

TOP 50
PRODUCTS

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TREND ALERT:
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See Page 10

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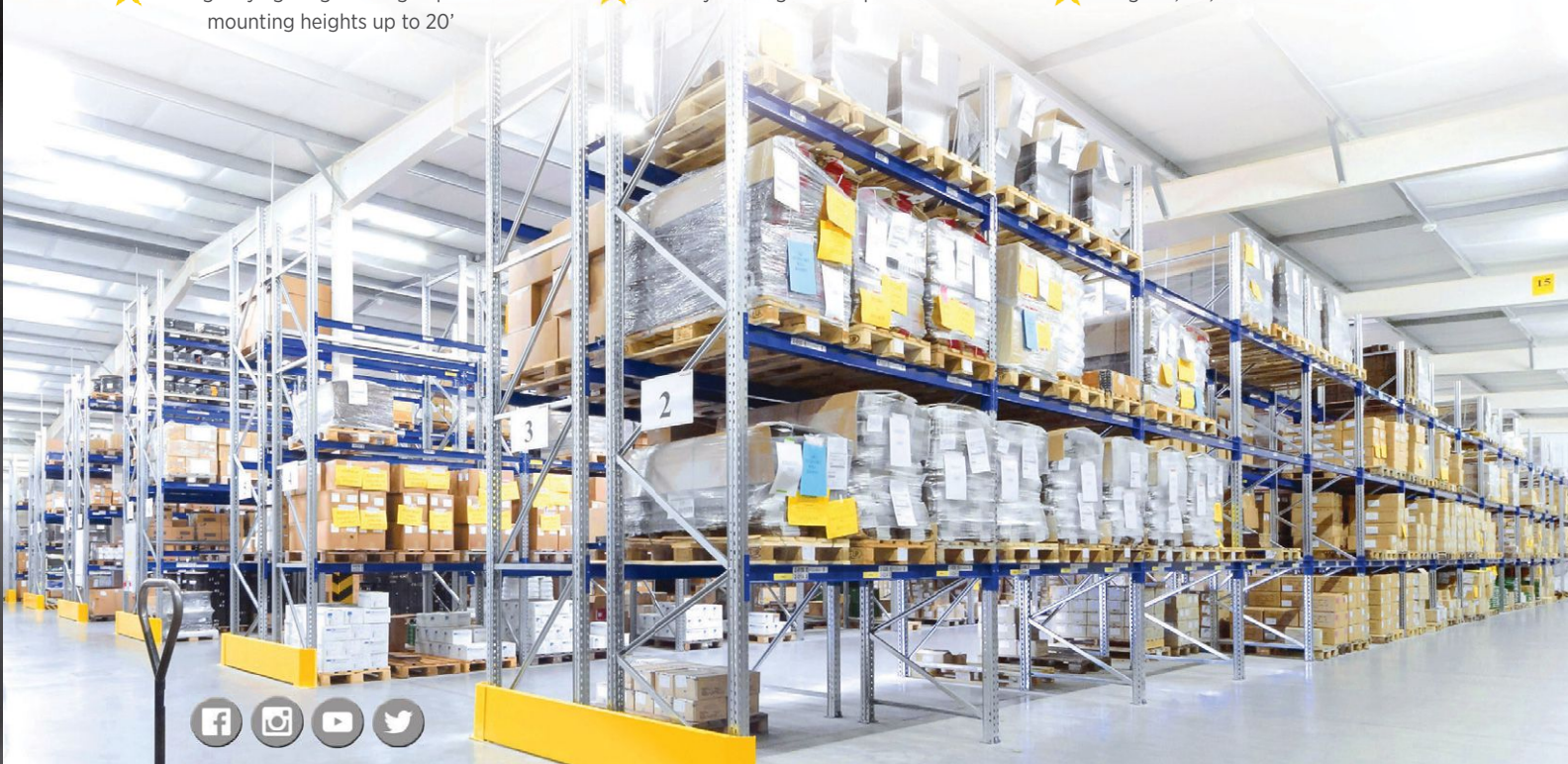
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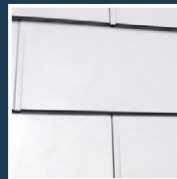
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Four Unique Profiles

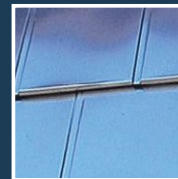
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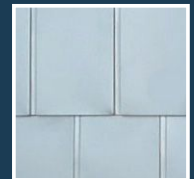
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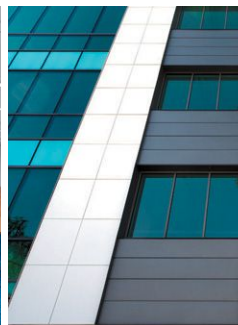
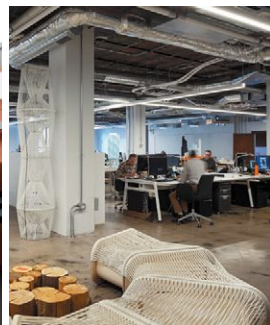
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➔ feature projects

VESTED INTEREST

Personal and professional ties enhance a celebrated mid-century modern office building's restoration.



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- Gates Hardware Building, Tulsa, Okla.
- designCraft, Madison, Wis.
- B&R Fournier Construction Inc., Rehoboth, Mass.
- Studio Gang, Chicago
- One Woodward, Detroit
- American Society of Interior Designers, Washington, D.C.
- 2165 Spring Street, Long Beach, Calif.
- Acuity Brand Lighting, Engineering and Technology Center, Decatur, Ga.



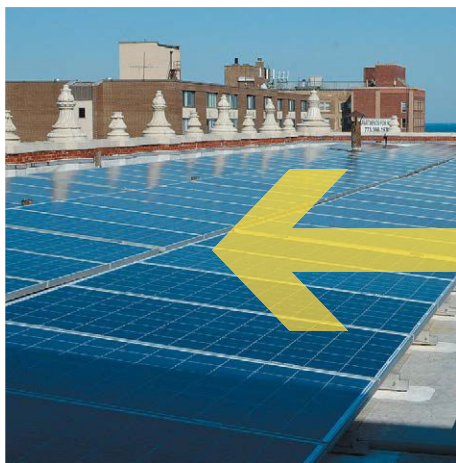
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COVER PHOTO: JULIUS SHULMAN AND JUERGEN NOGA

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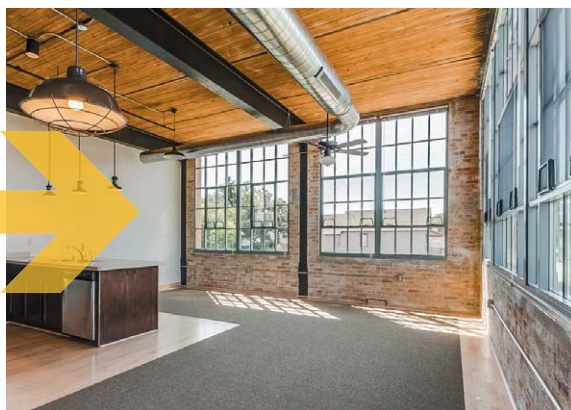
The line between commercial and residential interiors is disappearing—and the workplace has never looked or felt better.

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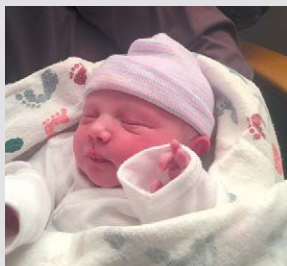
A COMFORTABLE WORKSPACE



I've been fortunate enough to work from home much of my career. Never have I been more grateful for this opportunity than through my recent pregnancy. During the first trimester, I could spend my lunchbreaks taking a quick snooze without having to hide under my desk, George Costanza-style. During the last month of my pregnancy—when my office chair was hurting my back, hips and bottom—I took comfort on the couch with several pillows stacked behind and around me. I have the utmost respect for moms who must go to an office—or any traditional workplace—each day during their pregnancies. I don't know how they do it!

Fortunately for those of you who go to a traditional office daily and would love a more comfortable working environment, the line between commercial and residential interiors is disappearing. Robert Nieminen, retrofit's contributing editor, reports in this issue's "Trend Alert", "mobile technology has helped break the shackles that have kept employees tethered to their desks for so long and ushered in a new era of openness, flexibility, and comfort in offices that are beginning to look and feel more like home." Nieminen asserts "now that people can work anywhere a Wi-Fi connection is available, commercial buildings are taking on a 'resi-mercial' aesthetic, blending the best of both worlds and opening up opportunities and challenges for facility executives." Read about this "resi-mercial" trend on page 76.

WELCOME retrofit's NEWEST ADDITION



Congratulations to **retrofit's** Editorial Director Christina Koch and her husband Bart Thoreson on the birth of their daughter Clare Julie. Born on Dec. 7, 2017, at 1:18 p.m., Clare weighed 6 pounds, 12 ounces and was 19-inches long. She and her mom are doing well!

Christi Koch

CHRISTINA KOCH
Editor in Chief

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Edward A. Killingsworth, FAIA, perhaps was ahead of his time in 1955 when he constructed his office alongside residential property in Long Beach, Calif. The 5,000-square-foot, 1-story Killingsworth Office Building exemplifies mid-century modern architecture and is being maintained the way Killingsworth left it to honor the full spectrum of his career. Today it is the office of Kelly Sutherlin McLeod Architecture Inc. The firm's principal, Kelly Sutherlin McLeod, has made it her mission to ensure the building's long-term preservation. Regular contributor KJ Fields writes about the challenges Sutherlin McLeod has encountered while deciding which elements should be maintained in their original form in our "Cover Story", page 38.

Transforming a former factory into residential space is an admirable feat. Our "Multifamily" story, page 70, describes what Rice Lake, Wis.-based Impact Seven and Quorum Architects, Milwaukee, Wis., achieved with the former Mirro Plant #3 in Manitowoc, Wis. Built in 1929, the plant once manufactured the MirroCraft line of lightweight pleasure boats. Today it is Artist Lofts, a 40-unit affordable housing project serving tenants at 30 to 60 percent of the median income (with four units reserved as market rate). Learn how the building's structural integrity and large windows made it suitable for conversion into residential space.

Although we all can't—nor would we probably want to—live in our workspaces, there's no doubt offices are becoming much more comfortable these days. In fact, according to the National Sleep Foundation's website, sleep.org, companies concerned about employee wellness, like Ben & Jerry's, Google and Nike, actually are providing their employees space and time for naps. Someday in the not so distant future, the "Seinfeld" episode in which George Costanza is sleeping under his desk won't even be funny because everybody will be napping at work. Doesn't that sound like a dream?



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CONTRIBUTING WRITERS



Combining "mid-century modern" with "historic preservation" may seem like an oxymoron but our "Cover Story", page 38, may

change that perspective. **KJ Fields**, a Portland, Ore.-based retrofit contributor, writes about the Killingsworth Office Building, Long Beach, Calif. The 1955 structure exemplifies mid-century modern architecture, and its current owner, Kelly Sutherlin McLeod, FAIA, is determined to maintain the vision of Edward A. Killingsworth, FAIA, the building's designer and original owner.



Thomas W. Hutchinson, AIA, FRCI, RRC, CSI, RRP, principal of Hutchinson Design Group Ltd., Barrington, Ill., shares his three-decade career

in the roofing industry in "Component", page 56. Hutchinson discusses how troublesome issues in the roofing industry easily can be corrected with knowledge and proper detailing.



Allen Barry, who writes about architecture and sustainability from Chicago, shares the story of two disparate buildings with a common goal in "Energy",

page 64. A Chicago non-profit and a Washington, D.C., association are seeking to make their existing buildings net zero. Learn about the strategies undertaken and the challenges they face.



Portland, Ore.-based freelance design journalist, critic and architectural photographer

Brian Libby writes about Artist Lofts, a 40-unit affordable housing

project built within Mirro Plant #3 in Manitowoc, Wis. Constructed in 1929, the plant produced the popular MirroCraft line of lightweight pleasure boats for decades and is a point of pride within the Manitowoc community. Read the story in "Multifamily", page 70.

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When performing any wiring retrofit, all electrical connections and wires need to be traced and properly identified. Electrical codes require connections to be properly labeled, but inevitably there are circuits that have been rewired sometime in the past, are not labeled or are improperly marked. Depending on the scope of the job, it can take hundreds of man-hours manually tracking each wire to its circuit termination points. When you consider that in construction time really is money, the time wasted in man-hours tracing incorrectly or unmarked circuits adds up quickly and could impact your profits on the job. That's why you need to have a circuit mapping and identification strategy ready before you begin.

www.retrofitmagazine.com/simplification-circuit-mapping

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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:

- Sustainable Investment: Short-term Thinking Is Killing Us in the Long Run
- Four Reasons Soapstone Is Making a Comeback
- Are LED Retrofit Kits Safe?
- The Eight Question Procurement Cost Audit

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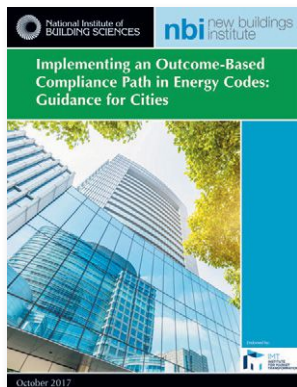
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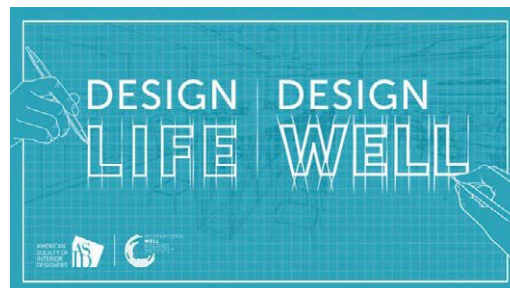
NIBS and NBI Develop Guidance for Outcome-Based Compliance Path in Energy Codes



A number of U.S. cities and states have begun to recognize the current code-based mechanisms do not provide the means to help them achieve their energy performance goals for buildings. Codes largely focus on design requirements for a limited number of building characteristics but do not require verification that the design results in actual, measurable energy savings. That is why the Washington, D.C.-based National Institute of Building Sciences (NIBS) and New Buildings Institute (NBI), Portland, Ore., developed “Implementing an Outcome-Based Compliance Path in Energy Codes: Guidance for Cities.” This document provides jurisdictions with a new approach to shift the focus toward actual, measurable energy results so they can begin impacting energy-influencing measures not currently included in the nation’s model energy codes. ¶ Most jurisdictions across the nation use a prescriptive or performance-based pathway to achieve their energy-efficiency requirements. For years,

NIBS and NBI have worked to address the actual, measured energy performance of buildings across their life cycle. They have submitted code-change proposals through the Atlanta-based ASHRAE and Washington-based International Code Council code-development processes to establish an outcome-based compliance path within the model codes. While developing the guidance document, they received feedback from industry stakeholders representing numerous aspects of the industry. ¶ “Implementing an Outcome-Based Compliance Path in Energy Codes: Guidance for Cities” provides jurisdictions with the regulatory language to put an outcome-based compliance path into place. Jurisdictions can use the draft regulatory language as a framework around which they can begin to align their high-level energy goals through their building codes. ¶ The guidance document, which is available free to jurisdictions, includes code language that can be incorporated directly into a jurisdiction’s energy code. Jurisdictions interested in starting on the outcome-based path to achieving energy goals, can download “Implementing an Outcome-Based Compliance Path in Energy Codes: Guidance for Cities” at bit.ly/2zWB0E2.

ASID AND IWBI ENHANCE WELL AP EDUCATION



The American Society of Interior Designers (ASID), Washington, D.C., and the International WELL Building Institute (IWBI), New York, announced at the recent Greenbuild International Conference and Expo that they are teaming up to enhance WELL Accredited Professional (WELL AP) education for the design community. Beginning in February, ASID members who have or receive IWBI’s WELL Faculty designation will lead WELL AP exam-preparation courses throughout the U.S. ASID members will receive discounted pricing as a way to increase the opportunity for those in the design community to attain the WELL AP credential.

“ASID is excited about this opportunity to make WELL education and exam prep more readily available to our members,” says ASID CEO Randy Fiser, Hon. FASID. “Healthy living begins with design, and our community is leading that work. Becoming [a] WELL AP is a way to demonstrate that one has the expertise to create a space that is focused on the health and wellbeing of the occupants.”

The WELL AP credential denotes expertise in the WELL Building Standard and a commitment to advancing human health and wellness in buildings and communities. WELL Accredited Professionals have demonstrated proficiency in the field of design, health and wellness in the built environment through the WELL AP exam. Currently more than 2,000 people around the globe are WELL APs with another 3,500 registered for the exam.

The ASID website, www.asid.org/learn/well, contains information about the special Greenbuild WELL AP promotional package that includes exam registration, an e-textbook, a study guide and reservation for one of the WELL Faculty-led training sessions conducted by ASID members.

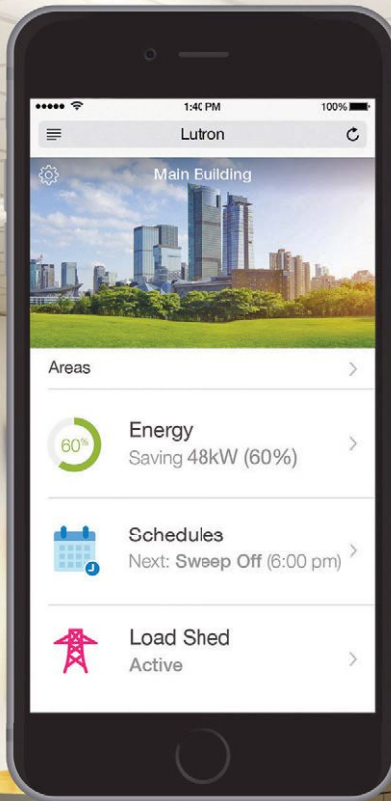
Greenbuild was the official launch of the “Design Life, Design Well” campaign from ASID and IWBI. It includes marketing and promotional efforts to increase the visibility of the role of interior designers in creating healthier spaces and places.

“We are proud to partner with ASID to bring these resources directly to their members and stakeholders,” says IWBI Chief Product Officer Rachel Gutter. “Their market leadership demonstrates a tremendous understanding of the importance of using our buildings and communities to help improve our health and wellbeing. We are excited about the opportunities going forward.”



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2017 retrofit TOP 50 PRODUCTS

Products are an integral part of any trade publication. As such, **retrofit** is celebrating the 50 products that received the most reader inquiries from our September-October 2016 through July-August 2017 issues.

In addition, at the prompting of our editorial advisory board, we asked the manufacturers to share case studies about how their top products solved a problem or achieved the desired result within a retrofit. Although many of these products are fairly new, a few manufacturers were able to share actual retrofit projects in which their products were specified.

Enjoy **retrofit**'s fifth-annual Top 50 Products!

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www.dryvit.com // Circle No. 15



2 ILLUMINATE DISPLAYS WITH LED

The Radianz PK900 LED Slim Disk Series from JESCO Lighting Inc. features architectural, versatile, low-scale, fixed or aimable high-output white COB LEDs designed for showcase and display lighting applications. The products are available in two models, which can be recessed or surface-mounted. Each is 3 1/4 inches in diameter and 9/16-inch high. The Slim Disks are constructed from die-cast and machined aluminum that dissipates heat, reduces heat transfer and extends lamp life. A textured lens softens emitted light, virtually eliminating reflective glare. Finishes include black, silver and white.

www.jescolighting.com
// Circle No. 16



3 THREE SERIES OF LED RETROFIT LIGHTING AVAILABLE

Nora Lighting has released Lolite, Cobalt and Onyx LED retrofits. Lolite is available with 1-, 2- and 4-inch apertures for a minimal architectural appearance and features an LED core module, which is compatible with dedicated patent-pending downlight housings in various dimming and voltage options. It produces 600 to 800 lumens, and the 2- and 4-inch models have various adjustable configurations. The Cobalt Series is designed for use in existing IC or non-IC housings and is available in 4-, 5- and 6-inch square and round apertures with a 750 and 1000 lumen output. A spun aluminum trim has deep-set diffused lens for visual comfort, and reflector or baffle trim styles are available. Onyx is offered in 4-, 5- and 6-inch apertures with 650 to 750 lumens. Baffle or reflector trims are available with a medium base socket adaptor for retrofitting in recessed housings by Nora and others.

www.noralighting.com // Circle No. 17



A recently remodeled restaurant in Los Angeles incorporated Nora Lighting's Lolite modular LED downlights into the upscale design for practical and aesthetic purposes. The smaller 4-inch Lolite aperture with squared trims presented a contemporary, architectural appearance that complements the interior styling. Lolite's LED lamp source is adjustable, aiming downward for general lighting or directed toward the back wall to highlight the stonework.

Lolite's LED core module allows the driver to be easily changed from below the ceiling, and the beam spread can be altered from spot to flood without tools.

The 4-inch, 14-watt model produces 800 lumens for bright illumination while various dimming and voltage options are offered. Lolite's 95+ CRI presents realistic color rendition to enhance the dining experience.

In addition to the installation of the overhead Lolite fixtures, Nora Lighting LED tape light was installed in decorative panels in the back wall for a multidimensional effect.



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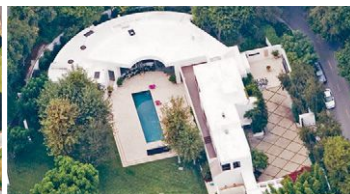
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Circle No.18



4 LAMP MEETS NEW DESIGNLIGHTS SPECIFICATION

Lunera Lighting Inc. has introduced a 4-pin 26W compact fluorescent replacement lamp to meet the recently enacted DesignLights Consortium specification and qualify for DLC listing. To achieve DLC v4.1 Listing and attract utility rebates, Lunera improved lumen output, which is 50 percent greater than the previous generation, while power consumption has dropped more than 20 percent. In addition, the number of industry-standard ballasts compatible with the new lamp has been expanded.

The Lunera CFL LED G24q lamp also can be used to replace 18W, 32W and 42W four-pin G24q base CFLs. The lamp delivers near-daylight illumination in 2700K, 3000K, 3500K or 4000K color temperatures and has a CRI of more than 80.

www.lunera.com // Circle No. 19



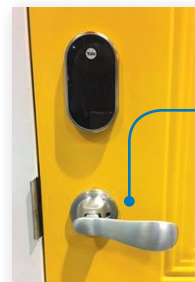
6 LIGHTING CONTROL COMPLIES WITH ENERGY CODES

Hubbell Lighting has introduced SiteSync Lighting Control, which delivers energy savings, reduced maintenance costs and code compliance for many spaces and budgets. The adaptable wireless control solution has been developed to meet key energy-code compliance requirements (ASHRAE, IECC and Title 24). With its preprogrammed approach, installation only requires customers to fill out a worksheet and Hubbell Lighting does the rest: commissioning the fixtures, tagging them for identification in the field and providing a site map for field installation reference. To complete the installation, a customer will use SiteSync software to broadcast the date and time to fixtures, and the system will instantly be up and running.

www.hubbellighting.com/sitesync // Circle No. 21



Learn more about this technology in a video. View details on page 10.



5 LEVER CAN BE PUSHED OR PULLED OPEN

Yale Locks & Hardware has made available a quick, easy and comfort-

able way for anyone—young, old or in between—to open a door. The Yale Pivot Collection Classic lever can be pushed open with a hip, and its two-way push/pull operation makes it suitable for high-traffic interior and exterior doors. In addition, the design makes it easy for anyone to quickly open the door in an emergency. The collection is available in three finishes: satin nickel, polished brass and oil-rubbed bronze.

www.yalelocks.com // Circle No. 20

new

Slant/Fin

Revital/Line

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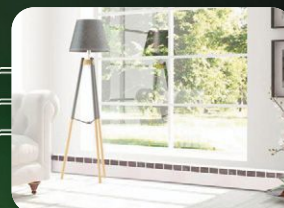
Laboratory tested for maximum heat output!



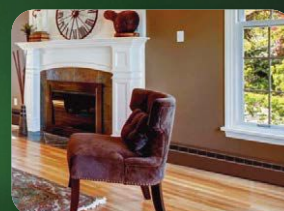
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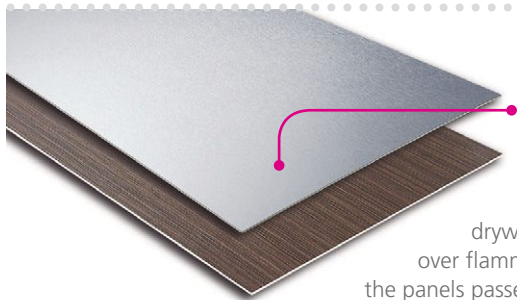
7 FOIL SEALANT REDUCES DUCTWORK AIR LEAKAGE

The Hardcast Foil-Sealant Duct Sealing System from Carlisle HVAC reduces ductwork air leakage, energy loss and moisture intrusion. It is a combination of rolled mastic sealant and brush- or spray-applied mastic. This system includes Hardcast's Iron-Grip 601, Spray-Seal or Versa-Grip 181 liquid mastic sealant. Once the liquid sealant has cured completely, the mastic is overlaid with a 4-inch-wide strip of AFT-701 rolled sealant. When properly installed, the Hardcast Foil-Sealant Duct Sealing System is eligible for a 10-year material-only warranty.



View a video of proper installation techniques. See details on page 10.

www.carlislehvac.com // Circle No. 24



10 ACHIEVE CLASS A FIRE RATING WITH LAMINATED PANELS

NRP-FIRESTOP is a laminated panel from Parkland Performance Panels that can be adhered over painted walls, concrete block, plywood, insulating foam and unfinished drywall. A Class A (ASTM E-84) rating can be obtained even when the panel is installed over flammable substrates, such as OSB or plywood. With NRP-FIRESTOP over Dow Styrofoam, the panels passed the room corner burn (UL 1715). A wide variety of laminates are available, including veneers, metallics, marbles, pebbled textures and marker boards. Matching and contrasting moldings are available, or the panels can be installed in a seamless construction.

parklandplastics.com // Circle No. 27



8 SOLAR PANELS INTEGRATE INTO ROOF SYSTEM

GAF has released the DecoTech Roof-Integrated Solar System, which can be installed by roofing contractors. Designed to provide an attractive, low-profile alternative to typical rack-mounted solar panels, the DecoTech System is integrated directly into the roof system. GAF uses premium solar panels to optimize power output. Robust flashing and a black perimeter shield reduce the risk of leaks and animal intrusion while creating a monochromatic profile that helps blend the Deco Black panels into the roof for maximum aesthetic appeal.

www.gaf.com // Circle No. 25

9 LED DRIVER MEETS CEC REQUIREMENTS

IOTA's ILB-CP10-HE Emergency LED Driver features a high-efficiency micro-processor designed to achieve compliance with 2017 California Energy Commission requirements. The driver manages the charging efficiency of the battery while in the recovery and maintenance modes to minimize power consumption without affecting emergency performance. Additionally, the ILB-CP10-HE utilizes IOTA's patented Constant Power design to deliver 10W of non-diminishing emergency illumination for the entire runtime. It has auto-sensing 10-60VDC Class 2 output for wider LED compatibility and offers enhanced surge protection. The driver is UL Classified for field and factory installation.

www.iotaengineering.com/ilbcp10HE.htm // Circle No. 26



In 2017, a large grocery chain discovered its ceramic tile walls no longer looked good or remained clean. The chain's owners had to determine how to remove the ceramic tile areas. They could pay a contractor to remove the tiles and likely destroy a portion of the substrate. However, this would require the store to close because of dust and debris.

One of the designers suggested NRP-FIRESTOP, which can be adhered over surfaces that are uneven or damaged. After talking with Parkland Performance Panels, the designer specified a woodgrain version of NRP-FIRESTOP that would be adhered directly on top of the existing ceramic tile. This allowed construction crews to finish the entire project in just one overnight session without dust and debris.



This will shatter a window.



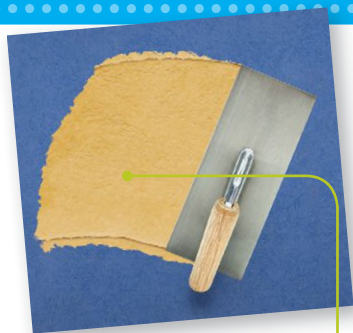
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11 MEMBRANE CAN BE TROWEL-APPLIED

Sto Corp. has introduced StoGuard Gold Coat TA, a trowel-applied version of Gold Coat. The vapor-permeable air barrier membrane is used in StoTherm ci Systems and troweled directly onto vertical above-grade wall sheathing and concrete masonry. It also functions as a waterproof air barrier when combined with StoGuard joint and rough-opening treatment. The water-based product comes in 5-gallon pails and is ready-mixed for easy application.

www.stocorp.com // Circle No. 29



14 SLEEK PROFILE ALLOWS FOR MORE GLASS EXPOSURE

JELD-WEN EpicVue contemporary clad-wood windows and patio doors feature clean lines, square interior detailing and a sleek profile to leave more of the glass exposed. The windows' aluminum-extruded sash provides rigid strength and stability, which helps support the pane and allows expansive openings. In addition, 90-degree direct set windows can be installed in the corner of a structure to create a panoramic view of the surroundings. EpicVue patio doors are available in a variety of configurations, including swinging and sliding. The windows and doors are available in nine wood species and five stains, as well as custom color matching. Hardware is available in 10 finishes.

www.jeld-wen.com // Circle No. 32

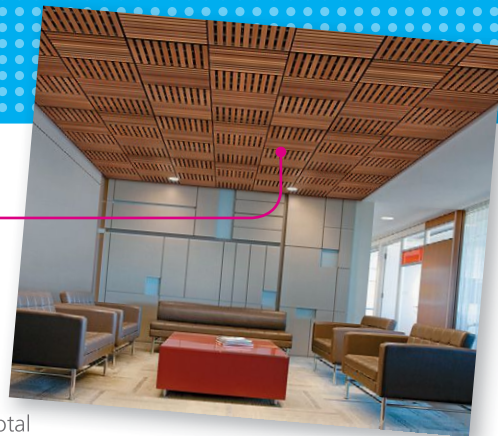
12 METAL AND WOOD CEILINGS ABSORB SOUND

Armstrong Ceiling Solutions has expanded its portfolio of ceiling panels that provide Total Acoustics performance with the addition of select MetalWorks and Woodworks product lines. WoodWorks ceiling panels with Total Acoustics performance now include WoodWorks Tegular, WoodWorks Grille Tegular and WoodWorks Channeled Tegular. MetalWorks ceiling panels with Total Acoustics performance include MetalWorks Tegular, MetalWorks Tin, MetalWorks Mesh and MetalWorks 3D. Metal and wood Total Acoustics panels are rated as Good, Better, and Best based on their combination of sound absorption as denoted by their Noise Reduction Coefficient and sound blocking as denoted by their Ceiling Attenuation Class.



Learn how acoustics meet aesthetics in a short video. View details on page 10.

www.armstrongceilings.com/totalacoustics // Circle No. 30



13 MINI FLOODLIGHTS INCLUDE COB TECHNOLOGY

Vista Professional Outdoor Lighting has added two models to its line of Up & Accent fixtures. The two dimmable Mini Floodlight models—5105 and 5106—include the latest COB LED technology. They feature a slim, compact design that provides a higher output and more lumens per watt than standard LEDs. A single LED chip/emitter available in 2W, 3W or 4W offers beam spread and control. Light quality is further enhanced by a high-performance anodized aluminum reflector. Color temperatures are available in 3000K, 4000K and 5000K, and light output is up to 400 delivered lumens. A bordered, high-impact tempered lens enhances durability.

www.vistapro.com // Circle No. 31



15 SOFTWARE PROVIDES COMMISSIONING DOCUMENTATION

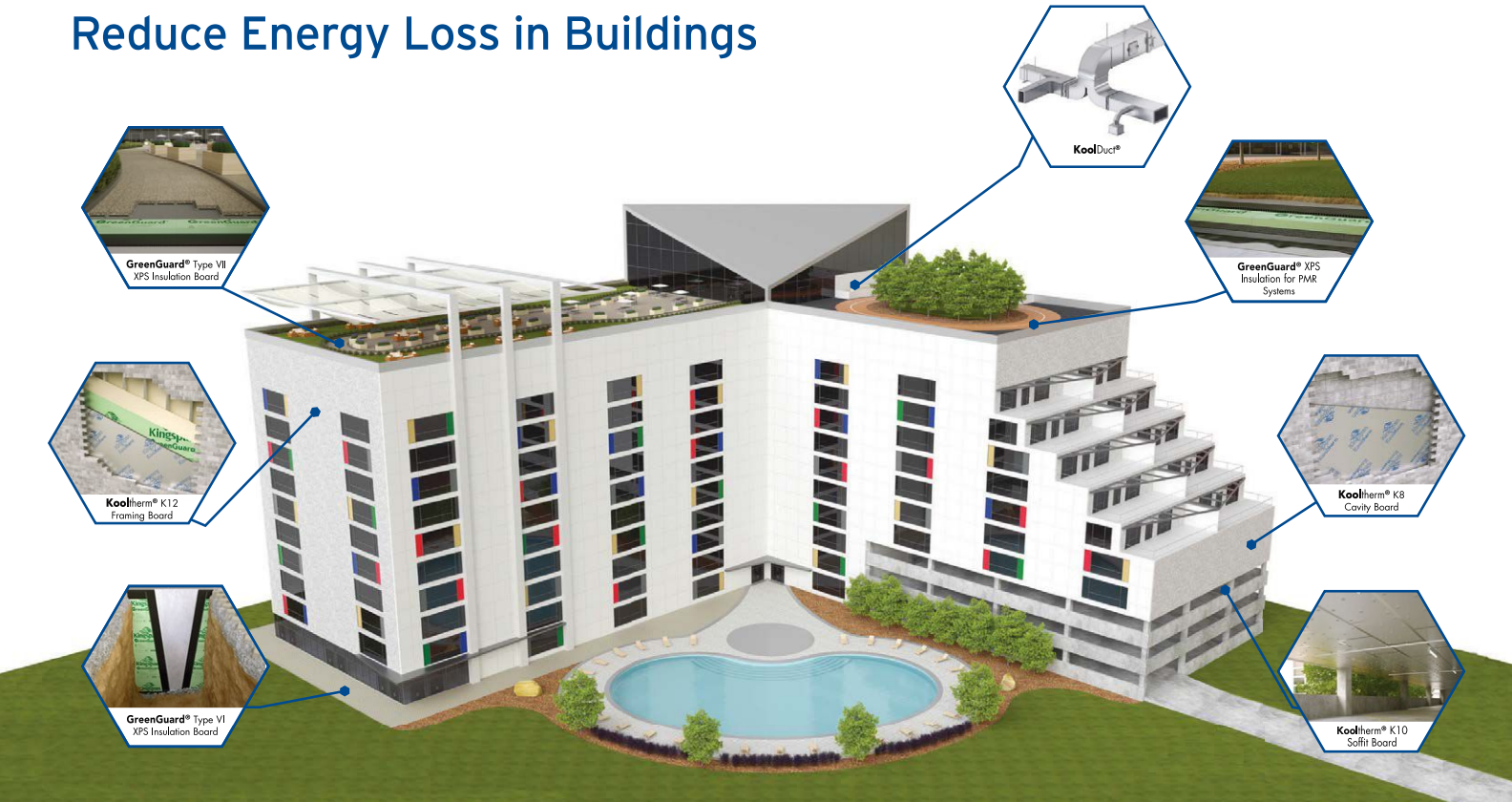
Legrand has updated the Wattstopper LMCS configuration software and Wattstopper Segment Manager Network software to extend the power of the Digital Lighting Management (DLM) control platform. The LMCS software provides industry professionals with important commissioning documentation. With active real-time monitoring of the DLM system, field technicians can configure, manage and update job information while onsite, as well as set up advanced features of DLM devices. The Network View provides a holistic view of all DLM networking components on a project, making it possible to design, document and keep track of all components that make up the entire DLM system. Wattstopper DLM is a scalable platform that provides control infrastructure at every switch, outlet and lighting load for optimal energy performance.

www.legrand.us/wattstopper // Circle No. 33



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16 LED IS DESIGNED FOR USE IN HIGH CEILINGS

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. 35

17 DIRECTLY REPLACE FLUORESCENT LAMPS WITH LED TUBES

Universal Lighting Technologies Inc. is expanding its linear LED options with EVERLINE T5HO LED Tubes. Two available power levels—25.5W and 22.5W—are direct replacement options for F54T5HO fluorescent lamps. The T5HO tubes, which increase energy savings by more than 50 percent versus standard F54T5HO fluorescent lamps, are compatible with most Programmed Start ballasts. The tubes are easy to install and offer less maintenance than traditional fluorescent with a 50,000-plus-hour lifetime at L70. They offer a CRI of 82 and correlated color temperatures of 4000K and 5000K. The wide 240-degree beam angle eliminates dark zones ensuring uniformity and accuracy of light output.

www.unvlt.com // Circle No. 36



18 ZONING SYSTEM IMPROVES RADIANT FLOOR HEATING EFFICIENCY

Uponor North America has released its Climate Control Zoning System II, which features Autobalancing technology that boasts 25 percent faster reaction times and up to 20 percent greater energy savings for radiant floor heating systems. Autobalancing technology calculates the actual energy need of single rooms and adapts the heat output of each loop by controlling the actuator's on and off cycle. This technology allows the system to react to temperature changes faster and offers greater energy savings in the process. The complete system consists of a base unit, an expansion module and digital or dial thermostats. A single base unit in the system can support up to six thermostats and eight actuators. Adding an expansion module will increase the number of thermostats and actuators the system can handle to 12 and 14, respectively.

www.uponor-usa.com // Circle No. 37

The owner of Résidence Le Béli, Quebec City, Quebec, Canada, was not only looking for a more affordable and efficient heating system, but also a comfortable solution for the building's occupants. The project engineer knew Uponor PEX-based comfort systems well and recommended the team choose an Uponor radiant heating system to meet the building owner's needs.

The Climate Control Zoning System II has an Autobalancing feature that provides time and cost savings to the customer

because the manifold does not need to be manually balanced to deliver the right amount of heating into the space. The control does this automatically and continually self-adjusts.

Because of the wireless capability of the CCZSII, the building owner had the flexibility to place the thermostat in the most convenient and aesthetically pleasing place on the wall in each apartment. The engineer has reported zero issues managing the zoning system.



19 PIVOT DOORS ALLOW FOR MORE GLASS AND LIGHT

LaCantina

Doors has released its Pivot Door System, which features a narrow stile and rail profile for more glass and light, as well as consistent-width panels for balance and symmetry. The door system is available with direct-set or panel-glazed sidelites and transom, as well as a flush threshold for minimal floor-space interruption. LaCantina's Pivot doors feature high-performance hardware for ease of operation of larger panel weights and an exclusive handle package. The system is offered with standard low-E glass for energy efficiency and various privacy and decorative glass options. It is available in a range of materials, including aluminum, aluminum thermally controlled, aluminum wood and contemporary clad.

www.lacantinadoors.com // Circle No. 38

20 EXIT DEVICE LINE NOW FEATURES TRIM OPTION

dormakaba has expanded its 8000 Series exit device product line to include the 8H Escutcheon Trim. In after-market installations, it enhances aesthetics by covering up existing holes. The trim features a single plate connecting pieces together, providing a seamless look. It offers five functions, three lever styles and one knob style and is available in six finishes with designer and custom colors available at additional charge. The product, which accommodates multiple mounting stand-offs, easily converts from Entry (08 Function) to Storeroom (09 Function, key only removable when locked). The trim has achieved ANSI/BHMA 156.3 Grade 1 rating, is UL Listed, and is ADA and NFPA 80 and 101 compliant.



www.dormakaba.us // Circle No. 39

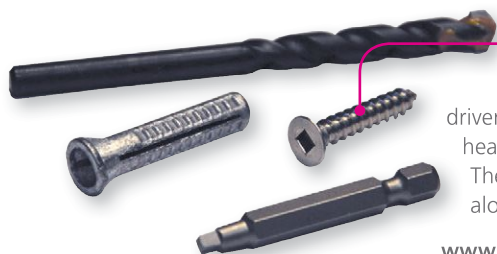
21 STANDING-SEAM ROOF CAN BE BENT, CURVED AND TAPERED

Fabral has added Powerseam II, a mechanically seamed structural standing-seam 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 requiring a long-length panel. Powerseam II 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. 40

22 SCREWS ARE UPDATED BASED ON CUSTOMER FEEDBACK



After receiving customer feedback, Protect-All Flooring has upgraded the #8 screw to a self-drilling stainless-steel screw. The 1 1/4-inch hex head screw is self-drilling with a hex head driver. The company also added a #12 stainless-steel screw to its line. It is a 1 1/4-inch counter sunk head screw with a square drive, along with a 5/16-inch concrete bit, square drive bit and lead anchor. These screw sizes join the #10, 2-inch stainless-steel (counter sunk head) screw with a Square Drive, along with a 5/16-inch concrete drill bit, square drive bit and lead anchor.

www.protect-allflooring.com // Circle No. 41

23 TILE DESIGN IS INSPIRED BY WATER



Artaić Innovative Mosaic has added two mosaic patterns—Rift and Serene—to its SPLASH! collection.

Now consisting of 10 patterns, SPLASH! was inspired by the spontaneous movements of water and surrounding landscapes. The mosaic series presents stylized motifs of seaweed, rippling water and calming beaches. Rift is inspired by kelp while Serene is inspired by the sea's motion. Incorporating Artaić's Vitreous Glass, the tiles are available in an extensive color palette and several finish options. The 3/8-inch size offers higher resolution for smaller projects and 3/4-inch provides a lower price point for larger projects.

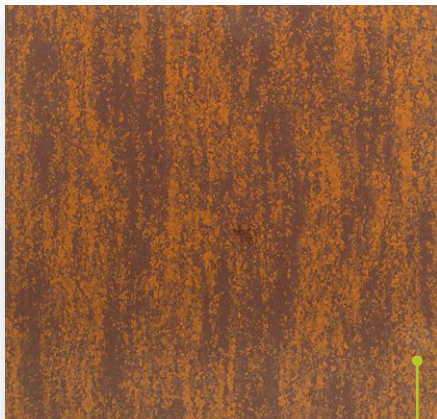
www.artaic.com // Circle No. 42

24 CONVERT T8 AND T12 TO LED LUMINAIRES

Engineered Products Co.'s LED RetroFit Conversion Kits convert older 4- and 8-foot T8 or T12 "strip-type" fixtures into energy-efficient LED luminaires. The kits are available in a two or three T8 fluorescent lamp equivalent. The kits' components and design make the retrofit look like a new LED luminaire at a fraction of the cost. The kits also deliver high-performance lumen output and achieve a quick retrofit regardless of "strip-type" fixture brand because of the one-piece construction. The kits are ETL listed to UL Standard 1598C and DLC listed and approved (standard wattage driver only). Kits are available with or without a frosted diffuser lens, and a five-year warranty is included.

www.engproducts.com // Circle No. 43





25 ROOF AND CLADDING PANELS LOOK LIKE RUSTED METAL

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 Galvalume-coated steel sheets. It's available in a variety of McElroy Metal standing-seam and through-fastened panel profiles.

www.mcelroymetal.com // Circle No. 44

26 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. 45



27 STONE CLADDING FEATURES TONGUE AND GROOVE PANELS

Glen-Gery has unveiled StoneFit with DryFit Technology, a stone cladding solution with patented tongue and groove panels that interlock the stone pieces together without the use of mortar. The panels are mechanically secured with attachment brackets that can be drilled directly into structural sheathing, regardless of stud location. The attachment brackets assist in creating a water-management system and result in high wind-load resistance. The tongue and groove system also eliminates wall vibration. The panels are part of a larger wall system, the StoneFit Wall System, which is a complete stone drainage wall system that includes a custom-engineered starter angle and Glen-Gery-branded Weather-Resistive Barrier and Drainage Mat.

www.glen-gery.com // Circle No. 46



28 MINERAL WOOL INSULATION IS ALTERNATIVE TO SPRINKLER SYSTEM

Knauf Insulation is giving architects, specifiers and insulation contractors an alternative to sprinkler systems in multifamily interstitial spaces with the introduction of Inner-Safe Concealed Space Batt Insulation. The non-combustible glass mineral wool batt insulation exceeds NFPA 13 Standard requirements. It can be installed in typical I-Joist and Open Web joist types found in multifamily projects and is available for cavity depths from 8 to 24 inches. Recent updates to NFPA code stipulate that concealed spaces filled with non-combustible insulation do not require sprinkler protection (NFPA 13, SECTION 8.15.1.2.7).

www.knaufinsulation.us // Circle No. 47



29 THIN-CLAD PRODUCTS OFFER RETURN CORNER UNITS

Arriscraft has introduced two thin-clad products in response to growing demand for veneer stone. The Midtown product, with two slim face rises, in long lengths, delivers a modern look similar to linear brick. Unlike many Arriscraft products, which combine sizes in a bond pattern, Midtown can be laid separately (one size, continuously) or the two sizes can be combined. Designers can choose to install Midtown with or without mortar. The linear Coastal Series is suitable for a sleek look with a mortar joint. The Coastal Series and Midtown offer return corner units for a seamless, natural finish and are available in five colors.

www.arriscraft.com // Circle No. 48



Rooted in Experience



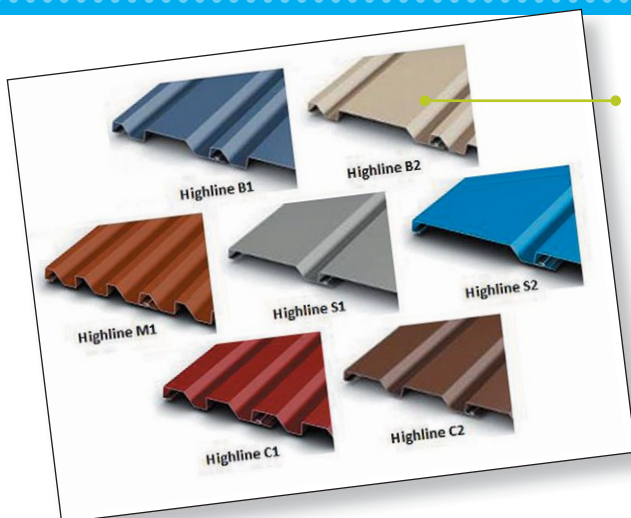
- » Carlisle's industry-leading, single source warranties protect the Roof Garden components as well as the underlying roofing systems.
- » Carlisle offers a diverse line of traditional and modular systems, as well as a wide variety of vegetation options to fit project requirements and design aesthetics.
- » The MiraDRAIN® G4 Drainage Composite all-in-one product increases the installation rate and contractor confidence while decreasing the risks associated with a multiple step application.



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learn more about
Roof Gardens

Circle No. 49

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30 METAL PANELS FEATURE VARYING RIB PATTERNS, WIDTHS

Petersen Aluminum has added seven Highline products to its Precision Series line of metal wall panels. The wall panels feature varying rib patterns and widths for creative architectural effects in commercial, institutional, residential and many other applications. The new Highline panels are 1 3/8-inch deep, resulting in dramatic building exteriors and deeper shadow lines than the original Precision Series HWP, which is 7/8-inch deep. Options include 12- or 16-inch widths, a no-clip panel, or clip-fastened panel to accommodate thermal expansion and contraction. The steel or aluminum panels, which can be installed horizontally or vertically, can be specified with perforations or applied as equipment screens.

www.pac-clad.com // Circle No. 50

31 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. 51



32 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-to-the-touch matte finish that resists fingerprints and bacterial growth, and features 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. 52

33 INCORPORATE EMERGENCY LIGHTING INTO EXISTING FIXTURES



Keystone Technologies' SmartSafe LED Emergency Back-up Lighting product line enables incorporation of

emergency lighting capabilities into a broad range of direct-wired LED tube, fluorescent and standard LED fixtures. The SmartSafe kit includes not only the battery and LED driver, but also an LED module, making it possible to add emergency lighting to almost any LED or fluorescent light fixture and ensure reliable and continuous lighting operation in the event of a power failure. The line recently was recognized as "Best Overall Product" by the National Association of Innovative Lighting Distributors and the top product within the "Driver/Ballast" category.

www.KeystoneTech.com // Circle No. 53

LED RETROFIT CONVERSION KITS FOR STRIP-TYPE LIGHT FIXTURES

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**100% Tested
and certified**

Adjustable Brackets
fit most manufacturers' strip fixture
 housings from 4.25" to 5" wide

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cost compared to
fluorescent lighting**



**Superior Lumen
Output for LED
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**Assembled in
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LED RetroFit Strip
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T8 LED Tubes RetroFit
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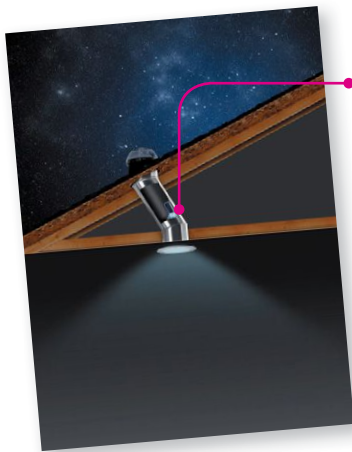
Learn how our LED RetroFit Conversion Kits can improve your lighting system, lower your energy cost, and meet your application needs. Contact our Inside Sales Department at 800-336-1976 or sales@engproducts.com and we will arrange for our Sales Representative to meet with you and demonstrate our LED lighting retrofit solutions.



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Circle No. 54



34 DAYLIGHTING DEVICE STORES ENERGY FOR NIGHTLIGHT

Solatube International Inc. has made available its Integrated Solar NightLight, or ISn. During daylight hours, the solar panel inside of the Tubular Daylighting Device harvests and stores power so when the sun goes down it's illuminated as a nightlight. The Integrated Solar NightLight is available for all Solatube residential daylighting systems. ISn models are eligible for a 30 percent tax credit on the entire system and installation. Using patented technology, a Solatube Daylighting System harvests daylight at the rooftop, transfers it down a highly reflective tube (which bends up to 90 degrees

and can be up to 70 feet or more long) and distributes it evenly into an interior space through a diffuser at the ceiling.

www.solatube.com // Circle No. 55



35 VINTAGE LAMPS REDUCE ENERGY CONSUMPTION

LEDVANCE is expanding its SYLVANIA ULTRA LED Filament and Vintage portfolios with Twisted and Frosted versions for downlights, pendant fixtures, table lamps, wall sconces and chandeliers. The lamps, which cover 95 percent of traditional shapes, have a full glass body design. The company is also adding dimming capability to its Vintage portfolio. With a long-rated life of up to 15,000 hours and a color rendering index of 80, Filament and Vintage Lamps can be used in a variety of commercial and residential applications. They reduce energy consumption up to 90 percent and last up to 15 times longer than incandescent lamps but provide a retro look that is becoming increasingly popular.

www.sylvania.com // Circle No. 56

36 MATCH CARPET TO PAINT AND FABRIC

The latest carpet tile collection from Bentley—Disruptor + Teleport—features an assortment of twisted yarns, cabled and bundled, that produce depth and movement on the floor. Bentley's tool in color flexibility, COLORCAST, matches color from any source, including paint chips and fabric swatches. Disruptor + Teleport styles are available in 24 by 24 inch and 18 by 36 inch and utilize Antron Legacy Type 6,6 Nylon. The products, which are Cradle to Cradle, NSF 140 and CRI Green Label Plus certified, are produced in a LEED-EBOM Gold-certified manufacturing facility.

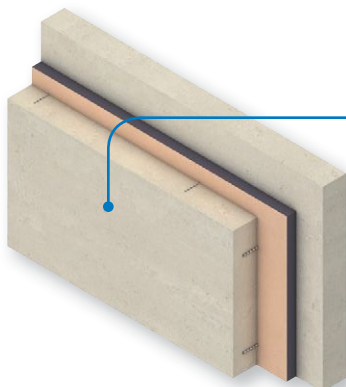
www.bentleymills.com // Circle No. 57



37 RIGID INSULATION IS IDEAL FOR CONCRETE WALLS

Kingspan Insulation has introduced the Kooltherm K20 Concrete Sandwich Board, a premium performance rigid thermoset insulation that is ideal for tilt-up and precast concrete wall applications. The product's core is a premium performance, rigid thermoset fiber-free phenolic insulant manufactured with a blowing agent that has zero Ozone Depletion Potential and low Global Warming Potential. It offers an R-value of 17 on 2 inches, fire and smoke performance, and is unaffected by air infiltration. Kingspan Kooltherm K20 Concrete Sandwich Board is available in standard sizes or can be ordered in custom lengths. It is available in R-values ranging from 13.5 to 40.

www.kingspaninsulation.us // Circle No. 58





38 SPEED INSTALLATION OF MULTIPLE TANKLESS WATER HEATERS

The Commercial Water Heater System from Noritz America is designed to simplify the installation of multiple tankless water heaters for plumbing and mechanical contractors. Noritz combines commercial-grade tankless units with system controllers, manifolds, and other necessary components and accessories into fully assembled metal rack systems for shipment anywhere in North America. The installer needs only to connect the water and gas lines, build the vent runs and set up the prewired system controller. Thirty-six rack models are available, all specifically designed for the ENERGY STAR-certified NCC 199(GQ-C3257WZ US) Condensing Tankless Water Heater Series.

www.noritz.com // Circle No. 59

39 NYLON ALTERNATIVE TO PLASTIC SHEETING

ZipWall ZipFast reusable barrier panels are an airtight, opaque and environmentally friendly alternative to plastic sheeting. The 12-foot panels, which are made of nylon fabric, quickly zip together to form a barrier as wide as needed. Available in standard and flame-retardant versions, the panels are ready to use out of the box without cutting or measuring. In addition to effective dust containment, ZipFast panels present a professional appearance and provide privacy on both sides of the barrier.

www.zipwall.com // Circle No. 60



Learn more about these easy-to-use barriers in a short video. View more details on page 10.



Retrofit Made Easy



Circle No. 61

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40 FRAMELESS GLASS SLIDING SYSTEM PROTECTS AGAINST WEATHER

NanaWall Systems has created the NanaWall ClimaCLEAR, a frameless, all-glass individual panel sliding system specifically engineered for transparent weather protection. Available for residential and commercial use, transparent vertical weather seals between the panels protect the wall against wind-driven rain and reduce air infiltration. When the system is closed, the seals virtually disappear from sight, allowing for maximum transparency with no vertical stiles, providing natural daylight, open views and a clean, modern appearance. ClimaCLEAR configurations come standard with a single action swing panel and are available in a clear anodized finish with additional brushed, dark bronze and black anodized finishes available to accommodate varying interior designs.



View more details on page 10.

www.nanawall.com // Circle No. 62

42 ARCHITECTS' INPUT HELPS CREATE HANDWASHING STATION

Zurn has released its Sundara Handwashing System, a modern, architecturally inspired approach to handwashing in the commercial restroom. The system combines a seamless countertop and basin design with curated faucets and soap dispensers to match. It features durable solid-surface construction, made from a proprietary mix of materials that are easy to maintain and scratch- and stain-resistant. Sundara has a 300-pound load rating to ensure vandal prevention. In developing the system, Zurn interviewed 150 architects and designers, completed 10,000-plus hours of research and created 26 prototypes.

Through further testing and validation, Zurn finalized the concepts to three designs: Sundara Reef, Drift and Float.

www.zurn.com // Circle No. 64



Sundara Drift Double

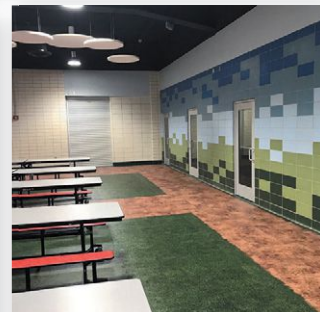
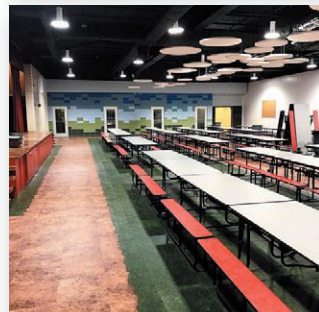
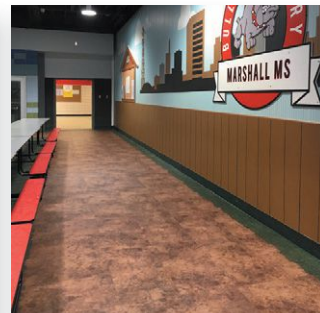
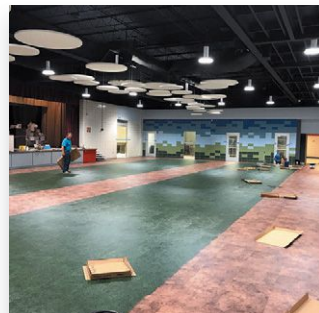
41 LVT IS DESIGNED BY INTERNATIONAL ARTISTS

Tarkett has unveiled Collections Infinies, a digitally printed luxury vinyl tile (LVT), featuring designs by internationally renowned artists. Collections Infinies enables architects and designers to actively participate in the product design process. Collections Infinies currently includes the following designs: "Trans-Materia" from Suzanne Tick, "Glow" from Krista Ninivaggi of K&Co, "Riot" from 2x4, "Crystal" from D.B. Kim, and a Sagmeister & Walsh collection. In addition, new designs are being released within each artist's collection.



www.collectionsinfinies.tarkettna.com // Circle No. 63

Because of Collections Infinies' innovative digital print technology, Tarkett is able to create custom flooring designs for customers. For example, leaders within a middle school in Houston wanted a fun, new floor for the cafeteria and sought to mimic picnic areas outdoors. Tarkett created digitally printed LVT of grass and dirt with lunch tables placed on the grass pieces and the dirt designs serving as the pathways through the space.



"Riot" won a HiP Award at NeoCon 2017

retrofit

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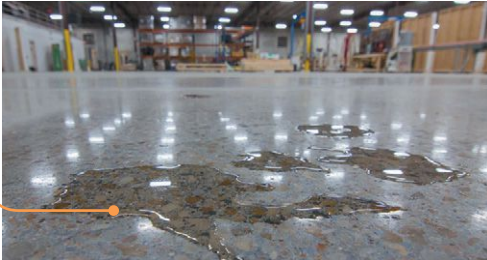
View highlights and information from the 2017 retrofit conference at www.retrofitconference.com.



Circle No. 65

Contact John Riester, **retrofit**'s publisher, at (919) 641-6321 or john@retrofitmagazine.com for information about sponsorship opportunities.

43 PROTECT CONCRETE SURFACES FROM WATER, OIL AND STAINS



Concrete Protector SB is a solvent-based alternative to PROSOCO's Concrete Protector. Formulated based on contractors' feedback, Concrete Protector SB offers improved performance in repelling water, oil and stains and it can be burnished. Surfaces treated with Concrete Protector SB retain their natural appearance, texture and breathability and are easier to maintain. The product is ideal for high-traffic or wheeled-traffic areas where surface film-forming sealers may prematurely wear off. The low-odor, VOC-compliant product is applied with pump-up sprayers and can also be applied to surfaces previously treated with Consolideck guards, like LSGuard and PolishGuard. The product previously known as Concrete Protector remains available as Concrete Protector WB for customers who desire a water-based formulation.

www.prosoco.com // Circle No. 66

44 INTERIOR WALL PANELS RESIST DAMAGE

Inpro Corp. has released its Palladium Wall Panels, which are engineered with rigid sheet wall protection to endure abuse in commercial interiors. Designed for lobbies, elevator interiors, headwalls and more, Palladium Full Wrap Panels feature Edge Protectant Technology for durability.

www.inprocorp.com // Circle No. 67



45 FAUCETS BALANCE WATER SAVINGS WITH USER COMFORT

Chicago Faucets' 3600 Series is the latest addition to the Chicago Faucets Metermix line of metering faucets. All 3600 Series faucets feature user-adjustable temperature control. The faucets' MVP metering cartridge provides precise water flow, automatic shut-off and adjustable runtime to save water with every use. A choice of flow rates from 0.35 to 1.5 GPM allows specifiers and building owners to strike the right balance between water savings and user comfort. Threaded mounting studs and free-spinning, stainless-steel hose connections make installation easy. In addition, the 3600 Series meets ADA requirements.

www.chicagofaucets.com // Circle No. 68



46 ACCESS GATE USES LITTLE ENERGY

Boon Edam has launched the Winglock Swing, an intuitive, single-wing access gate. The gate is designed to coordinate with the Speedlane Lifeline series (as an additional specialized lane) or be used as a standalone installation. A

combination of green, orange and red colors displaying static, pulsing and flashing signals guide traffic through. Just 9W of energy is used in standby mode and 20W while in motion. A substantial floor plate design alleviates the need for an additional supporting side post, which notably simplifies installation into the flooring. The gate comes standard in brushed stainless steel, but specifiers can choose from a wide range of finishes or colors, as well as custom options.

www.boonedam.us/winglock-swing // Circle No. 69



47 EFFICIENTLY HEAT LARGE, OPEN SPACES

Cambridge HTHV Space Heating Systems are designed to meet a building's heat and air load requirements. The Blow-Thru design, with 160 F maximum temperature rise and discharge temperature, delivers usable heat and thermal comfort with minimal temperature variation throughout the heated space. The high-efficiency space heater is suited for large commercial and industrial buildings. In addition, discharge air from the S-Series Space Heater provides large volumes of fresh, warm air flowing throughout the building, which eliminates higher ceiling temperatures and uncomfortable drafts. The S-Series Heater utilizes 100 percent fresh air to dilute contaminants generated within the building.

www.cambridge-eng.com // Circle No. 70

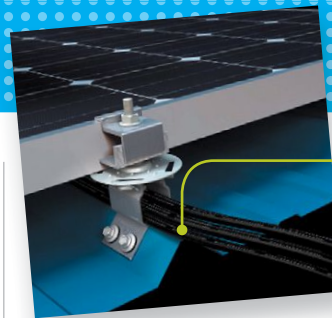


48 INTEGRATE SECURITY AND BUILDING MANAGEMENT SYSTEMS

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. 71



49 ATTACH ANCILLARY EQUIPMENT TO TRAPEZOIDAL METAL ROOFING

S-5! has released the Rib-

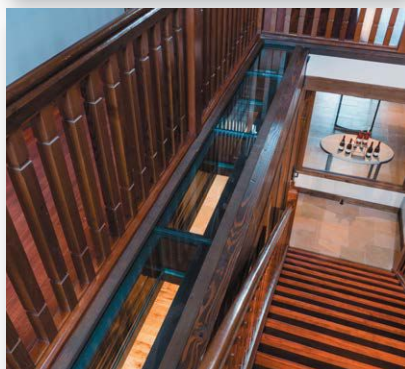
Bracket I-IV products, four different shapes designed to properly fit the vast majority of trapezoid profiles found globally. Thoroughly tested for strength, RibBracket I-IV has no moving parts and is flexible enough to fit varying trapezoidal widths. A higher profile ensures more space between the roof and any devices attached to the roof while the four attachment points offer greater holding strength. RibBracket I-IV is designed for convenient wire management and ease of installation for a solar system. RibBracket I-IV and the accompanying fasteners come with a factory-applied EPDM rubber gasket seal attached. The S-5! reservoir conceals the bracket EPDM from UV exposure, preventing drying and cracking.

www.s-5.com // Circle No. 72

50 INTERIOR FRAMING SYSTEM OFFERS WOOD LOOK AND FIRE PERFORMANCE

Technical Glass Products' Fireframes TimberLine Series allows design professionals to bring the look of wood frames to interior glazing applications with stringent fire and life-safety performance criteria. The innovative system pairs a high-strength steel sub-frame with a real-wood veneered metal cover cap. The result is slender fire-rated frames that capture the warmth of wood, enable tall spans and serve as a barrier to radiant and conductive heat transfer. The series is combined with Pilkington Pyrostop fire-rated glass to allow for unrestricted glazing in locations where the total glazing area exceeds 25 percent of the wall. Frames are available in multiple wood species, including white maple, cherry, fir and oak.

www.fireglass.com // Circle No. 73



When San Francisco-based Brayton Hughes Design Studios began planning the remodel of the La Crema Estate at Saralee's Vineyard, Windsor, Calif., the design team encountered an architectural challenge in the estate's tasting room. To meet current fire-resistance requirements, the designers needed to construct a barrier around the tasting room's historic stairwell that was capable of defending against the spread of flames, smoke and heat transfer. The high-performance system also needed to create and maintain the rich allure of wood, complementing the extensive wood framing and hardwood flooring used throughout the surrounding space. The designers found their solution with the Fireframes TimberLine Series.

The Fireframes TimberLine Series is fire-rated up to 120 minutes and tested to the fire-resistance standards for walls, ensuring it provides the tasting room's stairwell with the necessary fire defense. Aesthetically, the specified domestic white oak wood-veneered metal cover caps create visual harmony with the non-rated hardwoods used throughout the tasting room.

As an added benefit, the Fireframes TimberLine Series' rich beauty and fire-rated glazing help showcase the tasting room's central, historic wooden stairway. Large, fire-rated Pilkington Pyrostop glass wall panels provide guests with clear views of the stairway while the fire-rated frames' timber look complements its warmth and elegance.

To create a complete entrance solution for the stairway, the design team incorporated a Fireframes Heat Barrier Series door. It provides the necessary fire resistance while maintaining the same visual aesthetic as the surrounding fire-rated glass system.

In addition, the design team chose to line the perimeter of the main staircase with Fireframes ClearFloor fire-rated glass floor system segments. The advanced fire-rated glass floor system consists of Pilkington Pyrostop heat barrier glass; a tempered, laminated walking surface; and a steel framing grid. This configuration allows the system to draw light from the upper level down to the ground floor while providing critical fire resistance. It also can support loads up to 150 psf.



VESTED INTEREST

PERSONAL AND PROFESSIONAL TIES ENHANCE A
CELEBRATED CALIFORNIA OFFICE BUILDING'S RESTORATION

[WRITTEN BY | KJ FIELDS]

PHOTOS: JULIUS SHULMAN AND JUERGEN NOGAI unless otherwise noted

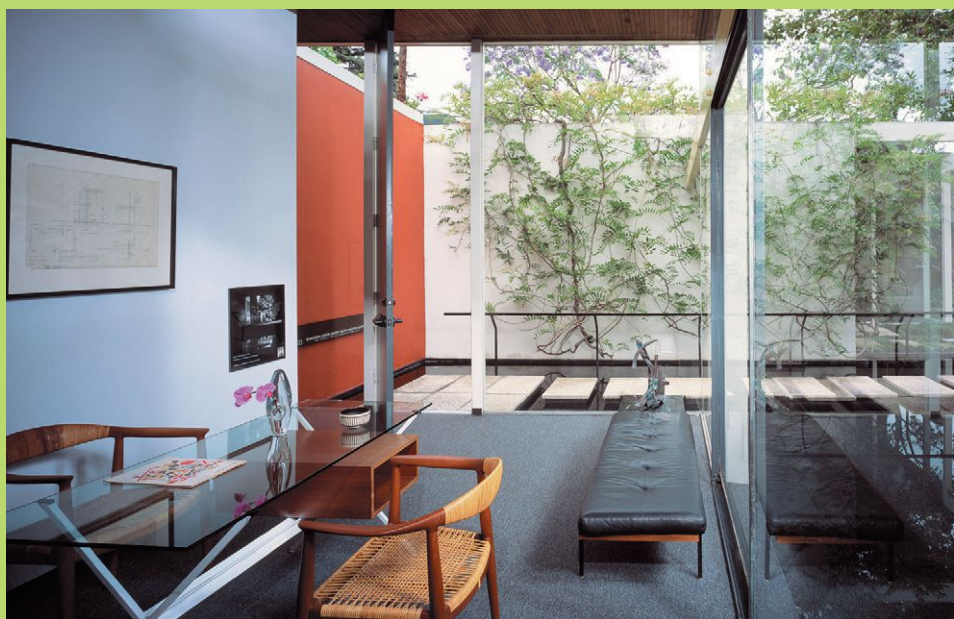
Combining the terms “mid-century modern” with “historic preservation” may seem like an oxymoron, but Kelly Sutherlin McLeod, FAIA, is determined to change that perspective. As principal of Kelly Sutherlin McLeod Architecture (KSMA) Inc., Long Beach, Calif., Sutherlin McLeod is involved with the preservation of modern architectural resources on an international level. One of her current preservation projects is the ongoing restoration of the Killingsworth Office Building in Long Beach, a 1955 single-story, 5,000-square-foot structure that now houses her architectural practice. The Killingsworth Office Building exemplifies mid-century modern architecture and is an iconic structure—in its design and because of its designer, Edward A. Killingsworth, FAIA.

“Southern California was recognized worldwide for its role in the development of mid-century modern design, and Killingsworth was an extremely important figure in the movement,” Sutherlin McLeod asserts. “This building was the headquarters for the three firms that Killingsworth had over 20 years, and it was here that he started to explore the design ideals he further developed in subsequent projects.”

DEFINING FEATURES

Integration with the landscape is a strong characteristic of mid-century modern design and Killingsworth used interior and exterior treatments to make the office building connect to its environment. Large expanses of glass, skylights, trellises and beams projecting off the roof that carry the structure beyond the building all blur the lines between the outside and inside. Every interior space looks out to sky, landscape or semi-private gardens, and the outdoor water feature was designed to reflect surrounding tree canopies and the adjacent building’s interior.

Killingsworth was a master of making the most out of difficult sites. The building is located on a narrow lot along a busy boulevard and backs right up to residential property, yet it feels expansive.





Integration with the landscape is a defining characteristic of mid-century modern design. As such, the Killingsworth Office building features large expanses of glass, skylights, trellises and beams projecting off the roof that carry the structure beyond the building, blurring the lines between inside and out.

“The extension of space created by the roof and floor planes continuing beyond the glass walls make the spaces light and airy,” Sutherlin McLeod explains. “Killingsworth’s objective was to design spaces where the ‘spirit can soar,’ and this is a dynamic and energetic quality that inspires us.”

POWERFUL PRESENCE

In addition to having daily interaction in the space, Killingsworth was Sutherlin McLeod’s mentor and friend. The two first

met in the late 1980s. Shortly after opening her own practice, Sutherlin McLeod completed a project at California State University, Long Beach, where Killingsworth was the campus’ master planning architect for more than four decades. Their paths also crossed at professional and social events, and they became friends.

When Killingsworth closed his practice, Sutherlin McLeod rented the Killingsworth Office Building’s south pavilion. Killingsworth continued to come to the

building daily to support professional and architectural institutions. “He was always interested in the projects I was working on,” Sutherlin McLeod recalls. “We’d have long interesting conversations on a regular basis and I still feel his presence in this building.”

EMBRACING THE FAMILIAR

Killingsworth told his family that Sutherlin McLeod would be a good steward of the property. Killingsworth passed away in 2004 and Sutherlin McLeod purchased the



The extension of space created by the roof and floor planes continues beyond the glass walls, giving the space a light, airy feeling where the "spirit can soar," a design objective Killingsworth embraced.

building in 2005. Over time, Killingsworth had created additions on the north, south and west ends of the building to accommodate his expanding firms, but he did not change the primary street façade nor the original building's spatial quality. Although the office was a design showcase, the team at KSMA recognized that it was in need of a comprehensive restoration.

Certain aspects of mid-century modern design aren't necessarily well poised for long-term durability. Sutherlin McLeod

explains the spirit of optimism dominating the post-war era encouraged designers to freely experiment with how far they could push the limits of materials, architectural elements and the structure.

The Killingsworth Office Building has an exposed structure with slim, tall vertical wood framing members. The roof is completely flat, and the floor planes are close to the ground outside. Sutherlin McLeod says it is precisely these elements that make the architecture so elegant.

Retrofit Team

PROJECT ARCHITECT // Kelly Sutherlin
McLeod Architecture Inc., Long Beach,
Calif., www.ksmarchitecture.com

ARCHITECTURAL HISTORIAN //
Francesca Smith

STRUCTURAL ENGINEER // Structural
Focus, Gardena, Calif.,
www.structuralfocus.com

PROJECT CONSERVATOR // Griswold
Conservation Associates LLC, Los Angeles,
www.griswoldconservation.com

CONSERVATOR (Light Fixtures) // Rosa
Lowinger & Associates, Los Angeles,
www.rosalowinger.com

➡ BACK IN 1955...



PHOTO: ART, DESIGN & ARCHITECTURE MUSEUM, UNIVERSITY OF SANTA BARBARA

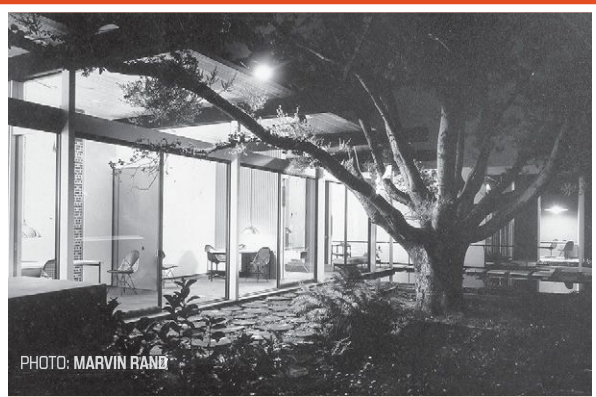


PHOTO: MARVIN RAND



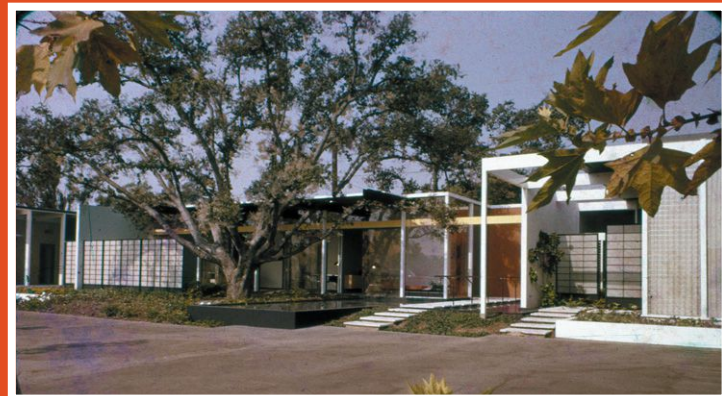
PHOTO: MARVIN RAND

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Photos of when the building was first constructed allowed Sutherlin McLeod to pinpoint which aspects were original and what had changed through the years. Original exterior paint colors, confirmed through documentation and onsite forensics, are once again in place, and the interiors are being restored, as well.



PHOTOS: COURTESY OF THE FAMILY OF MARVIN RAND



In addition, many of the design features and materials can present challenges over time. “We are familiar with many of the materials mid-century modern designers used, including aluminum, engineered timbers, fiberboards and laminates, which were considered cost-effective at the time,” Sutherlin McLeod says. “But the familiarity of these materials doesn’t mean that we should view these buildings nor their materials as expendable. We cannot be dismissive of this very important part of our architectural history.”

To help ensure the building’s long-term preservation, Sutherlin McLeod had the space listed on the National Register of Historic Places in 2009.

HARD DECISIONS

As a testament to Killingsworth’s professional growth, the building shows the development of his design vocabulary. Even the post-and-beam connections between the three pavilions differ because Killingsworth’s ideas were evolving during construction. Photos of when the building was first constructed allowed Sutherlin McLeod to pinpoint which aspects were original and what had changed through the years. The restoration’s master plan targets the original date of construction for the center portion of the building because Killingsworth’s practice began in that space. The north pavilion—where Killingsworth later expanded his growing firms—is maintained the way Killingsworth left it to honor the full spectrum of his career.

But deciding which elements should be maintained in their original form across the restoration proved challenging. For example, a very tall, thin (4- by 4-inch) wood post suffered deterioration due to exposure and groundwater. Killingsworth used steel framing in later projects but in 1955, he used wood for his office building. Although steel would have been a more practical replacement material, Sutherlin McLeod took into account more than mere practicality. “I am a steward of Ed’s legacy, not just this building,” she says. “We removed the painted finish from this post and its flanking beams and found joints where Killingsworth had replaced this post during his lifetime. He could have used a steel post for replacement but he kept it as wood.” Sutherlin McLeod’s new replacement post will also be wood to maintain Killingsworth’s vision.

The large glass doors’ thin metal frames had rusted, were delaminated and they leaked. The original manufacturer would not consider repairing them and only offered new doors with a completely different profile. Instead, KSMA’s team found a specialized fabricator who could save the door frames by making pieces to replace the rotted areas or combing through stockpiles to find old parts for reuse.

Original exterior paint colors, confirmed through documentation and onsite forensics, are once again in place. KSMA is restoring the building interiors, too. Many of the furnishings date back to the 1955 construction, including the

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SOUTHERN CALIFORNIA WAS RECOGNIZED
WORLDWIDE FOR ITS ROLE IN THE DEVELOPMENT OF
MID-CENTURY MODERN DESIGN, AND KILLINGSWORTH WAS
AN EXTREMELY IMPORTANT FIGURE IN THE MOVEMENT.

—Kelly Sutherlin McLeod, principal,
Kelly Sutherlin McLeod Architecture Inc.



PHOTOS: TOM BONNER

Original materials, such as deteriorating wood beams and rusted glass doors (seen here), were thoughtfully replaced to preserve the building's architectural integrity and Killingsworth's original vision.




CERTAIN ASPECTS OF MID-CENTURY MODERN DESIGN AREN'T NECESSARILY WELL POISED FOR LONG-TERM DURABILITY.

integral marble table/bench that Killingsworth designed.

"As with all conservation-based projects, it's a process to carefully evaluate and assess how to treat original materials—what is to be maintained versus replaced, what is significant and why, and how can authenticity be preserved in a way that is relevant today and for years to come," Sutherlin McLeod says.

KSMA opens its doors to architecture tours and students on a regular basis because Killingsworth had

always welcomed people in to see the space. Knowing what Killingsworth valued has a profound effect on Sutherlin McLeod and her approach to the restoration project. "The fact that we can connect with the people who designed and lived in these spaces is an exciting aspect of preserving our recent heritage," she says. "It allows us to better understand the buildings and preserve their authenticity, and I'm extremely honored to be the steward of this very important resource." 

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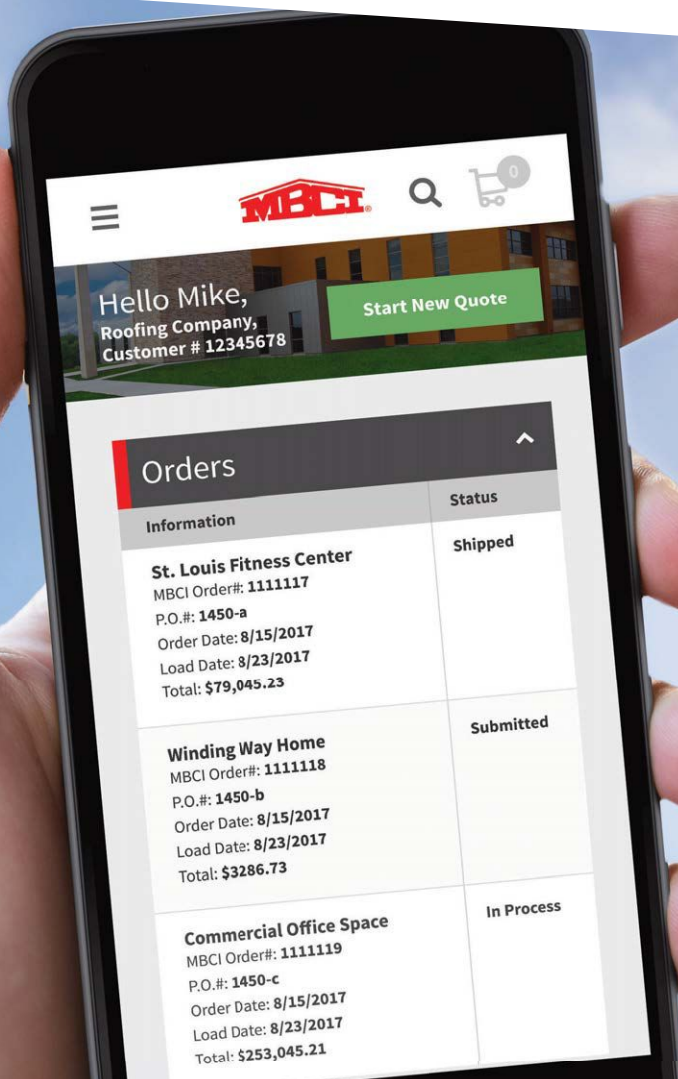
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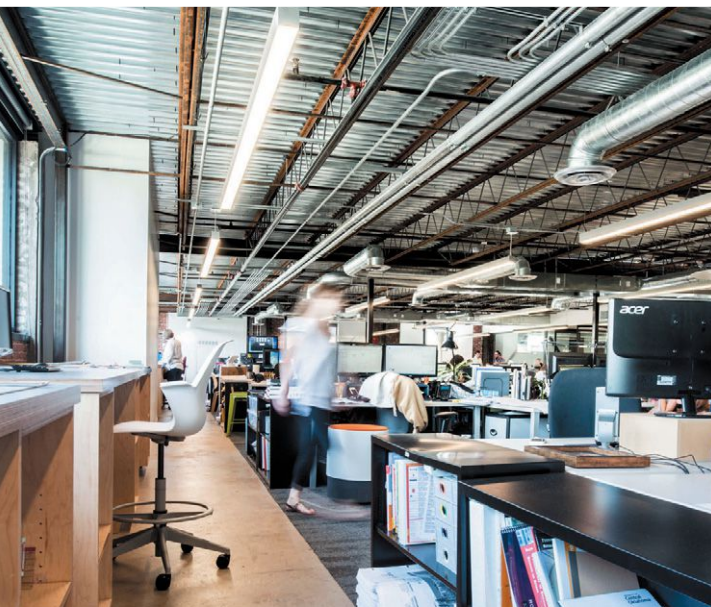
GATES HARDWARE BUILDING

Tulsa, Okla.





PHOTOS: COURTESY OF KSQ DESIGN



RETROFIT TEAM »

ARCHITECT, DEVELOPER AND INTERIOR DESIGNER: KSQ Design, Tulsa, ksq.design

- David W. Short, AIA, project manager
- Juana Gomez, Assoc. AIA, project designer
- Kyle Casper, technical director
- Doug Willim, AIA, interior design director
- George Pritchard IV, RID

ENGINEERS: Cyntergy AEC, Tulsa, www.cyntergy.com; Wallace Engineering, Tulsa, www.wallacesc.com; and Ross Engineering, Tulsa, www.withrossgroup.com

GENERAL CONTRACTOR: The Ross Group, Tulsa, www.withrossgroup.com

MATERIALS »

The following materials were used in KSQ Design's second-floor office project within the building:

CARPET: Human Nature Carpet Tiles from Interface, www.interface.com

GLASS PARTITIONS: Lightline Architectural Wall from KI, www.ki.com

LED LIGHT FIXTURES: A Light AccoLED from Alcon Lighting, www.alconlighting.com

ELEVATOR SHAFT TILE: Laminam from Crossville, www.crossvilleinc.com

KITCHEN TILE: Perspective Pure from Emser Tile, www.emser.com

BATHROOM TILE: Motion from Emser

FRONT DESK: Quartz from Caesarstone, www.caesarstoneus.com

ROLLER SHADES: MechoSystems, www.mechoshade.com

BATHROOM SINKS: Advocate from Bradley Corp., www.bradleycorp.com

BOTTLE-FILLING STATION: EZH2O from Elkay Manufacturing Co., www.elkay.com

THE RETROFIT »

KSQ Design purchased the Gates Hardware Building in Tulsa's Brady Arts District in late 2014 and moved its 63-member Tulsa staff to the 14,000-square-foot second floor of the mixed-use structure. (Eslick Design also is housed on the second floor.) The gut renovation of the 90-year-old building featured challenges, including building instability and the grading of the parking lot, which contained forgotten oil tanks from railroad cars.

The building is located immediately across from the main entrance of ONEOK Field where the Tulsa Drillers baseball team plays. The entry pays homage to the building's origins with raw steel, spots of exposed brick and metal partitions throughout, which resemble peg boards commonly found in hardware stores. The historic "East End Experience" marquee (previously on the corner of the building) hangs in the double-volume lobby stairway. KSQ Design's office features an open studio, glass-encased conference rooms with ballpark-themed names—Dugout, Bullpen and Press Box—to match the ballpark views, a full kitchen, community spaces and an open studio environment underscoring the creative culture within the firm. The office includes energy-efficient glass, LED lights, low-flow showers and sinks, and a water-bottle refilling station.

On the street level, the Gates Hardware Building is home of McNellie's Group and Marshall Brewing's new sports bar and microbrew pub, Elgin Park, along with She Theater, a performance art and dance club. The downstairs also is 14,000 square feet.

The project was made possible by Brady Arts District TIFF funds. As David W. Short, AIA, project manager with KSQ Design told The Journal Record, "If it weren't for the historic tax credits, the \$3 million rehabilitation would not have been worth it."

» ON THE STREET LEVEL, THE GATES HARDWARE BUILDING IS HOME OF SHE THEATER, A PERFORMANCE ART AND DANCE CLUB.





PHOTOS: MCELROY METAL

DESIGNCRAFT | Madison, Wis.

RETROFIT TEAM »

ARCHITECT: Barnett Architecture LLC, Madison, www.barnettarchitecture.com
METAL PANEL INSTALLER: Metal Design Corp., Madison, www.metaldesignmadison.com

MATERIALS »

The owners wanted to rejuvenate the appearance of their office, which featured aged vinyl siding. The design team specified the Wave

Panel, a concealed fastener metal wall panel, that would navigate the curvature of the building. The color chosen is Buckskin, an ENERGY STAR-compliant PVDF coating. Approximately 2,800 square feet of Wave Panel was installed vertically to accommodate the curved façade. Wood was installed horizontally and vertical colors are a transition between the wood and metal. Wave Panel also was installed on the third-floor penthouse.

"The general contractor had installed solid plywood with rigid insulation over it on the entire exterior of the building," says Kent Woller, general manager at Metal Design. "We installed 6-inch-wide, 20-gauge galvanized strapping horizontally, 24 inches on-center, fastening through the insulation and into the plywood. The panels are 24-gauge metal, 16-inches-wide with a screw strip incorporated in the panel so we did not need to use clips. The panels were mounted to the strapping."

Woller says the curving of the building was "soft enough" that when coupled with the vertical orientation of the panels, the crew was able to simply follow the contour of the

building with minimal effort. "The curves of the building really didn't add significant labor with the exception of fabrication and installation of the trims at the base and top of the curved areas because these areas required shorter segmented pieces," he says.

Metal Panel Manufacturer: McElroy Metal, www.mcelroymetal.com

THE RETROFIT »

Architect Todd Barnett, ALA, and Sarah Canon, project manager, with Barnett Architecture collaborated with the creative staff of designCraft to rejuvenate the company's facility.

"It was truly a collaborative process," Barnett says. "The client helps design advertising and develop brand strategy, so they understand the design process and colors. ... They selected some colors and we were very supportive. Metal was the obvious choice because of the aesthetics, its ability to meet the building code and because of the low maintenance."

The project received the 2016 Mayor's Design Award for Office and Façade Renovation.





B&R FOURNIER CONSTRUCTION INC. |

Rehoboth, Mass.

RETROFIT TEAM »

OWNER AND CONTRACTOR: B&R Fournier Construction, Rehoboth,
www.brfourrier.com

MATERIALS »

B&R Fournier Construction purchased the aging building—formerly an auto glass shop—for use as its Massachusetts office and showroom. To transform the nondescript building into an attractive showcase for the construction firm, the contractor covered the existing roof with Landmark Pro asphalt shingles in Max Def Hunter Green. A combination of Cedar Impressions Double 7-inch Straight Edge Perfection Shingles and Monogram Double 4-inch Clapboard Siding, both in Charcoal Gray, and InvisiVent vinyl soffit in Colonial White create a clean look for the exterior.

“This project was unique in that we were both customer and contractor, and we’re really pleased with the result,” says Ray Fournier, owner of

B&R Fournier Construction. “Our new office looks terrific and also serves as an excellent example of our workmanship, as well as the low-maintenance beauty, durability and quality of CertainTeed products.”

SHINGLES, SIDING AND SOFFIT MANUFACTURER: CertainTeed Corp.,
www.certainteed.com

THE RETROFIT »

B&R Fournier Construction won the Remodeler Project of the Quarter award from CertainTeed for outstanding work with the company’s roofing and siding products for this light-commercial remodel. The Remodeler Project of the Quarter award is an opportunity for remodelers using multiple CertainTeed products to win cash and promote their businesses. The award is part of the CertainTeed Building Solutions program that celebrates remodelers who demonstrate excellence in workmanship and creativity using multiple CertainTeed products.



PHOTOS: MITSUBISHI ELECTRIC COOLING & HEATING

STUDIO GANG | Chicago

RETROFIT TEAM »

OWNER AND ARCHITECT: Studio Gang, Chicago, www.studiogang.com
MECHANICAL CONTRACTOR: AT Mechanical LLC, Melrose Park, Ill., www.atmechanical.com

MATERIALS »

After years of renting space, in 2013, Studio Gang purchased what was the Polish National Alliance building in Chicago's Wicker Park neighborhood and created a plan to turn the building into its office. Built in 1937, the building was closed after having served as a technical school. When the Studio Gang team began thinking about HVAC for its offices, knowing they planned to achieve Landmark status for the building became important, as did Studio Gang's commitment to sustainability. Today, the 21,000-square-foot office is cooled and heated by a Hyper-Heating INVERTER (H2i) Variable Refrigerant Flow (VRF) system.

In its previous office, which was one open space, Studio Gang had one massive HVAC unit with a single zone. "In the summer, we would never get cool air over where I sat, while other people were too cold," explains Harry Soenksen, AIA, LEED AP, Studio Gang's senior technical director. "This time around, how can we be modern and more efficient? Landmark was adamant about not seeing the system from the street. We needed something with a small footprint that was acoustically reasonable for us and our neighbors."

In terms of cost, VRF was competitive with a conventional system while meeting Landmark's performance requirements of exceeding ASHRAE standards by at least 17 percent. Acoustics and visuals on the roof became particularly important as Studio Gang planned for a roof prairie and event space. Studio Gang Chief Financial Officer Meredith Mack echoes Soenksen's satisfaction: "We had pictured a green roof with plantings and even trees, and we knew the VRF units would not be unattractive next to it. And they wouldn't blow all over you if you were up on the roof grilling or eating lunch."

Studio Gang's previous office space had a monthly expenditure (electric and gas) of 14 cents per square foot. The new office space comes in at 11 cents per square foot.

VRF SYSTEM MANUFACTURER: Mitsubishi Electric Cooling & Heating, www.mitsubishipro.com

THE RETROFIT »

Since its renovation, the project has achieved LEED certification and Landmark status from the city of Chicago. The office also has been popular for the Chicago Architecture Foundation's open house.

Soenksen says: "It feels good to think about how we might have saved this building from destruction. It was not much cared for over the last 50 years or so. Now it's beautiful and ready for the next 100 years."





ONE WOODWARD

Detroit

RETROFIT TEAM >>

BUILDING OWNER AND FACILITIES TEAM: Bedrock Real Estate Services, Detroit, www.bedrockdetroit.com

MATERIALS >>

Bedrock Real Estate Services gave the building an extensive redesign, including plumbing. The firm specified 220 of Sloan's ECOS Flushometers as part of the 26-story building's renovation, citing the products' water-conservation attributes. The ECOS Flushometer has automatic dual-flush (1.6-/1.1-gallons per flush) or single-flush (1.1-gpf) high-efficiency closet options, plus 0.5-, 0.25- and 0.125-gpf high-efficiency urinal flushometer options. ECOS flushometers provide hands-free activation for improved hygiene, as well.

As part of its green-building initiatives, Bedrock Real Estate Services also installed 100 AER-DEC Integrated Sink Systems throughout the building. The systems feature a soap dispenser, faucet, hand dryer and sink basin working together at arms-length as one touch-free and hygienic system.

FLUSHOMETERS AND SINK SYSTEMS MANUFACTURER: Sloan Valve Co., sloanconnect.sloanvalve.com

THE RETROFIT >>

Situated in the center of Detroit's Civic Center since 1962, the waterfront One Woodward experienced the Motor City's economic boom of the 1960s, trying times of the 2000s and the city's resurgence in recent years. When the town fell upon harsh economic conditions, and jobs in the automobile industry started moving elsewhere, even buildings as iconic as One Woodward suffered. In fact, the building's occupancy dropped as low as 20 percent in 2013 when the city's population dipped by more than 1 million people from its peak in 1950.

But as jobs began coming back to the area, and companies, like Bedrock Real Estate Services, began purchasing downtown properties, the Motor City underwent a gradual revitalization. As of 2017, One Woodward is 100 percent occupied and represents Detroit's revitalization. Building tenants include Quicken Loans, the Detroit Regional Chamber of Commerce, a dentist's office and numerous law firms.



PHOTOS: HEDRICH BLESSING

AMERICAN SOCIETY OF INTERIOR DESIGNERS | Washington, D.C.

RETROFIT TEAM »

ARCHITECT: Perkins+Will, Washington, www.perkinswill.com

LIGHTING DESIGNER: Benya Burnett Consultancy, Davis, Calif., www.benyaburnett.com

ELECTRICAL ENGINEER: GHT Limited, Arlington, Va., ghlttd.com

MATERIALS »

James Benya and Deborah Burnett, principals and partners of Benya Burnett Consultancy, created a lighting design to ensure circadian-optimized lighting and daylighting, critical luminaire placement, and annual lighting schedules and sequences. To maximize points in WELL and LEED, a Lutron Quantum Total Light Management System was selected to automatically adjust shades and light to provide appropriate spectra, light intensities and exposures throughout the year while saving as much energy as possible. The Quantum system also provides data to help analyze building energy use and provide proof points to support certifications.

Working with Lutron field service engineers to set up and program control protocols, the ASID headquarters met stringent requirements of WELL and

LEED certification with the Lutron system contributing points in three WELL and three LEED categories.

"The Lutron Quantum system was uniquely able to provide all the lighting control capability we needed for this landmark project—automated, solar-responsive daylight and shade control, astronomic time clock, manual overrides, precise control of several types of electric light sources, compliance with the energy code and the data needed to prove LEED and WELL certification requirements," Benya explains.

Burnett adds: "With our Lutron field service team, we were able to program all the wellness protocols and transitions, as well as provide everyday functions like personal task light dimming. Even better, the programming automatically adjusts light intensities and durations for seasonal solar angles, changing weather conditions, available daylight and occupancy."

In addition to the Quantum Total Light Management System, Lutron's Sivoia QS shades with Hyperion solar-adaptive shading software were utilized in the project.

WINDOW SHADING AND LIGHTING CONTROLS SYSTEMS' MANUFACTURER: Lutron Electronics, www.lutron.com

THE RETROFIT »

ASID's headquarters is the world's first project to achieve Platinum level certification for the WELL v1 Building Standard and LEED ID+C rating system. ASID leadership was committed to making the headquarters a showcase for progressive design and prioritized the goal of achieving Platinum certification from the International WELL Building Institute, New York, and the U.S. Green Building Council, Washington.

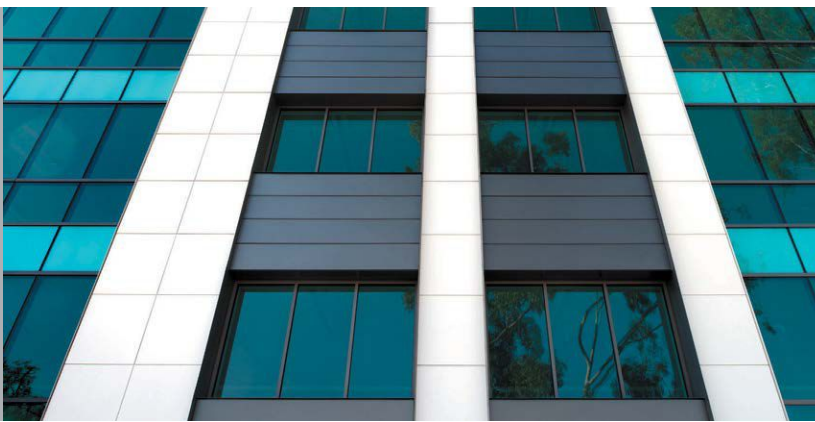
"At ASID, we take tremendous pride in being a champion for good design and demonstrating that design impacts lives," notes ASID CEO Randy Fiser. "The automatic shades and lighting control system enhanced the efficiency of the space while improving the comfort and productivity of the employees. Our shared vision would not have come to fruition without commitment from our construction partners and consultants and complete buy-in from ASID staff."

ASID leadership intends for the new space to be a dynamic "living laboratory" for the design community, offering an opportunity to engage in pre- and ongoing post-occupancy research.





2165 SPRING STREET | Long Beach, Calif.



RETROFIT TEAM »

ARCHITECT: Ware Malcomb, Irvine, Calif., www.waremalcomb.com
METAL PANEL INSTALLER: Emerald Metal Products, Signal Hill, Calif., www.emeraldmetalproducts.com
METAL PANEL DISTRIBUTOR: 2H Construction, Signal Hill, www.new.2hconstruction.com

MATERIALS »

Dri-Design Tapered Series Panels were integral to creating a new image for the building, which was constructed in 1985.

"The Dri-Design panels were specifically selected for their beautiful aesthetic and are what drove the design of the building exterior," says Julia Carroll, project manager with Ware Malcomb. "The ability to tilt the panels in different directions inspired the visual effect of the fluttering wall, mimicking the panels moving in the wind."

Emerald Metal Products installed 7,651 square feet of Tapered Series

Panels and standard Dri-Design Panels in Bone White and Medium Gray colors. Tapered Series Panels can be angled in any direction to varying degrees and depths.

This can occur without the need to modify the substrate or weather barrier.

Retrofit projects often have obstacles because of existing conditions; this building had uneven exterior walls. The Dri-Design panels' lightweight aluminum construction allowed for the needed flexibility of substrate to correct the issue. Dale Gronewold, president of Emerald Metal Products, says, "The existing building leaned over 2 inches, so we had to add tapered hat-channel furring to make everything straight."



WALL PANEL MANUFACTURER: Dri-Design, www.dri-design.com



ACUITY BRAND LIGHTING, ENGINEERING AND TECHNOLOGY CENTER | Decatur, Ga.

RETROFIT TEAM »

ARCHITECT: Homer Lewis & Associates Inc.,
Conyers, Ga., (678) 210-7007
METAL PANEL INSTALLER: National Panel Systems,
Wexford, Pa., www.nationalpanelsystems.com
METAL PANEL DEALER: Peachtree Protective
Covers, Hiram, Ga., www.peachtreecovers.com

MATERIALS »

The following Intercept Entyre metal wall panels were used on the project:

- Color, Grey Velvet; Square Footage, 9,010;
Finish, Smooth; Coating, Sundance Mica
- Color, Silversmith; Square Footage, 3,600;
Finish, Smooth; Coating, Sundance Mica

Peachtree Protective Covers' team was tasked with revitalizing the tired, damaged brick façade. Because the envelope was possibly leaking, the team chose to damp-proof it. The Intercept Modular Metal Panel System was chosen because

of its rainscreen performance and aesthetics. Intercept Entyre panels prevent entrapped moisture, material degradation and mold with well-vented wall cavities. The horizontal joint design provides cavity venting at the base of each panel course, ensuring continuous pressure and temperature equalization at every panel reveal.

The Intercept Entyre system requires little field prep and functions with nearly any substrate. Acuity Brands' Jimmy Suttles, director of Facilities Engineering, cited price and efficient delivery time as the key factors behind the decision to use the Intercept system.

METAL WALL PANEL MANUFACTURER: CENTRIA,
www.CENTRIAperformance.com

THE RETROFIT

The 167,000-square-foot building, which had been vacant for 20 years, now is a workplace for about 200 software and electrical engineers.

"This multi-year investment will help Acuity Brands foster a cutting-edge work environment for our people that will accelerate our collaboration and innovation processes, as well as help us retain and attract world-class talent," says Vernon J. Nagel, Acuity's president, chairman and CEO.

Acuity Brand Lighting's team was so impressed with the results they added a feature wall at the entrance of the \$11 million Engineering and Technology Center, using nearly 8,000 feet of Intercept panels.



PHOTOS: CENTRIA

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ROOF REPORT

WRITTEN BY | THOMAS W. HUTCHINSON, AIA, FRCI, RRC, CSI, RRP

Troublesome Issues in the Roofing Industry Can Be Corrected with Knowledge and Proper Detailing

For those of us who have been involved in the roofing industry for many years—in my case, 30—this current period of roofing material stabilization is a godsend. Materials can now be specified without performance concerns, such as premature deterioration or destabilization.

But why are there still so many roofing concerns that result in the involvement of attorneys? I believe the lack of an educated design class of architects is leading this charge, resulting in a litany of roof failures whose root cause often can be found in the design of the roof systems and a lack of knowledge in regard to building science and roofing installations.

Following are reviews of several, but certainly not all, issues I see day in and day out:

The Architect

The design professional—whether architect, engineer or consultant—is charged by the owner to design a roof system that will perform for the climatic conditions in which the building is located. Why is this so difficult? When I ask educators why there isn't more education in regard to roofing (and building envelope) in school, they reply, "They will learn it in the office." I find this funny because most offices I have encountered have no clue; thus, the clueless are charged with teaching the neophytes.

In addition, despite the fact that the Washington, D.C.-based American Institute of Architects reports that moisture intrusion is the No. 1 issue resulting in building-related lawsuits, roofing just isn't glamorous enough for attention from architects. To quote a large roofing contractor in Chicago, "I haven't been looking at the specifications lately; I have to bid what is possible." Imagine if your client was aware of this!

The lack of roof system knowledge is enforced by little if no empirical experience. Design professionals should get on the roof and see not only concerns caused by design, but also gain an understanding of how roof systems are put together. Perhaps they might gain insight into how water-

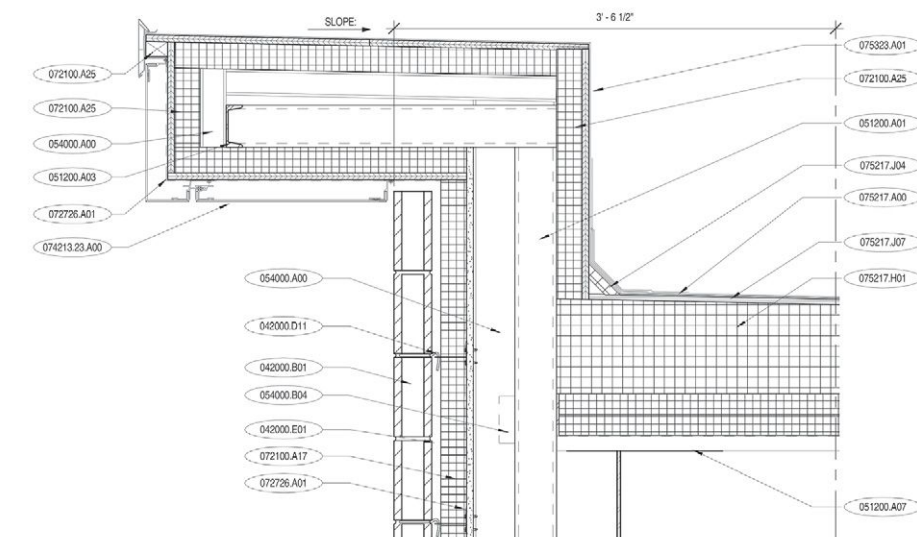


FIGURE 1 - STEEL STUD EXTERIOR WALL - PARAPET

based adhesive doesn't work in sub-freezing temperatures and that the almighty LEED point really wasn't worth it.

There is a generally accepted concept in the roofing industry that architects will never get on the roof and that construction managers really only manage contracts so there will be no oversight on the roof. Getting out of the ivory tower and being onsite is so important that time in the field should be a requirement for licensure—along with knowing how to properly design through-wall flashing, but that is another story worthy of its own rant. Please go out into the field and learn how buildings are built and the challenges contractors face.

Buildings in the last decade have become very complex, and new codes haven't made it any easier. Architects need to start gaining a better understanding of how buildings live and what they do once occupied. This understanding of how buildings function would go a long way in assisting the design of wall and roofing systems.

Building on this idea: Lack of detailing and the use of canned office master specs that rely heavily on "install to the manufacturer's specifications or recommendations" need to change. Although important, let's admit the manufacturer's specifications are the lowest market-driven minimum for



This metal stud parapet wall creates a condition in which interior warm moist air can rise (chimney effect) above the roof level and condense. The insulation shown will prevent some but not all of the conditions required for condensation. Now think fire, which can move up to the roof. Then consider construction: The contractor will have fun attaching the insulation to the studs—and let's not forget the base anchor of the roofing, which is required to be attached at least 12 inches on center. And don't you just love the cant with the single-ply membrane? Details like this tell roofing contractors the architect has no clue.



1) Note the open void at the concrete-to-steel stud wall and sheathing joints that will allow warm, moist interior air to move into the roof system. When I brought this to the attention of the construction manager with a recommendation to seal, his reply was “the insulation will block the air” (see photos 2 and 3). What I heard was, “You will be back for a big project in a year or so.”



2) Air infiltration up the steel stud wall, brought with it warm, moist air that contaminated the base flashing to sheathing bond, as well as the adjacent insulation facer to membrane facer (not coverboard, a mistake, too), which allows the roof membrane to be removed from the roof and parapet under winds well below warranty coverage speed.



3) This is the second roof on a three-year-old facility. The first roof was removed after condensation below the membrane caused membrane delamination. The problem here was air pressurization up the metal stud wall.

manufacturers to compete with their competitors. Kind of like a code: the worst you can install for a warranty. Architects should be designing resilient roof systems, which are sustainable by definition. (If you don't know about resilience and its importance after this past year of severe weather, you are well behind the current governmental agency movements toward having resilient mandates.)

Rooftop Condition

Based on my experience, I have seen a lack of construction documents that actually recognize rooftop conditions. Let me provide some examples:

■ The Exterior Structural Steel Stud Wall/Parapet

My recent involvement in more than a few legal cases has led me to believe that one of the most egregious design issues is at the roof edge, involving the use of structural steel studs in the wall and extending them up above the roof deck to become the parapet. This development, the apparent result of continuous insulation and air barrier requirements, has created a litany of concerns (see Figure 1 on page 57).

First, few are blocked off and the ones that are blocked off are improperly sealed. Now you have created a perfect air plenum, bringing warm, moist air up to the parapet where condensation is occurring when the exterior temperature is right (see Photo 1). This results in deteriorated sheathing, mold growth and the re-emulsification of those water-based adhesives or the deterioration of the facer on the substrate. Now the adhesive bond to resist wind forces is gone and—you guessed it—up comes the roof (see photos 2 and 3).

Air movement up stud plenum aside, there is another issue and that is the securement of the roof membrane at the wall. Depending on design, it might be possible to drive the screw into the roof deck (possibly damaging the vapor retarder) but often the screw goes horizontally. The vertical substrate boards are not strong enough to resist the pull-out and now a condition has been created that is at high risk for anchor pull-out and substantial roof damage. Hint: Install a 16-gauge plate

on the exterior side of the stud, behind the sheathing, into which the screw can be installed.

My overall recommendation would be to avoid the stud wall/parapet. It's too risky. However, if you design a stud wall/parapet, be sure to seal between the studs, exterior facing substrate and the roof-deck level. The seal is to prevent any air moving from the conditioned space to the parapet.

■ Freezer Buildings

Before we begin discussing freezer buildings (those buildings kept at -20 F), let's remember the effects of extreme cold on building materials. You don't remember? I see that all the time! The physics of freezer buildings are that the warm, often moist exterior air is trying to be pulled into the cold, dry freezer building with great force. Thus, the exterior building façade is the vapor retarder. If compromised, the effects are quite dramatic:

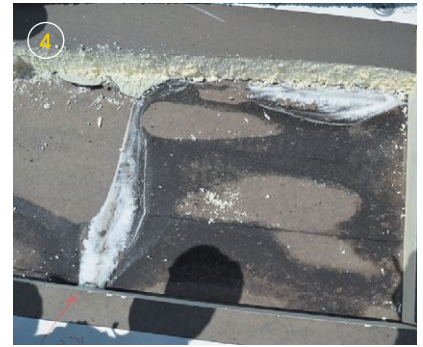
- Insulation becomes ice-locked and icicles form on the interior and they can be quite large (see photos 4 and 5).
- Roof systems can become blocks of ice and condensation runs amuck.

A 4- by 8-foot board of polyisocyanurate insulation shrinks 1/2 inch under -20 F temperatures. On a roof of 96 feet, that is 6 inches of gapping, allowing cold air to permeate up and resulting in a thermal short costing dollars.

Understanding how a building will function—in this case as a freezer building—and the effects on the building materials might lead a design professional to realize he or she should design for building contraction, air-intrusion resistance, seal the roof edge and incorporate redundancy to account for design mishaps and construction tolerances.

■ Roof Warranty Wind Speed Coverage Confusion

With the recent spate of landfall hurricanes, I undoubtedly will receive calls from attorneys looking for warranty coverage restitution. Many times, these attorneys and the owners they represent haven't looked at the warranty coverage, which if not dictated is 55 mph. However, attorneys will say the local code requires design to



4) Poor roof-edge detailing permitted warm, moist, ambient air to move into the roof system where ice formed. The bottom 4-inch layer of insulation was completely locked in place by 1/2- to 3/4-inch solid ice between insulation layers. This type of roof insulation contracts 1/2 inch per 4-by 8-foot board under -20 F interior temperatures.



5) Insulation in the roof system is a nuisance, but interior icicle formation, such as this, is a life-safety condition.



6) Although polyurethane foam is a wonderful adhesive, it must be in contact with the insulation boards to be effective. In this case, the product was not properly mixed and consequently did not rise. This type of workmanship contributed to the roof failure.



7a) and 7b) Using bead polyurethane foam adhesive can result in the creation of air gaps in the layers of the insulation through which air can pass. Photo 7b shows the result of what happens when warm, moist air meets the dew point. A large medical clinic did not find any solace in the fact that this roof was only one year old and needed to be replaced.

wind speeds of 115 mph. Unfortunately, designers often do not realize there is no correlation between the design wind speed and what is covered by the warranty. This causes a great deal of consternation for building owners who assume their buildings are covered up to the wind design speed. Roof systems can be designed for high wind speeds but they require specific detailing and specification. To add to the confusion, even if you have wind warranty coverage to 102 mph, for example, once a tropical depression is declared a hurricane, the warranty is void; damage resulting from hurricanes is excluded under the terms and conditions of the warranty.

My recommendation would be to design the roof to meet the anticipated wind-uplift pressures resulting from the design wind speed. Detail roof edges and impinging architectural elements with robustness and redundancy to resist the pressures. If wind speeds greater than the standard 55 mph are desired, they need to be called out in the specifications. This might be a good opportunity to consider designing a resilient roof system—one that can weather the storm with minimal damage and be brought back into service quickly so the building can operate, which is increasingly important for critical facilities, such as hospitals, police, fire and transportation facilities. It also is important to recognize that power might not be available for roof repairs; consider a roof cover that can be repaired without power.

■ Lack of Adhesion Between Polyurethane Adhesives and Insulation Boards

In the Midwest, full-cover spray foam or bead foam adhesive is taking over for asphalt as the adhesive of choice. Foam adhesive is an excellent choice. It sticks to everything: cars, skylights, clerestories, or even your sunglasses.

A recent rash of court cases in which I've been the expert witness confirms the lack of understanding in regard to the application and embedment of insulation in the foam adhesive. Contrary to what many believe, you cannot just "blow and go"; in other words, place the adhesive, drop the insulation board and move on to the next one. (Doing this ensures I have future work!) It is amazing how many insulation boards go down and don't touch the foam. If the insulation doesn't touch the board or only slightly does so, wind uplift will remove it for you (see Photo 6). Additionally, if the boards are not tightly compressed together, an air gap exists through which air—often moist air—can move and condensate within your roof system (see Photos 7a and 7b). That's not a good condition either. You must specify that the boards need to be set in place with

(continues on page 62)



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8) When using polyurethane adhesives, it falls upon the designer to properly specify how the layers of insulation are weighted to compress the insulation layers together until the adhesive sets. Failure to do so is a lack of care and often results in conditions seen in photos 2 and 3 on page 58.

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tight joints, walked on and then weighted in place until set. My firm specifies five 35-pound weights (5-gallon pails filled with water)—one at each corner and one in the middle—for 10 minutes (see Photo 8). Yes, you need to be that specific.

The Designer's Standard of Care

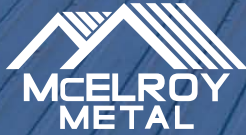
With roofing materials at an equilibrium, it falls to the design and construction industries to assemble roof system components in a cohesive, holistic manner. It all starts in the designer's office. Providing little attention at that level, not understanding building sciences and dynamics, or foregoing proper detailing will lead to early failure.

Assuming the roofing manufacturer is the de facto designer and will correct your errors is an incorrect assumption. Assuming the roofing contractor will make it right in the field is an incorrect assumption. As the educated design professional, your standard of care is to continuously educate yourself to the ever-changing building envelope realm. Not knowing is not an excuse. Think about and understand the conditions you have created. Think about how the building's interior function will affect your design. Think about constructability, the time of year when the parts will come together (as I write, it is 21 F outside and water-based adhesive won't come out of the pail). Then, detail, detail, detail. Draw your details large: 3 inches equals 1 foot. Draw your details to scale; show all components; and understand how they are all interrelated.

Today's troublesome issues in the roofing industry don't have to be troublesome issues if you don't let them occur. 



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AIMING FOR ZERO

WRITTEN BY | ALLEN BARRY

**TWO SUSTAINABILITY-MINDED NON-PROFITS
WORK TO UPGRADE THEIR BUILDINGS TO
NET-ZERO ENERGY**



AGU PHOTOS/ILLUSTRATIONS: COURTESY AMERICAN GEOPHYSICAL UNION



The concept of net-zero energy building is ambitious. It also represents the very essence of sustainability. To truly live sustainably is to operate within the parameters of a natural system, without taking anything from it or leaving anything harmful behind. Net-zero buildings seek to do just that. Whether connected or off-grid, they are designed to produce as much energy as they use.

There are many different ways to approach net zero. Some designs go all-in on renewable-energy production to handle the load of whatever the building may need while others put a greater focus on superior levels of efficiency. There is a long continuum of means and methods.

If net-zero new construction is a lofty goal, net-zero retrofits are in the stratosphere. Taking an existing building and incorporating enough efficiency and energy production to get to zero is extremely difficult. But that doesn't stop people from doing it.

Two non-profit organizations in different parts of the country are currently undergoing transformations to their facilities with the idea of achieving net-zero. The organizations, situations and approaches to net-zero are different, but their goals are the same—to serve as an example and make the world a better, healthier place.

Capital Idea

The American Geophysical Union (AGU) is a non-profit dedicated to advancing Earth and space sciences for the benefit of humanity. Sustainability and climate-change mitigation are entwined in AGU's core mission.

In early 2017, AGU's board of directors agreed to a \$41.7 million net-zero renovation of its nearly 25-year-old, 62,000-square-foot headquarters building in the Dupont Circle neighborhood of Washington, D.C. This ambitious project would make AGU the first to complete a net-zero commercial renovation in the nation's capital.

An RFP went out, and the architects at Washington-based Hickok Cole Architects answered the call. The firm worked with project manager MGAC, general contractor Skanska and noted high-performance building engineer Interface Engineering to tackle the net-zero goals for the building.

"AGU had to upgrade their building, and they wanted to do it in a way that is reflective of who they are," explains Lindsey Falasca, project architect with Hickok Cole Architects. "They put cost aside and approached this asking, 'If we're going to do this, how are we going to do it right?'"

Any net-zero construction requires a combination of expensive, sometimes relatively untested strategies. Few owners are

American Geophysical Union, Washington, D.C.

Retrofit Team

OWNER // American Geophysical Union, Washington, D.C., building.agu.org

■ Christine McEntee, executive director/CEO

ARCHITECT // Hickok Cole Architects, Washington, D.C., www.hickokcole.com

■ Yolanda Cole, senior principal

■ Holly Lennihan, director of sustainable design, project manager

■ Lindsey Falasca, project architect

OWNER'S REPRESENTATIVE // MGAC, Washington, www.mgac.com

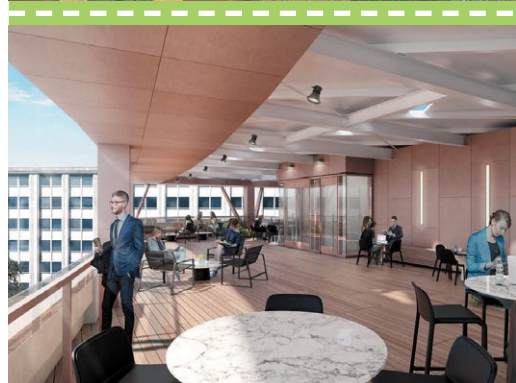
ENGINEER // Interface Engineering, Washington, www.interfaceengineering.com

DEVELOPMENT AND

CONSTRUCTION // Skanska, Washington, www.usa.skanska.com

COMMUNICATIONS/COMMUNITY

OUTREACH // Stratacomm LLC, Washington, www.stratacomm.net



ICA GreenRise, Chicago

Retrofit Team

OWNER // Institute of Cultural Affairs, Chicago, www.ica-usa.org

- Ted Wysocki, CEO/president
- Lesley Showers, property manager
- Mary Laura Jones, building fundraising
- Damien Blanchard, facility manager
- Jim Troxel, board chair

REAL-ESTATE CONSULTANT //

Henderson & Co., Chicago

- Irving Henderson, principal

ARCHITECT //

Farr Associates, Chicago, www.farrside.com

- Tony Holub, senior associate and project manager

ENGINEER //

dbHMS Engineering, Chicago, www.dbhms.com



ICA GREENRISE PHOTOS: COURTESY ICA GREENRISE

willing to undertake those costs and risks, but with a membership of 65,000 scientists, AGU is refreshingly open to new ideas. And because the organization is the owner and long-term occupant of the building, the association could afford to look at the big picture.

"AGU intends to be there many more years, so they are looking at the life cycle and payback over a very long term," says Yolanda Cole, senior principal, principal in charge, Hickok Cole Architects. "It allowed them to justify some upfront costs to get to longer-term decisions."

Strategies, Synergies and New Technology

Nearly 50 different strategies were considered at the start. Over time those were whittled down, refined and bundled together. Although AGU is open to new technologies, the group is also very judicious in its choices.

"[The owners] are very diligent about reviewing product specifications, information and research," Falasca says. "They even did their own energy model to test some of our assumptions. They're not afraid of new technology, as long as the facts and research are there to back it up. We eventually narrowed it down to just over 20 strategies that were implemented in the building."

One example of the kind of cutting-edge technology set to be employed on this project is a hydroponic phytoremediation wall, which helps filter toxins out of the air and assists in recirculating clean air without requiring an air-handling system to pull in unconditioned, outside air.

Another, more conventional approach was the incorporation of more than 700 solar panels on the roof of the building. While a boost to the energy equation, the PV did bring up some issues with historic neighborhood zoning and required a historic preservation review. Ultimately, smart design alleviated concerns of the PV array going over the property line, and the installation could move forward.

Energy will flow directly from the PV array to a direct current LED lighting system in the building, rather than converting the power to alternating current and sending it out to the grid. This limits the energy lost

in conversion and transmission and creates more efficient building power generation. "How we use energy in this country may change when people start generating power onsite because there are great efficiencies," explains Holly Lennihan, Hickok Cole Architects' project manager.

The AGU retrofit also will include a municipal sewer heat-exchange system that recovers thermal energy from wastewater and a radiant cooling system that will circulate chilled water through a network of pipes. The building also will feature enhanced envelope insulation and dynamic glass that shades itself in sunlight to limit heat gain. Work on the retrofit is underway and a complete move-in is expected by spring of 2018.

Rise of GreenRise

In another part of the country, another non-profit is tackling a different kind of net-zero challenge. This one looks to upgrade a much older building while dealing with numerous restrictions and a tighter budget.

The Chicago-based Institute of Cultural Affairs (ICA) in the USA is dedicated to building a just and equitable society in harmony with planet Earth through empowering cultural dimensions of the social process. ICA's home is in a terra-cotta-clad building that was originally built in 1921 with additions in 1926 and 1966. Known today as the ICA GreenRise, the building was given landmark status in 2013.

It is a mixed-use facility and home to a diverse range of tenants. Along with ICA, it has office space, a bank, medical office, pharmacy, worship space, retail and even is home to a number of families. What everyone in the building has in common is a desire to make the world a better place.

"ICA has always tried to address the social issues of our time, and we consider the environment and climate change to be a major issue," says Lesley Showers, ICA GreenRise's property manager. "We do a lot of neighborhood work to try to bring awareness and connect people. The largest asset we have is this building. We asked how we can use it to demonstrate our mission and share what we're learning so others can be just as energy efficient."

The real process of retrofitting the building for energy savings began in 2013



with an initiative of buildings in Chicago committed to lowering their energy use by 20 percent in five years. This fit with ICA's mission and they became the first non-profit to join.

A total lighting overhaul was followed by an elevator upgrade and a new roof on the third addition to the building. By

grabbing low-hanging fruit, the building became ENERGY STAR certified for the first time in 2014 and was able to reduce its energy usage by 23 percent in just three years. This was the beginning of the drive to net zero, but the process was further pushed by necessity.

"Around 2014 or 2015, a lot of our

systems started to fail," Showers recalls. "Our boilers started to fail. We have a 300-ton absorption chiller that was having problems. We started asking whether we should take a step back and look at what we want to accomplish with this building."

In 2014, ICA installed a solar array that now produces approximately 25 percent

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of the building's power. "That's when we really started looking at doing the whole building holistically and how we could cut our energy consumption," Showers says. "We started talking about getting the building off the grid and decided we were going to try to get this building as close to net zero as possible."

Aspiration and Challenge

Two years of planning produced a 78-page document outlining ICA GreenRise's sustainability strategies, which include swapping existing steam boilers with high-efficiency hot-water boilers, replacing a 300-ton absorption chiller with a new 200-ton chiller, replacing existing air-handling units with a dedicated outdoor air system and installing radiant ceiling panels. Accomplishing all of this is not without its challenges. For starters, the building's

historic status creates limitations on what can be done on the exterior façade.

"The landmark status has a real interest in keeping the terra cotta as it is, so we've started looking at insulating the interior walls on those façades," Showers explains. "But the façades on the back, on the south and west sides of the building, are brick so we can do a cladding on the outside to insulate there."

Another challenge stems from the fact that the building is occupied and the construction needs to work around the tenants.

"We can't just move everyone out," Showers says. "So we are juggling. As we move tenants off a floor, we're able to gut that floor totally, insulate the interior walls, change the windows out, and put all the new plumbing, electric and HVAC systems in."


And finally, there is the challenge of funding these kinds of upgrades to the building. The original budget for the project was \$20 million but that has been pared down to \$15.8 million.

"We are financing through a combination of New Market Tax Credits, Historic Tax Credits, help from the city of Chicago through Adopt-A-Landmark, as well as grants and our capital campaign," Showers explains. "We're trying to close the funding on the first phase and then start the funding for the second phase so we can continue on with construction and not have to stop and regroup."

First phase construction is expected to take six to eight months with all phases set to be completed by the end of 2019. "It's really ambitious to try to get this building as close to net zero as we possibly can, but what's really rewarding is the reason we are doing this," Showers says. "We have 25 different non-profits in this building that all serve the very vulnerable communities around this area and the homeless that are here. ICA is trying to inject its spirit into this building."

In spite of challenges with budget and logistics, the organization sees the chance to make its building a symbolic beacon. Showers notes: "We really believe that people who are struggling and come to our building to receive services should be able to enjoy a space that honors them and gives them hope. This building really has a purpose in serving vulnerable populations."

For both groups and both buildings, the journey to net-zero is ongoing. There will be bumps along the way, but both projects provide an important example. On the technical side, the successes and failures of the strategies employed on these buildings will help give a blueprint to future owners and designers striving for net zero.

But on a deeper level, both organizations demonstrate the most important aspect of net-zero energy construction—the will to do it. AGU and ICA will push through any challenges they face because they are dedicated to the true promise of sustainability. And where there is a will, there is a way. 

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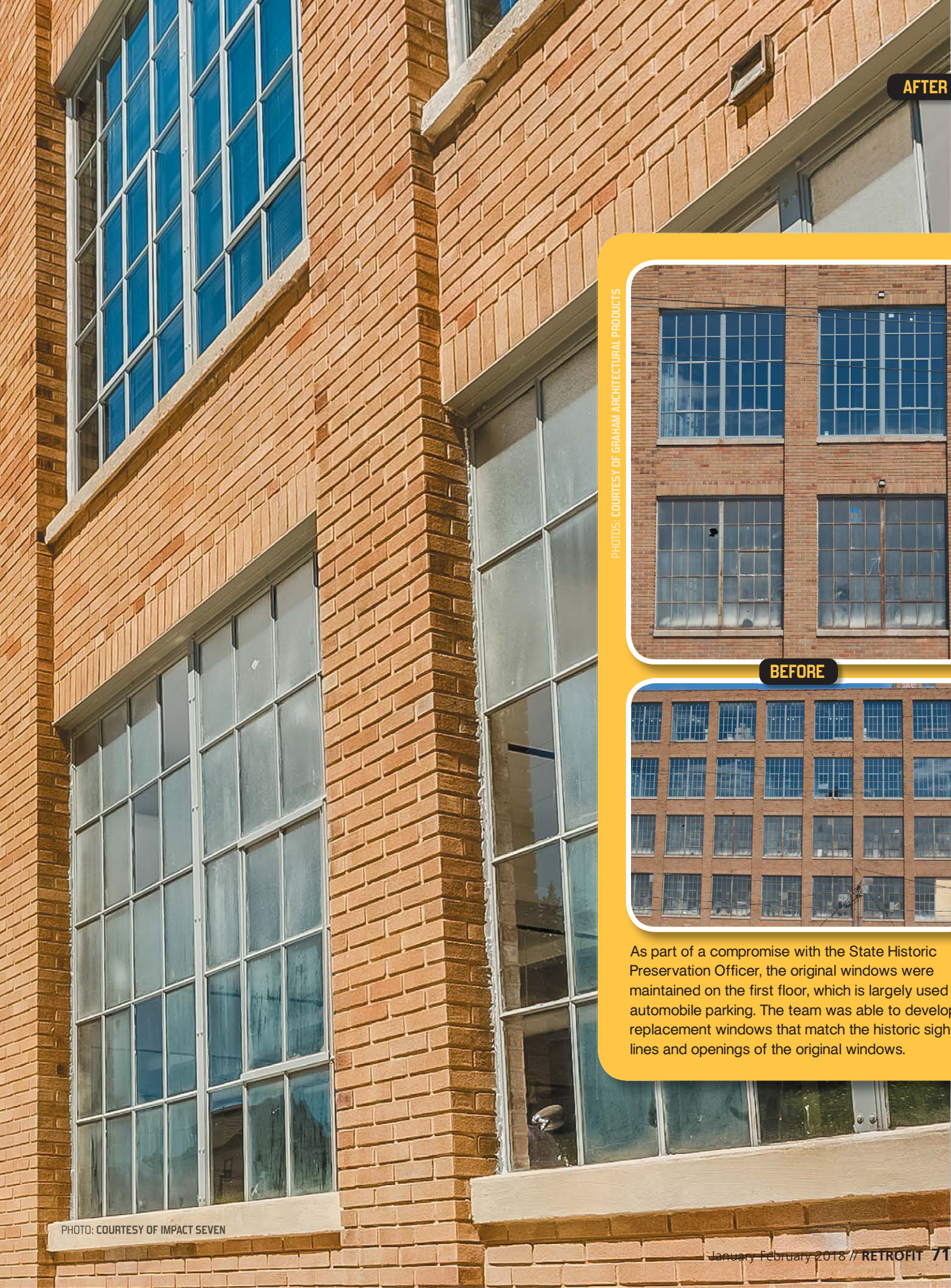
WRITTEN BY BRIAN LIBBY

The Artist Lofts in Wisconsin Brings New Life to a 1920s Aluminum Plant

For much of the 20th century, Manitowoc, Wis., was what one might call a company town, home to the Mirro Aluminum Co., once the world's largest manufacturer of aluminum cooking utensils with eight plants in three states. Two of those plants were in Manitowoc. But by 2003, the company had ceased operation, and in 2017 Manitowoc saw its larger facility demolished.

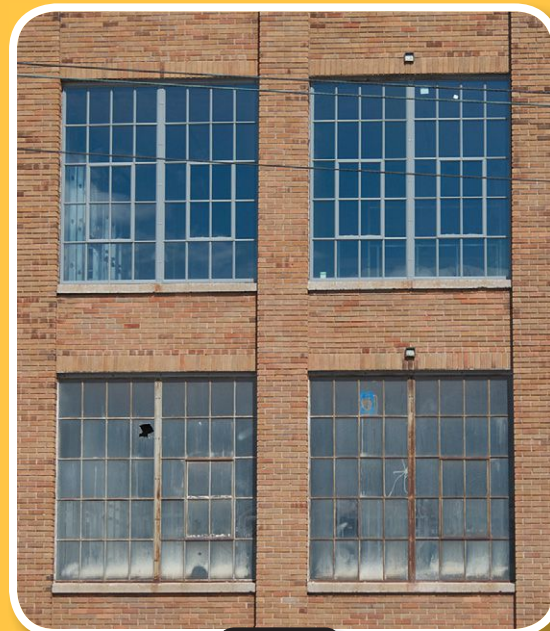
Thankfully there is a happier ending for Mirro Plant #3, dating to 1929, which for decades produced the company's popular MirroCraft line of lightweight pleasure boats. Production ceased in the early 1960s, and for many years the facility was occupied by artist studios. Yet the plant was continuing to deteriorate physically.

Now, however, the building has been fully restored as the Artist Lofts, a 40-unit affordable housing project serving tenants at 30 to 60 percent of the median income (with



AFTER

PHOTOS: COURTESY OF GRAHAM ARCHITECTURAL PRODUCTS



BEFORE



As part of a compromise with the State Historic Preservation Officer, the original windows were maintained on the first floor, which is largely used for automobile parking. The team was able to develop replacement windows that match the historic sight lines and openings of the original windows.

PHOTO: COURTESY OF IMPACT SEVEN



PHOTOS: COURTESY OF IMPACT SEVEN



four units reserved as market rate). Although the restoration by Milwaukee's Quorum Architects had to be historically sensitive to meet the demands of a National Register of Historic Places-listed structure (it was added in 2016), the project also met ambitious energy-efficiency goals, achieving the highest-ever score from Wisconsin's Green-built Homes program. "We were pretty proud of doing that with a historic building," says Kristine Giormalista, vice president of Rice Lake, Wis.-based Impact Seven, which is the owner and co-developer of the Artist Lofts.

Prior to renovation, the building seemed run down but had great potential, recalls Todd Hutchison of Milwaukee, Wis.-based Wisconsin Redevelopment, one of the project's developers. "The windows were broken out in a number of areas. It didn't look very pretty," he says. "But it just seemed like a solid building from the inside." Indeed, Hutchison recalls a moment when the owner took him in the freight elevator and stopped it between floors "so your eye was level with the floor," Hutchison recalls. "He'd say, 'Look: it's as straight as can be.' And it was. You could put a marble on the floor and it wouldn't go rolling away." Given the ceiling heights and the building's openness, Hutchison knew the conversion to residential lofts wouldn't require a lot of demolition. And while some of the windows seemed to need patching up, "They were so large, so inviting, and let so much natural light into the space," he adds. "That was really attractive."

Arguably the biggest attraction in terms of the building's suitability for converting to residences—the large windows delivering a bounty of natural light—was also one of the primary challenges. "It was a careful tight-rope between not disturbing the historic character and trying to create an energy-efficient building," Giormalista says. The team had to make the case to the State Historic Preservation Officer that the windows were in bad enough shape to need replacing. "Usually the windows are something that if at all possible historical societies want you to keep," she explains.

The team carefully surveyed all the windows to show they were in most cases not in sufficient condition to last another 30 years. As part of a compromise, however, the original windows were maintained on the first floor, which is largely used for automobile parking. The next challenge was "to develop replacement windows that matched the his-



Retrofit Team //

DEVELOPER AND OWNER //

Impact Seven, Rice Lake, Wis., www.impactseven.org

DEVELOPMENT CONSULTANT //

Wisconsin Redevelopment, Milwaukee, Wis., wisconsinredevelopment.com

ARCHITECT //

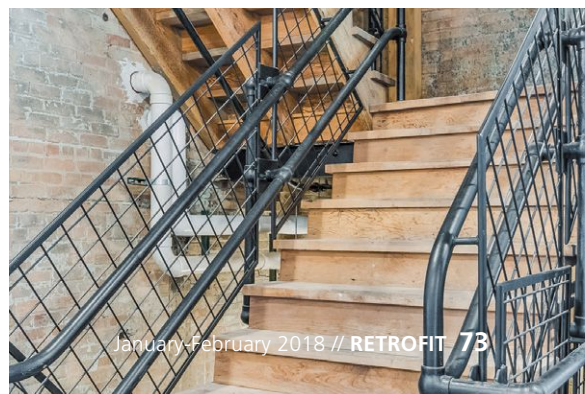
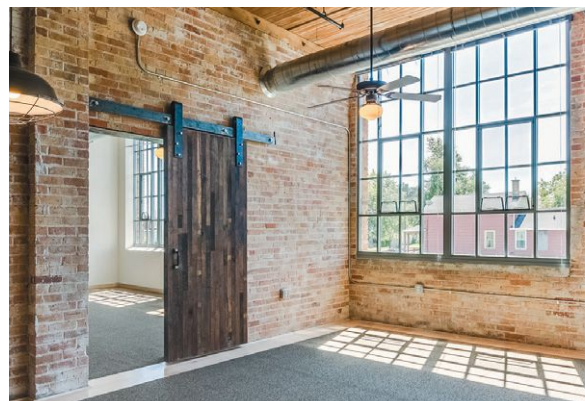
Quorum Architects Inc., Milwaukee, www.quorumarchitects.com

STRUCTURAL ENGINEER //

Pierce Engineers, Madison, Wis., www.pierceengineers.com

CONTRACTOR //

Catalyst Construction, Milwaukee, www.catalystbuilds.com



PHOTOS: COURTESY OF GRAHAM ARCHITECTURAL PRODUCTS



Arguably the biggest attraction in terms of the building's suitability for converting to residences—the large windows delivering a bounty of natural light—was also one of the primary challenges.

toric sight lines and openings,” explains Chris Hau, a principal with Quorum Architects. Yet the new windows had to be right. Historic steel-sash warehouse windows require a very specialized replacement window because of the very narrow sightlines of the frame and sashes. “What’s unique is there were some existing steel Ts running vertically that allowed the warehouse windows to fit into that opening, Hau explains, “so we were able to use some of that existing steel structure to put our new replacement windows in. It’s a blend of new and old.”

Hau also believes there has been a noticeable uptick in new window products for historic-building applications. “In the last 10 years, many manufacturers have been able to generate thermally broken assemblies in smaller footprints,” he says. “The window manufacturers are doing more projects so they have developed more product lines that meet the needs of historic-preservation projects.”

Inside, to convert an old industrial plant into contemporary apartments, the architects created a double-loaded corridor down the middle with units on each side,



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with those big windows filling each space with a bounty of natural light. But first they needed to address acoustics. The building had a unique feature: wood floors made of 2- by 6-inch planks end-nailed together, topped by regular hardwood flooring. Although sturdy, “it did not provide good sound masking,” Hutchison recalls. “The sound reverberated through the whole floor and you could hear other people’s conversations.” Builders removed the old hardwood floor, added 2 inches of sound matting and re-laid new hardwood flooring.


Many of the old floors were deemed too damaged to be reused in the units. “But we were able to salvage enough to put it back in the corridors,” Hau says. “It was a really distressed floor that had been a factory space, so it has a very rich patina that’s fantastic. You can’t buy something like this. People make distressed products that are designed to look like this. It was really fun to see that brought back into the project.”

The existing brick façade also needed attention, but the patching had to be invisible. “When we repointed the mortar where it had deteriorated, we sent that out for testing to make sure we got a mix that matched the historic mixture: not too hard or too soft,” Hau recalls. “We tuckpointed with mortar that matched the historic property.”

While parking comprises much of the first floor, there is a 1-story addition on the east side of the plant that has been converted to a fitness center, community room and a small art gallery, the last of which also serves as the home of a local design firm that curates the space. “It’s become an art gallery in a community that didn’t really have many,” Giornalista says.

The designers also took inspiration from historic Mirro colors, such as those used in MirroCraft boats, in the design of common areas at the Artist Lofts. “A Mirro boat was a Mirro blue, if you will: almost like a robin’s egg blue, so we tried to use those colors, and some of the colors from their marketing materials from the ‘50s and ‘60s,” Hau says. “We wanted to give meaning to and respect the history of the plant that was here.”

The Artist Lofts utilized a spectrum of funding sources, including federal and state historic tax credits. The project also received a grant from the Federal Home Loan Bank of Chicago and a Washington, D.C.-based U.S. Environmental Protection Agency grant for brownfield remediation.

Yet there was also plenty of interest in the four market-rate units. “We had to turn a lot of people away,” Giornalista says. “But even though we saw considerable market demand, it wouldn’t have offset the equity we got.” Giornalista sees that demand as a reflection of the project’s success. “When you talk to people in the community, they’re pleased that at least one of the Mirro buildings has been saved. I think it’s a point of pride.” 

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WRITTEN BY | ROBERT NIEMINEN



PHOTO: RICHARD JOHNSON

The Line Between Commercial and Residential Interiors Is Disappearing—and the Workplace Has Never Looked or Felt Better

Among the more noticeable impacts the Digital Revolution has had on daily life is the way in which it has reshaped the landscape of the workplace. Gone are the days of cubicle farms and corner offices, which became the punchline of comic strips and cult films and exposed an underlying, rather dismal truth:

People were never meant to work in boxes. Thankfully, mobile technology has helped break the shackles that have kept employees tethered to their desks for so long and ushered in a new era of openness, flexibility, and comfort in offices that are

beginning to look and feel more like home.

To that point, Kevin Kuske, author of a recent Business News Daily article, observed having choice and control are important when it comes to designing effective workplaces where creativity can flourish.

“Different types of work are best done in different settings, and all of that flexibility can’t be delivered by one desk and chair,” he observed. “Is that how you work at home? Serendipity does not only happen sitting next to the same person every day.”

As Kuske alludes in his article, among the defining characteristics of the new workplace is a sense of freedom and comfort reminiscent of residential environments—a fact that makes perfect sense given the number of telecommuters and independent contractors



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As more people work from home after office hours or as telecommuters, the comforts they are accustomed to in their residences are emerging in the workplace.

in today's workforce. In fact, according to Gensler's 2016 U.S. Workplace Survey, 40 percent of the U.S. workforce is estimated to be independently employed by 2020. As such, the survey revealed many companies are struggling to attract and retain good talent, just as emerging technologies and co-working trends (see "Trend Alert", July-August 2015 issue, page 68, or bit.ly/2hjPqTO) empower more workers to step out of the corporate structure and become freelance consultants that work from home or other "third places", such as coffee shops and libraries.

With the lines between home and work becoming almost obsolete now that people can work anywhere a Wi-Fi connection is available, commercial buildings are taking on a distinctly residential, or "resi-mercial", aesthetic, blending the

best of both worlds and opening up opportunities and challenges for facility executives.

Work and Life Converge

As noted at the onset of this article, one of the primary drivers of the residential trend in interiors is technology. With people constantly on the go, juggling work and personal demands often simultaneously, the workday has extended far beyond the four walls of an office and typical 9 to 5 timeclock as employees increasingly seek balance between work and their personal lives.

"I think what's happening is today people are becoming more connected, and the concept of work and workplaces continues to shift," observes Daniela Barbon, ARIDO, LEED AP, director of interior design in HOK's Toronto office.

"Especially with all of the mobile technology we have and not being tethered to a desk, the workplace kind of follows us home. Working anytime, anywhere is becoming more and more common."

Barbon explains as more people work from home after office hours or as telecommuters, the comforts they are accustomed to in their residences are emerging in the workplace. Whereas the office was once characterized by a series of endless workstations, she says the landscape changed and softened—a transformation that can have a positive impact on employees' wellbeing, another driver behind this trend.

CallisonRTKL Senior Designer Betsey Friedman, NCIDQ, IIDA, LEED GA, Seattle, adds: "The environment we surround ourselves in

(continues on page 80)



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has an enormous impact on our physical and mental well-being, which has been a huge focus for workplace interiors. A resi-mercial environment that provides a home-like setting will reduce employee stress and boost their productivity.”

Friedman notes oftentimes employees don’t feel comfortable having delicate conversations in the middle of an open office or a formal conference room, so corporate environments now incorporate more relaxed settings for those interactions to take place naturally. “It’s an advantage that can be realized by taking down hierarchies that can stand in the way of collaboration,” she explains. “These [resi-mercial] environments help in attracting and retaining talent and that’s something employers are looking to do, so that can be another driver, as well.”

Although the term

“resi-mercial” implies a distinctly residential feel and quality to commercial spaces, Barbon points out the trend is influenced equally—if not more so—by the hospitality market.

“When we’re looking at the softening of the workplace or the blurring of the lines, even though it might have a residential feel, it’s really the cues we take from the hospitality market that are important,” she explains. “If you think about it, it’s really about the drivers—the sense of arrival; the importance of first impressions; a sense of welcome; creating touchpoints throughout the space that align with the brand internally and externally.” Additionally, Barbon says a sense of community is important in corporate offices today, “so the whole idea of creating social hubs—the lobby lounge, cafés, great rooms—even though there are those residential

elements, qualities, and feel, it is the hospitality mindset and approach that really helps.”

Obstacles and Opportunities

Obviously, most existing commercial buildings were not designed with a residential approach in mind. As such, adapting a space from a traditional corporate office or other commercial use to a more open, flexible one with the amenities and touches of home comes with challenges. But what older buildings lack in terms of ease of adaptability, they often make up for in charm.

“When you get these great adapted buildings there’s already character built into them,” Barbon explains. “Of course, you may have some challenges with that because it may not have the proper mechanical systems and the infrastructure in place, but

there are ways of being able to deal with that creatively and then work with your engineers to be able to achieve that.”

Friedman agrees and points out the success of retrofitting an existing office space to adopt a more residential aesthetic is contingent upon the project itself. However, she adds some existing structures are ideal for that type of transformation, regardless of the inherent challenges they may present to a design team.

“I think it really depends on the project and the space itself,” Friedman says. “Some buildings will lend themselves nicely to a resi-mercial aesthetic, such as an industrial warehouse being retrofitted to a workplace, for example. But if a building has small windows, natural light can be challenging, and another thing that is always a challenge is acoustics. It’s something that needs to be

“The environment we surround ourselves in has an enormous impact on our physical and mental wellbeing, which has been a huge focus for workplace interiors and a resi-mercial environment that provides a home-like setting that will reduce employee stress and boost their productivity.” —Betsey Friedman, senior designer, Callison RTKL



PHOTO: ARI BURLING

considered from the earliest stages of design but, depending on the building, that could be more difficult.”

Additionally, while an existing space may be ideal for a residentially inspired redesign,

the client may not be. “You have to consider the type of client, the type of building they’re in, the brand and how they want to project themselves,” Friedman advises. Further, she says it’s important to understand

the type of work environment and culture the client wants to create. If it’s highly collaborative, the residential trend will work very nicely. “But there are certain work styles that it may not work for, so it really does

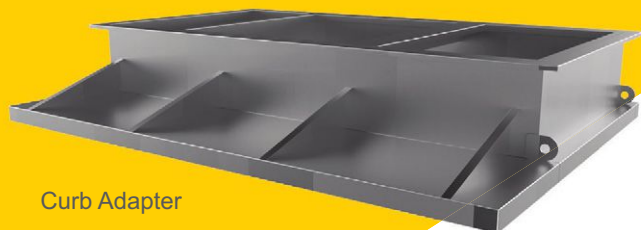
need to be taken on a project-specific basis,” she points out.

Barbon echoes that assessment, adding the design of any workplace is ultimately an extension of the client’s culture, and implementing a certain

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design just because it's trendy is a mistake. "At the end of the day, you can create this new, dynamic space with great lounges and a variety of seating but if the culture doesn't allow you to do that or the mindset isn't there, it doesn't matter how great the design of the space is," she says. For such a

transformation to be effective, Barbon says employees must be empowered to exercise choice in how and where they work within the office. In other words, the old mindset, "If you're not at your desk, you're not working," must be abandoned. Further, she advises the end user must also be taken

into account; a multigenerational workforce will influence the culture of the organization differently than one that's made up primarily of millennials, for example.


Finally, achieving a residential aesthetic in a workplace setting involves more than just outfitting an existing facility with a few couches and lounge chairs. It must be thoughtfully planned out and meet the demands of the space and end users.

"Just because it looks comfortable, doesn't mean it's comfortable," Barbon notes. "You need to understand the ergonomics and the aesthetics of [the furniture]; they go hand-in-hand. It's not just going out and buying a sofa from West Elm and sticking it just anywhere but making sure where you're placing it also has to function."

Ongoing Evolution

When asked if the residential trend is a passing fad or a more permanent shift in the way workplaces are designed, Barbon and Friedman agree it most likely will have staying power because of the drivers behind it.

"I think looking down the road people are going to need increased flexibility in where they work," Friedman predicts. "They're going to want environments that support their wellbeing and, culturally, the lines between work and office are becoming increasingly blurred. It's something I think will probably be a more permanent shift because people have more flexible hours and need more flexible spaces, so [in some ways] the home and the workplace are going to become one."

Barbon says whether it's fashion, food or interiors, people will continue to seek choice, wellbeing, and balance in their lives that will continue to drive the evolution of our interior environments to be more human-centric—at home or work. "I believe the workplace will always focus on people because if you think about it, that is probably the biggest investment above technology and the building itself. The idea of creating balance—with one's life and work, balance within the workplace and with technology—it will impact the design [of the workplace] and how we work. I think it's an evolution." 



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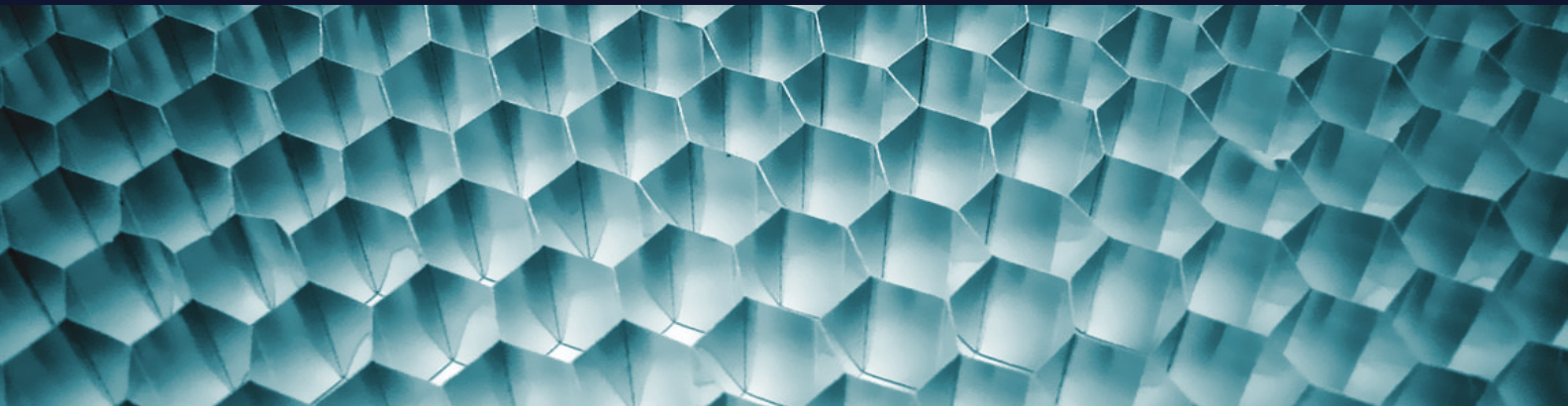
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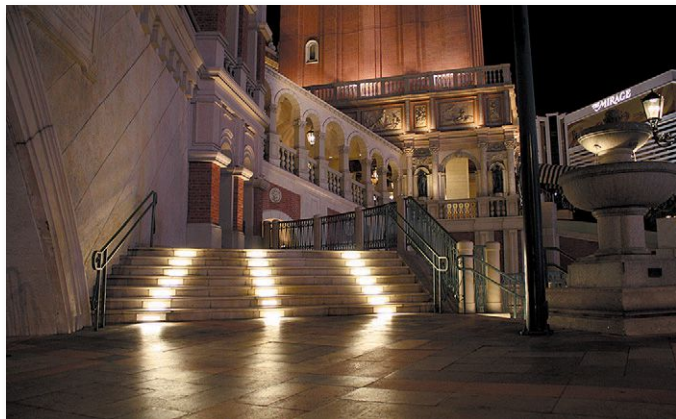
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← STEP LIGHTS RESIST WATER INFILTRATION

AMERLUX has launched Passo step lights, which boast an independently sealed LED Optical Chamber to eliminate water infiltration. The luminaires are typically used for steps, staircases and in walls to light walkways and add aesthetics to building façades.

Passo offers a wide selection of sizes, faceplates, color temperatures and light outputs to meet the specifications of many projects. The step lights are available in 8- and 12-inch rectangular shapes for retrofits. Each luminaire is available in a choice of two output levels to tailor the desired illuminance for the project.

www.amerlux.com // Circle No. 90

MANAGE STORMWATER WITH PRE-VEGETATED ROOF TRAY ↓

AMERICAN HYDROTECH has introduced its InstaGreen GT-4 pre-vegetated tray, which consolidates growing media, drainage and vegetation in one package for easy transport and installation by roofing professionals and landscape contractors. The 12- by 24-inch tray, which is composed of 100 percent recycled content, can hold up to 4 inches of media for plant growth. Its reservoir base design allows for increased water capacity and sustained plant growth in times of drought. Integral connector clips form a unified, seamless, vegetated surface and resist wind uplift. Vegetation options for the InstaGreen GT-4 tray are a standard sedum species blend designed to accommodate the rooftop conditions. A range of perennials also can be added to provide increased color, texture and habitat.

www.hydrotechusa.com // Circle No. 91



← EXTREMELY VERSATILE BOILER IS EASY TO INSTALL

RAYPAK introduces the XVers commercial stainless steel fire tube boiler. XVers has many advanced features that ensure long life and simple, quick commissioning for the installer. With an input range from 856-3,006 MBTUH, the XVers may be applied to primary flow or primary-secondary systems. With innovations such as Sure Start, integrated flow sensor, and simple programming for vent material and glycol, contractors and engineers are able to install with extreme ease.

www.raypak.com // Circle No. 93

SEALANT IS SUITABLE FOR VARIOUS INDOOR, OUTDOOR APPLICATIONS ↓

BOSTIK INC. has introduced Bostik Bosti-Flex Plus, a siliconized acrylic latex sealant. The product has been developed for multi-purpose applications that include countertops, door frames, shower surrounds, sinks, tubs, windows and bonding applications for ceramic tile, natural stone and wood trim. Bosti-Flex Plus is available in six colors, complementing various Bostik grout colors, and may be painted with latex or oil-based coatings. For interior and exterior applications, Bosti-Flex Plus is mold and mildew resistant, provides elasticity for flexible joints, emits zero VOCs, and is easy to apply and clean. The product is offered in a case consisting of 12, 10.1-ounce cartridges.

www.bostik.com/us // Circle No. 92





HEAT RECOVERY SYSTEMS ARE ENGINEERED FOR HEATING-DOMINANT APPLICATIONS

DAIKIN NORTH AMERICA LLC has released its Daikin VRV AURORA 230/460V Heat Recovery Systems. The systems are engineered and optimized for cold-climate and heating-dominant applications; the VRV air-cooled system delivers efficient heating down to -22 F. The series is available in 6-, 8- and 10-ton single modules and 12-, 16- and 20-ton multi-module systems. The VRV AURORA features refrigerant-cooled efficient and stable inverter board operation, independent of ambient conditions. The systems' hot gas base pan circuit allows installation without an additional condensing unit base pan heater. The series comes with a standard 10-year limited warranty.

www.daikinac.com // Circle No. 94

POLYISO PRODUCTS ELIMINATE HALOGENATED FLAME RETARDANTS →

CARLISLE SYNTEC SYSTEMS has made available its InsulBase NH and SecurShield NH polyiso insulations. These products provide the same performance characteristics as standard polyiso products but contain no halogenated flame retardants. InsulBase NH and SecurShield NH are Living Building Challenge "Red List Free" with Declare label and product database listing, can contribute to LEED v4 points and are California Department of Public Health VOC emissions-compliant.

www.carlislesyntec.com // Circle No. 95



RENEWABLE ENERGY BATTERIES NOW INCLUDE FLAT TOP COVER

Sun Xtender 12 Volt Group 31 batteries, manufactured by CONCORDE BATTERY CORP., now include a flat top cover and lifting handles. The flat top cover was designed to be compatible with standard

hold-down configurations and eliminates the

need to modify hold-down apparatus or revise cable routing; terminals now are more accessible. The new cover also incorporates removable ergonomic lifting handles to reduce installation difficulty without causing interference. This upgrade affects the following 12-volt part numbers: PVX-890T, PVX-1080T, PVX-1180T, PVX-1290T and PVX-1530T.

www.concordebattery.com // Circle No. 96



ATTACHMENT RAILS CAN BE USED WITH THIRD-PARTY RAINSCREEN SYSTEMS

KNIGHT WALL SYSTEMS now offers its PanelRail cladding attachment rails for use with systems other than Knight's proprietary rainscreen attachment systems. PanelRails can be employed as a second layer of rails to help accommodate different panel layouts and sizes to add depth. They also can be used in assemblies not requiring exterior insulation, where rails are installed directly over the substrate (steel studs with gypsum sheathing, wood studs with sheathing, CMU, etc.), enabling increased air flow behind the cladding while allowing water to drain efficiently. Rails may be attached to substrate or other rails in a vertical or horizontal orientation with a standard depth of 3/4 inch in face dimensions of 2, 3, 4 or 5 inches. The rails are available in 18- and 16-gauge corrosive-resistant Zn-Al-Mg ZM40 coating and can be specified in standard silver or a coil-coated black PVDF finish.

www.knightwallsystems.com // Circle No. 97



← SYSTEMS DELIVER ENERGY-EFFICIENT HEAT IN COLD CLIMATES

LG AIR CONDITIONING

TECHNOLOGIES is adding LG "Reliable to Extreme Degrees" (RED) heating technology to more products, including the Multi F and Multi F MAX multi-zone outdoor units. LGRED provides 100 percent rated heating capacity down to 5 F with continuous operation down to -13 F. The multi-zone systems have the option to be installed fully ductless for optimal performance or combined with ducted systems for

increased design flexibility. The LGRED Multi F systems also feature a SEER rating of up to 21, qualifying them for ENERGY STAR certification, as well as eligibility for participating local utility company rebates.

www.lgredheat.com // Circle No. 98



↑ LED DOWNLIGHTS PROVIDE MORE THAN 77 LUMENS PER WATT

EARTHTRONICS has introduced its IC-Rated LED Recessed Downlight Fixture Series to provide interior illumination for commercial, residential and municipal facilities. Available in 4- and 6-inch diameters, in 3000K and 5000K color, the series can be installed in finished drywall or architectural tile ceilings. Each of the downlights accepts 120-volt AC power supply and provides more than 77 lumens per watt with an 80+ CRI for improved visual acuity and efficient performance. The 4-inch, 7-watt downlight provides 550 lumens while the 6-inch, 9-watt provides 700 lumens. Both downlights include smooth dimming down to 5 percent on typical incandescent dimmer controls. The LED fixtures meet IECC air-leakage requirements and are UL Wet Location listed.

www.earthtronics.com // Circle No. 100



↙ FOLDING GLASS SYSTEM OFFERS HURRICANE PROTECTION

NANAWALL SYSTEMS has announced its hurricane system for mid-rise buildings: the NanaWall SL73 Miami Dade/AAMA Hurricane Folding Glass System. The NanaWall SL73 provides a large opening combined with hurricane protection for buildings of up to 8 to 10 stories. The system features clean lines with narrow stiles and rails to maximize glass areas. It has been tested to Miami-Dade County Protocols PA201 (large missile impact), PA202 (structural pressure, air, water, forced entry) and PA203 (cyclic pressure), as well as higher structural performance levels and static water testing required for mid-rise buildings. Thermally broken for energy efficiency, the SL73 has been rated, certified and labeled in accordance with NFRC 100 and 200.

www.nanawall.com // Circle No. 99

LINEAR, PERIMETER AND RECESSED LUMINAIRES ARE COMPETITIVELY PRICED ↓

HUBBELL LIGHTING's Litecontrol has launched a portfolio of architectural-grade products as part of its reinvigoration of the "SAE" (Simple. Affordable. Efficient.) Program. The SAE Program addresses a market gap for competitively priced luminaires in the linear, perimeter and recessed categories. Four products—SAE101, SAE102, SAE201 and SAE202—feature Litecontrol's Variable Intensity (Vi) Technology, which helps specifiers match output or power, in 50 lumen increments, to meet precise needs whether indirect or direct output. The SAE101 rectilinear and SAE102 curved pendants are small-scale, modern pendants with versatile performance options and efficacy up to 137 lumens per watt for indirect and 102 lumens per watt for direct. The SAE201 is an architectural-grade concealed cove luminaire, which features an adjustable beam angle that can be manipulated pre- or post-installation. The SAE202 is a recessed wall/slot luminaire designed for perimeter lighting needs.

www.litecontrol.com // Circle No. 101



LIQUID-APPLIED COATINGS PROTECT WALLS, MAKE ROOFS REFLECTIVE ↓

KEMPER SYSTEM AMERICA INC. has made available its Wall Guardian FW-100A and Roof Guardian. Wall Guardian FW-100A fibered acrylic air barrier acts as a water/weather barrier and vapor retarder to prevent moisture buildup that can lead to mildew and mold. The coating can be applied by sprayer, roller or brush when temperatures are 40 F and rising. It meets IECC 2015 standards and exceeds ASTM E2357 by a factor of 100. Roof Guardian elastomer-based coating options can cost-effectively transform metal, BUR, modified bitumen and aged

single-ply roofs into reflective cool roofs that can reduce building energy requirements. Roof Guardian RG-170 is a white finish coat with a solar reflectance index of 109. Roof Guardian RG-180 is a fibered white coating (SRI 108) that achieves a Class A fire rating. Both are ENERGY STAR and CRRC-rated.

www.kempersystem.net
// Circle No. 102



Roof Guardian

↑ ACM PANELS FEATURE TEXTURED FINISHES

The ALUCOBOND PLUS naturAL Terra Series, featuring six textured finishes inspired by iridescent stone, has been released by 3A Composites USA. The aluminum composite material (ACM) line includes Arctic Frost, Clear Ice, Lava, Precast Grey, Sierra Sand and Terra Cotta finishes, designed to sparkle in daylight like iridescent stone but, because the panels are ACM, they are lighter weight and can be formed into unique shapes. Terra Series panels also are weather-resistant and colorfast. Alucobond PLUS consists of two sheets of 0.020-inch aluminum thermobonded to a proprietary fire-resistant core. The wall panels have a flame-spread index of less than 25 and a smoke-developed index of less than 450 when tested in accordance with ASTM E 84. They also have achieved a Class A interior finish classification.

www.alucobondusa.com // Circle No. 103

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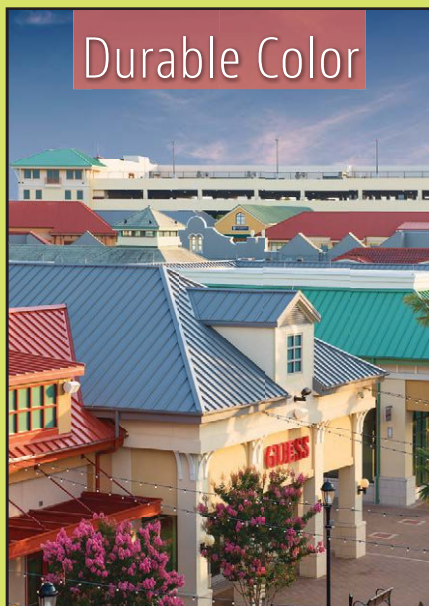
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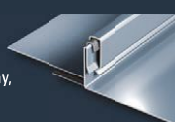
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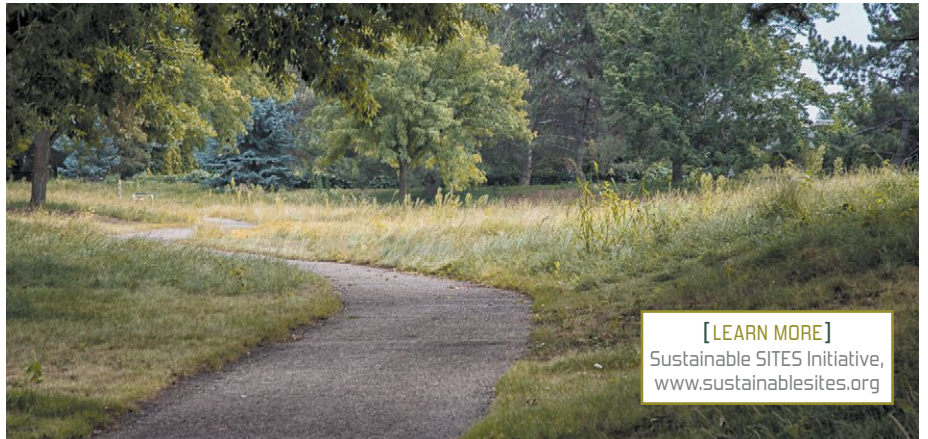
CORPORATE CAMPUS ACHIEVES SITES GOLD RATING



HP Inc.'s Boise, Idaho, campus was awarded Gold under the Sustainable SITES Initiative rating system. Owned and administered by the Washington, D.C.-based Green Business Certification Inc., SITES is a comprehensive program for designing, developing and maintaining sustainable landscapes.

HP's Boise sustainable landscaping project is the first to earn a SITES certification in the state of Idaho and the first corporate campus in the world to be certified using the SITES v2 rating system. Through this project, HP collaborated with more than 10 local and national groups to replace non-indigenous grass on campus with native grasses that require less maintenance and attract local pollinators. Stack Rock Group, Boise, was the lead landscape architect on the project. The campus now saves 82,900 cubic meters of water annually and has reduced emissions by 90 percent and landscaping costs by nearly 50 percent. The project will reach full maturity by summer 2019.

"At HP, we strive to make life better for everyone everywhere—not just through technology, but through sustainability efforts within our operations and supply chain," says Cynthia Rock, HP's head of Corporate Real Estate and Workplace Services. "Through this landscaping project, we're using less water, producing less emissions and increasing bee production—ultimately protecting our planet for future generations."




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www.sustainablesites.org

The SITES rating system is based on the understanding that land is a crucial part of our built environment and by fostering its resiliency we elevate its economic, environmental and social benefits. SITES provides best practices and benchmarks projects against performance criteria, enabling the market to quantify and rate the sustainable use and performance of land sites. SITES-certified projects are better able to withstand and recover from floods, droughts, wildfires and other catastrophic events.

"HP understands that a green environment extends beyond the four walls of a building," explains Mahesh Ramanujam, president and CEO, U.S. Green Building Council, Washington, and GBCI. "Through the use of SITES, projects like this are creating ecologically resilient communities,



reducing water demand, improving air quality and human health by connecting people to nature. Their work is part of the growing movement to holistically approach sustainable development and construct green buildings with accompanying green landscapes in green communities." 



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