building's exterior give the limestone façade a banded look, and decorative aluminum grillwork stands above the entrances. To provide weather protection but maintain views to the Art Deco grillwork, the architects placed an unobtrusive canopy at the main entrance.

Hotel and restaurant uses require a loading dock, but the building had no accessible back side because of adjacent development. "We removed the sill on a small section of storefront along Main Street and transformed it into a door," Schroeder describes. "This created a discreet 6-foot-wide loading area that's barely visible on the façade."

Welcoming Exhibitions

Curated and rotating contemporary art installations produce galleries in the lobby, ballroom and the hotel's pre-function space, restaurant, meeting rooms and circulation spaces. Other than times when the ballroom or meeting rooms are in use, the hotel's 10,000 square feet of exhibition space is free of charge and open to the public 24 hours a day.

21c's overarching objective is to forge connections between people and cutting-edge art. Although some of the pieces can be provocative, a friendly staff and the deliberate selection of comfortable furnishings make the spaces inviting. The public can lounge on the furniture or have a snack at the bar while viewing the installations. "It's an unconventional way to experience art," Schroeder says. "Exploration and playfulness is an important part of 21c's brand, and we worked to create spaces that let the art pieces shine. At the same time, we focused on wayfinding strategies to keep you moving through spaces, viewing the art and discovering more."

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Circle No. 34

Eureka! REDISCOVERED

An Acclaimed Restoration and Renovation on the Northern California Coast Creates a Showplace of Building Legacies and Local Lore

WRITTEN BY | JOHN LESAK, AIA, LEED AP, FAPT, AND LINDSEY MILLER, AIA, LEED AP

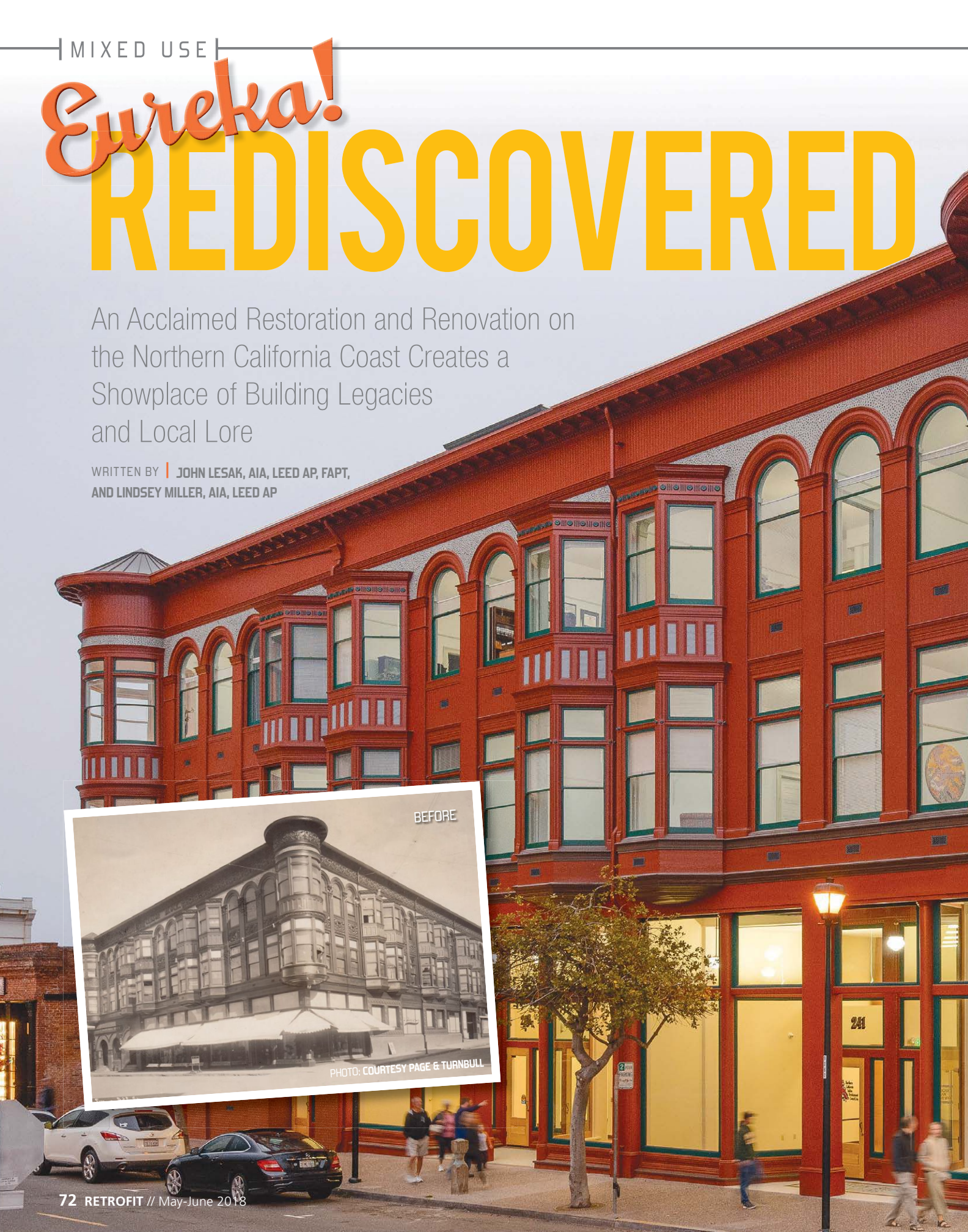

PHOTO: COURTESY PAGE & TURNBULL

TECHNIQUES

Large-scale historic preservation and retrofit projects are big enough challenges already, but what happens when the building is located in an isolated area with few supplier options and limited skilled trades? On the bright side, as seen with the recently reborn Carson Block Building in Eureka, Calif., it becomes an opportunity to educate emerging craftspeople about historic preservation, exchange knowledge about time-honored construction techniques and discover forgotten local lore. Even better, it can create a showplace of excellence in design and building, as well as a gleaming new, mixed-use magnet for businesses, visitors and area residents.

First, some background is in order. Eureka, the seat of Humboldt County

PHOTOS: **STEPHEN SCHAFER, COURTESY PAGE & TURNBULL** (unless otherwise noted)

RETROFIT TEAM

EXECUTIVE ARCHITECT // John Sergio Fisher & Associates, San Francisco, jsfarchs.com

PRESERVATION ARCHITECT // Page & Turnbull, Los Angeles, www.page-turnbull.com

GENERAL CONTRACTOR // Pacific Builders, Arcata, Calif., pacificbuilders-arcata.com

FAÇADE RESTORATION // Spectra Company, Pomona, Calif., spectracompany.com

STRUCTURAL ENGINEER // CYS Structural Engineers Inc., Sacramento, Calif., www.cyseng.com

MEP/FIRE PROTECTIONS ENGINEER // GHD Inc., Eureka, Calif., www.ghd.com

WOOD REPLACEMENT FABRICATION // Mad River Woodworks, Arcata, madriverwoodworks.com; Blue Ox, Eureka, www.blueoxmill.com; and WoodLab Designs, Arcata, woodlabdesigns.com

MASONRY // SJR Masonry & Construction, McKinleyville, Calif., (707) 839-2103

INTERIOR PLASTER REPAIR // Peter Santino, Eureka, www.santino.tv

TURRET WINDOW REPLACEMENT // CJ's Sash & Door, McKinleyville, (707) 839-3687

MATERIALS

WOOD REPLACEMENT // Old-growth local redwood

WOOD EPOXY // 105 Epoxy Resin and 205 Hardener from West System, www.westsystem.com

WOOD ADHESIVE // 5-Minute Epoxy from Devcon, devconeurope.com

TERRA-COTTA REPLACEMENT // Cast stone with integral color

BRICK REPLACEMENT // Custom and specialty shapes by Pacific Clay, www.pacificclay.com

EXTERIOR PAINT // Oil-based primer and latex topcoat from Sherwin-Williams, www.sherwin-williams.com

STANDING-SEAM METAL ROOF // Kynar-coated 24-gauge Galvalume from Metal Sales Manufacturing Corp., www.metalsales.us.com

and a center of action during the Gold Rush in Northern California (and the more recent boom in legalized marijuana farming), is a big town of about 27,000 on Humboldt Bay and surrounded by great natural beauty. Its iconic Carson Block Building dates to 1892 when redwood lumber baron William Carson commissioned architect Samuel Newsom to create a big, bright-red architectural centerpiece to help transform Eureka into a more cosmopolitan city and serious center for commerce. It included the Ingomar Theater, an 837-seat venue among the most ornate of its day on the West Coast.

Prominently located in Eureka's historic downtown, the stunning 3-story structure offers exemplary lessons in 19th-century building methods using redwood timbers, ideal for the original occupant, the Dolbeer and Carson Lumber Company. By 1991, the building had been included as a contributor to the National Register of Historic Places-listed area, the Eureka Old Town Historic District—but not soon enough: In the intervening decades, including some hard times for Humboldt County's seat, well-meaning building owners had "modernized" the façades by stripping away brick archways, decorative carved wood trim and ornate relief panels. The tall, first-floor storefront was almost entirely removed and redesigned and, most notably, the bright-red street-facing façades were covered over with tan cement plaster. It got modern, or more accurately moderne, to no benefit for the city. Worse yet, in 1958 the Carson Block Building's iconic corner turret was removed to make way for a corner-blade sign.

As experts in preservation and architectural history, the firm Page & Turnbull, which has offices in Los Angeles, Sacramento and San Francisco, saw an opportunity to revive this legendary, 50,000-square-foot masterpiece for the current owner, the Northern California Indian Development Council (NCIDC), a Eureka-based non-profit that specializes in administering grants to Native American tribes in California.

Revival

And that's what happened: In 2010, a planner from NCIDC called Page & Turnbull asking for a cursory façade study to see if restoring the exterior would be possible. That work supported the group's receiving a grant of more than $1 million, called a California Cultural and Historical Endowment. This relatively small study was followed by a historic structure report—often the first step toward a historic-preservation project and a key to lining up funding and historic tax incentives.

Eventually NCIDC got its startup nut, a Community Development Block Grant, which paired with other funding sources, including a 20 percent Federal Historic Preservation Tax Credit, that covered the majority of the rehabilitation costs. Then, as the project team was inspecting the building and drafting its report—Eureka!—the original 19th-century redwood façade and stunning Richardsonian Romanesque architectural fabric were found under the layer of cement plaster cladding

As a last step, according to Kathie Hamilton-Gentry, the former senior planner with NCIDC, the architecture team reviewed seismic and HVAC design for conformance with the Secretary of the Interior's "Standards for the Treatment of Historic Properties, Standards for Rehabilitation", a prerequisite for getting federal historic tax credits.

Working with Gentry and then-executive director Terry Coltra of NCIDC, Page & Turnbull teamed with executive architect Joe Monteadora, AIA, LEED AP BD+C, of John Sergio Fisher & Associates in San Francisco, a firm working with NCIDC since the 1980s on potentially restoring the Ingomar Theater, which had been closed in 1923 and split into two stories in 1958. Basic problems with the building, however—notably damage from the 2010 Eureka earthquake and a leaky roof—took precedence over the return of the theater, leading to a holistic rehabilitation of the entire building.

With the general contractor Pacific Builders, Arcata, Calif., the team had the opportunity to revive the storied landmark and bring it to modern seismic and accessibility standards. The first phase of work included adding a new standing-seam metal roof to match the original, which was followed by a campaign of major structural upgrades and the meticulous rehabilitation of the building's two primary façades, once meeting at the memorable turreted corner.

A key to the façade rehabilitation was rebuilding that southwest-facing turret—with local materials matching the original—and the careful removal of nearly

RESTORATIONS and **UPGRADES** helped revive the building's original daylighting benefits. For example, skylights bring more sun into third-floor corridors and help showcase beautiful woodwork in stairwells.

After **REMOVING 100-YEAR-OLD CEMENT PLASTER** concealing hefty slabs of old-growth redwood, the damaged redwood was treated to withstand the harsh marine conditions in Eureka. Building features that had been removed or damaged beyond repair, such as pebble-dash stucco, wood trim pieces, and decorative terra-cotta panels, were replaced.

100-year-old cement plaster concealing hefty slabs of old-growth redwood underneath. Historic-preservation contractors treated the damaged redwood to withstand the harsh marine conditions in Eureka, located a few blocks from Arcata Bay and Humboldt Bay on the Pacific Ocean, not far from California's westernmost point. Treatment included removing damaged wood, consolidating and patching wood in-kind with locally sourced old-growth redwood. Additionally, building features that had been removed or damaged beyond repair, such as pebble-dash stucco, wood trim pieces, and decorative terra-cotta panels, were replaced.

Using research and reviving time-honored crafts, the team committed to building the turret and other building elements with original means or with the best possible facsimiles. (As an example, cast stone provided better performance than heavily damaged terra-cotta pieces used in the original.) In addition, Page & Turnbull encouraged reviving the original arched entrances to the Ingomar Theater and a first-floor bank, which had been reconfigured in the 1950s when the theater was removed. Contractors reconstructed the exterior entryway arches using custom brick and cast stone

(continues on page 78)

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PHOTOS: COURTESY PAGE & TURNBULL

to match the original. The rebuilt arches now serve as storefront, as well as fire-stair egress. Upstairs, the former theater serves as a large meeting and co-working space.

Hurdles

A few critical hurdles threatened the project's progress. Sourcing appropriate materials to meet the Standards' definition of "in-kind" or "compatible" replacement was difficult. For example, it was initially considered infeasible to source replacement glass panels needed for the storefront's large-format glazing—up to 75 or 80 square feet each. Many large glass supply companies wouldn't deliver because their trucks were unable to navigate the narrow, winding mountain roads leading to Eureka. Ultimately, the team found a way to fetch the monolithic panels from nearby Santa Rosa, Calif., on smaller trucks, with the inevitable loss of some sheets during transport. The solution was critical to not only the owner group but also for meeting the historic-preservation standards underlying the tax breaks.

(continues on page 80)


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Although Eureka has always had a healthy supply of skilled woodworkers, early on in the project it became clear that the region lacked certain trades that specialized in historic-preservation work. Additionally, few of the contractors had worked on a project that required meeting the Standards. In an unusual instance of project team collaboration, Page & Turnbull led a training effort so the subcontractors not versed in historic-preservation requirements could understand the importance of accurately restoring features to meet the Standards, the key to securing the tax credit and its contribution as a significant source of funding.

As for the long-lost turret, it had to be totally reconstructed to match early photos and original plans. Carpenters framed the semicircular addition using a full-sized template with local craftsmen reinventing the curved trim and tall wood windows.

In fact, underlying the renewed Carson Block Building is a massive structural retrofit with a completely reworked framing system. New seismic bracing at the storefront level was a critical addition, but as conceived it would have been visible through the historic (and tall) glass storefront. A redesign moved the bracing back and also added steel bracing within interior spaces, presenting another challenge in keeping the interiors true to their original while incorporating steel framing for earthquake safety.

Improved Performance

The renewed Carson Block Building also restores features that improve its overall performance, including valuable sustainability features inherent to the 1892 original. Restorations and upgrades helped revive its daylighting benefits and interior finishes with skylights above open stairs improved to bring more sun into third-floor corridors and stairwells. New tall, double-hung windows serving ground-level retail spaces were rehabilitated and updated. The building's original wood slab walls—basically stacked arrays of two-by-fours used in the original design for fire resistance—are now protected by new sheathing for seismic stability with new plaster installed over the sheathing to match the original.

Other safety standards were met or exceeded while reclaiming the full legacy of Eureka's vaunted past. Now serving as a mixed-use resource that houses ground-level retail, the headquarters for NCIDC, various office tenants, and a co-working and event space in the former theater, the work showed how we can revive long-lost building traditions to benefit communities and cities with improved centers for commerce, tourism, entertainment and retail.

Most of all, the project revealed the nature of Humboldt County. This small, cooperative community displayed dedication to civic engagement. Local economic development committees, city leaders, and local historical societies and arts groups all banded together to secure success for their beloved Carson Block Building. The restoration and renovation processes brought passersby together, turning strangers into friends sharing wonderment and awe at their region's real history.

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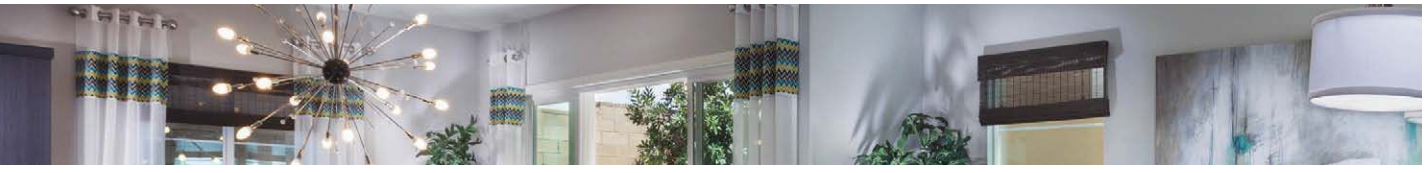

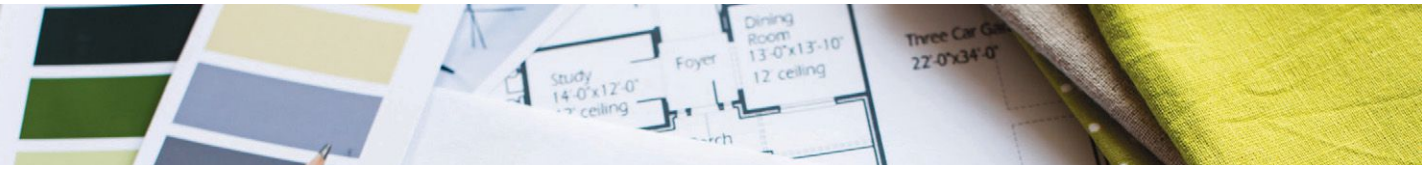

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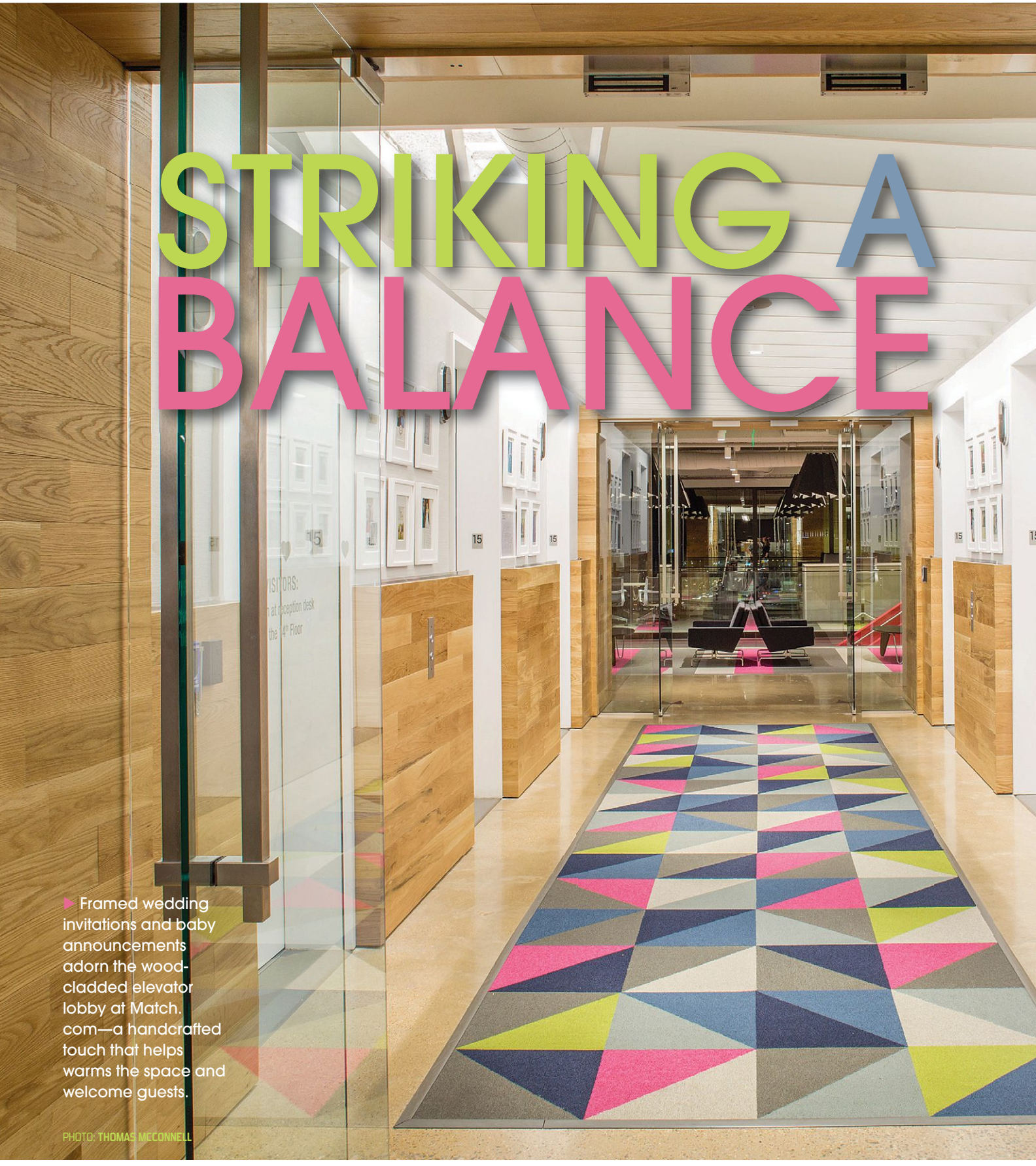
STRIKING A BALANCE



Framed wedding invitations and baby announcements adorn the wood-cladded elevator lobby at Match.com—a handcrafted touch that helps warms the space and welcome guests.

PHOTO: THOMAS MCCONNELL

As Technology Overloads Our Environments, Handcrafted Design Has Emerged to Offset It

WRITTEN BY | **ROBERT NIEMINEN**

In the last installment of "Trend Alert" (see the March-April issue, page 84, or bit.ly/2J4hqXT), we explored some of the tools and methods by which the construction industry is changing based on technological innovation. Although at times slow to embrace new technologies that alter the way things are done, the industry is in many ways being forced to deal with the accelerated pace at which automation moves—and it's reaping the benefits of reduced costs, improved efficiency and greater accuracy.

Simultaneously, a decidedly more "low-tech" trend is happening within commercial buildings that has the effect of offsetting the deluge of digitization that has invaded every facet of our lives. Inspired by handmade crafts, artisans and makers, interiors have seen a swing back toward the tactile and imperfect characteristics of one-off pieces that beckon occupants to press pause on their electronic devices and to touch, feel, and experience the physical spaces around them.

Given the proliferation and penetration of mobile technology today, whether it's for professional or personal use, it's no wonder a move toward more raw, tangible items is taking place. If you consider the fact that the average smartphone user today picks up or touches his or her device 2,617 times per day, spending 145 minutes browsing it during 76 unique sessions, according to a Business Insider report, it's evident that our use of technology has gone askew.

Establishing Equilibrium

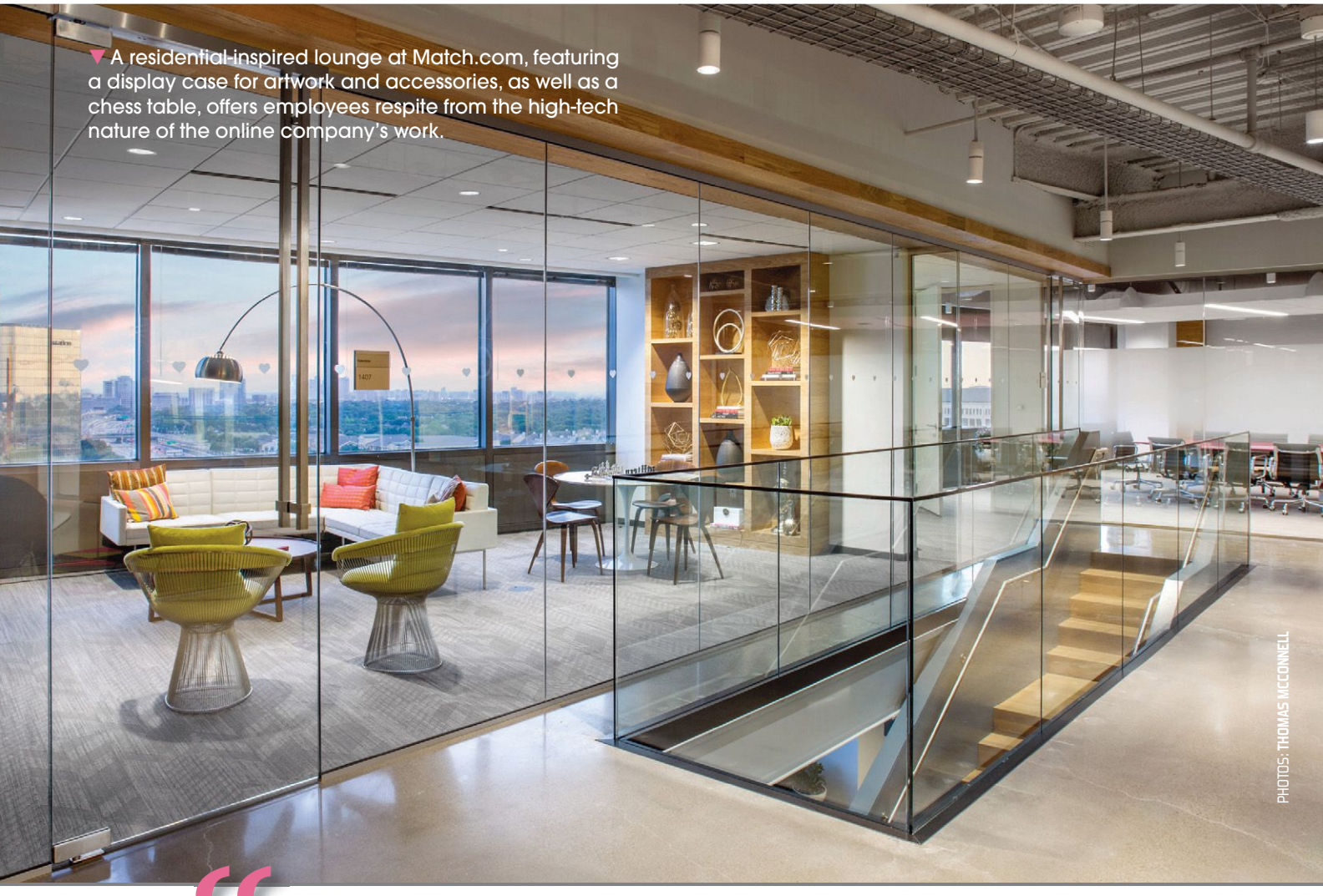
Invariably, human beings tend to seek balance when the scales tip too far to one side, and that's in part why we see this handcrafted trend taking root in interiors today.

"A lot of it feels almost like a reaction to just the sheer inundation of technology," explains David Holt, design director at IA Interior Architects in Seattle. He observes that between handheld devices, computer screens, and oversized TVs and monitors in lobbies and restaurants, digital displays have become too pervasive in the spaces we inhabit. As a result, the emergence of more tactile and natural elements in building materials and furnishings has been born out of "a reaction to try and recover some kind of balance against that," he says.

Author, consultant and speaker Holley Henderson, LEED Fellow, Fitwel Ambassador, WELL AP, and founder of The Common Sense Environmentalist, agrees and says it's important to offset technical and programmatic components within a building with human-centered elements to ensure they are complementary rather than competing.

"When you're creating an interior, you are thinking about counterbalance and you are thinking about the programmatic requirements in that space and you're thinking about what is it that the user needs," she explains. "When it's a convention center and people are moving through the space and everything is so active, as a convention center designer, you're thinking, 'OK, what can I do to create moments of respite and moments of reflection and moments of calm and peace for these people?'"

The same thought process applies to busy airports or even corporate environments, Henderson says, where the goals are to move people through a space efficiently or increase productivity, which need to be



▼ A residential-inspired lounge at Match.com, featuring a display case for artwork and accessories, as well as a chess table, offers employees respite from the high-tech nature of the online company's work.

PHOTOS: THOMAS MCCONNELL

> "REAL, HANDCRAFTED THINGS THAT TELL A STORY AND HAVE A REASON FOR BEING THERE ARE GOING TO HAVE A LOT MORE LEGS THAN THE MORE 'SURFACE-Y' IMITATORS—AND THERE'S PLENTY OF IMITATORS."
>
> *—David Holt, design director, IA Interior Architects*

counteracted with natural or tactile features that also allow for occupant comfort and create a more grounding effect to the busyness around them.

Chris Currie, LEED AP BD+C, a project designer at Lake | Flato Architects, San Antonio, and a recreational craftsman (see "The Artisan's Perspective", page 89), points out that while the trend toward the handmade certainly holds value as a counterweight to digital overload, it doesn't diminish the value of technological tools. "We use BIM software and Revit, and I don't know if we could do the drawing sets that we end up cranking out without that software, so I certainly have a lot of appreciation for the technology."

But even the best-laid plans sometimes come up short and, in those cases, a low-tech solution may be the best approach. Henderson offers the example of a building in which not every occupant can be given a view to the exterior, which can be a real challenge in existing buildings even when designing to LEED or WELL guidelines. "What could you do with a handcrafted element that can make occupants feel like there's a storytelling element and some human, organic, memory recall of the natural world? I think designers would be very receptive to that kind of thing: 'OK, I can't do a window. I can't get any natural light [into this space], but what could I do?' And that's, to me, where a handcrafted item could really help."

The Value of Authenticity

One doesn't need to look any further than product and material manufacturing to find evidence of the handcrafted trend happening in commercial interiors. Whether it's engineered wood flooring that's designed to look aged or "hand-scraped" or industrial furniture and fixtures that appear raw or unfinished,

suppliers are blending the best of both worlds to produce products that look beautiful and are extremely durable—and that certainly has its place.

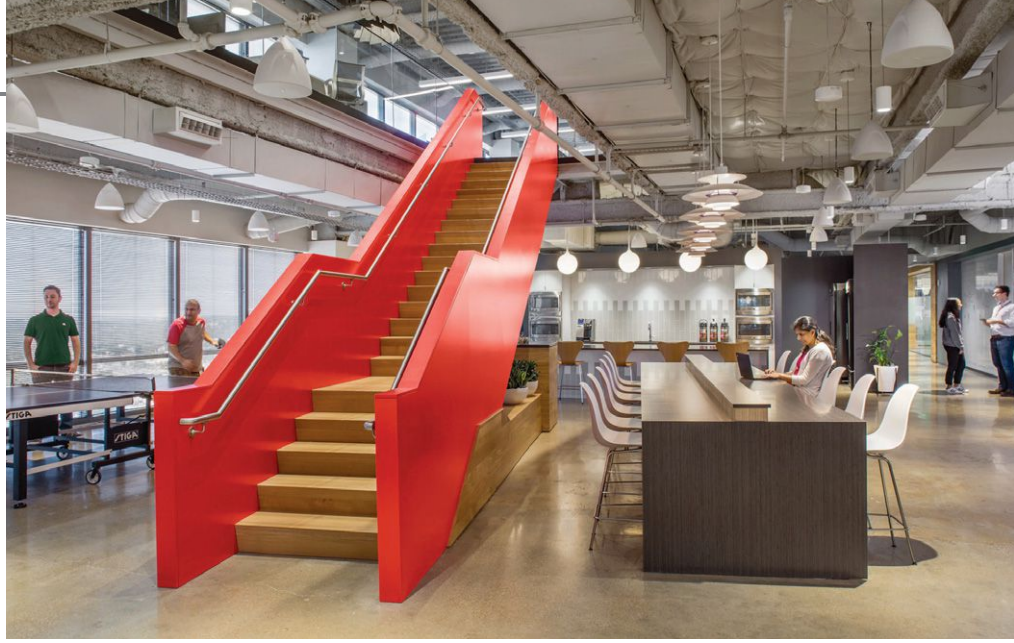
However, what mass-produced products often lack is a sense of authenticity that is inherent in handmade items that is difficult to replicate. "Real, handcrafted things that tell a story and have a reason for being there are going to have a lot more legs than the more 'surface-y' imitators—and there's plenty of imitators," Holt observes. Products that mimic the real thing will look dated in a matter of a few years, he adds, while authentic materials will last longer—and appear more beautiful—in the end.

Case in point: Holt explains as natural materials change over time, they add another layer of dimension or character that is sometimes unappreciated. "Traditionally you think about things like an oil-rubbed bronze finish, which facilities people hate because they feel like they have to ... maintain it but, in fact, what's beautiful about it is the dope, the oil-rub part, wears off. You start to see the brass aging."

Likewise, he says when leather handrails age, the oil stains from people's hands and other imperfections become visible. In historic and older buildings, people tend to appreciate the patina because it feels authentic. However, new products made from natural materials also can be installed in new construction or renovation projects, but they need to be given time to wear naturally.

"It really comes down to convincing your owners or at least the facilities part of your client's staff that it's OK for things to age and for them to be imperfect—and no, that's not 'messed up'—it's in the process of 'patina-ing'," Holt suggests.

At Lake | Flato Architects, Currie says the firm strives to use materials that are "honest in the way they're finished. It's going to be real stone. It's going to be real wood," he points out. Because although composite



▶ Throughout the three floors of Match.com's headquarters, informal spaces and a game room lend a relaxed aesthetic to the workplace that invites employees to unplug.

PHOTOS: A-FRAME STUDIO

◀ A multipurpose space at Blue Cat, Toronto, features pendant lighting with a handcrafted appearance, as well as a café, beer tap and picnic-style tables that encourage employees to unwind.

and engineered products do a much better job today of replicating their natural counterparts thanks to advances in manufacturing technology, sometimes you just can't beat the real thing.

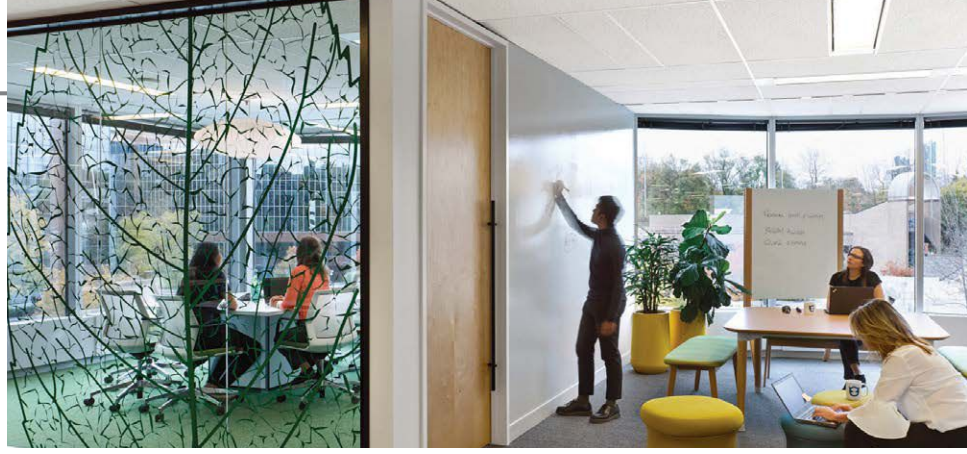
In fact, Currie explains that Lake | Flato includes a complete hands-on workshop within the studio to create physical mockups of buildings and furniture to give team members a more well-rounded understanding of how things are made. "That's been a really nice thing to have," he says. "It's kind of a push to try to get people away from the computer and more involved in the process of thinking about how things are built, how pieces fit together, learning about the tools and ultimately getting a unique product at the end."

Not 'Either-Or' but 'Both-And'

Ultimately, the handcrafted movement isn't about a wholesale rejection of technology—far

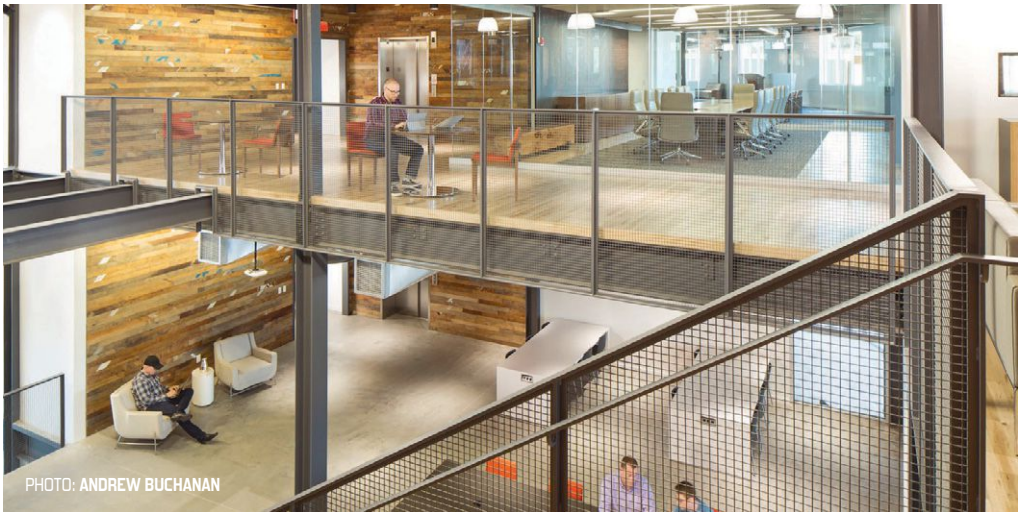
from it, in fact. It is more about the appreciation for artistry and craftsmanship that adds another dimension to interiors to complement the technological elements that are so pervasive. In other words, it's not about choosing "either-or," but rather, incorporating "both-and."

"I don't really see the handcrafted trend going away," Henderson suggests. "I think that the high-tech is definitely here to stay, but I don't think we're ever going to see it all high-tech and not some element of the handcrafted—there's actually a fascination with it." Citing the popularity of HGTV, for example, she says people are intrigued by things they don't necessarily know how to do themselves. "Whether it's people who are doing steel crafting or it's people who are doing interiors,



▶ A "walk in the park" design theme at Blue Cat includes expansive views, daylight, natural materials and leaf graphics, as well as a low-tech, pinup board to hang photos from multicolored strings. These natural and tactile elements offset the barrage of digital information employees encounter daily.

INSPIRED BY HANDMADE CRAFTS AND ARTISANS, INTERIORS HAVE SEEN A SWING BACK TOWARD THE TACTILE AND IMPERFECT CHARACTERISTICS OF ONE-OFF PIECES THAT BECKON OCCUPANTS TO **PRESS PAUSE ON THEIR DIGITAL DEVICES** AND TO TOUCH, FEEL, AND EXPERIENCE THE PHYSICAL SPACES AROUND THEM.



▲ At furniture manufacturer HNI's office in Muscatine, Iowa, flooring from its former 100-year-old factory was repurposed into wall cladding while structural members were turned into stair treads and benches—all of which embody an authenticity of materials that can't be mass-produced.

they're fascinated by these artisans that have this talent."

Currie sees technology as a tool to help people work more efficiently rather than an end unto itself. And he concurs that the handmade and the digital will both continue to influence the places we inhabit.

"Humans in general are always going to want spaces that feel a little more authentic and are not totally sterile, so we count on unique furniture pieces or artwork or authentic objects that kind of tell history or have that tactile feel," he says. "I think there's a place for both in the future."

THE ARTISAN'S PERSPECTIVE

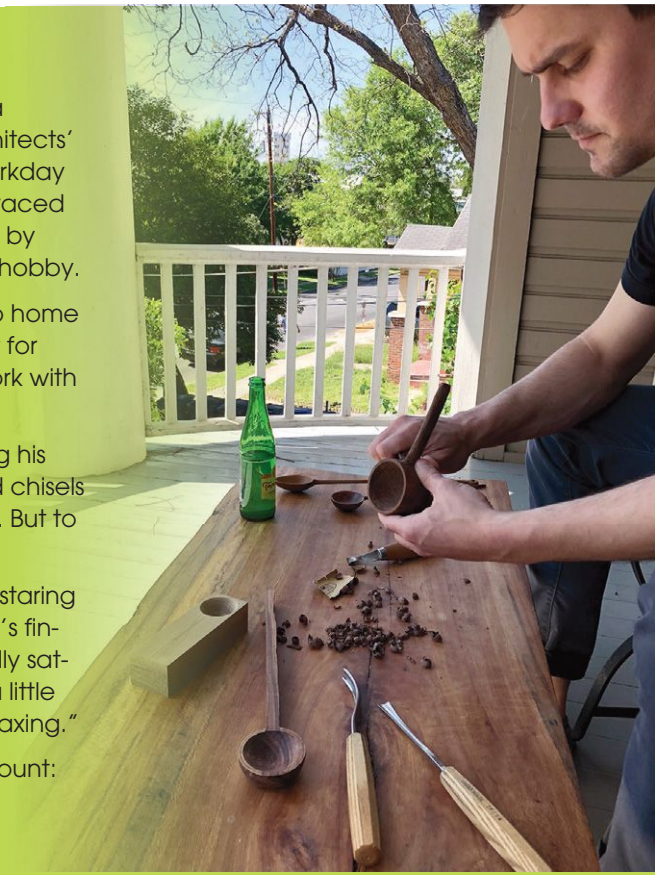
By day, Chris Currie, LEED AP BD+C, is a project designer with Lake | Flato Architects' San Antonio office. But after a long workday sitting at a computer, he has fully embraced the handcrafted trend during off hours by carving wooden spoons by hand as a hobby.

"It can be a lot if you just look at the screen all day and then go home and play on your phone and then go to bed," he explains. "But for me, personally, it's just a good thing to take a break" and to work with his hands, he says.

In fact, Currie says he doesn't use any power tools when carving his wooden spoons. Instead, he relies on specialty knife blades and chisels to create his designs, a process he admits does take some time. But to him, it's worth the effort.

"They do take a little while to make, but it's a nice release from staring at a screen all day and, in the end, it's pretty rewarding when it's finished," he notes. "It's hard to speak for anyone else, but it is really satisfying (to me) to make something with your hands and spend a little time with it and look at it more as an activity or hobby that is relaxing."

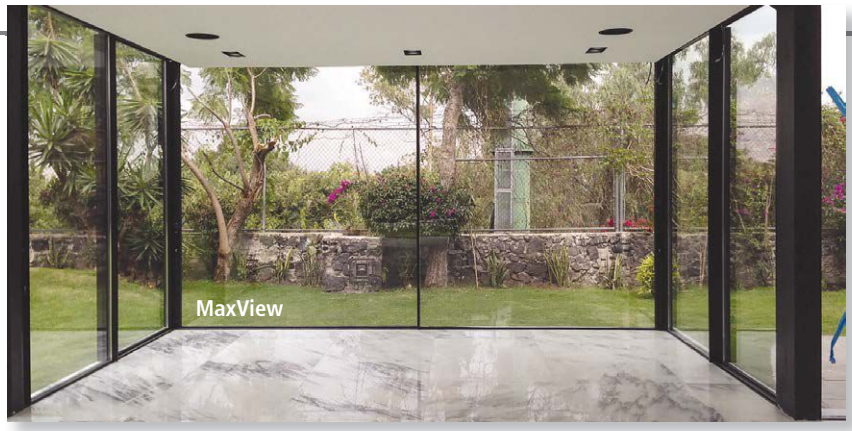
To view more of Currie's creations, check out his Instagram account: www.instagram.com/chriscurrie.



SCREW ANCHORS ARE SUITED FOR CORROSIVE ENVIRONMENTS

Simpson Strong-Tie has released large-diameter stainless-steel screw anchors for concrete and masonry. Designed for severely corrosive interior or exterior environments, the new stainless-steel Titen HD heavy-duty screw anchors (THDSS) deliver an advanced standard of performance for bridge, marine and water-treatment plant construction and retrofit applications. Available in 3/8-, 1/2-, 5/8- and 3/4-inch diameters, THDSS is suitable for heavier civil construction where corrosive elements pose a hazard to standard carbon-steel screw anchors. The screw anchors are made from Type 316 stainless steel and install with an impact wrench or a hand tool. All stainless-steel Titen HD anchors are code listed in IAPMO UES ER-493 (concrete) and ICC-ES ESR-1056 (masonry).

strongtie.com // Circle No. 44

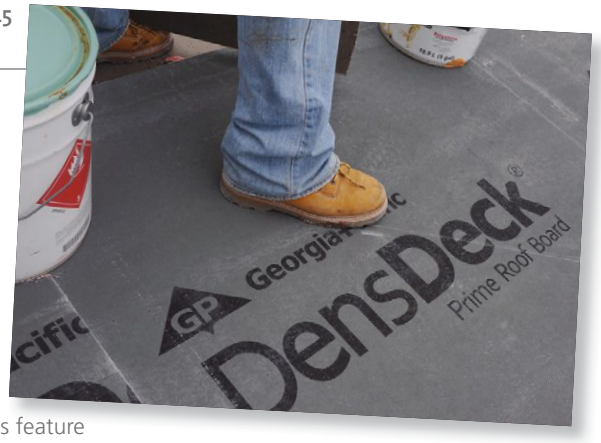


PATIO DOORS CONNECT INTERIORS TO THE OUTDOORS

Ply Gem has introduced its EuroSeries, MaxView and 4880 Series doors that offer multiple configurations and material choices for connecting the outdoors and indoors.
The vinyl EuroSeries Patio Door is designed with an 8- by 9-foot door panel and lift and slide gliding system for easy opening. The EuroSeries meets impact protection requirements set forth by the Florida Building Code, including Miami-Dade County. The MaxView patio door—available with an upgraded automated opening feature—is an aluminum three-panel, multi-slide door system that is 20-feet wide and 10-feet high. A minimalist frame design maximizes the glass viewing area with vertical stiles of 3/4-inch wide. The 4880 Patio Door is available in two-, three- and four-panel sliding and pocket configurations with thermally insulated construction and high-performance glazing packages.

www.plygem.com // Circle No. 45

ROOF BOARD RESISTS WATER AND ACHIEVES VERTICAL PULL STRENGTH



Georgia-Pacific Gypsum has unveiled DensDeck Prime Roof Board with EONIC Technology. Designed for enhanced water resistance and increased vertical pull strength, the roof boards feature manufacturing specifications that include a surface water absorption rate of 1 gram and a total water absorption rate of 5 percent. In vertical pull-strength tests, DensDeck Prime Roof Boards with EONIC Technology were found to be stronger than competitor boards on the face and back.

densdeck.com // Circle No. 46

WATER-COOLED CONDENSING UNIT CAN BE USED IN COLD CLIMATES

Daikin North America has launched its VRV T-Series Water-cooled condensing units, which provide the same attributes of an air-cooled VRV system, plus the added flexibility for cold-climate applications and buildings with water loops or geothermal applications. The VRV T-Series offers efficiency improvements of up to 37 percent IEER and up to 33 percent COP compared to previous PC-Series. New single modules in 208-230V/3Ph/60Hz or 460V/3Ph/60Hz are now available in compact, single module 8-, 10- and 12-ton sizes. Single modules can be manifolded together with up to three units to form one system of up to 36 tons. Reduced cabinet height allows double stacking with 7-foot ceilings and triple stacking with 11-foot ceilings.

www.daikinac.com // Circle No. 47

RETROFIT TRADITIONAL HID SOURCES WITH SOFT LIGHT

The Lumasquare canopy luminaire from Hubbell Outdoor Lighting has been designed to enhance the environment it occupies and offer visual comfort. The acrylic lens provides glare control to "soften" the light with no pixilation. The low-profile product is available in two sizes and four outputs up to 9,300 lumens. The luminaire, which is a seamless retrofit solution for traditional HID sources up to 250W, needs only a four-step installation. It features wireless control, motion sensor, photocontrol and emergency battery back-up capability. It is available in 3000K, 4000K and 5000K nominal CCT with a five-year limited warranty.

bit.ly/2Gv59y3 // Circle No. 48

WINDOWS MAINTAIN HISTORIC INTEGRITY OF LANDMARKS

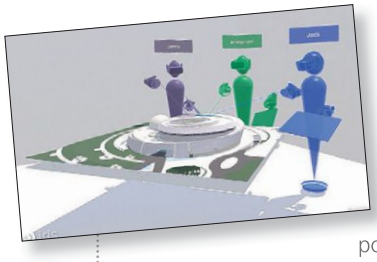
St. Cloud Window Inc. has introduced the SCW3000 Series, a line of historic replication/narrow sightline windows and terrace doors. The SCW3000 Series is designed around a 3-inch frame engineered to maintain a narrow sightline profile yet facilitate the structural needs of large window openings and maintain the historic integrity required for landmark properties. It is available for awning, hopper, casement and fixed applications, as well as floating vent fenestrations that are common in buildings of historic significance. The new window boasts 45 STC and 36 OITC (without the need for an acoustic interior panel) and thermal values ranging from 0.23 to 0.31 U values and 0.16 to 36 SHGC values.

stcloudwindow.com // Circle No. 49

WATER ASSISTANT MONITORS PLUMBING FOR LEAKS

Phyn, a joint venture between Belkin International and Uponor, has debuted Phyn Plus, a smart water assistant plus shutoff. The system monitors and measures tiny fluctuations in water pressure to detect and alert owners the moment a leak is identified, mitigate costly damage through automatic shutoff, and diagnose potential problems in plumbing systems before they become an issue. Phyn measures micro changes in pressure—240 times a second—to fingerprint the unique signatures of each fixture and catch plumbing issues ranging from pinhole leaks to faucet drips and frozen pipes. Upon installation, Phyn learns about the owner's personal water system and continues to get smarter over time.

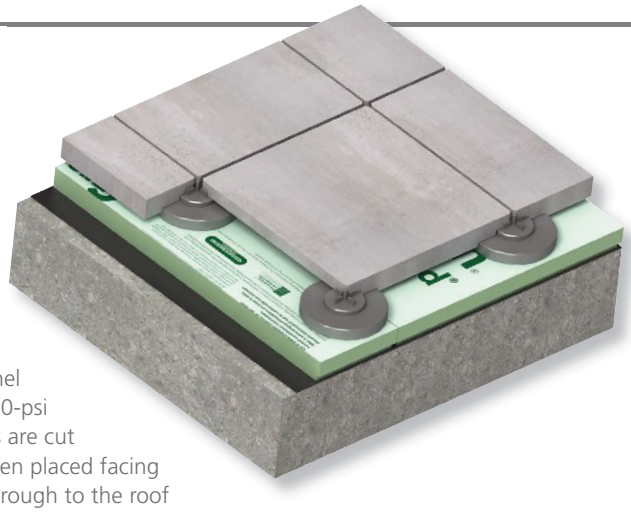
www.phyn.com // Circle No. 51



COLLABORATE ON MODELS WITH YOUR TEAM ANYWHERE IN THE WORLD

IrisVR has released a new Meetings feature within its Prospect software. This update, powered by IrisVR's proprietary Multiuser technology, enables professionals located anywhere in the world to meet and perform collaborative virtual-reality walkthroughs of models built with Revit, SketchUp, Rhino and other 3-D tools. Multiuser Meetings features built-in voice chat, which allows everyone in the Meeting to see the exact same annotations, layer settings, sunlight and shadows, and more. Up to 12 users can join Multiuser Meetings via the HTC Vive and Oculus Rift VR headsets. Users can launch Multiuser Meetings quickly; it can take as little as 10 seconds to enter VR. Meetings are optimized for low latency and high frame rates to ensure a comfortable experience when viewing complex geometry and large models.

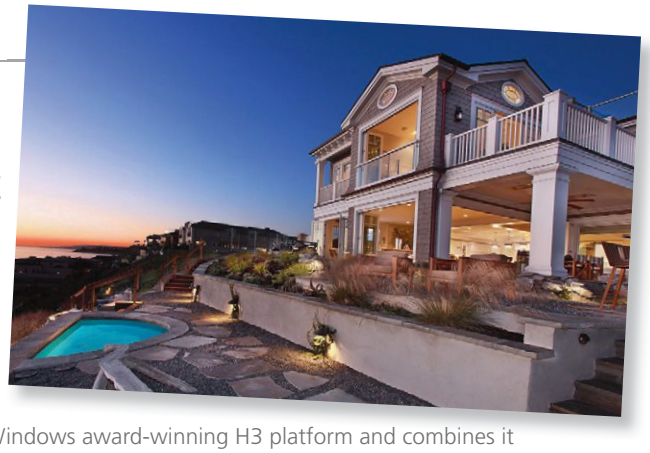
www.irisvr.com // Circle No. 50



XPS NOW OFFERED IN ADDITIONAL THICKNESSES AND COMPRESSIVE STRENGTHS

Kingspan Insulation has expanded its GreenGuard extruded polystyrene (XPS) insulation board product offering with additional thicknesses of 3 and 4 inches in select 25-, 40- and 60-psi compressive strength boards. The company also has added a new four-sided routed drainage channel board. The products help round out Kingspan's GreenGuard line in commercial markets, such as roofing, cold storage, and various below-grade and vertical wall applications. The GreenGuard XPS Drainage Channel Board is for use in protected membrane roof assemblies requiring 40- or 60-psi minimum compressive strength and drainage channels. Drainage channels are cut along all four sides of the board at 0.5-inch deep and 0.25-inch wide. When placed facing down in a PMR assembly, channels permit drainage of water that seeps through to the roof membrane.

www.kingspaninsulation.us // Circle No. 53



BI-FOLD DOOR IS DESIGNED TO RESIST HURRICANE FORCES

In response to 2017's record year for hurricanes, Sierra Pacific Windows has debuted its FeelSafe Bi-fold Door for large, expansive openings. The storm-tested H3 FeelSafe takes Sierra Pacific Windows award-winning H3 platform and combines it with the strength of the FeelSafe impact line. At the core of the H3 line is Sierra Pacific's patented Fusion Technology, which integrates extruded aluminum, vinyl and solid wood into one aesthetic and structural window. With the addition of FeelSafe glazing, the H3 window is more effective at weathering storms.

sierrapacificwindows.com // Circle No. 54

BRICK IS AVAILABLE IN DARK COLOR

Eldorado Stone has released a new color, Ironside, to the TundraBrick collection. TundraBrick is a classically shaped profile with surface character. Slightly squared edges are chiseled and worn. TundraBrick is roughly 2 1/2-inches high and 7.875-inches long. The rich, dark tone of Ironside adds a matte black option accentuated with red undertones to the characteristic brick profile and is suitable for adding depth to darker design palettes.

www.eldoradostone.com // Circle No. 55

WINDOWS CAN BE ASSEMBLED AS CLERESTORY WINGS OR PUNCHED OPENINGS

Providing natural light and natural ventilation, TECHVENT 5300 window systems from EXTECH feature a patented, top-hinge design that allows the unit to remain open during normal rainfall while keeping the interior dry. The windows can be operated manually or electrically and can be integrated with building control systems. Units typically range from 3- to 8-feet high. The system can be factory assembled with interlocking vertical mullions for installation as continuous clerestory wings up to 150-feet wide or as smaller, individual "punched" openings. The units, which accept up to 1-inch-thick glass or cellular polycarbonate glazing, can be used as operable skylights when installed on a slope. The framing system uses 38.95 percent recycled aluminum as standard and may be specified in a broad choice of finish types and colors. After its useful life as part of a window system, the metal is 100 percent recyclable.

extechinc.com // Circle No. 56

UPGRADE GAS STATION CANOPY LIGHTING WITH LED

The LSI SCOTTSDALE VERTEX LED Gas Station Canopy Luminaire features combined optical distributions (Symmetric, plus Symmetric Combination Forward Throw, which eliminates the need for supplemental flood lighting between canopy and C-Store), five lumen packages (10K, 13K, 15K, 20K, 23K), field serviceability, silicone optics (shatterproof, non-yellowing and lightweight) and simple installation. This low-profile canopy fixture is available with a wide variety of retrofit accessory solutions. It is dimmable; wireless controls are available; and it comes in white, black and bronze standard finishes.

lsi-industries.com/vertex // Circle No. 57

LVT CAN BE INSTALLED IN LOOSE LAY AND CLICK FORMAT

Patcraft has made available Crossover, an LVT product available in loose lay and click format. Offered in 7- by 48-inch planks, products feature an embossed texture for a realistic wood feel and provide relevant and modern color options for use in commercial design. Crossover features a 20-mil wear layer for durability when installed in extreme conditions. The matte finish is polish and buff optional for hassle-free maintenance, and the 5-millimeter product construction allows for installation alongside carpet without the need for transition strips. The product features a 10-year underbed warranty when installed with advanced adhesive Shaw 4100 or S150.

www.patcraft.com // Circle No. 58

COAT MASONRY TO RESIST DIRT

Sherwin-Williams has launched Loxon Self-Cleaning Acrylic Coating, a product specifically engineered for exterior, above-grade masonry to provide a clean and attractive look with high-performance protection. The self-cleaning formula sheds dirt with rain or water contact and provides durability and water shedding, as well as wind-driven rain and dirt-pickup resistance. In addition to stucco, masonry and cement board, Loxon Self-Cleaning Acrylic Coating can be applied directly to bare or previously coated concrete that is at least seven days old, has a pH of 6-13, in temperatures down to 35 F. Meeting VOC regulations, the product is available in a flat sheen in a wide range of colors.

www.sherwin-williams.com // Circle No. 59

SURVEILLANCE CAMERAS ARE DESIGNED FOR VARIOUS APPLICATIONS

LILIN Americas has expanded its surveillance camera family with three new AHD models featuring 1080p/1280H resolution, a remote auto-focus 2.8- to 8-millimeter lens, and long transmission distances. The convenience of three form factors—dome, bullet and turret—fit a variety of applications in retail, SMB, C-Store and commercial properties. The new remote auto-focus AHD products provide a value-added offering with the video found in LILIN's popular IP series with integration into leading automation platforms. UTC, or "Up The Coax", technology lets users remotely set up LILIN AHD cameras using compatible UTC recorders, reducing the time and eliminating the need for vari-focal adjustments at the camera. In addition, infrared LED automatically activates for image capture in total darkness.

www.meritlilin.com // Circle No. 60

GYPSUM BOARD DAMPENS SOUND WITHOUT DEMOLITION

Improve sound dampening between rooms without the need for disruptive demolition with Gold Bond brand SoundBreak XP Retrofit from National Gypsum. The 5/16-inch sound-dampening gypsum board features a viscoelastic polymer adhered to the back paper. This high-density material is encased in heavy mold, mildew and moisture-resistant PURPLE face paper. It can be installed over an existing interior gypsum board wall where noise from adjacent spaces is a concern. It also provides a thinner wall assembly without sacrificing square footage.

soundbreakxpretrofit.info // Circle No. 61

ARCHITECTURAL CLOUDS REDUCE NOISE

MDC has released its Architectural Clouds decorative acoustic solutions. The clouds transform loud, open spaces, such as airports, convention centers, offices, lobbies, restaurants and more, into peaceful environments. Covered in stretch fabric, the clouds are offered in eight colorways, ranging from a bright green to earthy tones, like dusty rose and an industrial-inspired slate. Available in six standard silhouettes that evoke cumulus, cirrus and stratus clouds, Architectural Clouds can take almost any shape. The products are manufactured in North America with 3-D freeform tube-bending technology that allows for custom, precise shapes. Likewise, MDC's digital capabilities offer designers the option to digitally print a graphic or customize their Architectural Clouds' colors. The 12-foot clouds have a noise reduction coefficient rating of 0.45.

www.mdcwall.com // Circle No. 62

EXIT DEVICES MEET MULTIPLE DOOR REQUIREMENTS

ASSA ABLOY Group brand Adams Rite has made available EX Series Exit Devices in four models. The series includes impact bumpers to reduce sound and horizontal and vertical guide with return control for smoother operation. The devices come with a universal hardware kit for aluminum, hollow metal and wood installations. The EX88 Interlocking Rim Exit Device has a bolt design that interlocks the door to the frame for strength and durability. The Pullman Rim Exit Device features a 3/4-inch Pullman latch bolt that is compatible with the Adams Rite 74R1 Electric Strike. The EX76 Concealed Vertical Rod Exit Device features adjustable concealed rods and latching assembly for easy installation, maintenance and adjustment. The EX80 Dummy Push Bar is for applications that do not require a latching/locking life-safety exit device. The EX Series devices come in 30-, 36- and 48-inch lengths and can be cut to length in the field.

adamsrite.com/exits // Circle No. 63

CITADEL ARCHITECTURAL PRODUCTS

METAL COMPOSITE MATERIALS NOW AVAILABLE IN EXTRA DARK BRONZE

Citadel Architectural Products has added the color Extra Dark Bronze to several products in its line of metal composite material cladding. This coil-coated color has been added to Series G: Premium PVDF and is now available in 48- and 60-inch widths. Extra Dark Bronze is a match to Classic Bronze (Series D), offering the same hue in a high-performance PVDF with a 30-year standard warranty. Visually, it resides between Statuary Bronze and Ebony on the color spectrum, providing the specifier an additional option for complementing window and storefront extrusions. Extra Dark Bronze is available on the following products:

- SinoCore
- ProCore
- Panel 20
- Envelope 2000
- GlazeGuard

www.citadelap.com // Circle No. 64

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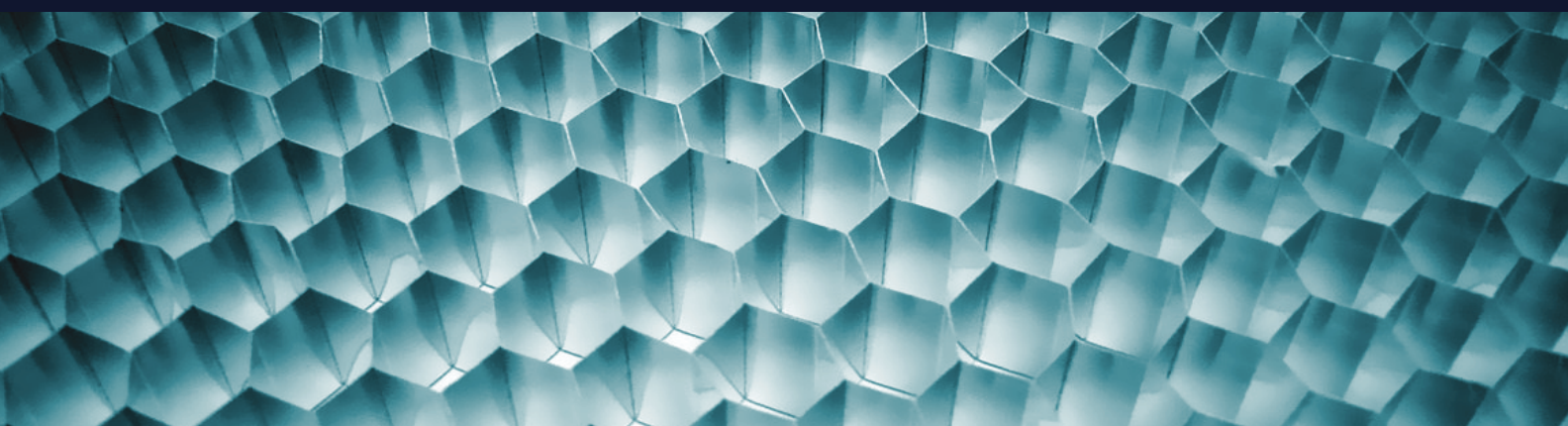

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A WELL-LIT PATH

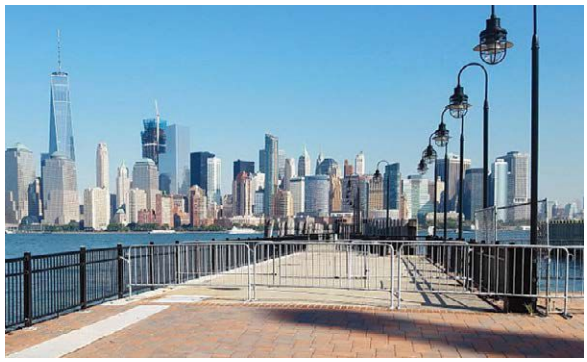
Liberty State Park Updates Lighting on Popular Pathways

Built mostly on landfilled tidal flats where two rail lines once terminated, Liberty State Park in Jersey City, N.J., is a natural mecca surrounded by water on three sides. The park, which opened in 1976, spans 1,212 acres and features ferries to the Statue of Liberty National Monument, Ellis Island and Liberty Island, all of which are nearby. Despite its proximity to these landmarks, Liberty State Park has many attractions of its own, including bike and walking trails, a marina, the Liberty Science Center, and a monument to the Holocaust and memorial to 9/11. Today, the walkways and dock to the Manhattan overlook are lit by LED luminaires thanks to recent site renovations.

The new nautical-styled luminaires feature a vertical LED power array that produces even light distribution with minimal glare so visitors can enjoy activities at the park without lighting being an issue. The fixtures, which are offered in two sizes, are available in multiple arm mount configurations, wall mounts or post tops. Lens options include clear or opal smooth acrylic and clear or opal smooth polycarbonate. Textured finishes are available in black, dark bronze, gray, green and white along with custom colors.

More than 20 LED fixtures have been placed with more on the way as improvements continue.

PHOTOS: U.S. ARCHITECTURAL LIGHTING



MATERIALS

LIGHTING MANUFACTURER // OV Series from U.S. Architectural Lighting, www.usaltg.com

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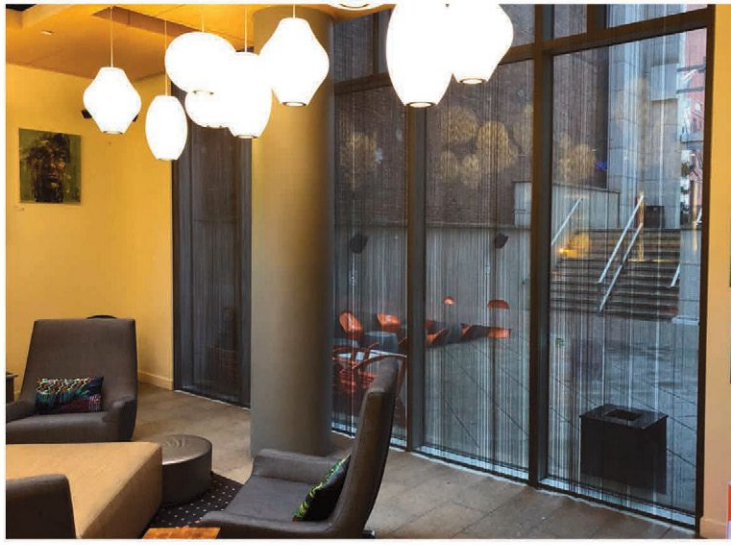

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