

nevember-december 2016 / retrofitmagazine.com

The Nation's Original Shopping Mall Is Revamped for Small Living and Pop-up Retail - More Retail and Mixed-use Projects

OUTIQUE

GREEN

EN?

TREND ALERT: social side of sustainability

IMPROVING YESTERDAY FOR TODAY



Hubbell Lighting offers the most energy efficient, cost saving LED luminaires on the market. With quick payback and easy installation, these products are the perfect solution for your lighting needs.



Columbia | LCAT LED Contemporary Architectural Troffer



Dual-Lite | EVHC-BC High Lumen LED Emergency w/ Front-Side Battery Compartment



Hubbell Industrial | HBLHA High Ambient LED Highbay Up to 65°C



Prescolite | RLC8LED 8" LED Retrofit Downlight



Circle No. 1

www.hubbelllighting.com







Innovative options for the ultimate home comfort experience





Optional new Wi-Fi remote control system Available for NCB-E combi-boilers and NHB condensing boilers

Circle No. 2

To learn more visit: navien.com boilersmadesmart.com or wholehousecombi.com





It's so good at hiding cables you won't believe your eyes.

Introducing Our New Under-Carpet Wireway

Connectrac[®] wireways provide a proven power and IT alternative to expensive and disruptive core drilling, trenching and unsightly power poles. Our ultra-low profile wireway is so discreet, it's barely noticeable as it elegantly blends in to any environment while accommodating power and data.



CONNECTRAC®

Circle No. 3

connectrac.com

Connect without core drilling

1.877.480.5637

Patent pending



Introducing our new Connectrac 2.7 Under-Carpet Wireway



Connect without core drilling

connectrac.com/NeverCoreDrillAgain

1.877.480.5637

Fresh Design

Mariano's Fresh Market, Oak Lawn, IL Owner: Stony Creek LLC, Itasca, IL Architect: Camburas & Theodore, Des Plaines, IL General contractor: J. Divita & Associates, Spring Grove, IL Installing contractor: WBR Roofing, Wauconda, IL Profiles: Corrugated, Flat sheet Color: Silver Metallic

"The design flexibility and economic value of PAC-CLAD metal panels contributed to the design vision in a way other materials couldn't."

Domenic Pezzuto, senior project architect, Camburas & Theodore Ltd.

PAC-CLAD Corrugated









PAC-CLAD.COM | IL: 1 800 PAC CLAD | MD: 1 800 344 1400 | TX: 1 800 441 8661 | GA: 1 800 272 4482 | MN: 1 877 571 2025



NOVEMBER-DECEMBER 2016 // VOL 7 // ISSUE 6

SIGN OF THE TIMES

The nation's first shopping mall, built in 1828, is reimagined, initiating a 21st century trend toward small living and pop-up retail.









PERUSE RETAIL PROJECTS FROM AROUND THE WORLD:

- NBA Flagship Store, Manhattan
- Springfield Town Center, Springfield, Va.
- Whole Foods, various locations
- IKEA, Zaragoza and Murcia, Spain

+ cover

COVER PHOTO: **BEN JACOBSEN, COURTESY** NORTHEAST COLLABORATIVE ARCHITECTS





Business



For commercial landlords and tenants, green leasing provides a pathway to big energy savings.

Component



HISTORY LESSON

HDR Architecture Associates tells the story of its office's neighborhood via a custom 600-square-foot wood ceiling installation.

Transformation



Transformation



The Chesapeake Shakespeare Co. revitalizes a bank building into a modernday Globe-style theater.

Multifamily



INSPIRED BY PRST AND PRESENT

A Tribeca landmark is reborn as glamorous condominiums.



Special Report

60 RATIONAL HISTORIC PRESERVATION

The Alaska State Capitol re-cladding resists adherence to absolute replication of the original design.



Trend Alert

68 THE SOCIAL SIDE OF SUSTAINABILITY

The "people" component of the triple bottom line has taken a backseat to profit and planet. Find out why that's changing and how to get involved.

DEPARTMENTS

NEWS // Learn what's happening in the retrofit marketplace.

PRODUCTS // View a roundup of the latest materials and systems for the industry.

INSPIRATION // A variable refrigerant flow system heats and cools the USS North Carolina.

COLUMNS

POINT OF VIEW // The concepts of preserving and improving our existing building stock are not mutually exclusive.

by subscribing to *retrofit*'s weekly e-newsletter at **www.retrofitmagazine.com**. You'll receive the latest news, blogs and content you won't find in the magazine.

→ stau up to date



Light is personal SYLVANIA LEDVANCE LED Luminaires and Retrofit Kits

Activating, functional and flexible lighting for office spaces. Straightforward, efficient and easy-to-install products with proven quality and performance, perfectly matched to your everyday requirements. SYLVANIA LEDVANCE LED luminaires and retrofit kits are the ideal solution to fit your needs for everyday applications. The luminaires have all the necessary features and functions offering precisely what they have been developed for – no more and no less.

For more information, visit www.sylvania.com/luminaires





"Fine Architectural ardware E Your Fine



Dynamic Display Systems

MPB Series - Standoffs

Circle No. 6

www.mockett.com • 800-523-1269



PUBLISHER JOHN RIESTER

john@retrofitmagazine.com

DIRECTOR OF OPERATIONS BECKY RIESTER

becky@retrofitmagazine.com

EDITOR IN CHIEF CHRISTINA KOCH

christina@retrofitmagazine.com

MANAGING EDITOR BECKY RIESTER

becky@retrofitmagazine.com

SENIOR EDITOR ELYSE COOPER

CONTRIBUTING EDITOR, INTERIORS ROBERT NIEMINEN

> **EDITORIAL ASSISTANT ANDREA HOFFMEIER**

> > **ART DIRECTOR**

VILIJA KRAJEWSKI art@retrofitmagazine.com

CIRCULATION MANAGER LYN URE

lyn@retrofitmagazine.com

ADVERTISING SALES

JOHN RIESTER john@retrofitmagazine.com (919) 641-6321

BARRETT HAHN barrett.hahn@gmail.com

(919) 593-5318

DAN BURKE

dan@burkemediagroup.com (732) 241-6720

EDITORIAL ADVISORY BOARD

NATHAN M. GILLETTE AIA, LEED AP O+M, CEM WILLIAM E. HOLLOWAY AIA, LEED AP

Director, Natura Architectural Consulting LLC Grand Rapids, Mich.

Principal, BERNARDON, Wilmington, Del.

JOHN J. NOONAN

Vice President of Facilities Management Duke University, Durham, N.C.

RETROFIT // Vol. 7 // No. 6 is published bimonthly by Fisher Media LLC, 98 Booth Meadow Lane, Durham, NC 27713, (919) 641-6321. POSTMASTER: Send address changes to retrofit, 2409 High Point Drive, Lindenhurst, IL 60046.

TO SUBSCRIBE or make subscription changes, visit www.retrofitmagazine.com, and click on the "Subscribe" button, or email lyn@retrofitmagazine.com.





ARE YOUR BUILDING DESIGNS SUFFERING FROM OUTDATED TECHNOLOGY?



Mitsubishi Electric Cooling & Heating can help you design a strong future. Variable Refrigerant Flow (VRF) technology allows for more design freedom with unmatched comfort control to deliver buildings that are relevant. Let the industry leader help you deliver a noteworthy building design.



©2016 Mitsubishi Electric US. Inc.

Discover how to STAY RELEVANT at MitsubishiPro.com/architect

pointofview

NEW IDEAS FOR IMPROVING EXISTING BUILDINGS



Apple Watch Winner

In our September-October issue, we announced a giveaway for an Apple Watch to one new *retrofit* subscriber. Congratulations to John Austin Diaz, mechanical engineer, controls, with Etna Chemical Co., San Francisco. Thanks for being one of our valuable readers, John! I've always been told I would love Savannah, Ga., and Charleston, S.C., because of my passion for history. After years of hearing about the beauty of these cities, my husband and I visited them—with a one-day stay in Beaufort, S.C., in between—during a weeklong vacation in September. We took historic walking tours, a carriage-ride tour, even a boat to Fort Sumter. By the last day, my husband was asking whether he had to go on yet another historic tour but I couldn't get enough. I loved the fact that I could imagine the cars away and visualize what it was like to live in the Low Country before the Civil War and after. I was grateful these cities' historic districts are strictly guarded by commissions to ensure their picturesque structures from a bygone era remain intact.

Then I returned home and read Paul Lukes' "Special Report", titled "Rational Historic Preservation". Lukes, owner of Seattlebased PAUL LUKES: Building Envelope Consulting Services LLC, describes his 11-year involvement with the Alaska State Capitol, Juneau. The concrete frame structure, which was completed in 1931, was experiencing severe degradation. Lukes notes: "The severe leakage plaguing the portico ceiling did not originate with its roof, but rather resulted from the downward migration of moisture within the building's multi-wythe exterior masonry walls above, which—reflecting construction methods of the time did not incorporate through-wall flashings or weeps to capture and drain water out of inherently absorbent masonry. Instead, the builders attempted to rely on the masonry thickness and mass to limit infiltration to the interior. While this 'mass masonry' approach may suffice for many exterior detailing conditions in much drier climates, it has little chance against Juneau's 220 days of precipitation annually."

Lukes and his colleagues proposed solutions to the state government. The "Maximum Preservation" option—at a cost of \$18 million—would have probably given the building another 40 years before another round of costly repairs would be required. A more radical option—at a cost of about \$22 million—was the complete reconstruction of the building's exterior to match as closely as possible to the original design while enhancing the cladding's performance and correcting the technical flaws inherent in the existing design. Find out which option the state chose by reading the story on page 60.

Lukes' article convinced me that the concepts of preserving and improving our existing building stock are not mutually exclusive. I support enhancing performance of existing buildings as long as design and construction teams remain true to a historic building's appearance. In fact, Lukes and his team reconstructed the capitol's original roof-level cornice, which had been removed decades before. The new cornice not only brought the building closer to its original appearance, but also helps protect the new masonry from weathering.

Similar to how historic preservation and energy efficiency have appeared to be at odds, building owners and tenants historically haven't been motivated to work together toward more efficient buildings. This "split incentive" occurs because of the assignment of capital expenses and operating expenses in a lease. Andrew Feierman, who works on the Washington, D.C.-based Institute for Market Transformation's market engagement team, is motivated to remove the "split incentive" from leases. He explains the benefits of green leases in "Business", page 20, and notes more than 30 "Green Lease Leaders" have been recognized by IMT and the Washington-based U.S. Department of Energy's Better Buildings Alliance, providing tangible examples of sustainability helping to meet business goals.

Philosopher George Santayana wrote in *The Life of Reason*, "Those who cannot remember the past are condemned to repeat it." Lukes and Feierman underscore in their articles how we can easily correct our past mistakes made within our buildings and continue progressing toward a better built environment.

pristi Ko. l.

CHRISTINA KOCH Editor in Chief







Available at

SECURITY

Low-energy, Hands-free Compliance.

SDC's NEW Auto EntryControl[™] Swinging Door Operator provides hands-free, low-power point of entry door control to help meet all US and Canadian ADA requirements for door installations in retail storefronts, office buildings, campuses and healthcare facilities.

See SDC's full line of ADA Compliance Solutions at http://sdcsecurity.com/ADA-Compliant-Solutions.htm.



the lock behind the system

SDCSecurity.com • 800.413.8783 • service@sdcsecurity.com



CONTROL SUNLIGHT NOT YOUR MAGINATION

E

MORE glazing choices = MORE design versatility

Call or visit us online to find out MORE

about our translucent FRP adapter panel systems that easily integrate with existing curtainwall framing, plus other mixed glazed options.



skylights, canopies & translucent wall systems **MAJORSKYLIGHTS.COM** 888-759-2678

Circle No. 9 **14 RETROFIT** // November-December 2016

CONTRIBUTING WRITERS



Andrew Feierman works on the Washington, D.C.-based Institute for Market Transformation's market engagement team, where he helps the private sector access and utilize energy-efficiency best practices for commercial buildings. In "Business", page 20, Feierman explains how green leasing provides a pathway to big energy savings for commercial landlords and tenants.



In "Transformation", page 42, **Allen Barry**, who writes about architecture and sustainability from Chicago, shares the story of a historic lowa row house that finds new life as a hip, urban wine bar.



Jason-Emery Groën is an award-winning architectural designer for HDR Architecture Associates Inc., Ottawa, Ontario, Canada. Groën's enthusiastic style and creativity are demonstrated in "Component", page 38, in which he tells the story of the firm's custom wood ceiling installation that represents the history of transportation in Ottawa.



Kristen Kearby is marketing manager for Cho Benn Holback + Associates Architects, Baltimore. In "Transformation", page 48, she explains how the firm assisted the Chesapeake Shakespeare Co. to revitalize a bank building into a modern-day Globestyle theater.



C.C. Sullivan is a writer about buildings, architecture, and the design and construction industries. He is founder of the content and marketing agency C.C. Sullivan, Montclair, N.J., which focuses on communications for the AEC industry. In "Multifamily", page 56, Sullivan highlights a Tribeca landmark that has been reborn as glamorous condominiums.



Paul Lukes, owner of Seattle-based PAUL LUKES: Building Envelope Consulting Services LLC, has been consulting on building exterior enclosure systems for more than 30 years. In the "Special Report", page 60, Lukes explains the Alaska State Capitol recladding is an example of "rational historic preservation". The team resisted adherence to absolute replication of the original design in favor of enhancing the envelope's performance while correcting technical errors.

HAVE YOU HEARD? SAMSUNG HVAC'S PRODUCT LINE UP IS EXPANDING!

SAMSUNG HVAC CONTINUES ITS PROUD TRADITION OF COMBINING THE BEST TECHNOLOGIES IN THE WORLD WITH TRULY INNOVATIVE IDEAS. AS A RESULT, SEVERAL NEW AIR CONDITIONING SYSTEMS ARE JOINING THE FAMILY.

THE "FORM FOLLOWS FUNCTION" 360 CASSETTE. THIS ONE-TO-ONE SYSTEM EMBODIES THE REAL MEANING OF FORM FOLLOWING FUNCTION, BUT FOR A VERY PARTICULAR REASON. THE 360° WIND OUTPUT ALLOWS FOR PERFECT AND EFFICIENT WIND DISTRIBUTION, AND IT DOES IT IN STYLE.

THE SMART WHISPER CAN COMMUNICATE WITH OTHER SAMSUNG APPLIANCES VIA THE "SAMSUNG SMART HOME" APP*. AN ALREADY RELIABLE PERFORMER JUST GOT BETTER, GIVING THE USER TOTAL CONTROL FROM VIRTUALLY ANYWHERE VIA A SMARTPHONE¹.

THE MULTI-POSITION AIR HANDLING UNIT AND THE NEW DUCT TYPE ALLOWS FOR FLEXIBLE INSTALLATION, GIVING THE CONTRACTOR MORE OPTIONS.



SAMSUNG

Circle No. 10 samsunghvac.com



THIS IS ROCKET SCIENCE. GENEO® windows from REHAU

With the GENEO[®] Passivhaus certified window design by REHAU, you'll benefit from the same fiber-composite materials found on aircraft construction and racecars.

Watch the video at na.rehau.com/geneo

Circle No. 11

ARTICLES ON www.**retrofit**magazine.com

NETWORKS NEED RETROFITTING (THROUGH THE CLOUD), TOO

By Simonida Boscovic

An update to a building's private network can make the entire building smarter. How? With software. A "software defined network", or SDN, can significantly enhance your building's abilities to stay competitive in a modern, ever-evolving, technology-oriented world. Without a private network, old buildings will be left behind. They won't be compatible with the newest building-control systems or provide high-end, webbased services to tenants. Plus, a private SDN has secret benefits: You can define new, revenue-generating building services on the back of a high-quality, high-speed network.

www.retrofitmagazine.com/networks-retrofit-cloud

BLOGS ON www.retrofit magazine.com

READ WHAT INDUSTRY EXPERTS HAVE TO SAY ABOUT RETROFITTING AND RELATED TOPICS.

Since *retrofit* was established, industry experts have been sharing their insight about energy efficiency, technology, codes, green-building programs, natural disasters, products and more via *retrofit*'s blog. Click on "Online Exclusive" in our website's top navigation and select "Blog" in the drop-down menu. New blogs are posted every two weeks and shared via our e-newsletter. The latest blog topics include:

- PAEVEN: The Missing Link in Finding Your A/E Design Team
- The Key to Retrofitting Corbels, Consoles and Other Supports
- Are "Plug and Play" Control-integrated Luminaires Ready for Prime Time?
- Why It's Never Too Late to Earn an Architecture License
- The Reintroduction of EIFS, Exterior Insulation and Finish System www.retrofitmagazine.com/category/blog

NOW PLAYING ON retrofitTV.com

Cascade Architectural

Manufacturer Guidance Cascade Architectural, a division of Cascade Coil Drapery Inc., offers Fabricoil architectural coiled wire fabric systems and GuardianCoil safety and security systems for use by



architects, designers, building owners, contractors, and government entities in a wide range of commercial and residential applications worldwide.

retrofit



PREMIER BUTYL SEALANT TAPES A LASTING DEFENSE

FOR OVER 30 YEARS, MANUFACTURERS AROUND THE WORLD HAVE ENTRUSTED THEIR BUILDINGS' MOISTURE DEFENSE TO THE MOST RELIABLE BUTYL SEALANT ON THE MARKET, MB10A BUTYL TAPE.

800.288.9489 GSSISEALANTS.COM



AIA 2030 Commitment Is Meeting Some, But Not All, Goals

The American Institute of Architects, Washington, D.C., has produced a report assessing the work of firms that are part of the AIA 2030 Commitment, a voluntary initiative to commit their practice to advancing the AIA's goal of carbon-neutral buildings by the year 2030. The initiative began reporting performance data in 2010. ¶ "We have made some progress in the overall program, with a noteworthy jump in the amount of buildings included in the report," says Greg Mella, FAIA, director of Sustainable Design at Detroit-based SmithGroupJJR and co-chair of the AIA 2030 Working Group. "But we are simply not making significant strides in crucial metrics that predict building performance. These findings should serve as a wake-up call to architects that there needs to be greater urgency to drive improved energy efficiency across their project portfolios if we are going to reach our ultimate carbon reduction goals."

1 Highlights from the AIA 2030 Commitment: 2015 Progress Report (bit.ly/2cSZLBg) include:

- 152 firms submitted reports, a 9 percent increase from 2014
- ◆ 2.6 billion gross square feet (GSF) represented in this data, an 8 percent increase
- 5,982 whole building projects have been accounted for in this report, a 37 percent increase
- ◆ 4,461 interiors-only projects reported, a 16 percent increase
- 614 design projects are meeting the 60 percent energy-reduction target, a 42 percent increase

• 38 percent average Predicted Energy Use Intensity reduction reported by firms, an increase of 1 percent

• 10 percent of total GSF meeting the previous 60 percent carbonreduction target, a decrease of 4 percent

• 4 percent of total GSF meeting the new 70 percent carbonreduction target

• 59 percent of total GSF using energy modeling to predict operational energy consumption, a 9 percent increase

In aggregate, the energy saved from the projects accounted for in this report is approximately 21 million metric tons of greenhouse-gas emissions, the equivalent of running six coalfired power plants or powering 2.2 million homes for a year per the EPA Greenhouse Gas Equivalencies Calculator. ¶ "Seeing more firms including energy modeling into their workflow is one of the encouraging takeaways from this report," notes Andrea Love, AIA, director of Building Science at Boston-based Payette and co-chair of the AIA 2030 Working Group. "Architects are uniquely positioned to lead the energy-modeling process and incorporate into their overall business strategy with their clients. This is exactly the sort of broad, cultural shift that is required to make serious inroads toward carbon reduction in buildings." ¶ Last year, 2015, was the first year that firms used the 2030 Design Data Exchange interactive tool that enables design teams to benchmark and target energy performance through a range of analytical aids to drive improved energy efficiency. Users of this tool are reporting the ability to see immediate results on how their projects are performing has facilitated benchmarking and started conversations about efficiency options earlier in the design process. This has afforded them more ability to understand how the buildings will perform against baseline energy use. ¶ For additional resources for architecture firms to develop greater high-performance building practices, visit bit.ly/2dryxba.

NONRESIDENTIAL CON-STRUCTION WILL RETURN TO ITS PEAK IN 2017

A market study released by the Metal Construction Association, Chicago, reports that 2017 will be the year the nonresidential construction industry will return to the peak levels last seen in 2007. The residential market will take a bit longer to hit the mark, but the news is positive across the board for industry stakeholders. According to the study, conducted by Raleigh, N.C.-based FMI, a management consulting and investment banking firm dedicated to engineering and construction, infrastructure and the built environment, the growth has been steady and moderate during the past five years and is slowly inching its way back to high levels seen a decade ago. Growth is predicted to reach 8 percent in 2016 reaching \$1.14 trillion. The market is highly dependent on economic factors, like interest rates, consumer spending and housing growth.

The study shows the strongest hot spots for total construction growth (residential, nonresidential and nonbuilding combined) are in the Pacific, South Atlantic, Mountain, New England and East North Central regions. The 20 top-growth areas, based on construction volume and compound annual growth rates, are the following:

- Riverside-San Bernardino-Ontario, Calif.
- Los Angeles-Long Beach-Anaheim, Calif.
- Phoenix-Mesa-Scottsdale, Ariz.
- Miami-Fort Lauderdale-West Palm Beach, Fla.
- San Francisco-Oakland-Hayward, Calif.
- Atlanta-Sandy Springs-Roswell, Ga.
- Dallas-Fort Worth-Arlington, Texas
- Sacramento-Roseville-Arden-Arcade, Calif.
- Denver-Aurora-Lakewood, Colo.
- Washington, D.C.; Arlington-Alexandria, Va.; Md.; W.Va.
- San Diego-Carlsbad, Calif.
- Seattle-Tacoma-Bellevue, Wash.
- Las Vegas-Henderson-Paradise, Nev.
- Houston-The Woodlands-Sugar Land, Texas
- Tampa-St. Petersburg-Clearwater, Fla.
- Portland-Hillsboro, Ore.; Vancouver, Wash.
- San Jose-Sunnyvale-Santa Clara, Calif.
- Orlando-Kissimmee-Sanford, Fla.
- Chicago-Naperville-Elgin, 111.; 1nd.; Wis.
- San Antonio-New Braunfels, Texas

The two common factors among these areas that contribute to growth are the number of jobs, particularly technical jobs, and ties with universities.

To learn more, visit www.metalconstruction. org or www.fminet.com.



VARIDESK® IS THE HEIGHT-ADJUSTABLE STANDING DESK SOLUTION FOR ANY OFFICE SPACE.

- Solutions for desktops, cubicles, or full-desk replacements
- Special pricing for bulk orders available



Pricing and product availability are subject to change. Taxes will be added for delivery into California, Texas, and Nevada. For patent and trademark information, visit VARIDESK.com/patents ©2016 VARIDESK®. All Rights Reserved.

- Usually ships within 24 hours
- All products require little or no assembly

Order online or call 866-932-4602



[BUSINESS]

hat parts of your lease matter? Aside from cost, space requirements and lease length, most building occupants aren't paying attention to the finer details of their commercial lease. Yet, lease terms determine many aspects of building operation and energy performance, which can have a large impact on a tenant's overall experience. By adding or modifying a few key terms in a typical commercial lease, building operations can become much more efficient—providing value to the landlord and tenant. This new kind of lease, a green leasealso referred to as an energy-aligned lease—has been gaining in uptake by leading companies since it was introduced to the market around a decade ago.

THE IMPACT OF GREEN LEASES

The Institute for Market Transformation (IMT), Washington, D.C., understands the major impact green leasing can have on the built environment. Its report, "Measuring the Potential Impact of Green Leases in the U.S. Office Sector", www.imt.org/ resources/detail/green-lease-impactreport, shows that a green lease can reduce utility spend by up to 51 cents per square foot in an average office building, representing a \$3.3 billion savings opportunity for office buildings in the U.S. This reduction in operating costs can lead to significant added value at the time of refinancing or sale if the building is properly appraised for being energy efficient. In fact, green clauses tend to share similar concepts with popular green rating systems, such as LEED and ENERGY STAR, and they can help expedite the process of obtaining the credits needed for these certifications.

For tenants, efficient buildings have many of the same benefits as green buildings, which are known to improve occupant comfort, reduce sick days and improve occupant productivity.

What's the problem with existing commercial leases? While the specifics

WRITTEN BY ANDREW FEIERMAN

FOR COMMERCIAL LANDLORDS AND TENANTS, GREEN LEASING PROVIDES A PATHWAY TO BIG ENERGY SAVINGS

vary depending on the lease type—that is, whether a lease is full-service or some version of a net lease—most leases contain some form of the "split incentive". The split incentive problem occurs when, because of the assignment of capital expenses and operating expenses in the lease, landlords have no motivation to improve the energy efficiency of their building while tenants bear the brunt of wasteful and poorly performing building systems (air-conditioning, heating, etc.).

For example, the financial savings of lower operating costs in a net-leased build-

ing accrue to the tenant while the landlord pays the capital costs for improvements. Because of this divide, the landlord has little incentive to make energy-efficiency improvements. Meanwhile, buildings with a full-service lease structure face the opposite problem: Although the landlord has incentive to keep energy costs down, the tenant is not penalized for wasteful energy consumption. (See the infographic on page 22 to see how the lease can bring landlords and tenants together on energy efficiency.)

GREEN LEASE LEADERS

Although many companies were beginning to see the potential and need for addressing energy efficiency in the leasing process a few years ago, it wasn't clear what defined a green lease and it was difficult to pinpoint who in the market was signing them. To set parameters and shine a spotlight on this issue, IMT and the Washington-based U.S. Department of Energy's Better Buildings Alliance partnered to launch the Green Lease Leaders recognition program in 2014 (bit.ly/2cNt48h). Designed in collaboration with a cadre of commercial real-estate practitioners, serving as an industry advisory group, Green Lease Leaders awards property owners, tenants, and brokers who modernize lease language to account for energy efficiency and encourage tenant-landlord collaboration around sustainability goals.

During the past three years, 30-plus companies have been recognized, representing more than 1 billion square feet of commercial space. These companies which include large landlords like TIAA and Forest City, as well as major tenants like PriceWaterhouseCooper and TD Bank—are proving that green leases are slowly gaining popularity in the U.S. as a tool to reach sustainability and business goals.

Those selected met the requirements of the Green Lease Leaders program by incorporating lease clauses that improve sustainability on many fronts, such as allowing for sharing of the costs of energysaving improvements; ensuring tenants

(continues on page 22)

Replacing this fan coil could take a week. Or less than a day.



Introducing MNReStoramo^T. Tired of replacing parts on old fan coils? Worried about the cost of demolition and having rooms off limits for days or weeks? MNR**eStoramo**^T is the new right-sized hi-rise coil that fits in your existing cabinet for fast, problem-free replacement. MNR**eStoramo**^T offers unique capabilities in a small footprint to allow higher internal static pressures—the result is a unit that fits into virtually any pre-1980 installation. That means no complicated tear out and no carpentry or finish work. In less than a day, your hotel room or condo is back in service with a new unit that's under warranty for years of worry-free climate control.

For a free consultation, contact us at 405-605-5000 or visit minirestoramod.iec-okc.com.





TENANTS USE MORE THAN HALF THE ENERGY CONSUMED IN LEASED SPACES ACROSS THE U.S. OFTEN THIS ENERGY IS WASTED BY INEFFICIENT OPERATIONS AND EQUIPMENT.

build out to green standards; increasing transparency by sharing access to energy consumption data and ENERGY STAR scores between tenants and landlords; and encouraging cooperation on environmental initiatives, like recycling.

One Green Lease Leader, Atlanta-based landlord Jamestown Properties implemented green leases across its portfolio (view a case study at bit.ly/2dpZ7xq), using its existing lease rolls to figure out where new lease terms could have the greatest impact on energy consumption in its buildings. Among other changes, Jamestown Properties now asks that incoming tenants outperform existing building codes by 10 percent in all new build-outs.

HELPING SMALL BUSINESSES

Green leases are not just for large companies. Small Cleveland-based landlord NEO Realty Group has used energy audits and green lease terms as a tool to improve its existing buildings without raising rents on tenants. In one instance, NEO Realty Group reduced utility expenses by 44 percent for its tenant, the American Cancer Society, utilizing green lease terms to recoup costs during a two-year period. (Read the case study at bit.ly/2dKY9zq.)

Green leases can be especially impactful for small and medium building owners and small businesses. And it's important to recognize this, because according to the Washington-based U.S. Energy Information Administration's most recent Commercial Buildings Energy Consumption Survey (www.eia.gov/consumption/commercial), 88 percent of commercial buildings are smaller than 25,000 square feet and account for more than 25 percent of all commercial floor space in the country. With tighter margins than a larger corporation that owns or occupies a Class A building, reducing utility expenses and improving tenant retention through the low-cost

implementation of a green lease can go a long way to improving the bottom line.

To help small businesses develop green leases and reduce their utility costs, IMT and the Council of Smaller Enterprises (COSE), Cleveland, recently completed a two-year initiative in the city of Cleveland called the Cleveland Energy-Aligned Leasing Program (bit.ly/2dl6s5y). The overarching goal of the program was to improve the small business community's understanding of sustainability through a combination of education, energy audits, green lease resources, and financing options in a bundled program package. The effort could then be used as a blueprint for cities and local business communities across the U.S.

Throughout the initiative, IMT and COSE engaged more than 60 owners and tenants representing more than 7 million square feet of space to help them pursue energy and water-saving solutions through *(continues on page 24)*



"Eastlake Studio searched for a unique & resilient material that could help emphasize the volume of the space, while not detracting from the views, lighting and other refined finishes. Cascade Architectural's Fabricoil[®] system achieves all of these constraints while adding a level of seamless drama and vertical interest to the space. In the end, the coils add the perfect amount of color and texture to the project, which directly infuses the space with a serene visual appeal."

> Kevin Kamien, AIA Principal Eastlake Studio

200

Vail Systems, Chicago, IL • System: 1/4"19 Ga. Steel Fabricoil with custom red finish and Secura Track attachment



800.999.2645 fabricoil.com cascadearchitectural.com



Fabricoil® architectural coiled wire fabric systems define extraordinary spaces. Perfect for adding texture to hospitality, commercial, retail, and corporate office projects, Fabricoil engineered systems provide visually intriguing retrofit solutions for any interior space.

stronger collaboration. It culminated in Making Efficiency Work for You (bit. ly/2dl6Lof), a step-by-step guide to implementing green leasing for small business owners; the guide includes green leasing frequently asked questions, sample green lease clauses, tenant operations and buildout guides, as well as several case studies.

LOOKING FORWARD

During the past few years, IMT has seen

landlords become increasingly sophisticated in their approach to energy management and sustainability. Landlords are adapting to tenant demand to have efficient buildings through strategies like green leasing, as well as by investing in higher performance core building systems. However, another area that remains a difficult nut to crack is tenant engagement. Currently, lack of awareness and weak demand for energy-efficient spaces

Tough Protection for What's Inside Your Building



Garland's New Thermoplastic Membrane The Ultimate in Waterproofing Protection

- KEE-Stone[®] is the most durable KEE sheet in the industry, providing superior waterproofing protection and excellent puncture and hail resistance
- KEE-Stone has been formulated to provide superior heat and UV resistance, providing long-term protection
- Industry's best KEE stands up to weathering to keep you worry free and leak free longer than our competition
- KEE-Stone's unique scrim provides superior sheet strength for a longer lasting roof



The Garland Company, Inc.® www.garlandco.com



is preventing thousands of companies from unlocking potential savings.

Tenants use more than half the energy consumed in leased spaces across the U.S. Often this energy is wasted by inefficient operations and equipment. Achieving a 20 percent reduction in energy use in America's commercial, retail, industrial and office buildings would save \$5 billion annually, according to the Department of Energy (bit.ly/2dE1UCC).

To that end, IMT; the Retail Industry Leaders Association (RILA), Arlington, Va.; and the International Council of Shopping Centers (ICSC), New York, just launched the Landlord-Tenant Energy Partnership (www. landlordtenantenergypartnership.org), which will work with tenants across the U.S. to spread best practices in green leasing, energy policy, and building operations together to reduce energy consumption in multi-tenant buildings.

RILA and ICSC, which represent major retail tenants and landlords, respectively, will help to continue to drive cutting-edge energy-management practices in buildings (including green leasing). The partnership has also established an advisory group of representatives from some of the largest companies with national real-estate portfolios, including CBRE, Kimco Realty Corp. and Nike.

Participants will receive expert oneto-one guidance to implement energy efficiency during site selection, lease negotiation, fit-out and operation. This will include things like metering options to resolve tenant-landlord-utility disconnects; data sharing between owners, tenants, and facility managers to drive ROI calculations and facilitate investment conversations; and financing efficiency upgrades, including innovative tools such as green bonds.

Landlords and tenants need clear and easier pathways toward making more substantial energy retrofits and improvements to their buildings. IMT is dedicated to helping provide that pathway and its representatives look forward to connecting with those in the commercial real-estate market who want to reap the benefits of energy efficiency.

LEARN MORE Visit the Institute for Market Transformation's website, www.imt.org.

NCFI salutes the men and women across this great nation building the American dream. We pioneered SPF insulation in the 1960s, and we're still leading the way.

D)

SP

11m

LET'S BUILD AMERICA TOGETHER.















[COVER STORY]



The Nation's First Shopping Mall Is Reimagined, Initiating a 21st Century Trend Toward Small Living and Pop-up Retail WRITTEN BY | CHRISTINA KOCH



rcade Providence in Providence, R.I., has been called America's original shopping mall. Built in 1828, the 3-story structure features Greek Revival columns, granite walls and a glass roof that made customers feel as though they were shopping outdoors. The mall, which extends between Westminster and Weybosset streets, catered to the carriage crowd of the era.

"The people who lived on the hill would come down in their carriages and be dropped off at one end of the mall, walk all the way through and come out the other end with the carriage waiting for them there," explains J. Michael Abbott, principal of Northeast Collaborative Architects LLC, which has offices in Providence and Newport, R.I., as well as Middletown, Conn., and Washington, D.C. "People thought this was amazing at the time; they could do all their shopping under one roof. It had probably 40 stores because the stores were quite small."

As could be expected of any building that is approaching nearly 200 years of age, the mall went through its share of difficult times and its owners did their best to change with those times while never drastically changing the building's layout. During the Great Recession, however, Arcade



EACH STORY OF ARCADE PROVIDENCE STEPS BACK FROM THE ONE BELOW IT, WHICH CREATES A TIERED FORM INSIDE THAT ALLOWS LIGHT TO PENETRATE ALL THE WAY TO THE FIRST FLOOR. AFTER 260 WINDOWS WERE PUT BACK INTO THE BUILDING'S EXTERIOR WALLS AND NATURAL VENTILATION WAS INTEGRATED INTO THE SKYLIGHTS, AIR ONCE AGAIN FLOWS THROUGH THE BUILDING.



Providence, which then contained a food court on the first level and office space on the upper floors, was forced to close. The nearby Bank of America building had been emptied, which negatively affected Arcade Providence's food-court business. By the time the mall closed, it had fewer than 10 tenants and was no longer able to pay its bills.

In 2010, Arcade Providence, which became a National Historic Landmark in 1976, was added to the Providence Preservation Society's 10 Most Endangered Buildings list. Local rumors circulated about the beloved building's fate. Owner and real-estate developer Evan Granoff kept the mall closed for two and a half years while he brainstormed how to reinvent the building. "We had this wonderful national landmark building that was so important to downtown Providence, and the local people were clamoring to get it open," Abbott recalls. "Evan and I loved the micro-loft concept for the top two floors; Evan loved the idea of those Japanese capsule hotels. We thought that it would really fly because there are so many students here and so many people that are just starting at their first jobs. They can't afford the \$2,500-a-month apartment."

The small apartments wouldn't be quite as diminutive as Japanese capsule hotel rooms but—based on the size of the building's original retail spaces—would be about the size of a traditional U.S. hotel room. In addition, Granoff visualized first-floor retail spaces catering to the many creative people drawn to Providence by the Rhode Island School of Design. He wanted the startup retail spaces to be affordable for artists and designers to become successful entrepreneurs.

As plans came together, Granoff and Abbott were gambling on an idea that was not mainstream—just as their predecessors did in 1828. Would anyone want to live in 225- to 275-square-foot apartments? Would those in the maker culture be able to succeed as brick-and-mortar retailers? Could Arcade Providence survive another 200 years?

Strong Bones

When it was built, Arcade Providence's two ends were open for ventilation. By the early 1900s, the mall was enclosed at either end and eventually the space was heated and air conditioned. A renovation in the 1980s replaced the glass in the atrium roof and improved the mechanical equipment. When Abbott studied the building, the granite façade was still in great condition; only the





ARCHITECT J. MICHAEL ABBOTT MODELED THE MICRO-LOFTS ON YACHTS AND USED INNOVATIVE HIDDEN STORAGE TO MAKE THE UNITS APPEALING IN ADDITION, ALL THE FURNITURE IS BUILT IN, EXCEPT FOR ONE, MOVABLE CHAIR.







30 RETROFIT // November-December 2016

ARCADE PROVIDENCE WAS BUILT TO CON-TAIN A NUMBER OF SMALL STALLS FOR RETAIL SPACES. EVERY 13TH FOOT, A STRUCTURAL MASONRY WALL EXTENDS VERTICALLY FROM THE BASEMENT THROUGH THE THIRD FLOOR. TODAY, THE BASEMENT CONTAINS STORAGE AREAS AND A BICYCLE PARKING GARAGE; THE FIRST FLOOR FEATURES POP-UP RETAIL SHOPS; AND THE SECOND AND THIRD FLOORS CONSIST OF MICRO-LOFTS, ABOUT 225 TO 275 SQUARE FEET IN SIZE.

joints needed to be retooled. The original one-piece, 20-foot granite columns, which were mined from a quarry 30 miles from the site and delivered via horse and wagon, also were in excellent shape.

"It's an amazing building because it's built so fabulously," Abbott explains. "Each story steps back from the one below it, which creates this tiered form inside that really lets the light come all the way down to the first floor. The light is quite bright; just like being outside."

Despite the building's strong bones, there are places where it sags because the structure literally was built on large, flat rocks that were laid in the basement. "Some of the walls actually drooped where some of these flat stones have sunk down into what was kind of marshy land there on the harbor," Abbott says. The results can be found while walking through the building: handrails move in and out and up and down, and the skylights are wavy. Abbott adds: "Nothing is straight in this building, so that was a challenge. Not a single wall is plumb to another wall, so there was a lot of fitting that had to be done to get everything to fit."

During the team's investigation, there were many pleasant discoveries, however. For example, original, interior brick walls were uncovered and have been exposed throughout the building. The team also found shutters that used to close across each of the interior-facing shop windows. "When the shopkeeper was done for the day, he would just fold out his shutters and close up his shop window," Abbott explains. "They all folded back into these pilaster columns on either side of the shop window; we just thought they were decorative columns on either side of the shop windows. Suddenly, one day when somebody was cleaning a board and a joint, he discovered a little fold-out closet where all of these shutters were stored. They're behind every one of the pilasters!"

Historic tax credits were a factor in the renovation but didn't cause Abbott and his team any heartache because they were seeking to bring the building back to its original specs. "We were correcting a lot of sins over the years that had been done, particularly, putting all the windows back in *(continues on page 32)*

Power shift.

Revolution *TFX* helps put you back in full control of your next HVAC install. It's a new kind of air handler unit with hundreds of configuration possibilities so you can create an air distribution system that matches your design vision, not the other way around.





Discover more at www.titus-hvac.com/revolution.



🖉 Retrofit Team

ARCHITECT // Northeast Collaborative Architects LLC, Providence, R.I., ncarchitects.com

MECHANICAL ENGINEER // J. Madison Inc., Exeter, R.I.

ELECTRICAL ENGINEER // Creative Environment Corp., East Providence, R.I., www.cec-engineering.com

STRUCTURAL ENGINEER // Structures Workshop Inc., Providence, structuresworkshop.com

GENERAL CONTRACTOR // Evan Granoff

MASONRY RESTORATION // Bay State Restoration Ltd., Warren, R.I., (401) 519-6341



Materials

CARPET // Shaw Contract, www.shawcontract.com

TILE // Daltile, www.daltile.com

UPHOLSTERY // Arc-Com Fabrics Inc., www.arc-com.com

AWNINGS // L.F. Pease Co., www.peasecompany.com

LIGHTING // Rejuvenation Lighting, www.rejuvenation.com

DOOR HARDWARE // Schlage, www.schlage.com

BLINDS // Springs Window Fashions, www.springswindow fashions.com

WINDOWS // Pella. www.pella.com

the building. It made such a difference on the streetscape to see a building with windows," he says. "Before it was just this big, dark, hulking box. Now, with all the windows and people in their apartments, it just glows on the outside."

Abbott says the outside walls originally contained two windows and the inside wall was composed of the shop window that faces the interior walkway. He says, fortunately, there were six windows left on the third floor that the team could use as a model when the windows were replaced. In all, 260 windows were put back into the building, which Abbott says allowed air to once again flow through the building and made the space feel clean and fresh.

Micro-lofts

Arcade Providence was basically built to contain a number of small stalls for retail spaces. Every 13th foot, a structural masonry wall extends vertically from the basement through the third floor. "We had these wonderful, little slots with windows at each end, so it was a perfect layout to do our little micro-lofts," Abbott explains. "The living rooms are behind the shop window and face into the big, open-air arcade space. The two windows on the outside became the bedroom, which has its own little door. Then, in between the living room and bedroom, we put a little bathroom and a little kitchen."

On the second floor, the micro-lofts are 275 square feet. Because the tiered building steps back 5 feet on the third floor, the lofts are smaller and were made into studios of 225 square feet. There are 48 living spaces total and, Abbott says, because of a couple "bumpouts" on the building, there actually are two two-bedroom units and one three-bedroom unit. "Believe it or not, the one bedrooms and studios rented immediately," he says. "The twoand three-bedroom units lasted longest."

Abbott believes the units were appealing because all the furniture is built in, except for one, movable chair. "That's part of the key to making this whole thing work," he says. "If somebody walked into this space, they would be like, 'How am I going to get my king-size bed in here?"

Abbott says he modeled the micro-lofts on yachts and used innovative hidden storage to make the units appealing. For example, the full-size bed is raised 30 inches off the floor and a four-drawer dresser is housed underneath. Between the two windows on the outside wall is a small closet for hanging clothes.

Opposite the built-in bed, a twin-size Murphy bed folds down out of the wall for visitors.

What the 5- by 5-foot bathroom lacks in size it makes up for in style. It features black and white subway tiles with matching floor tile. The L-shaped kitchen includes nearly everything an urban dweller would need, including a three-quarter-size refrigerator, built-in microwave/convection oven and 18-inch dishwasher. The kitchen does not have a cooktop because of the building's zoning classification as a rooming house. Abbott says everybody has a hotplate and, if a tenant wanted to, he or she could roast a chicken in the convection oven.

"Just like on a boat, everything has to be kept tidy," Abbott says. "If somebody lets you pop in their unit, you'll see they keep everything very neat, because everything is very close-in."

The micro-lofts' affordable rent, which starts at \$550 per month, is not only attracting recent college grads. A number of retirees who want a second home in the city rented units and there are also a few corporations that rent units for their visiting executives. Currently, the units are fully rented and there are an astounding 400 names on a waiting list for the next opening. "There is like a 10 to one ratio of need for a unit," Abbott says. "The upper two floors are just doing fabulously; they are fully rented and will be forever."

Retail

Like the micro-lofts, the first-floor retail shops are designed to appeal to businesses that are just starting out. Many of the shop tenants are focused on fashion, selling jewelry, dresses and handbags; others sell antiques. One shop is rented by a former contestant of "Project Runway", a reality show in which up-and-coming designers compete for a show during New York's Fall Fashion Week.

In addition to the eclectic shops, there are three restaurants in Arcade Providence-a coffee shop and two bar/restaurants—which give the upstairs tenants some convenient food options. The restaurants, Abbott notes, are three- or four-bays wide."We actually broke through walls and made them bigger. They also open up to the outside so customers can come directly in from the outside as opposed to only coming in through the mall," he says. "We did that so we could close down the mall at night for our people living above, but the restaurants can stay open later."

The 17 pop-up shops rent for about \$1,000 per month. Abbott says there are a few retail-



THE TEAM BUILT FRONTS ON EVERY STORE TO MITIGATE SOUND TRAVELING FROM THE RETAIL SPACES TO THE SECOND- AND THIRD-FLOOR MICRO-LOFTS.

ers actually living above their shops. "When you build a 2,000-square-foot retail store that rents for \$4,000 a month, you've got to be a big, fat, ongoing operation to pay that kind of rent," Abbott notes. "Because they're startups, they're trying new things and some of them just don't make it. There has been more turnover, and we even have a couple of vacancies. It's still a little bit of work to get that to really function."

21st-century Amenities

Obviously, a small apartment or retail space is going to be more energy efficient than a large space, but Abbott says the team also made a concerted effort to focus on energy efficiency while retrofitting Arcade Providence. For example, each unit has its own, independent, mini-split system for individual and efficient heat and air conditioning.

The atrium space, which was the most expensive area to heat and cool, now is naturally ventilated. "We took four panels out of the skylight and put in these huge exhaust fans, and that's how we deal with the environment in the atrium," Abbott says. "We don't air condition it. We just bring in outside air that we've conditioned and then exhaust or pump air in, depending on what the temperature need is. If it's a warm day, we turn those on, and they suck out like 200,000 cubic feet of air every hour."

Sound mitigation was important to the team. Abbott notes that at one time his firm's office was housed on Arcade Providence's third floor and the food court was distracting during its 11 a.m. to 1 p.m. rush. To mitigate sound traveling from the new retail spaces to the second- and third-floor micro-lofts, the team built fronts on every store, so sound stays inside the retail or restaurant space. "Now every one of the retail spaces and restaurants has a storefront, a little shop window, a bay window with a door and the like, so that really cuts down on the sound," Abbott says. "It's actually really quiet inside, so we had to add a little music just to make it not too quiet!"

Recognition

The project took a bit longer than the team anticipated. "We went through about a year of planning, doing all this investigation and coming up with plans and getting all of our approvals," Abbott recalls. "Then about twothirds of the way through construction, we had contractor problems, so we had to hire another contractor to finish."

Despite a few early bumps, the project has received many accolades. These awards from industry peers, along with the building's success, assure Abbott the small living idea is replicable. "We were so excited to receive the National Trust for Historic Preservation's National Preservation Honor Award," Abbott recalls. "It's wonderful that people actually recognize what a great project this is, and that's what's rewarding. Honestly, I think we should be building these things all over the place. We've taken an old, tired dog and really made it into a building for the next century."



LED PANEL LIGHTS Replace traditional commercial/residential drop-ceiling troffers with LED Panel Lights or flush mount to a ceiling J-Box. Achieve unmatched energy savings with Even-Glow technology and multiple dimming options. These LED panels offer smooth, long-lasting illumination.



fixtures while consuming a fraction of the energy, these Linear LED Light Fixtures are perfect for warehouse aisles and parking garages. Vaporproof and waterproof versions available.

OTHER POPULAR PRODUCTS



Wall Packs

SHORT ROI, ENERGY EFFICIENT AND MAINTENANCE FREE

Quantity discounts available for all products.

For commercial pricing call 866-590-3533 or email commercial-sales@superbrightleds.com

NBA FLAGSHIP STORE Manhattan

>> Retrofit Team

ARCHITECT: Gensler, New York, www. gensler.com, in conjunction with Kurt Salmon and TAD Associates, New York, www.tadassociates.net

METAL PANEL INSTALLER: MBM Metal Works, Hong Kong, www.bgmbmhk.com FACADE CONSULTANT: Studio NYL, Boulder, Colo., studionyl.com

>> Materials

Custom metal panels with a hardwoodfloor pattern (derived from the NBA's maple-wood courts) extend outward beyond the glass façade to form portals and awnings. The aluminum panels bring the "hardwood court" look to the exterior façade.

The design process for the metal panels started with a sample of the Madison

Square Garden court. The manufacturer carried out an exterior lumiflon resin technology process, starting by digitally copying the material properties of the court and creating multiple diamond and laser-engraved steel "design cylinders" that convey the qualities of the hardwood court. The cylinders are etched into a 1/8-inch aluminum plate through a controlled process of adding pearlized inks and resin. The plates were then baked to seal in the print.

The manufacturer's technology allows for a wide range of coloration, glossiness and texture, which allows the design team to create a wide-range of material effects-from wood and natural-stone finishes to a plethora of abstract, bespoke and metallic finishes.

The company's printed resin fabrication process comes into play with the inner lining of the NBA's massive trade-

marked logo. Thanks to the process, the metal surface was able to be postformed in a challenging bent configuration to which typical painted surfaces would not hold up.

CUSTOM METAL PANELS MANUFACTURER: Pure + Freeform, purefreeform.com

>> The Retrofit

The NBA Store, which occupies a 25,000-square-foot corner storefront on Fifth Avenue and 45th Street, offers an immersive shopping experience for fans. The store is a multidimensional design effort that merges basketball memorabilia with technology to produce unique interactive experiences. Three floors of clothing and memorabilia from NBA, WNBA and NBA D-League teams are showcased.





SPRINGFIELD TOWN CENTER Springfield, Va.

>> Retrofit Team

ARCHITECT: JPRA Architects, Farmington Hills, Mich., www.jpra.com

WALL PANEL INSTALLER: Tecta America East LLC Architectural Metals, Jessup, Md.,

www.tectaamerica.com/tecta-americaeast-jessup

WALL PANEL FABRICATOR: Architectural Metal Designs, Millville, N.J., www.amdnj.com

>> Materials

Approximately 26,400 square feet of Silver Metallic Envelope 2000 metal composite material was installed using the Rout & Return system in phases during a 10-month period. Silver Metallic offers a high-end look without stealing attention from the brightly colored, branded storefronts.

"Each retailer is responsible for its own storefront so we were responsible for the neutral, or common, areas of the renovation," says Louis Margitan, RA, NCARB, senior associate at JPRA Architects. "Our job was to downplay to the retailers so their brands pop."

Envelope 2000 is a composite panel for exterior use, manufactured by bonding an aluminum skin to a substrate of thermoset phenolic resin. A second skin is added as a backer and provides thermal stability and panel balance. "The thermoset phenolic resin core on this system offers a better impact resistance ...," Margitan says. "It's more hail resistant and stands up better in storms and weather. We wanted a product that won't require maintenance, replacing or anything that cuts into the bottom line."

The standard thickness for Envelope 2000 is 4 millimeters; 3, 6 and 8 millimeters also are available.

MCM PANEL MANUFACTURER: Citadel Architectural Products, www.citadelap.com

>> The Retrofit

The 1.3 million-square-foot shopping mall, which opened in the early 1970s, features more than 85 specialty retailers and serves the most populous region of the Washington, D.C., metropolitan area.

The only challenge during installation of the MCM panels, according to Brian Mc-Clelland, vice president of Tecta America East, was where the bridges came to the buildings. "These portals had panels on the exterior, the interior and on the ceiling," he says. "Some of the structure changed from the drawings, which happens, so we had to make adjustments to that."

"There's always going to be some hidden existing conditions with a renovation, so there were some minor field modifications, but that's standard with a renovation like this," Margitan adds.

A year after the completion of the project, Margitan says everyone is happy with the appearance and durability of the Envelope 2000 system.

WHOLE FOODS MARKET Various Locations

>> Materials

After six months of planning and internal deliberations, Whole Foods Market selected two firms to develop 100- to 150-kilowatt rooftop store solar systems for retail store installations. Select distribution centers also will house arrays of about four times that size. The approximate 100 systems are expected to start generating power in 2017.

Unlike past ad-hoc installations, this installation process was designed for efficiency. By working with two vetted system providers, Whole Foods benefits from better terms; volume pricing; and consistent, field-tested hardware. The broader roll-out will also benefit from an average installed cost decline of 58 percent between 2010-15 for non-residential solar, giving a boost to investment returns.

SOLAR ARRAY DEVELOPERS: NRG Energy, www.nrg.com, and SolarCity, www.solarcity.com

>> The Retrofit

Whole Foods Market's experience with rooftop solar power began in the early 2000s with a series of single-store installations initiated by local solar developers and led by onsite managers.

Subsequently, Whole Foods Market's regional offices took the lead on new solar project management, working with a variety of solar developers. By the end of 2015, Whole Foods Market had completed almost 40 solar installations.

To successfully facilitate the rapid solar roll-out of 100 more facilities, Whole Foods Market has to address several challenges that it encountered during the previous 40 installations, including lease and landlord concerns, roof quality and installation oversight responsibilities. Like many retailers, Whole Foods Market leases its facilities' building shells subject to tenant improvements. This constrains the company's ability to make changes, like installing solar arrays. Further, many properties are part of multitenant or mixed-use projects where Whole Foods Market is located next to other building tenants, increasing landlord concerns.

Second, solar projects are complicated by concerns about the roof and related conditions, especially in older buildings. About two-thirds of the combined completed and planned solar projects are retrofits on existing buildings with the remaining one-third additions to new buildings. Challenges include determining liability and maintenance responsibility for the roof and overcoming age and condition of the roof membrane and electrical switch gear. Ultimately, lease and roof compatibility were the biggest determinants in selecting the locations for installation.

Finally, for the initial 40 installations, installation oversight responsibilities, such as financing and equipment procurement, varied across systems, making Whole Foods Market's costs inconsistent and uncertain. The initial 40 solar developments were primarily financed through power purchase agreements (PPAs) or with internal capital. Of those financed through a PPA, Whole Foods Market opted for a third-party ownership variation, where a third-party solar developer finances, installs, and operates the system and provides power to the store at a guaranteed price that is typically below market price. Consequently, stores with a short lease term remaining usually require renegotiation to accommodate the 10 years or more length of a typical PPA.

About seven years ago, Whole Foods Market began to establish standard solar language in store leases, reserving the option to install, operate, maintain and remove solar power provided that it isn't visible from the ground. The solar installation was classified as personal, not real property that is attached to the land. The standardized lease language helps to streamline project implementation; leases don't have to be renegotiated later when solar is installed.

All projects will be third-party-owned with PPAs or leases for sites where PPAs aren't allowed. The installers have partnered with finance companies to provide this service. While Whole Foods Market might realize greater returns through direct ownership, third-party ownership reduces capital investment and is generally easier to execute. Given the inherent challenges in securing internal capital and scaling up, Whole Foods Market was drawn to the relative ease of third-party ownership through PPAs.

Because the corporate office will coordinate the roll-out rather than the regional offices, obtaining regional office buy-in was essential. One significant benefit of a headquarters-led project is the reduced demand on the regional offices. Furthermore, with such a large portfolio of projects, Whole Foods Market can balance easier projects with those in more difficult locations, so all 11 regions benefit and the overall return on investment is positive. Learn more about Whole Foods Market's solar roll-out at bit. ly/2dOpJM5.



>> By the Numbers

Number of rooftop solar installations (2000-15)	40
Approximate number of planned solar installa- tions (2016-17)	100
Size of typical store installation (kilowatts)	100-150
Expected energy offset	
Per store	7-8 percent
Per distribution center	30-50 percent
IKEA Zaragoza and Murcia, Spain

>> Materials

Pairing high-volume, low-speed fans with its existing HVAC system enabled IKEA to reduce its energy consumption and improve employee and customer comfort. In fact, these benefits and the return on investment convinced IKEA to continue to install the HVLS fans in its other locations.

HVLS FANS MANUFACTURER: MacroAir Technologies, www.macroairfans.com

>> The Retrofit

After the fans were installed, a 6-degree Fahrenheit increase in temperature at floor level at both IKEA stores was measured during winter. In the summer, the stores were able to increase the set point of their HVAC systems, thereby significantly reducing energy consumption without sacrificing comfort. IKEA doesn't use its HVAC on days in which the temperature is lower than 79 F.





Don't be fooled by an imposter

1600 Series

Norton[®] ASSA ABLOY

The Original Door Closers from Norton are the real deal

Just because door closers look alike, doesn't mean they are alike. Norton has been an innovator and quality manufacturer of door closers since 1880. That extensive experience results in durable, reliable hardware that has earned its BHMA certification the hard way—through sustained performance. If you need closers for a variety of applications that will last millions of cycles, why go with an imposter when you can get the reliability of an Original from Norton?

To learn how, visit nortondoorcontrols.com



Circle No. 20

8000 Series

ASSA ABLOY, the global leader in door opening solutions

November-December 2016 // RETROFIT 37



38 RETROFIT // November-December 2016

HDR Architecture Associates Tells the Story of Its Office's Neighborhood Via a Custom 600-square-foot Wood Ceiling Installation



hen we began the search for our new architectural studio space in Ottawa, Ontario, Canada, we asked ourselves two questions:

- How could we best support our community's urban fabric renewal?
- Would it be possible to use our new space to tell the story of urban transformation?

The first question was answered when we found space in an emerging downtown neighborhood called Westboro. The second was a little more challenging when we decided to redefine our workspace and celebrate the history of our urban environment through a ceiling installation that tells the story of urban transformation in the Capital Region of Canada.

The Westboro neighborhood played a significant role in the region's lumber boom of the 1870s. We set out to tell the story of this region's modern transformation by creating a custom 600-square-foot wood ceiling installation. It takes the form of an abstract map of the region that traces the waterways, roads, trails and significant buildings, which are overlaid on panels that are then divided into the territorial concessions created when the land was settled.

The ceiling installation is made of more than 170 specialty milled pieces by a Computer Numerical Control (CNC) router. Through this creation, we merged our creative interests with a team of regional craftsmen and the latest technology, allowing us to actively participate in the design and construction of our space.

History as Inspiration

Ottawa, Canada's capital city, is located adjacent to the Chaudière Falls at the confluence of the Gatineau, Rideau and Ottawa rivers. These waterways allowed trade and exploration from Upper and Lower Canada to expand westward into what would soon become Canada's vast interior.

Transportation held a transformative role in the region for more than two centuries. Étienne Brûlé was the first European explorer to travel up the Ottawa River by canoe in 1610, followed by Samuel de Champlain in 1613. Each were assisted by Algonquin guides in control of the Ottawa Valley at the time.

As pioneers arrived in the region via the waterways and basic roads, they were conceded land for farming that was organized in rows of surveyed lots bound by new concession roads. Land title was awarded to applicants in exchange for the clearance of land, roadwork to expand the network and the raising of homes. Concession roads were laid out orthogonally such that the sidelines ran roughly parallel to the north shore of Lake Ontario or to the southern boundary of the nearest county.

> Retrofit Team

CLIENT // HDR Architecture Associates Inc., Ottawa, Ontario, Canada, www.hdrinc.com

ARCHITECT AND CEILING DESIGN/ASSEMBLY // HDR Architecture Associates INTERIOR DESIGNER // 4té inc., Ottawa, www.4te.ca STRUCTURAL AND MEP ENGINEER // Cleland Jardine Engineering Ltd., Kanata, Ontario, clelandjardine.com

GENERAL CONTRACTOR // Bassi Construction Ltd., Ottawa, www.bassi.ca MILLWORK // LTR Industries,

Ottawa, www.ltrindustries. com

MILLWORK INSTALLER // Anglin Group Ltd., Odessa, Ontario, (613) 386-1014



As settlement expanded and industry grew in the region, waterways became part of a larger transportation network that would include the convergence of rail and roadways connecting to the world beyond in the mid-19th century. Some sections of the railways followed earlier tracings of roadways and trails in the region; others influenced the creation of roadways that have remained long after the rails have been removed.

Following years of growth and periods of decline, the railways were consolidated and, in 1950, the Gréber Plan was created by Jacques Gréber for the Federal District Commission of Ottawa. The urban plan called for the complete reorganization of Ottawa's road and rail network, including the construction of a new boulevard crossing from east to west replacing the Canadian National Railway. The thoroughfare was ultimately created as a highway and called the Queensway as a result of provincial funding requirements.

Telling a Story

The ceiling installation represents this shifting influence of transportation systems over the

last century and a half in the Ottawa region. It traces all of these key transportation routes over the original grid of the land concessions in the region, forming a series of distinct panels that include modern-day roads, trails and buildings.

An abstract topography was created by pushing upward along the centerline of the Ottawa River—the transportation route of origin—while pulling down along the Queensway, our modern-day bisecting highway.

"The ceiling represents a nod to the history of change in our region," says Walter Gaudet, managing principal, HDR. "It speaks to the impact of human development on the landscape."

Producing the Vision

The creation of the new studio space and its featured ceiling installation required the use of new milling technologies and the development of a 3-D graphic language to represent and translate thousands of lines of mapping into a consistent abstraction milled into the panels. Multiple mockups and tests for resin bonding and bit depth were also needed.

Digital maps of the region were sourced

It's time to replace your ineffective and inefficient unit heaters



With HTHV heating technology, one piece of equipment can dramatically reduce energy costs and improve Indoor Air Quality on commercial and industrial retrofit projects.

- Reduce Gas Consumption By At Least 20%
- Improve IAQ With 100% Outside Air
- Minimize Temperature Stratification
- Lower Installation Costs
- Deliver 250,000 to 3.2 Million BTUs
- Save Money

Circle No. 21



To Get Started: SCHEDULE A LUNCH & LEARN OR A FREE FEASIBILITY STUDY TODAY www.cambridge-eng.com 800-899-1989

- S-Series HTHV Heaters
- SA-Series HTHV Heaters
- SA-Series IIIIIV fieater
- Make-Up Air Ventilation



and redrawn to provide the best balance of information. These digital files were converted into computer code that would instruct the CNC machines on where and how to cut the panels. Each panel would have a distinct shape and pattern.

Medium-density fiberboard (MDF) was chosen as the substrate because of its dimensional stability and the ability to cantilever past the suspension girts forming the structure above. A phenolic resin interlayer was laminated onto the MDF to allow for color changes as bit depth was varied. This allowed designers to show buildings and key elements in contrast to the panel face and core. The final layer was a maple veneer, chosen as one of the most common species in eastern Canadian deciduous forests and Canada's national symbol.

Multiple mockups were produced to gauge the appropriate bit depth, material tear and resin bonding before the final approach was developed. The panels each have a particular angle and the multifaceted composition is supported by custom-cut girts that each create an abstract topography as a series of support ribs. These ribs are then laterally tied by struts that run lengthways to hold the ceiling together and provide seismic stability as required by the local building authority.

"Once the panels' fabrication was completed in LTR Industries, a local millwork shop in the Ottawa Valley, the pieces were transported to the site and assembled upside down on the floor by our staff," says Ingrid Felso, HDR's director of operations for Eastern Ontario. Each concession section was then hoisted up and set in place one after the other to create the new abstract terrain above.

The Studio Space

The interior of the architectural studio was planned to provide the maximum amount of open area and access to daylight. The feature ceiling is located at the center of the open area and aligns with the entrance to guide visitors into the space. This central space is open to north and south exterior walls of glass; enclosed offices are located on the east and west sides facing the central open space.

A simple palette of finishes include the existing poured concrete columns and floor above, glass, painted drywall and carpet. All mechanical, electrical and plumbing services are exposed in the ceiling allowing the studio to show clients the inner workings of typical building fabric.

Together, the concrete and exposed services contrast with the warmth of the maple-faceted feature ceiling and create a clear focal point in the space. Monotube LED light pendants appear as floating fluorescent tubes highlighting the varied angles of concessions throughout the region in the abstract map. The hundreds of hours spent researching, experimenting and crafting the ceiling has paid off in creating something as unique to our architecture practice's place in the region as it is unique to the Ottawa office's workplace within the larger context of our worldwide offices. We see it as our responsibility to tell stories of historical change as much as to propose design solutions as a way to inspire future-forward thinking in our communities.



©2016 Metl-Span - an NCI Building Systems company. All rights reserved.

[TRANSFORMATION]

WRITTEN BY ALLEN BARRY

A HISTORIC IOWA ROW HOUSE FINDS NEW LIFE AS A WINE BAR he finest wines are generally the ones that have been allowed to age and mature. And often, the best and most beloved restaurants and bars have a sense of age and history, as well. The march of time supplies depth and character to wine and the places where wine is enjoyed. A flavorful, complex glass of wine is an experience for all the senses, and that experience is enhanced in the right environment and in the right company.

All around the country, more restaurateurs and hospitality designers are utilizing historic and renovated space to provide a rich aesthetic and give a sense of history and place, even to brand new establishments. While new build-outs can sometimes be a bit generic or sterile, historic buildings provide a built-in warmth and comfort that is difficult to emulate.

In Des Moines, Iowa, visitors and patrons can enjoy fine wine in beautifully historic surroundings at Della Viti, a wine bar that has made its home in a repurposed 19th century row house. Its hip, relaxed atmosphere connects past with present.

HISTORY

The building, originally called the Samuel Green Row House, was built in 1884 as a home for the family of the prominent local business leader for whom the building was named. An early resident of Des Moines and a kind of city father, Green's foundry and furnace became a cornerstone of the city's development in the late 1800s.

A Romanesque revival façade wraps the eastern side of the building several feet deep, and the secondary elevations contain multiple fenestrations. The first floor retains an open hall layout that is publicly viewable and the second floor preserves its mid-20th century layout with original plaster walls.

The row house was used as a residence, either by the Green family or by renters, until the mid 1940s. In the late 1940s, it was remodeled and used as a rehearsal space and clubhouse for a Swedish choral and cultural group. It was renamed Norden Hall and was home to several organizations until the 1980s, when it went back to being a residence.

It limped along with a rotating cast of tenants, weathered and aging, until 2006 when the city of Des Moines purchased the building. The Des Moines Rehabbers Club named the building one of the city's most endangered properties. It was located on the edge of the State of Iowa Capitol grounds, and when an expansion of those grounds was announced, demolition of the row house was scheduled for spring of 2013.

That could have spelled the end of Norden Hall, but preservation-minded private developer Jake Christensen and his firm, Des Moines-based Christensen Development, intervened. Not only would they rescue and renovate the classic structure, they would actually move it off the Capitol grounds and to a new location four blocks away.



MOVING AND IMPROVING

A million-dollar investment was made to save and relocate the old row house. In spring of 2013, plans were made to move the 2,200-square-foot, 2-story, 440,000-pound building to its new home at 425 E. Grand. This was no small task. It required extensive planning and flawless execution to preserve the building and ensure safety for workers and the community.

After months of preparation and coordination, the building made the move at midnight on Sept. 25, 2013. It took just two and a half hours to complete the move and, upon its safe arrival, Norden Hall was lowered onto a new foundation and basement that had been built for it.

Once the building was secure in its new location, the construction team began work on the shell. There was much to be done to bring the building back to life and make it operable for the present day. New utilities were brought in and a grease interceptor installed to allow for a restaurant in the building. A new patio was

THE SAMUEL GREEN ROW HOUSE was built in 1884 as a home for the family of the prominent local business leader for whom the building was named. It remained a residence until the late 1940s when it was used as a clubhouse for a Swedish choral and cultural group. It limped along with a rotating cast of tenants, until 2006 when the city of Des Moines, Iowa, purchased the building.





44 RETROFIT // November-December 2016







constructed along the eastern wall and a portion of the west wall was stuccoed and painted to display the original aesthetic intent of the building.

WALL IN

The move exposed the fact that the building's masonry and stucco façade was in need of repair. The Des Moines office of Western Specialty Contractors, who had been involved in waterproofing the building's new foundation prior to backfilling, was brought in to help restore the façade and make it watertight.

To restore and preserve the façade, Western Specialty Contractors' crews replaced all the building's joint sealants and then undertook the process of resealing the structure by cleaning the entire surface and removing residue that had accumulated over the many years the building had been in use.

Tuckpointing was done throughout the building's three masonry walls. It was





DETAILS | Before the move | Applying shotcrete | After shotcrete | Completed west elevation after acrylic coating |

Nora Lighting and NSpec proudly offer THE MOST COMPLETE LINE OF LED DOWNLIGHTS

LED PANELS

Edge-Lit Technology Recessed, Surface or Pendant Mount 2X2, 1X4, 2X4 Configurations

SAPPHIRE SERIES

4", 6", 8" High Lumen Architectural and Commercial LED Downlights New Construction, Remodel, Retrofit

MARQUISE SERIES

4", 5", 6" Light Commercial and High-End Residential LED Downlights New Construction, Remodel, Retrofit

IOLITE SERIES

1", 2", 4" Adjustable Modular LED Downlights New, Remodel, Retrofit

COBALT SERIES

4", 5", 6" 1000 Lumen LED Retrofit, New Construction and Remodel

> Circle No. 23 Lightfair Booth # **2837** Globalshop Booth # **2831**

SNORA NSPEC LIGHTING www.noralighting.com **THE BIG MOVE** I The building was located on the edge of the State of lowa Capitol grounds, and when an expansion of those grounds was announced, demolition was scheduled. Des Moines-based Christensen Development, intervened and moved the 2,200-square-foot, 2-story, 440,000-pound building 4 blocks.







important to maintain the historical integrity of the structure, so special attention was given to make sure the mortar color and joint profile used in the original construction of the row house was matched in the restoration project.

In its old location, the row house had butted up to another building. Since it had to stand alone in its new home, some additional structural integrity was needed on that wall. To achieve this, spray-applied concrete was used on the entire western elevation. A textured acrylic coating was also applied to this elevation to add waterproofing and help protect the historic appearance of the building.

LOCATION, LOCATION

The tenant build-out of the rehabilitated row house took place in the fall and winter of 2014. The original intent was to have a restaurant on the first floor and offices on the second, but this plan changed when a single tenant stepped in to take over the building.

Gerald "JJ" Caligiuri, who had already opened a Della Viti wine bar in Ames, Iowa, was drawn to the location and the historic building. The East Village is a growing neighborhood in Des Moines with an active nightlife and plenty of foot traffic. This special building in a hip neighborhood was ideal for the unique wine bar that now resides there.

Della Viti takes pride in the relaxed

atmosphere that it built in its historic surroundings. Self-service wine stations create a fun, unique environment that is accented by jazz, excellent food and an extensive craft beer menu. It's a place that local residents can take pride in, and visitors to Des Moines can enjoy for its epicurean delights and its connection to the city's proud past.

The rehabbed Samuel Green Row House/ Norden Hall is thriving in its new location and garnering new appreciation in its modern role. Its renovation saved a piece of city history while adding to the fabric of Des Moines today.

Once on the verge of demolition, the row house demonstrates now that even buildings can improve with time. As Thomas Moore once said, "What though youth gave love and roses, age still leaves us friends and wine."

RETROFIT TEAM

DEVELOPER // Christensen Development, Des Moines, Iowa, www.christensendevelopment.com

ARCHITECT // Slingshot Architecture, Des Moines, slingshotarchitecture.com

GENERAL CONTRACTOR // Beal Derkenne Construction, Des Moines, bdconstruct.com

MASONRY RESTORATION // Western Specialty Contractors, Des Moines, www.westernspecialtycontractors.com



DURO-LAST® THE NEW GOLD STANDARD

888-788-7686

Visit **duro-last.com/sustainability** or call to find out more.

Duro-Last has always been a proponent of sustainability, but we know it's no longer enough just to talk about it. That's why we are the first company to publish a product-specific PVC Environmental Product Declaration (EPD) for single-ply PVC roofing membranes. Our Duro-Last, Duro-Tuff®, and Duro-Last EV membrane product lines have also achieved NSF/ANSI 347 Gold Certification – giving Duro-Last the most certified sustainable product lines in the industry.



First place in sustainable roofing.

[TRANSFORMATION]



STORYTELLERS







THE CHESAPEAKE SHAKESPEARE CO. REVITALIZES A BANK BUILDING INTO A MODERN-DAY GLOBE-STYLE THEATER



CREATED ITS OWN GLOBE-STYLE THEATER THIS SIDE OF THE ATLANTIC IN A BANK BUILDING BUILT IN 1885. WITH SEATING SO CLOSE TO THE STAGE, WHISPERED STORIES INVITE THE AUDIENCE TO BE EAVESDROPPERS, TO FEEL AS IF THEY ARE IN THE ACTION.



REAT STORYTELLING IS TIMELESS, relating to audiences through a common human emotion or truth. So too, hopefully, are great buildings, connected properly to a sense of place, history and human experience. The members of the Chesapeake Shakespeare Co., Baltimore, already were expert stewards of old English plays, but they recently took on another historic task: the revitalization of the Mercantile Safe Deposit and Trust into a magnificent modern Globe-style theater.

BANKING ON ENTERTAINMENT

Located between the Inner Harbor and Baltimore City Hall, the building is heavy rust-colored brick, thick and grounded. It boasted impenetrability when first constructed and, indeed, was one of few buildings to survive the devastating Baltimore Fire of 1904. Established to house an innovative new way of banking (onestop convenience for checking, savings and loans), it was designed and built by notable local architects Wyatt & Sperry in 1885. It operated as a banking institution for nearly 100 years.

The distinguished landmark building anchored the financial district of Baltimore with strong Romanesque Revival features, fitting for its original use. Massive Roman arches and detailed carvings adorn the locally guarried stone. Inside, the building soars-the original rusticated columns draw the eye upward to the ornately coffered ceiling. When the bank closed in the early 1990s, a nightclub bought the building and performed a much needed renovation, revealing the ceiling and painting it brightly, creating an even more vibrant statement. A series of nightclubs operated there for nearly 20 years and, though these businesses kept the 22,000-square-foot building standing, they did little for its reputation.

The Chesapeake Shakespeare Co., a successful troupe with a summer series of

outdoor performances in Howard County, was on the hunt for a building to settle into, make their own and grow from. Finding the Mercantile bank building (having now turned the page on its nightclub days) was an opportunity to custom-build a castle for their dreams. Wishes for their own Globe-style theater this side of the Atlantic could come true in a space like this. With seating so close to the stage, whispered stories could invite the audience to be eavesdroppers, to feel as if they were there, in the action. A location in center city offered access to travelers and tourists, as well as the responsibility to be an active citizen in the Baltimore arts community and an outlet for its youth.





WHEN THE BANK CLOSED IN THE EARLY 1990S, A NIGHTCLUB BOUGHT THE BUILDING AND PERFORMED A MUCH NEEDED RENOVATION, REVEALING THE CEILING AND PAINTING IT BRIGHTLY. ARCHITECTS CHO BENN HOLBACK + ASSOCIATES, BALTIMORE, HIGHLIGHTED AND HONORED THE BANK'S ORIGINAL COLUMNS AND CEILING WHILE CREATING THE THEATER.

RETROFIT TEAM

ARCHITECT // Cho Benn Holback + Associates, Baltimore, www.cbhassociates.com

GENERAL CONTRACTOR //

Southway Builders Inc., Baltimore, www.southwaybuilders.com

* * * *

MECHANICAL/ELECTRICAL ENGINEER //

Mueller Associates, Baltimore, www.muellerassoc.com

* * * *

STRUCTURAL ENGINEER // Mincin Patel Milano Inc., Baltimore, www.mpm-engr.com

THEATER CONSULTANT // Theatre Consultants Collaborative, Toronto, www.theatrecc.com

ACOUSTIC ENGINEER // Cerami, Washington, D.C., www.ceramiassociates.com

DEMOLITION // Interior Specialists, White Marsh, Md., (410) 335-0381

PLASTER RESTORATION // McNieve's Plastering, Baltimore, www.mcneivesplastering.com

MASONRY RESTORATION // Coastal Exteriors LLC, Cockeysville, Md., (410) 252-3411

....

STEEL AND MISCELLANEOUS METAL FABRICATOR // Jarvis Steel and Lumber Co. LLC, Baltimore, www.jarvissteelandlumber.com

* * * *

MISCELLANEOUS METAL //

ACI Inc., Elkridge, Md., www.assuredcontractinginc.com

ALTHOUGH THE TROUPE'S NEW THEATER IS FULLY ENCLOSED, IT IS PERFECTLY REMINISCENT OF THE SHAKESPEARE EXPERIENCE IN MANY OTHER WAYS. THE AUDIENCE IS SEATED IN THREE TIERS EXACTLY LIKE ELIZABETHAN-ERA PLAYHOUSES, AND BARS ON TWO FLOORS ENCOURAGE REVELRY FROM THE CROWD.

FOUR-HUNDRED YEARS OF ARCHITECTURE

The plays of Shakespeare were originally performed in outdoor venues, a tradition that Chesapeake Shakespeare Co. continues with its "in the ruins" plays in Howard County. Although the troupe's new theater is fully enclosed, it is perfectly reminiscent of the Shakespeare experience in many other ways.

Seating the audience in three tiers exactly like Elizabethan-era playhouses invites a visitor to imagine the scene hundreds of years ago. There are bars on two floors open to the house, to encourage revelry from the crowd (though perhaps not as much revelry as the building's nightclub days). Short side depths around a thrust stage create an intimate space, where the audience feels part of the performance.

Architects Cho Benn Holback + Associates, Baltimore, became true partners in the mission, seeking to use the building to its best advantage. Significant historic details—the columns and ceiling—were highlighted and honored while others were wryly repurposed. A first-level vault is now a children's playroom, complete with its very own secure door. A catwalk, an original artifact previously used by bank security guards, now adds to the action with musical performances during interludes. A spiral stair, designed to facilitate the actors moving between floors, was replaced exactly where it is shown in old photographs of the bank. "There's 400 years of architecture in one building—an Elizabethan playhouse, a Victorian bank and a 21st-century theater," comments Ian Gallanar, artistic director of the Chesapeake Shakespeare Co.

Adaptive-reuse strategies delicately inserted transfer beams into the existing steel and terra-cotta structure, which now supports a modified mezzanine and new third-floor balcony. Southway Builders Inc., the Baltimore-based general contractor, put forth significant effort to ensure the installation went smoothly; each column and beam was hand carried into the space.

LIMITLESS ENTERTAINMENT

The new home of the Chesapeake Shakespeare Co. is very much like Shakespeare himself—steeped in history (reputable and notorious), wildly creative and thoughtfully constructed to support surprising twists. The "chameleon wall" in the upstage

With VRV, unleash your creativity to meet your customer needs and exceed their expectations

With the "building blocks" of VRV [Outdoor units | Indoor Units | Piping Joints | Controls] Daikin provides design simplicity, rapid installation, full flexibility, with high efficiency.*

Circle No. 25

ADDITIONAL INFORMATION* Before purchasing this appliance, read important information about its estimated annual energy consumption, yearly operating cost, or energy efficiency rating that is available from your retailer.

> Our continuing commitment to quality products may mean a change in specifications without notice. © 2016 DAIKIN NORTH AMERICA LLC · Houston, Texas · USA

MATERIALS

* * * *

CUSTOM MILLWORK // Grizz Custom Cabinets Inc., grizzcustomcabinets.com

* * * *

SOUND-CONTROL DOOR // Techstar Industries, www.tsi-maa.com

HOLLOW METAL DOORS AND FRAMES // Ceco Door Products, www.cecodoor.com

* * * *

WOOD DOORS // VT Industries, www.vtindustries.com

* * * *

STOREFRONT DOORS // Vistawall International, www.vistawallinternational.com

* * * *

DRYWALL // National Gypsum, www.nationalgypsum.com

* * * *

CARPET // Tandus, tandus-centiva.com

PAINT // Benjamin Moore, www. benjaminmoore.com, and Sherwin-Williams, www.sherwin-williams.com

ROLLER SHADES // MechoSystems, mechoshade.com ****

DUCTLESS SPLIT SYSTEMS // LG,

www.lghvac.com

* * * *

ELECTRIC CABINET HEATERS // Berko, www.marleymep.com

* * * *

PLUMBING FIXTURES // Sloan, www.sloan.com

FAUCETS // Kohler, www.kohler.com, and Chicago Faucets, www.chicagofaucets.com

WATER FOUNTAIN // Elkay, www.elkay.com

ELEVATOR // ThyssenKrupp Elevators, www.thyssenkrupp.com

SIGNAGE // Arundel Signs Inc., www.arundelsigns.com

APPLIANCES // GE, www.ge.com, and EVI Foodservice Equipment, www.evifs.net

* * * *

BLACK AND WHITE PHOTOS: COURTESY CHO BENN HOLBACK + ASSOCIATES

wall transforms for each play as the stage designer creates immersive sets. Originally envisioned as an erector set of parts to modify, clamp onto and remove as necessary, it has done much more than just act as a backdrop. Chesapeake Shakespeare Co. has used it to build-out in 3-D, creating forests, castles and Scrooge's home at 200 E. German Street (the original bank's address) in its annual production of "A Christmas Carol". The possibilities of this stage are limitless.

To experience a theater-in-the-round requires the embrace of a building, and Chesapeake Shakespeare Co. has created an environment so comfortable and enchanting that you can get lost in the performance. "The actors perform in the audience, on the spiral stairs, on the catwalk. It's an energetic and 3-D experience," points out George Holback of Cho Benn Holback + Associates.

The troupe also fosters relationships-

between the text and contemporary issues, between the actors and their audience, and now too between the building and its community. Many visitors have memories of banking in the Mercantile Safe Deposit and Trust, some even remember its iteration as a nightclub, and soon all will have the opportunity to view its history in an exhibit sponsored by the Baltimore National Heritage Area. A grant supports the exhibit as well as docent training so the Chesapeake Shakespeare Co. may preserve not only the space, but also its story.

The Chesapeake Shakespeare Co. is an expert in the continuous evolution of historic interpretation, translating old English Shakespeare for modern American audiences for almost 15 years. The troupe's new chapter—played out in the old Mercantile bank building—has made the company caretakers of new stories. From a lintel, Mercury, the Roman god of economics and eloquence, grins, guite pleased.

ONE FRAME COUNTLESS POSSIBILITIES

Strong Frame

Up to four stories tall and unlimited bays, Strong Frame[®] special moment frames provide countless design possibilities. Our new Strong Frame multi-story, multi-bay solutions meet all code requirements, resist the most demanding lateral loads and let you create spacious, beautiful buildings.

Strong Frame

Strong Frame

Strong Frame

Let Simpson Strong-Tie help you design your custom multi-story and multi-bay frames today. Contact us about our design services at (800) 999-5099 and visit **strongtie.com/strongframe.**

Strong Frame

Circle No. 26

INSPIRED BY PAST AND PRESENT

he Manhattan neighborhood of Tribeca is a place where urban grit and metropolitan glamour merge. In recent years, its brick-and-cobblestone allure has come to rival the posh precincts of midtown for the best opportunities in city living—and the most sought-after apartments and condominiums.

This helps explain why the raw loft spaces of a 260,000-square-foot former bookbindery built in the 1880s attracted developer Nathan Berman, managing principal of nearby Metro Loft Management LLC, to reimagine the classic half-block building at 443 Greenwich as 53 contemporary urban condominiums. "This was really the last and also the largest work of original Tribeca architecture in this highly desirable area," says Berman, whose company is best known for market-leading multifamily conversions of office towers around Wall Street. "We saw a way to reinvent the building that would preserve its landmark character while also allowing an unusually high degree of privacy, a modern sensibility and all the key amenities expected of top-end condominiums."

ORIGINALLY DESIGNED by Charles Coolidge Haight, the red brick, bluestone and iron exterior stands practically untouched. To cross into its magnificent new interior spaces, however, is to travel over a century in a matter of footsteps.

To make it happen, Metro Loft tapped New York-based architecture and interior design firm CetraRuddy, known for award-winning residential works and tricky residential conversions, including numerous properties with prominent architectural lineage. New York-based HMWhite, an acclaimed landscape architecture firm, handled not only a large courtyard but also the 5,000-squarefoot rooftop garden deck with trellises and pool, now under construction.

WRITTEN BY | C.C. SULLIVAN

Modern materials highlight the raw, elemental character of the monumental beams and columns of 443 Greenwich, a bookbindery built in the 1880s in Manhattan's Tribeca neighborhood. Today, the building hosts 53 contemporary urban condominiums.

With a mix of market savvy, design vision and craftsmanship, the team remastered Haight's original work, restoring the historic brick façades and courtyard walls while opening up large interior spaces. The 7-story building was originally constructed of load-bearing masonry perimeter walls with heavy timber columns and girders framing wood-beamed floors. "All these were restored, giving the interiors an authentic architectonic sense of space and order," says John Cetra, AIA, CetraRuddy's founding principal. "In the adaptation, many structural elements remain exposed, forming a historic organizing element within the common spaces and apartments." The residences of modern materials and various patinated metals highlight the raw, elemental character of the monumental beams and columns, allowing residents to appreciate the history and authenticity of this Tribeca original, Cetra adds.

At the existing roof level, the project team added contextually sensitive penthouse extensions for duplex and triplex residences. The result is an optimized mix of 53 residences, including eight penthouses and units ranging from 2,000 to 9,500 square feet and from two to five bedrooms, with the largest units boasting six and a half baths.

TO COMPLEMENT THE landmark's classic proportions and silhouettes, CetraRuddy's Founding Principal Nancy Ruddy, along with Ximena Rodriquez, principal and director of interior design, devised a palette of contemporary textures, modern craftsmanship and luxury-level finishes. They hand-selected marble and schist for the kitchens and baths alongside custom acid-etched glass, 8-inch-wide oak plank floors, and accents of antiqued bronze and polished stainless steel. Repurposed original details alluding

56 RETROFIT // November-December 2016

A Tribeca Landmark Is **Reborn** as Glamorous Condominiums

TANK.

We saw a way to reinvent the building that would preserve its landmark character while also allowing an unusually high degree of privacy, a modern sensibility and all the key amenities expected of top-end condominiums.

PHOTOS: ADRIAN GAUT

— Nathan Berman, managing principal, Metro Loft Management LLC

Throughout the homes, natural light is maximized through large arched windows and doubleheight spaces, subtly cuing the transition from street-facing living areas to more private bedrooms overlooking a central garden courtyard. Originally designed to illuminate and cross-ventilate factory floors, the courtyard connected to side streets via narrow driveways once used for loading and access. Today, the courtyard offers a lushly landscaped respite, and its driveways lead to an elegant underground parking lobby with Guastavino tile arches, accessed through a historic iron gate. Additional building amenities include a luxe fitness center with children's playroom, a hammam with locker rooms and a 75-foot lap pool lined in travertine marble walls. At ground level, a 24-hour lobby presents a sculptural ceiling design and views of the interior garden.

Not only preserving culture and history, 443 Greenwich also conserves natural resources through recycling of building elements, incorporating green roofs, and employing recyclable materials and modern technologies. Early energy analyses informed the addition of new, highly efficient windows and insulation to tighten the brick enclosure. High-performance mechanical and electrical systems reduce overall energy and water use, and the garage offers electric vehicle hookups, extending carbon reductions to the apartment owners, too.

THE AMBITIOUS retrofit will be substantially complete this winter, and the first residents started moving in last summer. "This has been a complex building project in terms of its purely technical challenges," Berman says. "But it is also a gift to us, to the buyers and to the city. 443 Greenwich is almost literally a cornerstone for Tribeca, a significant and sizeable landmark that contributes to the living history of this amazing city neighborhood."

Local real-estate brokers and shelter media are calling 443 Greenwich "TriBeCa's most private address" and "a new enclave for A-list property buyers" in entertainment, finance, sports and high-tech. "The building's historic character sets a backdrop for true creativity in modern city living," says Richard Cantor of New York's Cantor-Pecorella, a leader in residential real-estate concepts, marketing and sales engaged by Berman to work on the project. Outside, 443 Greenwich is a purely contextual gem, complementing Tribeca's heart and soul.

Many things have improved over the last 9,000 years.

Until now, brick wasn't one of them.

Introducing NewBrick. The most important innovation in the history of brick. NewBrick is superior to clay brick in weight, energy efficiency, speed of installation and environmental impact. NewBrick offers the same classic size and appearance of clay brick, but raises the bar with improved performance.

Visit dryvit.com/newbrick to see all of NewBrick's colors and textures. Contact us to request samples, and to learn how NewBrick can greatly benefit your next project.

newbrick@dryvit.com | 800-556-7752 x9

Rational Historic Preservation

The completed Alaska State Capitol, 1931.

In-progress re-cladding of the capitol's west side. The original terra-cotta roof-level cornice band, removed decades ago because of its degradation, was replicated using precast concrete.

READ MORE

Author Paul Lukes provides a more in-depth report—along with photographs and illustrations—about the Alaska State Capitol's problems and solutions on our website, www.retrofitmagazine.com/ rational-historic-preservation. He also touches upon related technical subjects, including how buildings get wet and how this affects building envelope configuration.

THE ALASKA STATE CAPITOL RE-CLADDING RESISTS ADHERENCE TO ABSOLUTE REPLICATION OF THE ORIGINAL DESIGN

uring the course of my career, I have on many occasions worked on projects of historic significance, where historic preservation boards governed any proposed work, particularly work affecting exteriors. In my experience, such boards have at times insisted on absolutely unwavering adherence to the original design, even when that original design—wonderful and beloved though it may be—makes serious technical errors, which plague the buildings and their occupants and owners.

Therefore, it is my contention that buildings of historic significance are best preserved by using judgment to maintain or duplicate the building's original appearance while taking the opportunity to enhance performance and correct technical errors. We already upgrade historic buildings structurally to enhance the survivability of their occupants and the buildings themselves in earthquakes, as well as retrofit insulation to enhance energy efficiency. Correcting technical errors and enhancing a historic building's enclosure performance, particularly where such enhancements can be largely concealed and not visually distract from the original design, makes overwhelming sense in my opinion.

I have been involved with the re-clad and seismic upgrade of the Alaska State Capitol, Juneau, for 11 years. Alaska has no historic preservation boards with which to contend. Therefore, the capitol project, which is scheduled for completion at the end of the 2016 construction season, illustrates "rational historic preservation" of notable buildings.

Investigation

The Alaska State Capitol was designed as the Federal Territorial Building in 1929 and completed in 1931, just as the Great Depression was in its infancy. It consists of a concrete frame structure with some riveted steel girders at the house chambers and multi-wythe masonry infill walls, which include brick, limestone, granite, marble and colorful terra-cotta elements.

My involvement with the building began in 2006 when I was asked to take a brief look at its exterior masonry and provide a verbal summary. This examination unexpectedly revealed severe masonry degradation and cracking, relatively widespread leakage to the interior, spalling of the stone cladding from anchor corrosion, among many other symptoms. The brick appeared as if it had been sandblasted and contained various cracks, some extending more than 10 feet. In short, the building's exterior masonry was in rather poor condition, particularly in view of the building's relatively young age.

Further, the stone entry portico appeared to suffer severe water infiltration and associated damage, as well as seemingly dangerous cracking of stone beams supporting the portico's roof.

These issues were brought forth in my summary, which recommended the portico, in particular, be more closely evaluated because of its seemingly dangerous cracking and degradation.

My next opportunity to see the building came in 2010 when I was asked to take *(continues on page 62)*

Clog Remover

GRAND CENTRAL TERMINAL

0

GRAND CENTRAL

ERATOR

With more than 750,000 daily visitors, the restrooms in New York City's Grand Central Terminal see a lot of traffic. Thanks to the XLERATOR, Grand Central's restrooms are now free of the clogs and mess associated with paper towels — and they're seeing a significant cost savings on labor, maintenance and waste. If the XLERATOR can make it here, it can make it anywhere.

Eliminate Paper Towels - Specify Excel Hand Dryers!

TIME TO THROW IN THE TOWEL®

888.507.4627 exceldryer.com sales@exceldryer.com

Circle No. 28

The capitol's brick appeared as if it had been sandblasted and contained various **CRACKS**,**H** some extending more than 10 feet.

CRACKING can be seen on this portico column.

Inner wythes of brickwork.

a much closer look at the portico and provide a report for it. This inspection confirmed my earlier concerns.

Although the focus of my second investigation was the portico, this element was so integrally intertwined with the building's exterior wall that analyzing the problems plaguing the portico unavoidably required analyzing the full height of the building's exterior wall above the portico. Because much of the entire building is built identically, my portico-focused investigation ended up analyzing much of the building's exterior by default.

For example, the severe leakage plaguing the portico ceiling did not originate with its roof, but rather resulted from the downward migration of moisture within the building's multi-wythe exterior masonry walls above, which—reflecting construction methods of the time—did not incorporate through-wall flashings or weeps to capture and drain water out of inherently absorbent masonry. Instead, the builders attempted to rely on the masonry thickness and mass to limit infiltration to the interior. While this "mass masonry" approach may suffice for many exterior detailing conditions in much drier climates, it has little chance against Juneau's 220 days of precipitation annually.

In short, my closer look revealed the portico had suffered seismic damage in the past and appeared very vulnerable to potentially severe damage in any future earthquake. It obviously had been plaqued by severe infiltration for 80 years, compromising the integrity of its stone ceiling panels and possibly its concrete roof structure through corrosion of its reinforcing, embedded steel tie-straps and steel beams. Further, the entire building appeared vulnerable to severe damage during future earthquakes. In addition, by virtue of the absence of through-wall flashings and drainage provisions within its exterior walls, infiltration to the interior and damage to interior finishes, as well as to the masonry, would continue to plaque various parts of its exterior walls.

In view of the already extant damage to its masonry, my report cautioned that seemingly random shedding of fist-sized masonry chunks off the building's façades should be expected.

Action

About two years later, a senator's aide was entering the building for work when a fist-sized chunk of masonry came crashing down 80 feet and shattered next to him. This crystallized the potential risks of inaction, leading to my third visit to the building at which time I was asked to assemble a team of experts to evaluate the building in its entirety and develop corrective options. The team included architect Wayne Jensen of Juneau-based Jensen Yorba Lott Inc. Greg Coons and Paul Fagét of the Seattle-based structural engineering firm Swenson Say Fagét formed an integral part of the team by virtue of their recent design of similar structural retrofitting at the Washington State Capitol.

All examined the building and its detailed design from their disciplines' perspectives over several days to begin developing appropriate corrective options addressing the building's multi-layered problems. This afforded the opportunity to examine portions of the building's exterior I had not previously accessed, revealing more of the degradation symptoms expected, namely serious weathering of its masonry.

For example, starting at the building's top, the roof-level masonry band that replaced the original comice was spalling extensively, in particular along a projecting narrow band, posing appreciable risk to pedestrians below.

In short, the Alaska State Capitol, perhaps the state's historically and architecturally most significant building—one more than worthy of preservation—was in quite poor condition with many of its exterior masonry elements very near, in many cases beyond, their safe, usable lifespans. The capitol was posing life-safety risks to pedestrians below its walls because of the extant damage to its masonry; experiencing interior leakage in many locations; and its very structure was vulnerable to complete seismic collapse, thus risking the state's effective decapitation just when the government's resources would be most critically needed following a significant earthquake.

The "expected" pathway for addressing the host of issues plaguing this venerable building—the pathway which based on my prior experience would have been absolutely mandated by any overseeing historic preservation boards—would be to do all possible to preserve all existing masonry while addressing the structural and other deficiencies.

Yet, it was clear given the full constellation of problems plaguing this structure, this would involve a massively costly effort while

still yielding at best marginal results. Plus, it would only extend this building's day of reckoning by 40 years at most. This approach would require removal of all hollow clay tile lining the inner faces of all exterior walls to allow new concrete shear walls to be shotcreted against the existing masonry to provide the structurally needed shear walls. It would require costly retrofitting of through-wall flashings to preclude infiltration into the portico ceiling and below many windows. It would similarly require all existing masonry be anchored to the new concrete shear walls with tens of thousands of steel pins. The masonry would need to be patched with suitable repair mortars and treated with consolidating agents to help stabilize its degraded integrity, which even under the best circumstances would have bought 40 years before another round of very costly repairs would be needed.

In this approach, the overall building would become heavier by replacing thin hollow clay tile with thick concrete shear walls, thus exacerbating seismic stresses and requiring addition of yet beefier foundations and shear walls. The exterior masonry would still continue to erode away and drop chunks onto sidewalks below, though hopefully with less frequency for some years. Further, this approach allowed no significant enhancement of the building's energy efficiency, leaving its exterior walls largely uninsulated with total R-values ranging between R-3 and R-4, depending on location. Although insulation could in theory be added inward of the new shotcrete walls, this would not only reduce already tight interior space, but posed a risk of accelerating further degradation of the masonry and was thus inadvisable. Our team proposed this option—"Maximum Preservation"—with a cost of roughly \$18 million.

This approach made no sense, so I suggested another approach be considered: complete reconstruction of the building's exterior to match as closely as possible the original design while taking advantage of the opportunity to technically enhance the cladding's performance and correct the technical flaws inherent in the existing design. Although this seemingly radical suggestion at first met with understandable hesitation, the potential advantages of this approach afforded compelling arguments.

This approach would ironically simplify the work: All exterior walls would be removed to allow easy access for installing new concrete shear walls, which would then remain fully accessible to allow new masonry to be anchored to them. It would lighten the building, replacing in many locations 16 inches of masonry with 8 to 12 inches of concrete and brick, thus

The portico's four marble columns were core-drilled through their entire height to allow reinforcing strands to be grouted through these to tie the separate marble sections together and to the foundations.

further reducing seismic risk and the amount of new concrete shear walls. It would provide a new masonry cladding closely resembling the original but with a plausible lifespan of 100 to 150 years even in Juneau's masonry-challenging climate. It would also allow major enhancement of energy efficiency, increasing the exterior walls' insulating value to roughly R-20 in some locations and more than R-40 in many other areas. This approach would also allow easy correction of the original design's technical flaws, by installing suitable flashings atop all ledgers and lintels, below window sills, and at similar suitable locations to drain water back out of the cladding; to cap over ill-advised, skywardfacing masonry surfaces with historically compatible copper flashings; and make similar enhancements with very limited visual impact. This option—"New Masonry Veneer with Concrete Walls"—would cost roughly \$22 million.

With either approach, I strongly recommended the original roof-level cornice be reconstructed of precast concrete; this would not only restore the building closer to its original appearance, but would appreciably help protect the new masonry from weathering, helping extend its lifespan.

Recognizing the powerful advantages of the "New Masonry Veneer with Concrete

The completed portico features a new concrete-frame structure of beams, pilasters and a roof slab cast atop the columns. The portico was clad with precast concrete to match the existing, severely damaged stone.

New concrete shear walls and windows on the capitol's west side.

Walls" option, the state of Alaska accepted this recommendation.

Corrective Design and Construction

Given the Phase 3 team's expertise and deep familiarity with the Alaska State Capitol's extensive problems, the same team was selected to carry forth the corrective design.

Because of the potential life-safety risks posed by the seriously damaged portico, corrective design was actually divided into two sub-phases, the first of which pertained to the reconstruction of the portico structure while the second described work at the remainder of the building. This allowed the most critically needed corrective construction at the portico to proceed in 2013 while the design for the following years' corrective work continued.

Corrective work at the portico began with removal of all portions of its structure, except for its four marble columns, which were coredrilled through their entire height to allow reinforcing strands to be grouted through these to tie the separate marble sections together and to the foundations. A new concrete-frame structure of beams, pilasters and a roof slab was cast atop these columns with a temporary EPDM roof over this to protect the structure until the following year when this skeleton was clad with precast concrete cladding to match the existing, severely damaged stone.

In brief, corrective work at the rest of the building, executed during 2014-16, consisted of complete removal of all exterior masonry to fully expose the building's concrete skeleton; installation of new shotcrete shear walls for seismic enhancement; and over-cladding the structure with a new masonry cladding to closely resemble the original building while also incorporating many technical enhancements, including insulating the building with rigid insulation outside the concrete structure and adding interior insulation for maximum energy efficiency. Because the existing brick face was 9 inches outside the concrete structure in many locations, this allowed addition of 4 1/2 inches of rigid insulation. Elsewhere, where the masonry fell closer to the concrete skeleton, lesser amounts of insulation could be placed within the masonry cavities, where added interior insulation was of greater consequence. Depending on location, the new exterior walls (continues on page 66)

EXPERIENCE THE FUTURE OF HVACR

- → SEE NEW PRODUCTS FROM 2,000+ EXHIBITORS
- → NETWORK WITH 60,000+ HVACR PROFESSIONALS
- → ATTEND SEMINARS & ASHRAE WINTER CONFERENCE

LAS VEGAS JAN 30-FEB 1 2017

^a AHREXPO.COM

The new brick veneer resembles the original brick but now protects insulation and drainagemat layers, as well as features seismic ties and horizontal joint reinforcements.

RETROFIT TEAM

CLIENT // State of Alaska, Legislative Affairs Agency, Juneau, alaska.gov ARCHITECT // Jensen Yorba Lott Inc., Juneau, www.jensenyorbalott.com STRUCTURAL ENGINEER // Swenson Say Fagét Inc., Seattle, ssfengineers.com

BUILDING ENVELOPE CONSULTANT

// Paul Lukes: Building Envelope Consulting Services LLC, Seattle, www.plbecs.com

ELECTRICAL ENGINEER // Haight & Associates Inc., Juneau, haight-assoc.com

MECHANICAL ENGINEER // Murray & Associates P.C., Juneau, murraypc.com

GENERAL CONTRACTOR, PORTICO // Alaska Commercial Contractors, Juneau, www.akcci.com GENERAL CONTRACTOR, BUILDING // Dawson Construction Inc., Juneau, www.dawson.com

The new masonry design incorporates weeps, which allow air to enter behind the cladding, at panel bottoms. Outward-sloping panel-top vents were installed to exhaust air out from behind the cladding.

had insulating values ranging from about R-20 to more than R-40.

The original terra-cotta roof-level cornice band, removed decades ago because of its degradation (which reflects its inadequate design), was replicated using precast concrete. To preclude infiltration and protect its integrity, the cornice was capped with EPDM membrane, a thin vent mat and standingseam copper roof.

To allow the masonry to dry out as rapidly as possible following each rain, the masonry design incorporated weeps, which allow air to enter behind the cladding, at panel bottoms. Outward-sloping panel-top vents were installed to exhaust air out from behind the cladding, thus setting up a thermosiphon drying effect.

Conclusions

In summary, this venerable capitol had been designed as many of its contemporary peers, which proved woefully inadequate for Juneau's very masonry-challenging climate. Consequently, its exterior elements displayed a level of degradation far beyond the building's relatively young age. Further, the building's overall structure was not designed to perform adequately in earthquakes of plausible magnitudes, had suffered seismic damage to various exterior masonry elements and was at risk of complete collapse when the inevitable significant earthquake takes place.

This building's many serious issues could have been addressed in the expected fashion, namely by exerting all effort to maintain its exterior masonry elements and installing interior shotcrete shear walls to enhance seismic performance. Based on past experience, I am very confident that this restoration pathway would have been mandated by many historic preservation boards.

Yet, this "preservation" approach would have proved very costly; produced a building whose exterior masonry would still continue to crumble away onto pedestrians below; continued to consume inordinate amounts of heating energy each year; made the building yet heavier, thus requiring additional seismic upgrading to address the increased movement stresses; and reduced already tight interior space by thickening the exterior walls inward. Further, this approach would at best have extended the lifespan of the building's exterior by perhaps 40 years, at which point further attempts to preserve the existing masonry would have proved futile, requiring very costly replacement in just a few decades.

In contrast, the "reconstruction" approach actually allowed the building to become lighter and seismically safer; made the exterior walls much more energy-efficient, reducing heat loss through the masonry by roughly 90 percent; and gave the building a new lease on life, probably extending the lifespan of its exterior cladding 100 to 150 years. It allowed the building to regain its originally designed appearance while accommodating barely perceptible corrections of its technical errors. In short, the "reconstruction" approach vastly improved the building's seismic performance and safety, greatly extended its lifespan and improved its energy efficiency immensely at only marginally higher initial cost than the largely futile "restoration" approach would have cost. 🖻

LEED: A LEGACY Leaders across

AND ENVIRON

BY

the globe have made LEED the most widely used green building program in the world. Leave your legacy today.

#LEEDlegacy

[TREND ALERT]

The Social Side of **SUSTAINABILITY**

WRITTEN BY | ROBERT NIEMINEN

The **"People" Component** of the Triple Bottom Line Has Taken a Backseat to Profit and Planet. Here's Why That's Changing and How to Get Involved.

f you've ever given thought to terms like "corporate social responsibility" or "social equity," it's no wonder; since the mid-1990s, companies have increasingly embraced their roles and responsibilities as global citizens rather than mere profit mechanisms. This shift was due in part to pioneering ideas put forth by visionaries like author and sustainability consultant John Elkington, who coined the phrase "Triple Bottom Line"—a three-pronged framework for business that places equal emphasis on people, planet and profit.

Although it seems industry has wholeheartedly embraced income and the environment, as evidenced by the mainstream adoption of sustainable design practices, for example, the social side of the sustainability equation is out of balance.

"If you think about people, planet and

profit and the Triple Bottom Line, all of us have been more focused on the planet/ profit side and less focused on the people side," explains Holley Henderson, founder of H2 Ecodesign, Atlanta. One of the reasons for this disparity is because social impacts can be somewhat difficult to measure.

"One problem with the Triple Bottom Line is that the three separate accounts (continues on page 70)

Save-the-Date for CONSTRUCT 2017

1

1

EDUCATION: SEPTEMBER 13 - 16 EXHIBIT HALL: SEPTEMBER 14 - 15

Providence | Rhode Island Convention Center

Circle No. 31

The reality that every building industry professional must face is that it is impossible to divorce infrastructure from **social** outcomes.

cannot easily be added up. It is difficult to measure the planet and people accounts in the same terms as profits—that is, in terms of cash," according to *The Economist*. "The full cost of an oil-tanker spillage, for example, is probably immeasurable in monetary terms, as is the cost of displacing whole communities to clear forests, or the cost of depriving children of their freedom to learn in order to make them work at a young age."

Nevertheless, Henderson says the tide is changing with regard to industry's focus on humanity and social outcomes, particularly within the built environment. She notes with the emergence of programs like the WELL Building Standard, an evidencebased system for measuring, certifying and monitoring the performance of building features that impact health and wellbeing, social outcomes are emerging as "a forefront trend".

See the Bigger Picture

So, what exactly are the social implications of doing business today and how are they tied to our infrastructure? The answer is somewhat unclear because understanding the full implications of design and architecture on social justice is an ongoing pursuit. However, as John Peterson, curator of the Loeb Fellowship at Cambridge, Mass.-based Harvard University's Graduate School of Design and founder of Public Architecture, a San Francisco-based organization that facilitates pro bono design services, says, identifying social outcomes can begin with rather ordinary, yet accessible ideas that ultimately help define quality of life.

For example, considering the types of communities we build, he asks, "Do people engage with one another on the street in a positive way? Do we have choice? Can you walk to the market?" Peterson says simple factors, such as whether houses have front porches and neighborhoods are walkable or they have access to retail, as well as larger policy decisions about where people can live based on exclusionary zoning, are issues that need to be addressed. Such considerations may seem pedestrian on the surface but they are ultimately rooted in social equity.

"Other things that are obvious are health outcomes," Peterson continues. "The materials we use [in buildings], the exposure people have to good things or bad things—it's very direct."

Henderson agrees there is a corollary relationship between the built environment and social outcomes. She participated in a recent education curriculum development project for Bristol, Va.-based Universal Fibers Inc., partnered with Masland Contract, Saraland, Ala., and says three major trends were identified: reuse of materials (see

Naturally-made, highly durable ARRIS.stack thin stone veneer.

A high-tech company chose ARRIS.stack thin stone for a complete re-design of their headquarters. Incredibly versatile, ARRIS.stack was used on interior and exterior walls and also applied to new accent piers for a co-ordinated look. This thin stone veneer simply adheres to a solid substrate, making installation very efficient. All Arriscraft products are naturally-made through a unique process which mimcs how stone is formed in the earth, creating products with the aesthetics and durability of natural stone.

arriscraft.com

"Trend Alert", July-August issue, page 67, or bit.ly/2d5yLjw), health and social issues. "We also talked about how all three things overlap—how you can see social benefits if you reuse things and how you can see health benefits if you're socially responsible, etc."

Even something as simple as exposure to natural daylight, which Peterson notes "is pretty well researched as a positive force in our daily lives," can be a starting point for addressing the social impact of the environments we create. And the opportunities to make a difference are ripe for those who are able to see the forest for the trees.

"We spend the vast majority of our time within an environment that we construct, and if the environment has an impact on our lives and how we interact with one another, and we are not thoughtful or understand how it has an impact on our lives, then we are obviously missing an opportunity to participate—for the built environment or decisions around the built environment—in these larger social goals," Peterson observes.

Get Started

Knowing where to start the process of establishing social practices can seem daunting for facility executives, architects and designers, but for those in positions of leadership taking the first step can be as straightforward as writing things down. Drafting a corporate code of conduct, or "a set of rules outlining the social norms and rules and responsibilities of the organization," as defined by Wikipedia, is one way to take a position on business ethics and social issues, such as human rights and sustainability.

Henderson points out many companies already have existing codes of conduct in place, but they don't necessarily do a good job of promoting them. "I think a lot of times [organizations] have one, but it's internal. My question is, 'Do you have an external policy, and do you have it on your website?'" She adds that creating and publishing a code of conduct doesn't cost anything other than the time it takes to produce it. "It's the kind of thing that if you just make the commitment, take the time to write it and post it, that's a start."

For building industry professionals, Henderson says another step toward greater social advocacy involves a program they're familiar with already: the LEED

Drafting a corporate code of conduct ... is one way to take a position on business ethics and social issues, such as human rights and sustainability.

DIG DEEPER

For facility executives and design and construction professionals who want to learn more about sustainable initiatives that have a social impact, check out these programs that are geared specifically toward the building industry:

» DECLARE Label—Declare is a product "nutrition-label" disclosure program developed and managed by the International Living Future Institute, Seattle, that is transforming the building materials marketplace through transparency and open communication. For manufacturers, Declare offers an expanded point-of-entry into groundbreaking restorative projects and a new platform to connect with consumers. For design professionals, ILFI has created the Declare product database that enables them to make selections that meet the Living Building Challenge's stringent materials requirements, streamlining the materials specification and certification process. For more information, visit livingfuture.org/declare.

» JUST Label—The International Living Future Institute's JUST program is a voluntary disclosure program and tool for all types and sizes of organizations. It is not a verification or certification program. Rather, the program provides an innovative transparency platform for organizations to reveal much about their operations, including how they treat their employees and where they make financial and community investments. This approach requires reporting on a range of organization—and employeerelated—indicators. Each of the indicator metrics asks for simple yet specific and measurable accountabilities for the organization to be recognized at a One, Two or Three Star Level, which is then summarized on a label. For more information, visit justorganizations.com.

>>> WELL Building Standard—WELL is a performance-based system for measuring, certifying, and monitoring features of the built environment that impact human health and well-being, through air, water, nourishment, light, fitness, comfort and mind. WELL is grounded in a body of medical research that explores the connection between the buildings where we spend more than 90 percent of our time and the health and wellness impacts on us as occupants. WELL Certified spaces can help create a built environment that improves the nutrition, fitness, mood, sleep patterns and performance of its occupants. For more information, visit www.wellcertified.com/well.

green-building rating system. In 2014, the Washington, D.C.-based U.S. Green Building Council identified "fostering social equity" as a driving principle in its strategic plan, and, as such, launched three new Social Equity credits as part of the LEED v4 Pilot Credit library. The three credits—Social Equity within the Project, Social Equity within the Community and Social Equity within the Supply Chain—reward project teams for implementing best practices in improving social equity.

"Creation of the credits builds on the newest goals for all of LEED-to enhance community, social equity/environmental justice and quality of life, and to build a greener economy," writes Joel Ann Todd, chair of the LEED Steering Committee (2009-13) and Susan Kaplan, founder and president of BuildingWrx, in an article on USGBC.com. "The credits begin to expand the range of strategies available for achieving these new goals and for achieving LEED certification. They also help define LEED buildings as truly sustainable and advantageous to all people, especially more vulnerable populations who often have little say in a project's development."

According to USGBC's website, the LEED social equity credits are:

» SOCIAL EQUITY WITHIN THE PROJECT

TEAM: This credit encourages a project's owners, financiers, architects, engineers and contractors to incorporate social equity into their daily activities. They can do this by paying prevailing wages to construction workers, providing workforce development, or by demonstrating corporate social responsibility through B-Corporation certification or through the creation of Corporate Sustainability Reports that address the social components of their businesses.

» SOCIAL EQUITY WITHIN THE COMMUNI-

TY: This credit encourages a project team to address identified needs and disparities in the community surrounding the project. It outlines a process of engagement with community stakeholders that focuses on vulnerable populations to understand these needs and also allows certification through established frameworks, such as the SEED Evaluator or Enterprise Green Communities.

» SOCIAL EQUITY WITHIN THE SUPPLY

CHAIN: This credit encourages social equity for those involved in the production of materials and products for our buildings—from raw materials extraction through final assembly. It rewards the establishment of supplier assessments, or scorecards, as well as the creation of Supplier Codes of Conduct that address basic human rights.

"The creation of these new social equity credits also signals the green-building movement's maturing—using its success in environmental and economic arenas to show project teams what more can be done to address all aspects of sustainability, including the critical social and economic characteristics of buildings," Todd and Kaplan observe.

Additionally, for those who are serious about making a commitment to social justice and human rights, Henderson suggests they consider participating in the JUST program, an innovative social justice label and transparency platform for organizations. [See "Dig Deeper", at left, for more information.] Developed by The International Living Future Institute, Seattle, which operates the Living Building Challenge, the voluntary JUST program is open to all types and sizes of organizations willing to self-report how they stack up to JUST's 22 specific social and equity indicators identified within six categories: diversity, equity, safety, worker benefit, local benefit and stewardship. JUST also builds on several of the institute's initiatives, including Declare, a similarly intentioned building product ingredients label and transparency program.

Connect the Dots

The reality that every building industry professional must face is that it is impossible to divorce infrastructure from social outcomes. Nevertheless, a disconnect exists between them for two reasons: the drivers for the creation of built environments often don't consider the larger context and the people creating them sometimes have difficulty making the connection between the two, according to Peterson.

He explains the drivers for the building industry are often limited to profit, governmental factors and private interests
We spend the vast majority of our time within an environment that we **construct**, and if the environment has an impact on our lives and how we interact with one another, and we are not thoughtful or understand how it has an impact on our lives, then we are obviously missing an opportunity to participate ... in these larger social goals.—*John Peterson, curator, Loeb Fellowship, Harvard University Graduate School of Design; founder, Public Architecture*

(constructing a home or building for a business, for example).

"Those are perfectly great drivers, but within those there isn't much that says, 'What are we doing to support the inhabitants and the users of those buildings or landscapes, as well as the social component of health?" he muses. "How does this contribute to a larger goal that we have for our community, a neighborhood, city, region?"

To that point, Peterson shares a frequent scenario he encounters after giving talks in which an audience member will approach him and say, "Wow, I'm so interested in the kind of work you do. I wish I was doing work that matters in the same way." His response is to ask the person—often a designer or architect—what they are currently working on, to which they'll reply: "Well, I'm working on this mid-rise building in downtown Pittsburgh," for example.

Peterson advises people in these situations to go back and reconsider the work before them and realize they have an enormous opportunity to improve people's lives—a mid-rise building in Pittsburgh has a far bigger social footprint than many smaller projects celebrated as having a stated social agenda.

For facility managers, building owners, contractors and other building professionals who have agency over the quality and specificity of where people live, work, play and worship, Peterson offers this bit of advice: "I would encourage them to own that reality and participate as thoroughly as they can. I think what we don't want to miss is how so many people's work in this field has the chance to really make a difference, and all you have to do, I believe, is understand that and work toward it." The Washington, D.C.-based U.S. Environmental Protection Agency's People, Prosperity and the Planet (P3) program has been encouraging multidisciplinary teams of college and university students to tackle some of today's most daunting challenges. By helping fund teams that focus on environmental challenges in developed and developing nations, the P3 program provides support for the design of tangible, innovative technologies that can bring solutions to real-world problems. Learn more at www.retrofitmagazine.com/social-side-sustainability.

Field-Installable LD Emergency Driver LD Emergency Driver LD Emergency Driver Description State State

[PRODUCTS]

DUCTLESS SYSTEMS SUPPORT BACNET •

Trane has expanded the ProSpace ductless systems portfolio to include six new systems: ProSpace multi-zone ductless systems, ProSpace single-zone ductless systems, ProSpace Circular Cassette, ProSpace 4TVM Convertible Air Handlers, ProSpace PTAC and ProSpace VRF. ProSpace ductless systems provide precise temperature control because of the portfolio's capability for zone level control, centralized level control and building level control. Built on a platform that supports BACnet open standards, customers can integrate existing building systems with Trane ductless systems.

www.trane.com/ProSpace // Circle No. 35



REMOVE GRIME FROM MASONRY SURFACES

Dust, dirt and grime can now be removed easily from interior or exterior brick, stone and other masonry surfaces, using a waterless, "strip away" latex cleaner from Cathedral Stone Products Inc. The masonRE Latex 20 cleaner applies as a liquid and hardens to a rubbery film. About 24 hours later, the latex film is peeled away, bringing grime with it. The cleaner works into pores and is powerful enough to remove soot and nicotine. Spray or brush-applied, the cleaner can be used to prepare masonry for a Cathedral Stone Products' mineral-based finish.

www.cathedralstone.com // Circle No. 36

LED IS AFFORDABLE FOR GENERAL OD OWNLIGHTING

Hubbell Lighting's Prescolite has introduced LiteBox Plus, an entry-level commercial downlight targeting distributors and contractors who remain price sensitive to using LEDs in general downlighting applications. The 6-inch LED downlight and wall-wash module give contractors the ability to select the dimming option directly at the J-Box. The integral high-efficiency LED driver 120-277V 50/60Hz is compatible with 120 to 277V low voltage and 120V Triac dimming. Additionally, LiteBox Plus features three lumen output levels that are comparable to 26 and 32W CFL while consuming only 10 to 20 watts, respectively. The LED light engine offers 2700K to 4000K at 90 CRI and is integrated with a durable aluminum heat sink.

www.prescolite.com/products/lbp6 // Circle No. 38

SUBFLOOR SCREW MINIMIZES FLOOR SQUEAKS

Simpson Strong-Tie has re-engineered its subfloor screw to increase installation speed and reduce driving force. The Strong-Drive WSV Subfloor screw has been developed for fastening subfloor and sheathing using the Quik Drive auto-feed screw-driving system. The WSV screw features a redesigned tip and thread pattern that provides up to 25 percent less torque, resulting in a faster-driving screw. It includes a deep-recessed, six-lobed ribbed head that delivers cleaner countersinking and more secure bit retention for fewer camouts. The screw also reduces the gaps between the joist and subfloor that cause floor squeaks.

www.strongtie.com/wsv // Circle No. 39

STANDING-SEAM ROOF CAN BE BENT, CURVED AND TAPERED

ProSpace VRF

Fabral has added Powerseam II, a mechanically seamed structural standingseam roof panel system, to its offerings. As with the existing Powerseam profile, Powerseam II can be bent, curved and tapered. Powerseam II is offered in 0.032-inch aluminum and 26-, 24- and 22-gauge steel. Stiffening ribs and shadow lines are available. The panel system, which is designed for education and sports environments, can be fabricated in the factory and onsite for projects reguiring a long-length panel. Powerseam Il panels are available in Fabral's full architectural color palette. Custom colors will be available upon request subject to common industry minimums.

www.fabral.com // Circle No. 37





SURFACING PRODUCTS ARE LOW MAINTENANCE

Formica Corp.'s 2017 Specialty Collection includes two high-performance, low-maintenance surfacing products—Formica Infiniti and dECOLeather. Formica Infiniti features a soft-tothe-touch matte finish that resists fingerprints and bacterial growth, as well as has thermal healing capabilities. It is available in all standard Formica brand colors. Made from recycled leather, dECOLeather channels the distinctive texture of crocodile, the warmth of walrus and the appearance of wild buffalo. It is available in 18 colors.

www.formica.com // Circle No. 40

RETROFIT CFL OR HID BULBS WITH LED Terralux has released DRVH, an energy-efficient LED retrofit kit for 8- to 12-inch commercial downlights that utilize vertically mounted Compact Fluorescent or High Intensity Discharge bulbs. The self-contained retrofit kit reuses the original downlight fixture in high ceiling, atrium and canopy applications. The DRVH is warrantied for 10 years, even in

24/7 run-time applications. All models are ENERGY STAR-certified as Luminaire Retrofit Kits, which qualifies them for utility rebates. DRVH is UL1598C certified as an LED Retrofit Kit, which allows field installation into existing UL-certified downlight fixtures to retain their UL certification after being upgraded to LED.

www.terralux.com // Circle No. 43

LVT OFFERS RESIDENTIAL DESIGNS FOR COMMERCIAL APPLICATIONS •

Gerflor USA has released its Creation Living luxury vinyl tile collection, which combines residential and commercial features



to offer designers resilience for

low-traffic commercial applications with modern home designs.

The 2-millimeter-thick LVT, which features microbeveled edges and seven different embossings, is available in plank and tile options. Its high-definition wood and stone designs are printed on tear-resistant film and protected by a 12-mil transparent wear layer. The waterproof flooring is finished with PUR+ surface treatment, is naturally antibacterial and 99 percent effective against the spread of infection by ISO 22196 standards. Creation Living includes a 100 percent recycled compact backing, is low VOC, 100 percent allergen-free and REACH compliant.

www.gerflorusa.com // Circle No. 41



INTEGRATE SECURITY AND BUILDING MANAGEMENT SYSTEMS

Schneider Electric has enhanced its AccessXpert security management system to allow seamless integration of security and building management systems via the BACnet communications protocol. By using open standards to merge security with Schneider Electric's SmartStruxure BMS, organizations

can share encrypted information between their building management and security systems to gain efficiencies and manage emergency situations. In the event of a fire, facility managers can initiate an alarm from the BMS that automatically transmits an emergency message to evacuate the building. Conversely, security systems can alert the BMS about building occupancy so lighting, HVAC and other building systems can be turned on when needed, which drives energy and cost savings.

www.schneider-electric.us/accessxpert // Circle No. 42

LARGE DISPLAY CREATES VISUAL MESSAGES •

Volanti Displays has made available its 98inch Active Matrix LCD display, which is designed for environments that benefit from architectural displays, such as hotels and corporate lobbies. Volanti's extensive display command set makes it suited for installations with a room controller, simplifying the task for AV integrators. The large display offers 3840 by 2160 Ultra-HD resolution, 450



nits brightness, 1300:1 contrast ratio and 1.07 billion colors. It has a powder-coated precision engineered aluminum housing with industry-grade electronics suitable for 24/7 commercial use. The Volanti 98-inch display is compatible with Windows, Mac, Android and Linux.

www.volantidisplays.com // Circle No. 44

[PRODUCTS]

an and the strategies

WALLCOVERING IS SUITABLE FOR • HIGH-TRAFFIC CORRIDORS

Versa's Chesapeake wallcovering brings to mind the light-dappled, rippling water of Chesapeake Bay. The proprietary embossing is a

proprietary embossing is a response to designers' requests for horizontal textures, particularly for use in high-traffic corridors. Suitable for corporate, hospitality, retail and senior living, the flowing striations take on the look of fields, canyons and beaches in earth-inspired colorations—

burled wood in grainy chocolates, tans, and grays and weathered metals in golds, silvers and coppers. With all-over detail and texture, Chesapeake is suited for covering walls with imperfections. Made of low-VOC, 20-ounce vinyl on Osnaburg backing, the Type II wallcovering is certified to the NSF 342 Sustainability Standard for Wallcovering.

www.versawallcovering.com // Circle No. 47



CURTAINWALL IS MIAMI-DADE CERTIFIED

The StormWall XL Hurricane-Resistant Curtain Wall from CRL-U.S. Aluminum is Miami-Dade Certified (NOA), has Florida Product Approval, and is fully tested to ASTM and TAS Standards. The system features a continuous thermal spacer interlocked within the horizontal and vertical pressure bar. With U-factors as low as 0.38, the system satisfies the Florida Building Code Fifth Edition (2014) Energy Conservation requirement. It features shear block assembly with no exposed fasteners for clean sight lines and maximum installation flexibility. The curtainwall, which provides defense against high winds, airborne debris and water infiltration, can be integrated with hurricane-resistant windows and doors to provide a complete building façade solution.

www.crlaurence.com // Circle No. 45

IN-GRADE LUMINAIRE NOW OFFERS PALETTE OF COLORS

Hubbell Lighting's KIM Lighting has added RGBW color changing to the 10- and 13-inch Lightvault 8, a Bluetooth-controlled in-grade luminaire that also can be controlled by a hard-wired DMX 512 system. Any individual luminaire optic can be aimed and dimmed to an optimal position for the chosen task. The addition of RGBW offers an infinite palette of color to highlight foliage, flagpoles, sculptures, murals, plaques, and other environmental and architectural areas through the KIM Remote application on any Android or iOS device. Narrow flood and spot optics feature targeted Prismatic optics for up-light, highlights or accents. Water, dust and debris cannot penetrate the luminaire because the LED light engine is sealed.

bit.ly/2dBnLhX // Circle No. 46

PIPE INSULATION FITS LARGE PIPES •

Armacell now offers flexible AP Armaflex pipe insulation in up to 10-inch inside-diameter tubes for large pipe applications. Mechanical insulation contractors will save time with easier-to-install tubes that curve naturally to fit snugly over large pipes and glue together faster than flat insulation. Added savings will come from reducing the scrap material that comes from cutting sheets down to size for large pipes. The insulation's closed-cell structure will not wick moisture and needs no additional water-vapor retarder. The fiber-free foam resists punctures and won't crack or



flake over time. When installed and maintained properly, AP Armaflex insulation should last the life of the mechanical system.

www.armacell.us // Circle No. 48

THIN LIMESTONE IS AVAILABLE IN VARIOUS COLORS

Arriscraft has introduced Thin Adair Limestone with more size and color diversity than its previous thin limestone product. The limestone is available in three sizes (face rises of 1 1/4, 2 1/4 and 3 1/2 inches) in various lengths and a random blend of natural sepia and blue-gray colors. A combination of veined, fleuri and cross-veined patterns augment the natural stone product. Thin Adair Limestone installs like tile, in a dry-mount style (without mortar), and can be oriented horizontally or vertically. The natural limestone is quarried in Ontario, Canada.

www.arriscraft.com // Circle No. 49

www.SNOBLOX.com www.SNOBARCOLORBAR.com www.SNOJAX.com Toll Free: 1-800-766-5291 Ph: 717-737-4398 F: 717-697-2452



ROOF AND CLADDING PANELS

McElroy Metal has made available Cor-Ten AZP Raw, which offers the look of aged or weathered roofing and cladding. Cor-Ten AZP Raw is a fluoropolymer coating system that uses cool pigment technology McElroy Metal applies over Galvalumecoated steel sheet. It's available in a variety of McElroy Metal standing-seam and through-fastened panel profiles.

www.mcelroymetal.com // Circle No. 50

 One Click LCA demo project - Optimized design
 All
 All</th

SOFTWARE CALCULATES LCA

Bionova Ltd. has launched One Click LCA. a cloud-based software solution that automatically calculates life-cycle assessment directly from BIM or other design data, ensuring compliance with LEED v3 and v4, among more than 20 other building certification systems and standards. In just one click, the materials data from a Revit model, quantity take-off Excel or an energy model are transformed to a standards-compliant assessment. The LCA results are then calculated and formatted according to the requirements for LEED LCA credits. Whole-building LCA is worth three points and an optional exemplary point under LEED v4 (BD+C).

bit.ly/2dwUSzt // Circle No. 51



Flex-C Trac Even Your Newest Guy Can Frame Precise Curved Walls



Circle No. 53

Pick up Flex-C Trac at Your Local Distributor and Start Framing

The Curved Wall People™

Toll Free 866.443.FLEX (866.443.3539) www.flexabilityconcepts.com MADE IN THE USA

[PRODUCTS]



Shat-R-Shield has added a 280W, 30,500 lumen option for ceiling heights above 30 feet. At 109 lumens per watt, the fixture consumes approximately 40 percent less energy with triple the life hours of its 450W metal halide lamp counterpart. The industrial LED provides instant on/off, no threat of glass or arc tube rupture, and reduced heat output in comparison to antiquated light sources. The choice of prismatic or aluminum reflectors with optional lens cover helps to control beam spread for omnidirectional light output or for more concentrated distribution. The LED boasts a lifetime of L70, greater than 55,000 hours and projected L71 of 224,000 hours, backed by a seven-year limited warranty. Other enhancements include 0-10V dimming and options of 120 to 277V or 347 to 480V drivers.

www.shatrshield.com // Circle No. 54

TILE SAW MINIMIZES DUST WITHOUT WATER •

iQ Power Tools has released its dry-cut tile saw, which is designed to cut ceramic, porcelain, marble and stone. The iQTS244 is a 10-inch saw with integrated dust-control technology; the tool can cut tile inside or outside with no water or dust discharge. Additionally, it is lightweight, compact, and built on wheels for easy transport to and from job sites. The tool, which is compliant with the new OSHA standard on respirable silica dust, utilizes a three-stage filtration system that captures up to 99.5 percent of dust. Blades are air-cooled by the vacuum, which also removes the cutting debris so the blade is not regrinding the same material.

www.iqpowertools.com // Circle No. 55





METAL WALL PANELS FEATURE GEOMETRIC ANGLES

AEP Span has launched the Perception Collection, patented architectural metal wall panels comprised of five concealed fastener panels, each with unique geometric angles and rib patterns that can seamlessly blend together. The collection can be direct-fastened or clip-attached to the substrate in vertical or horizontal applications. Clip attachments were designed in standoff clip and flush-mount clip options, offering unlimited thermal movement while reducing chances of oil canning. The wall panels and clip assembly have been independently tested by accredited third parties. The panels are available standard in 22 and 24 gauge, more than 20 colors, and AEP Span's Dura Tech (PVDF) paint system and specialty finishes.

www.aepspan.com // Circle No. 57



SHAPING THE ROOFING INDUSTRY

The 2017 International Roofing Expo[®] [IRE] is where new products are launched, great ideas are born and creativity and innovation unite. Register now to find unparalleled access to the tools, technologies and resources you need to maximize your roofing success.

Exhibits & Conference: MARCH 1-3, 2017

Mandalay Bay Convention Center Bayside Halls D-E Las Vegas, Nevada USA

Official Show Sponsor:

NRCA

Register at **www.TheRoofingExpo.com** to receive **FREE** Expo Only admission.

During the online registration process, enter ADG when prompted to enter a discount code.

Discounts apply to new registrations only. Discounts not applicable to MA or NEM registrations. No refunds issued for pre-existing registrations.

> Info@TheRoofingExpo.com 800.684.5761 | 972.536.6415

> > Circle No. 58





Official Show Publication:



AD INDEX

RETROFIT // November-December 2016



AHR Expo Page 65 www.ahrexpo.com

Arriscraft

Arriscraft Page 70 www.arriscraft.com

Cambridge Engineering

www.cambridge-eng.com (800) 899-1989

architectural

Cascade Architectural. . . Page 23 www.cascadearchitectural.com (800) 999-2645

CONNECTRAC

Connectrac Pages 4-5, 81 www.connectrac.com (877) 480-5637

CONSTRUCT

Construct. Page 69 www.constructshow.com

DAIKIN

Daikin.....Page 53 www.northamerica-daikin.com

MOCKETT

Doug Mockett & www.mockett.com, (800) 523-1269



Dryvit..... Pages 59, 81 www.dryvit.com



Duro-Last Page 47 www.duro-last.com, (800) 248-0280

Excel Dryer Page 61 www.exceldrver.com (800) 996-1096



Flex-Ability Concepts . . . Page 77 www.flexabilityconcepts.com (866) 443-3539



The Garland Co. Inc. Page 24 www.garlandco.com



www.gssisealants.com (800) 288-9489



Hubbell Lighting Page 2 www.hubbelllighting.com



IEC International Environmental Page 21 www.iec-okc.com (405) 605-5000

IOT/

IOTA Engineering Page 73 www.iotaengineering.com (800) 866-4682

ROOFING International Roofing www.theroofingexpo.com



The LED Show Page 83 www.theledshow.com



Major Industries Page 14 www.majorskylights.com (888) 759-2678



Metl-Span Page 41 www.metlspan.com, (877) 585-9969

COOLING & HEATING

Mitsubishi Cooling & Heating Page 11 www.mitsubishipro.com

Mavien Navien Page 3 us.navien.com

NCFI

NCFI Page 25 www.ncfi.com, (800) 346-8229

INORALIGHTING.

Nora Lighting Page 46 www.noralighting.com

Norton ASSA ABLOY www.nortondoorcontrols.com

P PAC-CLAD

Petersen Aluminum Corp..... Pages 6, 81 www.pac-clad.com, (800) 323-1960

Rehau.....Page 16 www.rehau.com/windows

RSKAvanti Partners_{uc} RSK Avanti Partners Page 81 www.rskavantipartners.com (972) 234-0180

SAMSUNG HVAC

Samsung HVAC Page 15 samsunghvac.com



Security Door Controls. . . Page 13 www.sdcsecurity.com, (800) 413-8783

SIMPSON Strong-Tie

Simpson Strong-Tie. Page 55 www.strongtie.com

SN#UW

SnoBlox Page 77 www.snoblox.com, (800) 766-5291



Super Bright LEDs Page 33 www.superbrightleds.com (866) 590-3533

SYLVANIA 🔂

Sylvania Page 9 www.sylvania.com/luminaires

Titus Titus Pages 31, 81 www.titus-hvac.com

USGBC Page 67 www.usgbc.org

VARIDESK.com

LEED

Varidesk. Pages 19, 81 www.varidesk.com

WOOSTER PRODUCTS

Wooster Products Page 78 www.wooster-products.com (800) 321-4936



www.zurn.com, (855) 663-9876

RSK Avanti Partners, LLC

Insightful + Strategic Consulting

Focused on Building Construction Markets Through Product + Market Development

RSK Avanti Partners is a full-service consulting firm with expertise in conducting market studies, developing products, marketing plans and promotional tools.

RSK and its team of associates bring over 130 years of credible experience to help serve our clients around the world.

Our proficiencies include:

- Product line assessment: metal building components, coatings and integrated solar technologies
- New business development
- Strategy business assessment and planning
- Market research and product line development
- Sales planning and training

www.rskavantipartners.com 972-234-0180

Email: rgscichili@aol.com or skriner1@verizon.net Circle No. 59

Many things have improved over the last 9,000 years.



Until now, brick wasn't one of them.

Introducing NewBrick. The most important innovation in the history of brick. NewBrick is superior to clay brick in weight, energy efficiency, speed of installation and environmental impact. NewBrick offers the same classic size and appearance of clay brick, but raises the bar with improved performance.

Visit dryvit.com/newbrick to see all of NewBrick's colors and textures. Contact us to request samples, and to learn how NewBrick can greatly benefit your next project.

newbrick@dryvit.com | 800-556-7752 x9









SIT-STAND SOLUTIONS FOR THE OFFICE

Turn existing desks and cubicles into standing desks with VARIDESK. Each ships fully assembled and there's no installation required. **Order online now.**



[RESOURCE GUIDE]





Connectrac[®] In-Carpet Wireway systems provide a proven power and IT alternative to expensive and disruptive core dilling, trenching and unsightly power poles.

CONNECTRAC

www.connectrac.com Toll Free 1.877.480.5637

Circle No. 61

VALUE AND VERSATILITY



Titus offers an AHU with up to 30,000 cfm capacity: RevolutionTFX. 36 cabinet and 34 segment options let you create just the AHU you need for your next project, whether new or retrofit.

Other notable features include outstanding casing performance and easy-to-maintain pan design. Details at www.titus-hvac.com/revolution.



Titus www.titus-hvac.com // (972) 212-4800 // Circle No. 64

[INSPIRATION]

VRF SYSTEM HEATS AND COOLS WWII BATTLESHIP

One of the nation's most well-known historic battleships recently was refurbished with a variable refrigerant flow (VRF) heating and cooling solution.

A team of technicians from Jacksonville Heating Contractors, Jacksonville, N.C., installed a 20-ton heat-recovery system, which provides heating and cooling for the wardroom, guest bathroom, employees' offices and catering room. The wardroom is where officers would dine on the ship and has been converted into a meeting space and museum area complete with many features from the original ship.

The VRF system includes seven cassette units and seven high-wall indoor units connected to two outdoor heat-pump units mounted on the starboard side of the ship.

"This was a unique project and an honor for our team to participate in," says Randy Ramsey, owner, Jacksonville Heating Contractors. "This ship is a symbol of our region and is a destination for so many. It's a great feeling to know that our work will help keep visitors comfortable aboard this floating museum."

The keel of the USS North Carolina was laid in October of 1937 at the New York Navy Yard in Brooklyn. At the time, the ship was the first battleship to be constructed in 16 years.

During her commissioning on April 9, 1941, she was considered the world's greatest sea weapon. Armed with the most powerful systems of that age, the ship's wartime complement consisted of 144 commissioned officers and 2,195 enlisted men, including about 100 Marines.

During World War II, the ship participated in every major naval offensive in the Pacific area of operations and earned 15 battle stars. In the Battle of the Eastern Solomons in August 1942, the USS North Carolina's antiaircraft barrage helped save the carrier USS Enterprise.

Today, moored on the Cape Fear River in downtown Wilmington, N.C., the ship welcomes approximately 300,000 visitors a year and is one of the most popular attractions in the region.





Glenn Davis, a heating and cooling technician with Jacksonville Heating Contractors, Jacksonville, N.C., inspects a Carrier ductless air conditioner recently installed aboard the USS North Carolina.





Strategies in Light.

technology by design



FEBRUARY 28 - MARCH 2, 2017 ANAHEIM CONVENTION CENTER » ANAHEIM, CA WWW.STRATEGIESINLIGHT.COM WWW.THELEDSHOW.COM

ANNOUNCING NEW 2017 CONFERENCE TRACKS

TRACK 1: THRIVING IN A DISRUPTED LIGHTING MARKET

Setting the stage for the next wave of market evolution

Explore the wide range of uses of LEDs in lighting products and emerging applications while gaining an understanding of the future development of the solid-state lighting market. Hear from the experts about the challenges to market growth and possible solutions to overcoming those challenges.

TRACK 2: TECHNOLOGY INNOVATION TO SUPPORT MARKET GROWTH

Key technologies that will change the face of lighting

Gain insight into the technical issues associated with the development and implementation of LED lighting. The scope includes not only the LED components but also the technologies that go into making a lighting product, including drivers, optics, and materials. The issues addressed in this track include performance, lifetime, reliability, luminaire design, comparison of technical approaches, and many others.

TRACK 3: WILL ALL LIGHTING BECOME CONNECTED?

The role of lighting in the Internet of Things

Learn the latest on how connected or smart lighting fits into the world of IOT (Internet of Things). Discussions will cover the entire spectrum of the market, including data analytics, network security, the true value of connected lighting, convergence of lighting into the IOT, communications protocols, smart cities, new business approaches and many more.

THE LED SHOW: CO-LOCATED WITH STRATEGIES IN LIGHT

Lighting Experience - the Designer Perspective

The LED Show track focuses on innovative lighting design and lighting applications with topics including color quality, Title 24, design es and new fixture technology. Panel discussions will touch on the effects of lighting and how it affects our human biological rhythms/physiology. Other featured topics include enabled technology, IoT, breakthrough technologies, new distribution models, Smart Cities, and much more.

INTERESTED IN VISITING THE EXHIBITION?

IT'S FREE WHEN YOU PRE-REGISTER

For more information, visit www.strategiesinlight.com and www.theledshow.com

Owned and Produced by:

Official Supporters:

orters:

CONNECT WITH US!







Circle No 65



114 BILLION GALLONS

Water saved over the next decade; it's our goal to help build a sustainable future.



After 10 years of industry-leading water efficiency innovations, we're just getting started.

Learn more at StandUpForTheEarth.org

1.855.ONE.ZURN | ZURN.COM

