january-february 2021 // retrofitmagazine.com

retrofit

2020 retrofit TOP 25 PRODUCTS

Celebrated Style:

An Iconic Austin, Texas, Mid-century Building Is Preserved as an Office + More Office Facilities

TREND ALERT: physical & mental wellbeing in workspaces

IMPROVING YESTERDAY FOR TODAY

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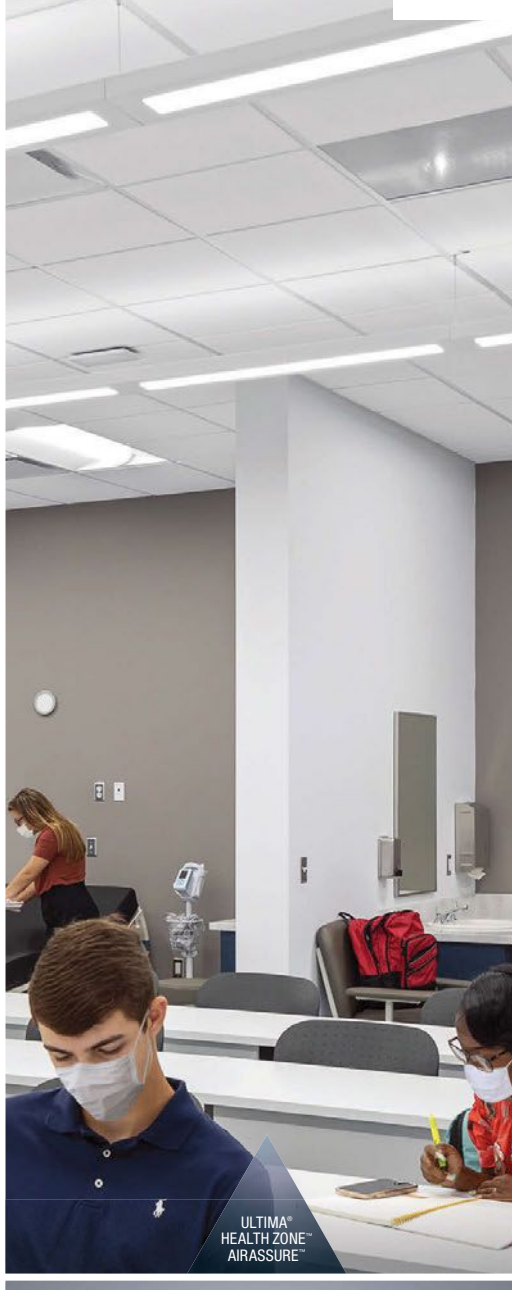

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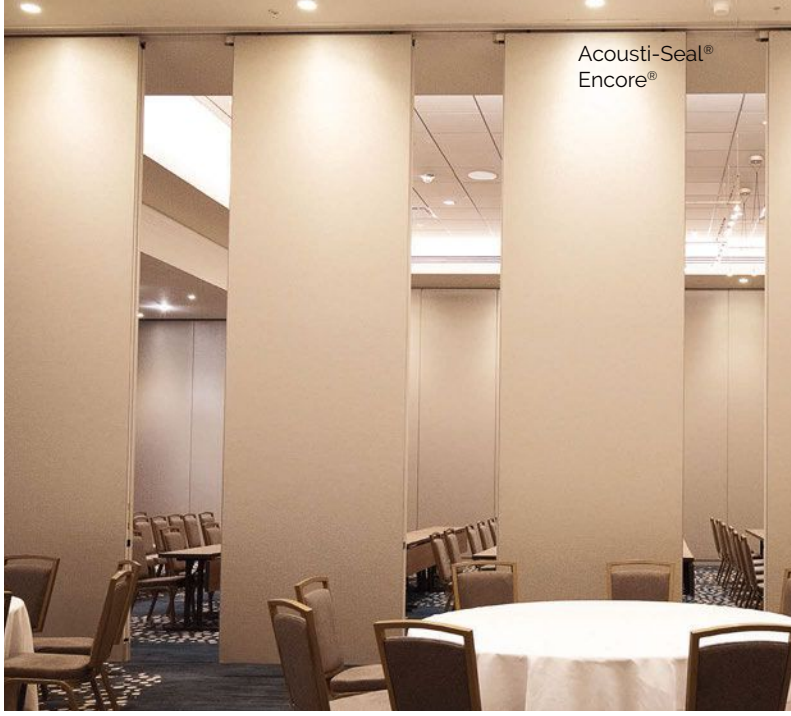
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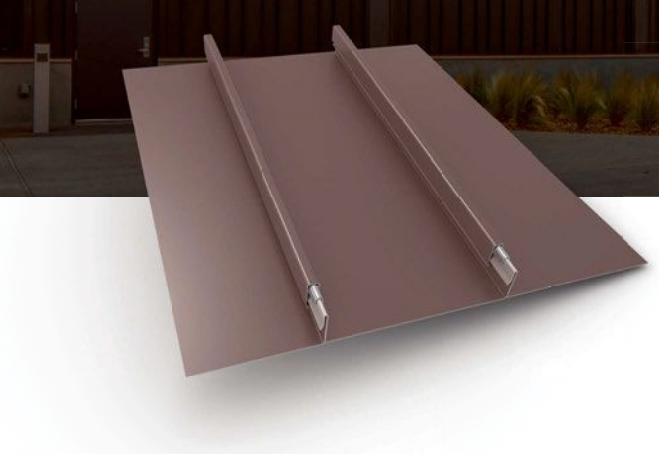
Minor League, Major Appeal

Three widths of Snap-Clad panels combine to reduce the magnitude of the Las Vegas Ballpark, named best ballpark by two media groups. "We wanted to break down the module in a varied panel to reduce the overall scale."

-Devin Norton, project designer, HOK San Francisco



Las Vegas Ballpark, Las Vegas Contractor: Southwest Specialty Contractors Architect: HOK, San Francisco GC: Penta Building Group, AECOM Hunt Owner: Howard Hughes Corp. Photo: alanblakely.com

Snap-Clad

Metal Panel System
(in a repeating pattern using
8″, 10″ and 12″ widths)

Custom color: Chocolate Chip

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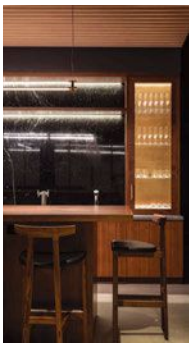

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PERUSE OFFICE FACILITIES FROM ACROSS THE COUNTRY:

- Connecticut Innovations, New Haven, Conn.
- Virtus Investment Partners, Hartford, Conn.
- Kiewit Engineering, Lenexa, Kan.
- Project Worldwide Headquarters, New York
- McFarlane Architects, San Diego
- Nomad Tower, New York
- Courthouse Square, Lexington, Ky.
- ASHRAE Headquarters, Peachtree Corners, Ga.
- The Cannon, Houston

cover

COVER PHOTO: **LEONID FURMANSKY**

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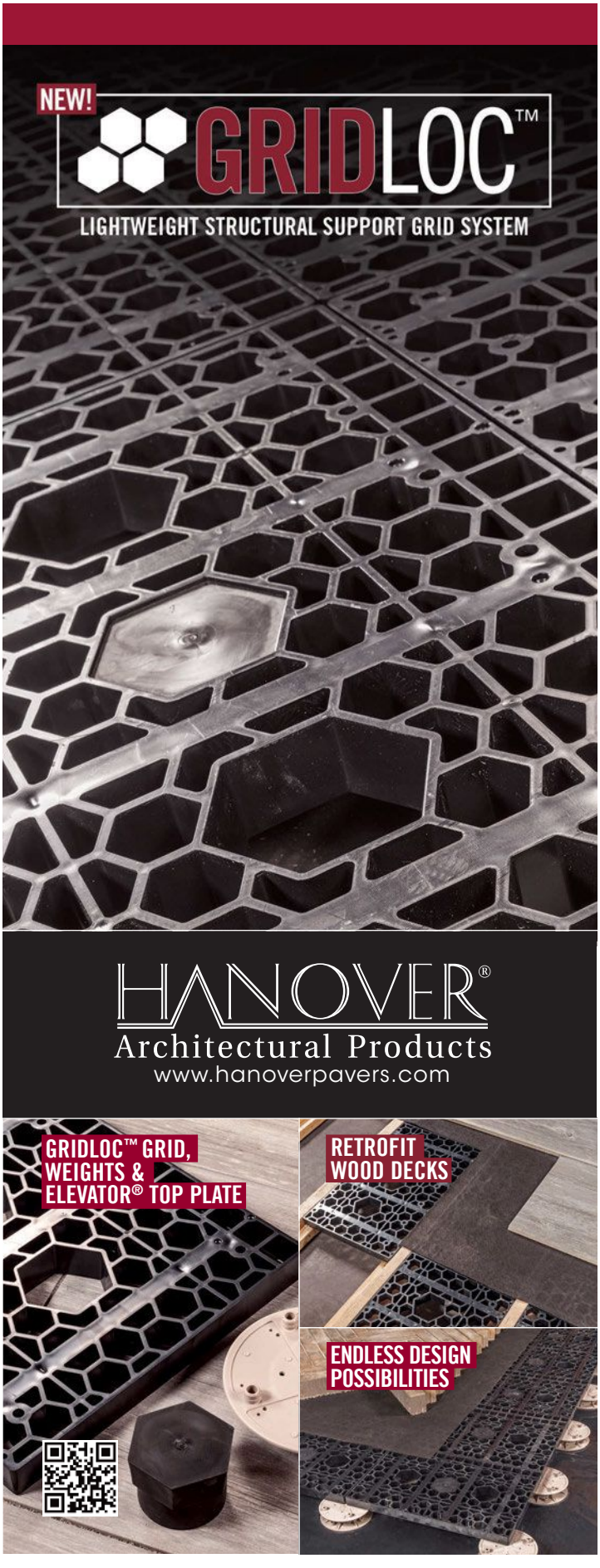

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THE INCOMPARABLE DAN BURKE

Our hearts are broken. One of our own, our salesperson extraordinaire, Dan Burke, passed away unexpectedly in early December. Those of you who read ***retrofit*** may not have had the pleasure of knowing Dan, so I'd like to take a moment to reminisce about this one-of-a-kind man.

Dan joined our team in 2007. We weren't the ***retrofit*** team then; we were the *eco-structure* and *metalmag* team, magazines created by our publisher, John Riester, in the early 2000s. Dan's easygoing personality quickly established him within our small group and he became a valuable—and valued—member. Eventually, we all briefly went our separate ways until the entire band got back together for ***retrofit***. And that's when the real fun started.

Dan was a New Jersey native with a charming personality, a dapper style and a booming laugh. He had a big heart. Dan loved fiercely and shared his feelings openly. He also was a good listener and would remember things you told him years later. He adored music and played trumpet in a band for years. He was a New York Giants fan, and Monday morning conference calls in the fall typically began with a rundown of the Giants performance over the weekend. Dan enjoyed a good vodka at the end of a hard day and relaxing in front of a dramatic television series.

Nobody could work a trade show like Dan. Sometimes we'd crisscross the show as a team; other times we'd split up. When we'd regroup at the end of the day, my mind would be blown by the stack of cards Dan would have from people whose hands he'd shaken that day. Dan loved to bring in new business and was what John calls "a phone banger," making tons of phone calls (and sending umpteen emails) each day, seeking the ad dollars we need to keep ***retrofit*** thriving. Dan's work ethic was an integral part of ***retrofit***'s success. And with Dan's successes came certain catchphrases that will stick with me forever: "Oh, no way! Get out!" and "Thank you, sweet baby Jesus!" were often exclaimed in his Jersey accent along with his boisterous laugh. (Dan's name will continue to appear on our masthead this year as a tribute.)

Dan had a fear of cats. I have cats and it tickled my funny bone that a big man like Dan could be fearful of such sweet little creatures. Dan once stayed in my condo in Chicago during a trade show. Before he closed the guestroom door at the end of the night, he had to make sure I had both my cats. He was convinced a cat would smother him in his sleep!

One of my favorite Dan stories happened during A'18 in New York City. Dan and our publisher John shared a hotel room and Dan woke up in the middle of the night roaring like a bear because of a wild dream. John, who is 6-foot, 4-inches tall, flew out of bed in fear and slammed into the wall of the tiny room. Dan and John had me crying with laughter when they shared the story the next morning.

Dan experienced a lot of challenges and tragedies. A lesser person would've folded, but not Dan. He always had a smile on his face. He always was eager to contribute to our team. He always wanted to make sure those around him were OK. His beautiful spirit helped him triumph over adversity.

Our ***retrofit*** team is small. I always have felt extremely fortunate to not only do a job I love, but to work with people who have become members of my family. However, that makes this loss particularly difficult. Our ***retrofit*** team will reminisce about Dan, especially when we are together, and there will be tears. But there also will be tons of laughter because Dan brought so much joy to us over the years. One of these days, when we can travel again—doing what Dan loved—there will be a vodka at the end of the day at the seat where Dan should be.

We love you, brother!

Christina Koch

CHRISTINA KOCH
Associate Publisher/Editorial Director
retrofit

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Anywhere you see a video player icon, we've embedded a video in our digital edition of this issue. Visit www.retrofitmagazine.com and click on our digital edition in the top right corner. Then, flip to pages 3, 18, 24, 25, 26, 28, 36, 48, 51 and 84 to watch videos that will give you more insight about the stories, products and ads you see in this issue.

retrofit's road warriors celebrating a successful day at Greenbuild 2014 in New Orleans. Left to right: Dan Burke, Christina Koch, John Riester, Becky Riester and Barrett Hahn.

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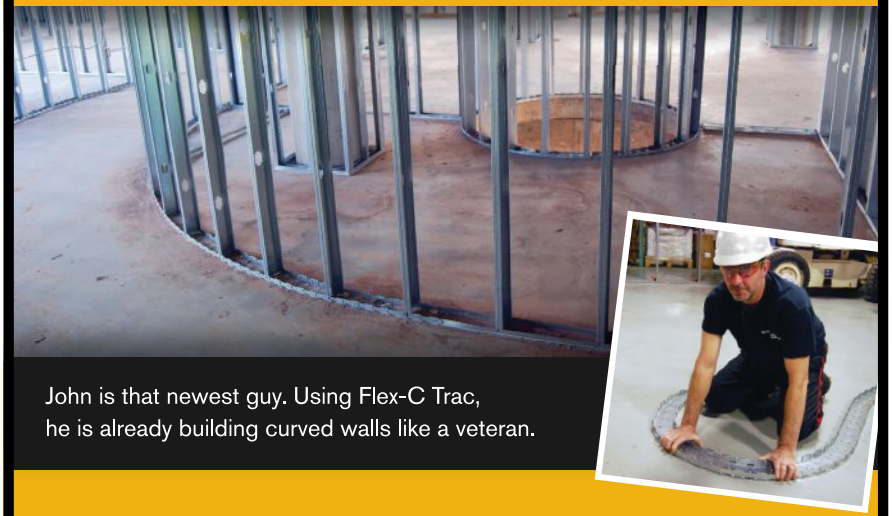

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Liviu Tudor is president of Genesis Property, a European property manager, and president of the European Property Federation (EPF), a pan-European organization of national property associations and companies whose members own and manage property assets worth 1.5 trillion Euro. Drawing on his experience at EPF, Tudor pioneered The IMMUNE Building Standard, which is a set of measures, technical solutions, and facility-management practices to certify how built environments can withstand present and future health challenges. Learn more in "Guidance", page 30.

Thirteen roofing industry organizations joined forces during the pandemic's early days to protect their members' employees and ensure these businesses remained operating. **Louisa Hart**, communications director for the EPDM Roofing Association, explains and shares how the coalition now is supporting tax credit legislation that could stimulate residential and commercial construction in "Business", page 32.

Mark Odom created Mark Odom Studio in 2004. The award-winning studio produces residential, commercial and public art projects throughout Texas. In our "Cover Story", page 40, Odom describes the preservation of an iconic mid-century modern building in Austin, Texas. Use of mid-century materials—some of which were salvaged from the building itself—as well as careful attention to detail brought the building back to life.

As a partner at BKSK Architects LLP with more than 25 years' experience, **Todd Poisson**, AIA, has been responsible for the design and construction of some of BKSK Architects' most ambitious projects, including 44 Union Square/Tammany Hall, a contemporary glass dome addition to the storied landmark building on Union Square's northeast corner. Poisson uncovers the inspiration for the project and the technical aspects in "Component", page 64.

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2020 retrofit TOP 25 PRODUCTS

Products are an integral part of any trade publication. As such, ***retrofit*** is celebrating the 25 products that received the most reader inquiries from our November-December 2019 through September-October 2020 issues.

"We consider ***retrofit*** a source book for our readers to find innovative solutions and products for their own retrofit projects," says Publisher John Riester. "The Top 25 Products special in our January-February issue is a great resource to our readers, showcasing the products readers' peers thought were most interesting within the pages of ***retrofit***."

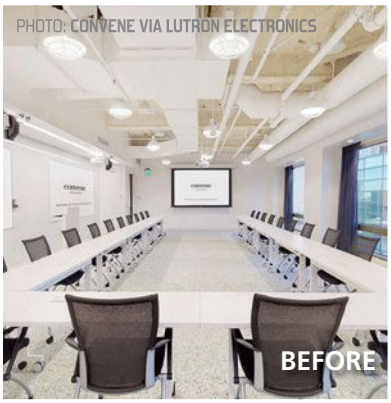
In addition, at the prompting of our editorial advisory board, we asked the manufacturers to share case studies about how their top products solved a problem or achieved the desired result within a retrofit. Although many manufacturers' products are fairly new, a few manufacturers were able to share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

Enjoy ***retrofit***'s eighth-annual Top 25 Products!

1 HOLISTIC ARCHITECTURAL LIGHTING CONTROL

Lutron Electronics has introduced Athena, a flexible, simple, all-in-one solution that combines an advanced light source with intelligent shades and connected apps to deliver a holistic light experience for retrofits and new construction. Any light source, any bulb type, any fixture can be controlled from a single system. Plus, with native Ketra integration, Athena enables you to transform spaces via wireless, easy-to-retrofit Ketra light sources. Wireless controls, sensors, and fixtures install easily and provide control and flexibility at the individual fixture. A new right-sized processor can be tucked away and works for spaces and budgets small and large. In addition, the iOS app allows lighting designers and facility managers to make lighting changes in real time.

www.lutron.com/athena

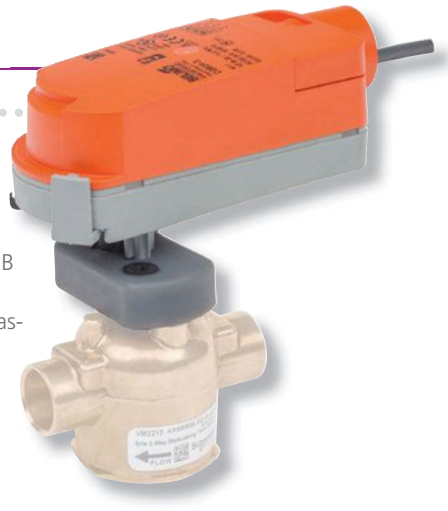


The Convene Space in downtown Los Angeles as a conference room.

The retrofitted Convene space with the Lutron Athena lighting and shading system.

Athena is suitable for retrofit applications, given its wireless nature and its minimal hardware requirements. For example, at Convene in downtown Los Angeles, Lutron executed its own retrofit project to create an Athena space with minimal renovation required. By combining wireless Ketra light sources, Lutron shades and draperies, as well as the Athena processor, a 500-square-foot conference room was retrofitted to change between a lounge, an art gallery, a meeting place or training room, depending upon which light and shade scenes are selected. Athena's ability to transform space simply with light and shade changes delivers the ultimate flexibility to create multipurpose environments.

2 RESTORE SERVICE WITHOUT REMOVING VALVES



Belimo Americas has released its optimized UBLK zone valve retrofit solutions. The UBLK retrofit kits are replacement solutions for existing failed actuators on TACO Zone Sentry zone valves, Schneider Electric VBB ball valves or TAC Erie VM zone valves with the Belimo compact CQ actuators. This series of replacement solutions restores the service without removing the valve, saving on installation and downtime while increasing performance and efficiency. The solution is backed with a five-year warranty.

www.belimo.com

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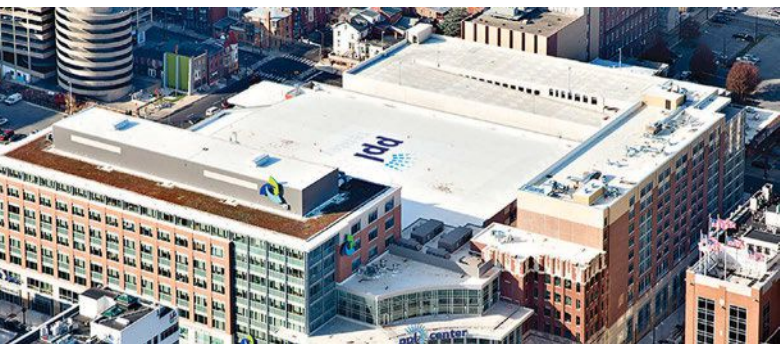

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3 ENERGY CORE VENTILATOR OFFERS PERFORMANCE IN SMALL FOOTPRINT

Model ECV-40 is the latest addition to Greenheck's energy core ventilator line. ECV-40's design features a dual-fan arrangement consisting of direct drive mixed-flow plenum fans with variable frequency drives (VFDs), replacing the forward-curved fan typically found in energy core ventilators. The mixed-flow fan, a hybrid between an axial propeller and centrifugal fan, reduces brake horsepower requirements by up to 50 percent. The VFDs facilitate ease of balancing at startup. Sound power levels are reduced and no belts make maintenance easy. ECV-40 is available with AHRI Certified fiber or polymer membrane cores with an airflow capacity up to 5,000 cfm. Optimized to ensure the best unit performance in the smallest footprint available, ECV-40 features double wall construction and optional hinged access with additional options for frost/economizer and standalone microprocessor controls.

www.greenheck.com

4 SINGLE-MODULE UNITS RELEASED IN LARGER CAPACITIES

Mitsubishi Electric Trane HVAC US LLC has expanded its lineup of CITY MULTI N-Generation single-module outdoor units for R2-Series and Y-Series. The newest single-module units improve energy efficiency, have a smaller footprint and offer more personalized comfort control. The units are available in 16-, 18- and 20-ton capacities. The larger-capacity options limit the need for twinning, allowing for single-module connections and smaller footprints where space is a premium concern. The expanded lineup also allows for twinned connection of R2-Series units up to 36 tons. Available in the N-Generation High Efficiency tier, the units incorporate flash injection technology to heat continuously through defrost and may deliver 78 percent of rated heating capacity in ambient temperatures as cold as -13 F.

www.mitsubishipro.com

5 TRANSLUCENT PANELS NOW AVAILABLE IN WINDOW SIZES

Kingspan Light + Air North America has scaled the size of its two-panel UniQuad system to create the more modular and versatile UniQuad Translucent Windows for smaller envelope openings. Available in heights up to 6 feet, UniQuad Translucent Windows can be built in limitless lengths. With the ability to specify custom window sizes and colors, the two-panel system allows buildings to coordinate with corporate or campus colors. UniQuad Translucent Windows feature the same two-panel composition with Removeable Skin Technology as the UniQuad system, allowing for the removal of the exterior panel while the interior panel remains in place. Additional insulation can be added between the two panels to improve thermal performance and further increase efficiency.

www.kingspanlightandair.com

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6 NATURAL STONE PRODUCTS ARE EASY TO INSTALL

About one year ago, Polycor launched its Hardscapes & Masonry product line, formed through mergers with Swenson Granite Works, Indiana Limestone Co. and Elliott Stone. This line brings the aesthetics and durability of 100 percent natural stone to the hardscapes market with easy-to-install products, including pavers, pool coping, veneers, steps and treads, walls and caps, edging and outdoor living elements. Suitable for landscaping and outdoor applications that withstand freeze-thaw cycles in northern climates and the scorching heat of southern summers, natural stone products resist cracking, flaking and discoloration. Polycor H&M products are sourced responsibly and are naturally sustainable.

hardscapes.polycor.com

7 THIN STONE PRODUCTS NOW CAN BE SPECIFIED IN SAWN FINISH

Arriscraft has released its Sawn finish for its Thin Building Stone products, including Coastal, Midtown and Stack. The Sawn finish is a smooth alternative to the company's traditional split-face finish. Arriscraft uses only natural materials (plus color pigments) and replicates how stone is created in the earth. This proprietary process creates stone with the natural aesthetics and durability of quarried stone, plus the convenience of standard installation and unlimited supply. All Arriscraft Thin Building Stone products are suited for indoor and outdoor applications in residential and commercial settings.

www.arriscraft.com

8 SLIDING DOOR SAVES SPACE, BLOCKS SOUND

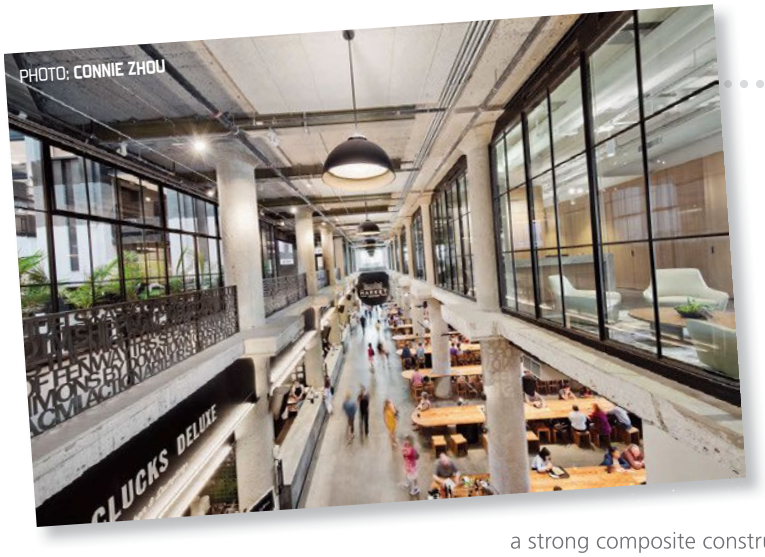
ASSA ABLOY has launched the RITE Slide, an integrated opening assembly where all individual door components are included to create a complete door system. RITE Slide ensures privacy and quiet operation with sound seals, automatic door bottom, and soft-close operation to minimize slamming and wear and tear on the door and hardware. Offering acoustically rated and non-acoustic options, the sliding door has a perimeter seal that blocks out light and sound and operational door hardware for passage or privacy with locking applications. The hardware is available with MicroShield, an inorganic hardware finish coating that continuously suppresses the growth of bacteria, algae, fungus, mold and mildew. The acoustically rated series has been third-party tested.

www.riteslide.com

9 SUBWAY TILES FEATURE HANDMADE APPEARANCE

Ege Seramik's Samos and Mirandela Lines add texture and a handmade appearance to 4- by 12-inch porcelain subway tiles. The Mirandela Line is available in 11 modern colors with a glossy finish and can be used as an accent piece or to cover large areas. Colors include Anthracite, Black, Burgundy, Coral, Cream, Deep Blue, Lilac, Olive, Silver, Turquoise and White. The Samos line is available in five neutral colors and includes deco pieces that add a unique aura to any installation.

www.egeseramik-usa.com



10 HISTORIC REPLICA STEEL WINDOWS AND DOORS OFFER ADVANCED THERMAL PERFORMANCE

Hope's Windows Inc. announces the expansion of its One55 Series to include doors and operable windows with Thermal Evolution technology. Hope's One55 Series steel windows and doors replicate historic arrow-shaped steel window profiles and sightlines. Thermal Evolution technology features a thermal isolator that is precision-machined to nest within the solid steel frame profiles and is structurally bonded to the frames, creating a strong composite construction that delivers thermal efficiency and condensation resistance.

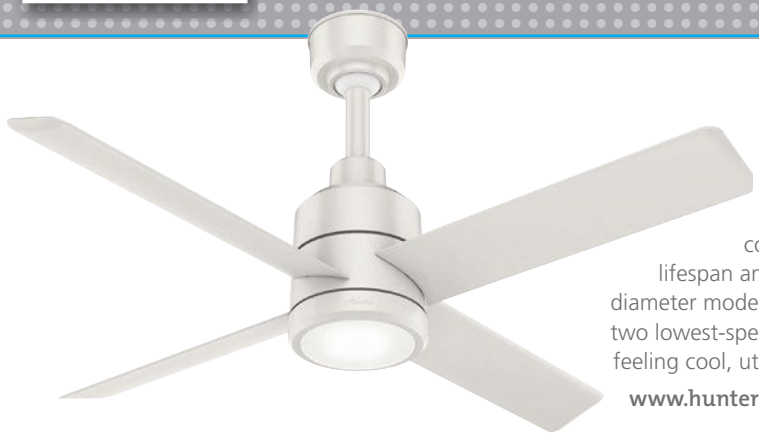
Hope's solid hot-rolled steel profiles remain completely intact for the full depth of the window, making them stronger than traditional thermally broken window and door systems.

hopeswindows.com

11 KITS EASE INSTALLATION OF ELECTRIC HEATING IN FLOORS

Danfoss LX Kits for floor warming are designed to make it easier to install electric heating in new or renovated flooring. The kits are a complete solution, including a Danfoss LX floor warming mat, LX205T Touch Thermostat and Little Buzzer continuity alarm. Suitable for installation under tile, stone, marble, and laminate floors in residential and commercial applications, LX floor warming mats feature a pre-applied heating cable and dual-adhesive backing that requires no fastening, reducing installation time by up to 70 percent. LX mats, which are backed by a 20-year warranty, range in size from 10 to 145 square feet (coverage) and are available in 120V and 240V formats.

bit.ly/36ujzKe



12 COMMERCIAL CEILING FAN USES MINIMAL ENERGY

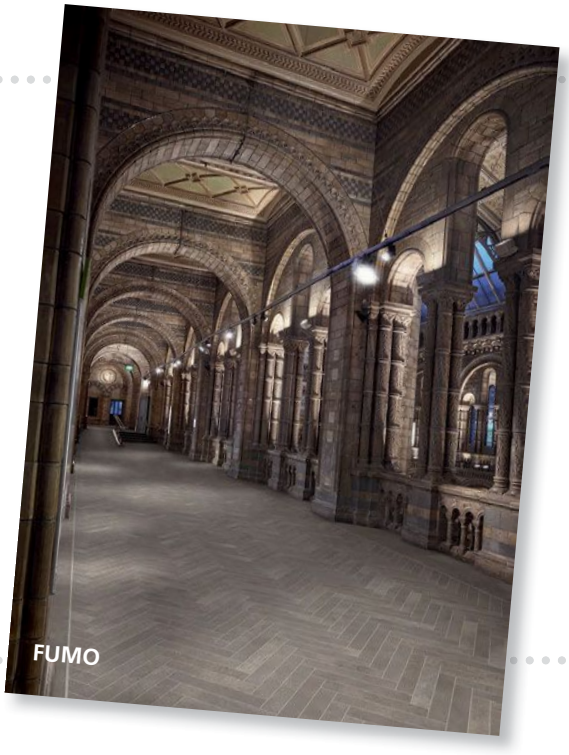
Hunter Industrial Fans has released its commercial fan line known as Trak. The Trak ceiling fan is designed and engineered with a commercial-grade motor and extruded aluminum blades for a long lifespan and optimal airflow. Available in four sizes—60-, 72-, 84- and 96-inch-diameter models—the Trak fan offers three finishes and an LED light option. The fan's two lowest-speed settings, which produce more than enough air to keep a consumer feeling cool, utilize less energy than a cell-phone charger.

www.hunterfan.com/industrial

13 GLUEDOWN LVT NOW AVAILABLE IN STONE LOOKS

Karndean Designflooring has introduced stone looks—Iberian-inspired Tiles and Limestone—to its 20-mil Opus gluedown luxury vinyl tile (LVT) flooring range. The Iberian-inspired Tiles' patterns combine geometric forms in a non-uniform patchwork arrangement that incorporates curves and crests influenced by medieval Spain. Within this collection, Casablanca is a monochromatic palette of grays while Marrakesh possesses a mix of chalky, terra color tones. Meanwhile, Limestone forms what can be interpreted as a stained concrete visual. Limestone is available in two colors: Fumo has smoky brown and gray tones for a concrete-like appearance while Lutum features darker, charcoal tones that allow pearlescent veining to show through.

www.karndean.com/opus2020



14 GLASS-FACED GYPSUM PANELS ARE SUITABLE FOR MOIST INTERIOR LOCATIONS

Whether retrofitting an existing building or starting from scratch, PABCO GLASS Interior Gypsum Panels are suitable for commercial and residential projects. Scoring 10 for mold resistance—the highest rating on the ASTM D3273 test—the product is for areas where moisture is a concern, such as bathrooms, kitchens, basements and laundry rooms. Its mold and water-resistant gypsum core encased in a glass fiber mat provides increased resistance to moisture and greater structural stability than paper-faced gypsum board. The product withstands exposure to the elements for up to a year without affecting product performance so can be installed prior to full building enclosure—appropriate when pre-rock construction is required. The product is available in 5/8-inch Type X for fire-rated commercial applications and 1/2-inch Regular for non-fire-rated residential projects.

www.pabcogypsum.com/interiorglass

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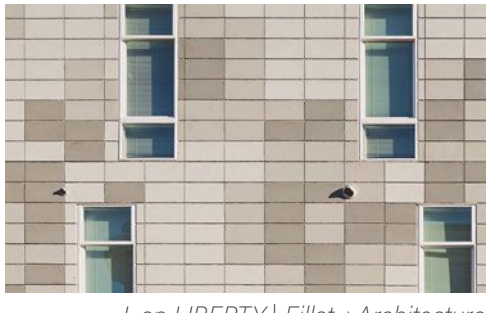
Make an impression with our versatile thin stone

For recladding or new construction, our unique calcium silicate stone delivers the aesthetic and performance of natural stone. At only 3/4" thick, ARRIS-tile is lightweight, adheres like tile and comes in a range of beautiful colors, with custom options available. Arriscraft's thin stone products make it simple to incorporate premium stone on virtually any project.



L on LIBERTY | Fillat +Architecture
Photo: Sam Oberter Photography

15 MOUNT ROOFTOP UTILITIES TO METAL ROOFING WITHOUT DAMAGING THE ROOF

S-5!'s universal GripperFix system makes mounting almost anything on standing and exposed-fastener metal roof profiles simple and easy. Roof-mounted utilities, such as split-system condensing units, duct supports, communication equipment and service walkways, can support a building envelope or compromise it. S-5!'s GripperFix technology ensures a secure and dependable attachment solution that preserves the integrity of the roof and avoids destructive corrosion. The system is quick and simple to install, lasts the life of the roof, maintains roof warranties and is less expensive than other mounting methods.

s-5.com/products/utility-solutions/hvacrooftop/gripperfix-us

S-5! authorized distributor LMCurbs provided 20 sets of the GripperFix CF-Tabs and S-5-U Mini clamps for its client's 20 home-goods wholesale supplier locations. Each site has two commercial air-conditioning condenser units mounted on retrofitted standing-seam metal roofs.

David Hotard, the client's branch manager, notes: "This was the first time I used the S-5! GripperFix mounting system. One of our managers searched for a solution and found it. It is very easy to attach. I had been getting roofers to come in and build brackets. With the GripperFix, I am able to secure the condenser units to the standing-seam metal roofs without the need for a roofer onsite."

Clint Funderburk of LMCurbs adds his client immediately drove over from Louisiana to pick up the product. "The quick response, quick availability and great tech support provided by S-5! made it an even better experience for the client," Funderburk says.

16 DECORATIVE COMPOSITE PANELS AVAILABLE IN DIGITAL DESIGNS

Uniboard, a North American manufacturer of decorative composite wood panels (thermally fused laminate), has introduced Studio, a collection of 20 digital designs. Inspired by the arts and creative expression, the panels are suitable for large-scale projects. Studio is offered in the Vellum finish on a particleboard or MDF core. The new colors also are available on high-pressure laminate.

www.uniboard.com

17 BEHAVIORAL HEALTH LIGHTING COLLECTION IS HOME-LIKE

Visa Lighting has introduced six models to its growing behavioral health collection, which includes fixtures with safe and therapeutic designs. The company's new Symmetry models are tested to IK10+ standards, which means they can withstand more than 100 joules of mechanical impact. They are constructed with an additional 3/16-inch polycarbonate lens, which is fastened behind the minimal frame with tamper-resistant screws. Each model can be installed flush to a drywall/sheetrock ceiling and recessed 5 to 7 inches. In addition, Visa Lighting's engineers have crafted luminaires that look more home-like and minimalist. For example, the tamper-resistant screws that fasten the frame and lenses to the ceiling structure are barely visible and painted with the same finish as the frame.

www.visalighting.com

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Retrofit Security Glazing

DefenseLite® is a clear security shield that integrates forced entry protection seamlessly with existing doors, windows, and storefronts, providing an invisible layer designed to protect retail businesses from impending harm, vandalism, and theft.

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- Protect your employees
- Protect your inventory

PROTECTION FROM VANDALISM

- Prevent looting
- Prevent vandalism
- Preserve brand integrity

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VIEW A VIDEO

18 RETROFIT GLAZING SYSTEM PROTECTS EXISTING STOREFRONT

Designed to keep intruders out and prevent smash-and-grab burglary, DefenseLite is a patented security glazing system manufactured by Impact Security LLC. This retrofit security shield is designed to mount onto the existing glazing to transform windows and doors into impenetrable openings that are 250 times stronger than glass alone. DefenseLite is not an applied security film but rather a heavy-gauge architectural-grade polycarbonate and extruded framing system. The surface of the polycarbonate is UV-coated to protect against scratching, graffiti and other factors that may result in the degradation of the material. The bullet-resistant version of DefenseLite, BulletShield, is independently tested to provide UL 752 ballistic ratings. BulletShield can be installed over existing glass from the interior or exterior.

www.defenselite.com

19 HIGH BAY FIXTURE IS LIGHTWEIGHT, IMPACT-RESISTANT

The SYLVANIA ValueLED UFO High Bay is a DLC Premium LED fixture that has a lightweight, impact-resistant design and offers up to 78 percent energy savings compared to traditional luminaires. With various wattage, color temperature, mounting, optics and sensor options, it provides the flexibility to meet the specific needs of warehouses, gymnasiums and other industrial applications.

www.sylvania.com

20 METAL PANELS OFFER WOOD APPEARANCE

When the performance of metal is required but the look of wood is desired, Petersen's 16 wood grain colors are available on PAC-CLAD steel and aluminum wall panels. The 70 percent PVDF patterns are nearly indistinguishable from actual wood, and applications are unlimited. The wood grain standard finishes include Beechwood, Charwood, Cherrywood Oak, Copper, Dark Oak, Golden Bamboo, Golden Maple, Light Oak, Long Grain Cherry, Long Grain Oak, Medium Oak, Red Oak, Siamese Bamboo, Sugar Maple, Sycamore and Whitewash Oak. Three wood grain patterns—Beechwood, Copper and Golden Bamboo—will be stocked in 24-gauge steel while the 13 other colors will be available on 24- and 22-gauge steel, plus .032, .040 and .050 aluminum upon request and with extended lead times.

pac-clad.com

21 UNDERLAYMENT RESISTS FIRE AND HIGH TEMPERATURES

Polyglass U.S.A. Inc. has released Polystick XFR, a self-adhered waterproofing underlayment. The product combines Polyglass' ADESO and Burn-Shield technologies to achieve UL Class A fire ratings for combustible decks while providing long-term weathering performance. Utilizing ADESO Dual-Compound Self-Adhered Technology for labor-saving application, Polystick XFR features an SBS (elastomeric) modified bitumen upper compound and an aggressive self-adhesive compound on the bottom. Fiberglass reinforcement provides additional strength and stability. The penetration-resistant underlayment is rated to withstand temperatures up to 265 F. Because Polystick XFR is designed for high-temperature applications, it is suitable for metal roof coverings, like steel, copper and similar materials. It also is approved for use under asphalt shingles, mechanically attached tiles, and any other application where fire resistance is needed or desired.

polyglass.us

22 PORCELAIN ROOF TILE IS CLASS 4 IMPACT-RATED

Daltile has released its Perennial Porcelain Roofing Tile, which is resistant to frost, impervious to water and walkable. Class 4 impact-rated by Intertek Labs, the tiles also boast a 110-mph wind rating and Class A fire rating. The product offers high breaking strength, low overall weight and a lifetime limited warranty. Perennial Porcelain Roofing Tile is made in the U.S.

daltile.com

23 GALVANIZED PANELS MODERNIZE LOWER, WIDER BUILDING PROFILES

CENTRIA has launched Versawall H+ Insulated Metal Panel, which is comprised of a galvanized steel face and foam insulation. The panel delivers weather resistance and moisture protection. From a design perspective, the panel enables architects to create a modern look for large-scale buildings that have lower, wider profiles, including warehouses, schools and shopping centers. The Versawall H+ is available in modules of 30 and 36 inches and in 2- and 3-inch thicknesses. Panels can be manufactured in a wide variety of finishes and colors.

www.centria.com

24 HEAT-PUMP WATER-HEATER MODELS MEET ENERGY GOALS

Lochinvar has launched 20 commercial heat-pump water-heater models, ranging from 25,000 to 250,000 Btu per hour and with modular installation capabilities up to 2 million Btuh per hour. The product line gives specifying engineers, architects and plumbing contractors additional options to meet energy-savings and sustainability goals when bidding on large commercial properties. Heat-pump water heaters transfer heat instead of creating it. Unlike typical HVAC heat-pump systems, heat-pump water heaters provide hot water using atmospheric heat (air source) or geothermal/waste heat (water source). The air-source models cool and dehumidify the surrounding ambient air, cutting down on air-conditioning usage and costs. The water-source units absorb heat from water sources, including return chiller water, process and groundwater. Designed for indoor or outdoor use, heat-pump water heaters work in conjunction with storage tanks and can be tailored to meet specific application requirements.

www.lochinvar.com

25 INTEGRATED SOLAR PANELS PRODUCE MORE ENERGY

GAF Energy has launched a high-efficiency solar panel for use with its roof-integrated solar product. Solaria panels are 16 percent more powerful than GAF Energy's previous offering, allowing owners to fit more roof-integrated solar capacity in a similar amount of space. Designed to provide a low-profile alternative to typical rack-mounted solar panels, GAF Energy solar is part of the primary water-shedding layer. The new solar panels optimize power output and maximize aesthetic appeal, combined with flashing and a black perimeter shield to further reduce the risk of leaks and avoid animal intrusion.

www.gaf.energy

Representatives from Granite Air Center in New Hampshire selected Solaria PowerXT panels largely because of the low glare factor that's imperative for pilots and the Federal Aviation Administration. The facility's owners explored various solar options and found Solaria panels offered the performance and efficiency they were seeking.

When durable, reflective, and cost effective are all #1 priorities

GAF EverGuard® TPO
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EcoHawks Research Facility
University of Kansas

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The IMMUNE Building Standard

Certification Developed in Europe Asserts How Built Environments Can Withstand Present and Future Health Challenges

WRITTEN BY | **LIVIU TUDOR**

During July and early August 2020, governments across Europe began to encourage workers to return to the office. However, there still was a sense of uncertainty about returning, predominantly apprehension surrounding the threat of localized COVID-19 outbreaks. Recent reports have suggested offices in the UK have seen the fewest number of people return to the office when compared to their counterparts. For instance, the UK has had 35 percent of white-collar employees return to work since the lockdown. This is considerably below other countries, such as France (83 percent), Italy (76 percent), Spain (73 percent) and Germany (70 percent).

Per comments by UK Prime Minister Boris Johnson, a strong recovery for the economy will require people to have the confidence to return to the workplace in a safe manner. Much of this hinges upon assuring employees they are returning to an environment where they can safely enjoy their work, collaborate with their colleagues and achieve the objectives of their organizations.

What was clear to see following the global implementation of lockdown measures and the closure of commercial buildings in every corner of the globe was that the property sector was neither prepared nor equipped to manage a situation of this nature. As we enhance our immune systems, we should also strengthen the immunity of our buildings by rethinking how they are designed, constructed, maintained and operated.

In this context, the framework behind The IMMUNE Building Standard was initiated, with a strategy to engineer safer built environments for people and organizations returning to their offices. IMMUNE, which was developed by Genesis Property, a European property manager, is a set of measures, technical solutions, and facility-management practices to certify how built environments can withstand present and future health challenges and minimize the impact of a pandemic, such as COVID-19, and other bacteriological or toxicological threats in the most sustainable way possible.

To provide a new global standard as a reference for buildings of all types, Genesis Property allocated budget, exceeding $1 million U.S., for prototyping and enlisted an expert team of around 20 multisector research and development professionals from the health, technology, real estate, architectural and engineering fields, who borrowed learnings from hospitals' and IT industry's clean rooms to develop the IMMUNE model. The team was led by Dr. Adrian Streinu-Cercel, a professor at the Department of Infectious Diseases and president of the University Senate of the Carol Davila University of Medicine and Pharmacy, Bucharest, Romania, and Professor and Dr. Matei Balș, general manager of the most important hospital treating COVID-19 in Romania, the National Institute for Infectious Diseases. The standard includes 100-plus recommended measures for buildings to implement. (Learn more about the specific measures at immune-building.com.)

The IMMUNE index measures include architectural engineering, technology, design, and two levels of operational practices—perpetual and ready-to-action—and offers a step-by-step guide for anyone involved in the realm of real-estate development, including architects, engineers, designers, developers and building owners, with target benchmarks to help them create a resilient future workplace.

An authorized building assessor in the field of sustainable building design, development and certification, will evaluate and award a property with one of the three IMMUNE labels: Strong, equivalent of 3 stars; Powerful, equivalent of 4 stars; or Resilient, equivalent of 5 stars. The label, which is based on the number of criteria met during the official assessment, demonstrates a building's diligence and commitment to implementing the Healthy by Design approach while considering best practices to

IMMUNE Healthy by Design — The IMMUNE Building Standard™

A London office is among the first buildings to achieve The IMMUNE Building Standard. Read more, page 31.

achieve the IMMUNE standard.

One of the main advantages of the standard is that because it is an open-source inaugural version, there will be adequate opportunities to re-assess and evolve to ensure the workplace is the safest it can be, regardless of its size and facilities, as we continue to learn more about the challenges we face.

We were very aware of the challenge in designing a framework that was achievable across the entire global property sector, considering financial capacity, differing building sizes and more. We were very particular in creating a standard that can be applied to any building type at any stage of its life cycle, such as new, in-use or renovation.

Although The IMMUNE Building Standard has been developed as an open-source platform to invite collaboration, support and contributions from a variety of experts for further updates to the criteria, it requires building owners to make viable investments. Depending on the size and scale of the buildings, our estimates suggest it could be around 1 to 2 percent of an overall project investment. This is a one-time investment to receive the immunity label as it adds value to a property. The IMMUNE Building Standard has already been achieved at Platinum level by Genesis Property's West Gate Business Park, Bucharest. An office in central London (see the story, right) and Chicago also are implementing the IMMUNE standard.

Just as we have fire-safety regulations in place when designing and operating a building, an IMMUNE standard would be mandated as part of the wider health and safety. This is not just a marketing label; it is a safety standard that will need compulsory investment. Having an IMMUNE-certified building will assure occupants their space would be capable of withstanding future health challenges. Consequently, we expect more building owners to look deep into their tenants' needs and design/redesign their properties with health in mind.

Perhaps more importantly, the standard should be considered by landlords and corporate building owners for the fact it breathes confidence into the workforce. Ultimately, the aim of this method of adapting our buildings will be what good companies have always wanted: a safe and productive environment where people can enjoy their work, collaborate with their colleagues and achieve the objectives of their organizations.

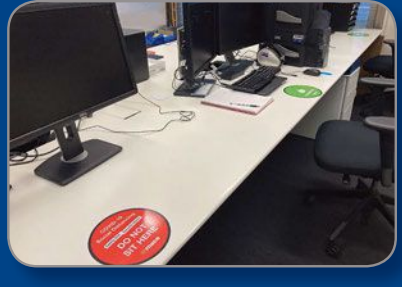
London Office Achieves The IMMUNE Building Standard

Mace, the international consultancy and construction company, has attained The IMMUNE Building Standard (IMMUNE) for its headquarters. Located in London's historic center and primary central business district, the office building has achieved the Powerful certification (equivalent to 4 stars), recognizing the successful measures implemented to keep employees safe during a global pandemic.

Throughout its 30-year history, Mace has made it a priority to reduce risks and protect people by building a "safety first" culture embedded within the company's values. With the coronavirus rapidly transforming the way workplaces operate, Mace has taken extensive action in the past months to implement safety measures across its global offices and construction sites to ensure a safer and healthier workplace environment for its 5,000 employees.

Mace's headquarters was awarded the certification following an independent assessment process based on the IMMUNE Assessment Scoring Index, conducted by Build Green, an authorized building assessor and a contributor to the development of the standard. The certification demonstrates Mace's diligence and commitment to implement a Healthy by Design approach, considering a coherent collection of 100-plus measures and best practices recommended by IMMUNE.

"The IMMUNE Building Standard demonstrably recognizes the health and wellbeing measures we have implemented at Mace's headquarters in London, keeping our employees safe during the pandemic," says Maud Santamaria, head of Workplace Experience at Mace. "The facilities management team at Mace has worked in partnership with colleagues from across the business to allow operations to continue from all our offices, implementing control measures that focus on the wellbeing of all our staff. Coupled with flexible working arrangements, we have created a workplace environment for our colleagues where they can work and perform safely."



A COVID-19 Task Force

WRITTEN BY | LOUISA HART

For many in the construction industry, the advent of a new administration in Washington, D.C., has raised new hopes and presented new questions, especially during an economic downturn and lingering pandemic. What sort of legislation will the Biden administration introduce and promote that could impact building codes and standards? Will energy efficiency take precedence over all other considerations of building design? Will Congress and the White House continue their enduring stalemate that stalls any change in the built environment? And—perhaps most

Roofing Industry Organizations Joined Forces During the Pandemic's Early Days and Continue to Propel Construction by Supporting Tax Credit Legislation

importantly—what funding will be available to building owners and contractors as they emerge from one of the toughest times this generation of businesses has experienced? Even as the Biden administration begins to make its mark on the ways of Washington, there are still more questions than answers surrounding these issues.

A coalition of roofing industry organizations banded together during the early stages of the pandemic to protect their members' employees and ensure these businesses remained operating. After achieving this goal, the coalition now is supporting a federal tax credit that would stimulate construction—residential and

When the existing roof on Potsdam, N.Y.-based Clarkson University's athletic center began to leak, a fully adhered EPDM roof system from Carlisle Syntec Systems was installed on the 66,300-square-foot hyperbolic paraboloid. If the COVID-19 task force is successful in promoting a federal tax credit, reroofing projects like this may qualify.

commercial. A close look at this potential tax credit may help illuminate what could be down the federal road as far as legislation to support the construction and design industry.

First, some background on how the roofing coalition came to fruition:

The Start of Something Big

Last spring, as the COVID-19 pandemic threatened the health of workers and shutdowns devastated the economy, a group of roofing construction association leaders based in Washington, D.C., joined forces, committed to working together to help keep their employees safe and keep companies in business. (View the list of organizations on page 38.) Their approach was unique: This was the first time the participants could remember forming a coalition to tackle challenges of the scope they mutually faced. As Jared Blum, Washington counsel of the EPDM Roofing Association remarked, "There was a realization that all the different segments of the roofing industry have a lot more in common than differences."

The work of this COVID-19 task force, as it came to be informally called, was laser-focused on specific issues that threatened to negatively impact their member industries.

As the pandemic increased in ferocity, several states, including New York and Washington, listed construction as "nonessential" activity, meaning all work on existing sites had to stop and no new construction could be initiated. The task force worked with the Cybersecurity & Infrastructure Security Agency to ensure the construction industry had adopted risk-management tactics to guarantee essential status. With that in place, the COVID-19 task force contacted governors

(continues on page 36)

NRCA's PROCertification Program

Three years ago, Reid Ribble, in one of his first landmark statements as the newly appointed CEO of the National Roofing Contractors Association (NRCA), spoke to the EPDM Roofing Association (ERA) and laid out his vision for the roofing industry, focusing on plans to establish a certification program for experienced workers in specific roof system installations. The program he envisioned would be designed to create a career path for industry field workers and "elevate the roofing industry to be on par with other trade professions that currently offer national certifications."

NRCA offers PROCertification in three roof systems:

- Thermoplastic Systems
- EPDM Systems
- Asphalt Shingles

It also offers a Roofing Foreman PROCertification.

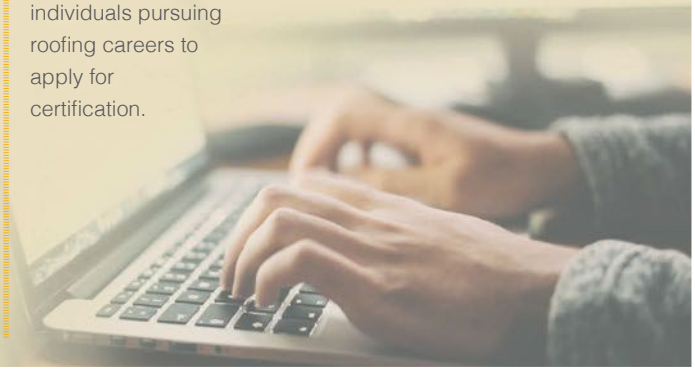
The program is designed to certify experienced installers by testing their knowledge and skills on three levels. There's an initial eligibility requirement: Every installer who applies has to include verification signed by his or her employer that he or she has at least 24-months system-specific installation experience. In other words, someone applying for EPDM Systems certification needs to have 24 months of not just roofing experience but experience specific to EPDM systems.

Once applicants are accepted for further testing, they take an online test. This is designed to validate that they understand general roofing knowledge, general roofing processes and safety procedures.

The final step requires applicants to perform critical tasks on standard mock-ups designed and supplied by NRCA. These tests can be administered at a variety of locations, such as a manufacturer's training facility or a contractor's office. An NRCA-certified assessor must be present to observe the applicant performing the tasks and installation steps of the specific system and scores him or her based on those steps. Successful applicants not only know the steps and understand the process, but can actually get on the roof and do it.

Currently, many applicants to the PROCertification program are individuals who are stepping forward to be tested. However, increasingly contractors are putting their crews through the process. An NRCA spokesperson says the association anticipates "a pretty healthy mix" of contractors putting their employees through the process, as well as individuals pursuing roofing careers to apply for certification.

David Martiny, the EPDM Roofing Association's chairman and director of Product Management at Firestone Building Products, points out, "At a time when we are all challenged to deliver excellence in the roofing marketplace, this is an important step forward to deliver certified quality to our customers and provide career prestige for our labor force. PROCertification provides an excellent opportunity for seasoned installers to add to their credentials. And for those who are early in their work as installers but have experienced the ease of EPDM installation, for example, it can provide a jumpstart into a respected and rewarding profession."



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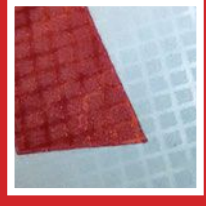

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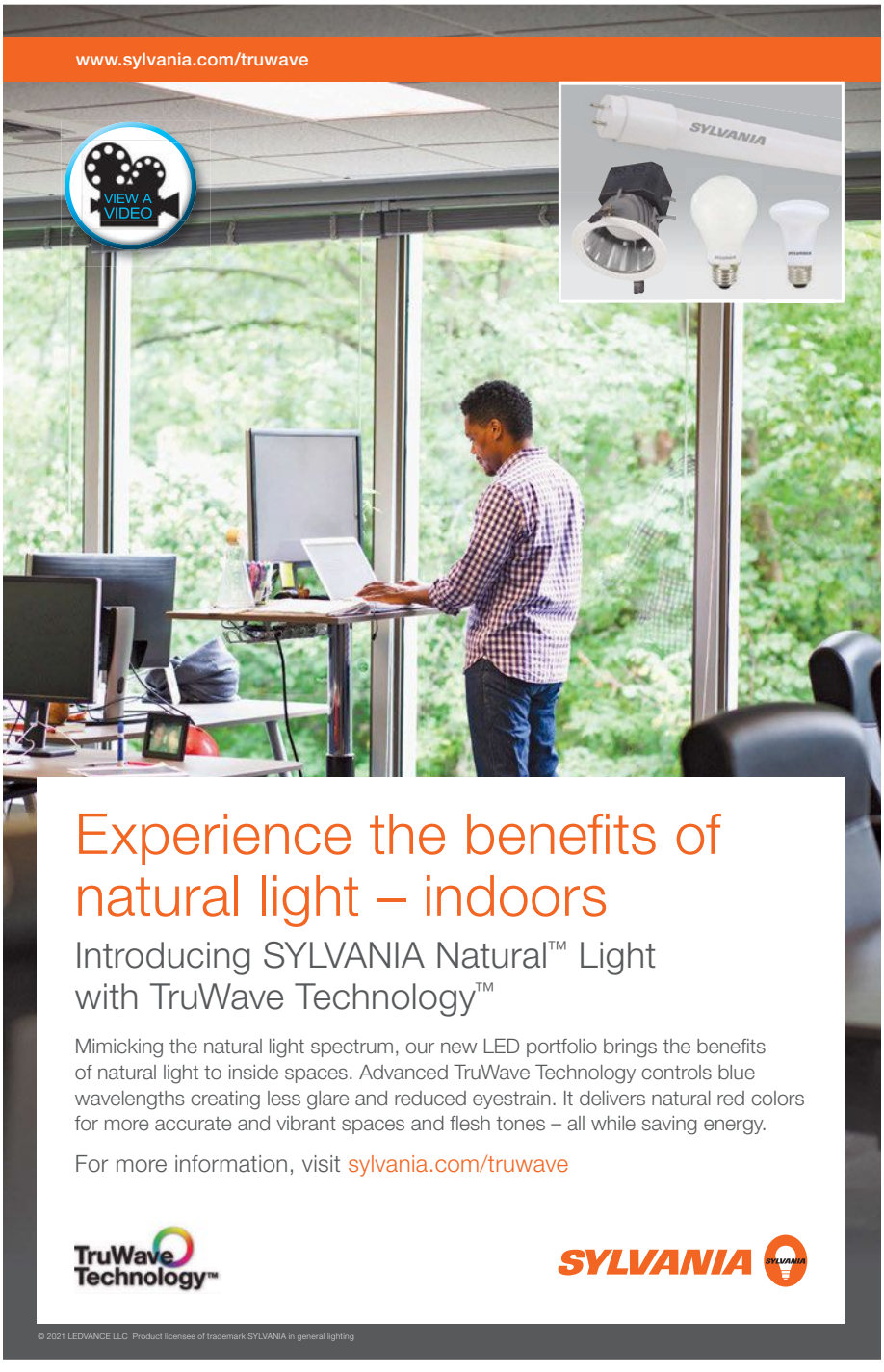
in key states, as well as other regional and local officials, to ensure the essential guidance was mandated nationwide, meaning construction activities could continue unabated.

Additionally, the COVID-19 task force launched a campaign targeted at easing the skyrocketing national unemployment rate and, at the same time, helping to remedy the industry's labor shortage. The campaign, called "Back to Work on America's Roofs" pointed out the roofing industry employs more than 1 million American workers and the "industry has developed guidelines that will safeguard buildings while also mitigating the risk of spreading COVID-19 among our workforce".

With these efforts underway, in early July 2020, the coalition was presented with another opportunity to help the industry, this time by shaping tax policy. The proposal, from a coalition of home improvement, roofing manufacturing and construction industries, detailed a 30 percent refundable tax credit for home improvements and qualifying business property improvements. The proposed tax cut was designed to "help stimulate the economy and get Americans back to work by investing in homes and businesses across the country." After discussion of the proposal, individual members of the COVID-19 coalition agreed to sign letters to key members of Congress and the administration in support of the tax cut.



Where the Tax Credit Stands Today

Fast forward to January 2021 and the 30 percent tax credit is being considered in a markedly different environment from even six months ago. The federal deficit, absorbing the more than $3 trillion spent in 2020, now stands at $27 trillion. Duane Musser, vice president of Government Relations at the National Roofing Contractors Association, points out this is a record-setting statistic: "Even before COVID, we were entering deficit-spending territory we have not seen since World War II. That is the only time in our nation's history that the government debt program was worse than it is now."

Whether the specific 30 percent refundable tax credit will survive is open to debate. Given a Republican-controlled Senate, there will most likely not be much enthusiasm on Capitol Hill to increase federal spending, and any proposal to add to the federal debt will be scrutinized by the red side of the aisle. Although the tax credit would most likely stimulate more business, a refundable tax credit would be shown as an immediate loss to the Treasury without factoring in any future gains. This structure will make it an even tougher sell to a spending-wary Congress.

There is one point of agreement on Capitol Hill that is potentially good news for construction: Both parties would like to see passage of an infrastructure bill. President Biden included a $1.3 trillion large-scale infrastructure package in his transition planning; this would include what is viewed as "traditional" infrastructure, such as roads, bridges, transit facilities, as well as airports,

THE COVID-19 TASK FORCE WILL CONTINUE TO WORK TOGETHER FOR THE DURATION OF THE PANDEMIC AND BEYOND, MARSHALLING THE MOMENTUM BUILT FROM ITS JOINT ACTION.

schools and other public buildings. Some of this would be new construction, some targeted for retrofitting.

However, Biden's plan includes key parts of his clean-energy agenda, and that is where agreement in Congress ends. Republicans and Democrats may all see the need for an infrastructure bill, but there is no foreseeable consensus on what should be included and how to pay for it. House Democrats have already passed the Moving Forward Act—with a $1.5 trillion price tag—in a vote last July that was strictly along partisan lines. This legislation had been discussed with the Biden campaign and has been seen as a starting point for negotiations on an infrastructure package. Although President Biden was renowned for his coalition-building skills when he was a senator from Delaware and as vice president, it is hard to imagine any "Green New Deal" elements will pass Mitch McConnell's Senate.

Therefore, what looked possible for a 30 percent refundable tax credit in July, now looks doubtful in January as the demands on spending increase and the available funding grows increasingly scarce. This is not because the members of the COVID-19 task force are short-sighted or unfamiliar with the ways of Capitol Hill. 2020 was so unpredictable and extraordinary that seasoned Congressional savants have been taken aback by election results and skyrocketing budget deficits. If the 30 percent reimbursable tax credit survives, it will almost surely be contingent on reaching some kind of energy-efficiency goal or threshold to ensure Democratic passage. In that case, it could mean other energy-efficiency tax credits will be included in the bill, creating a sort of universal tax incentive.

Ultimately, if the gridlock on Capitol Hill continues, it may be the private sector that leads infrastructure investment. Justin Koscher, president of the Polyisocyanurate Insulation Manufacturers Association and convener of the COVID-19 task force, sees "a change in corporate America to be more responsive to public concerns from social issues all the way to climate issues. Regardless of what the federal government does, you're going to see a corporate track record

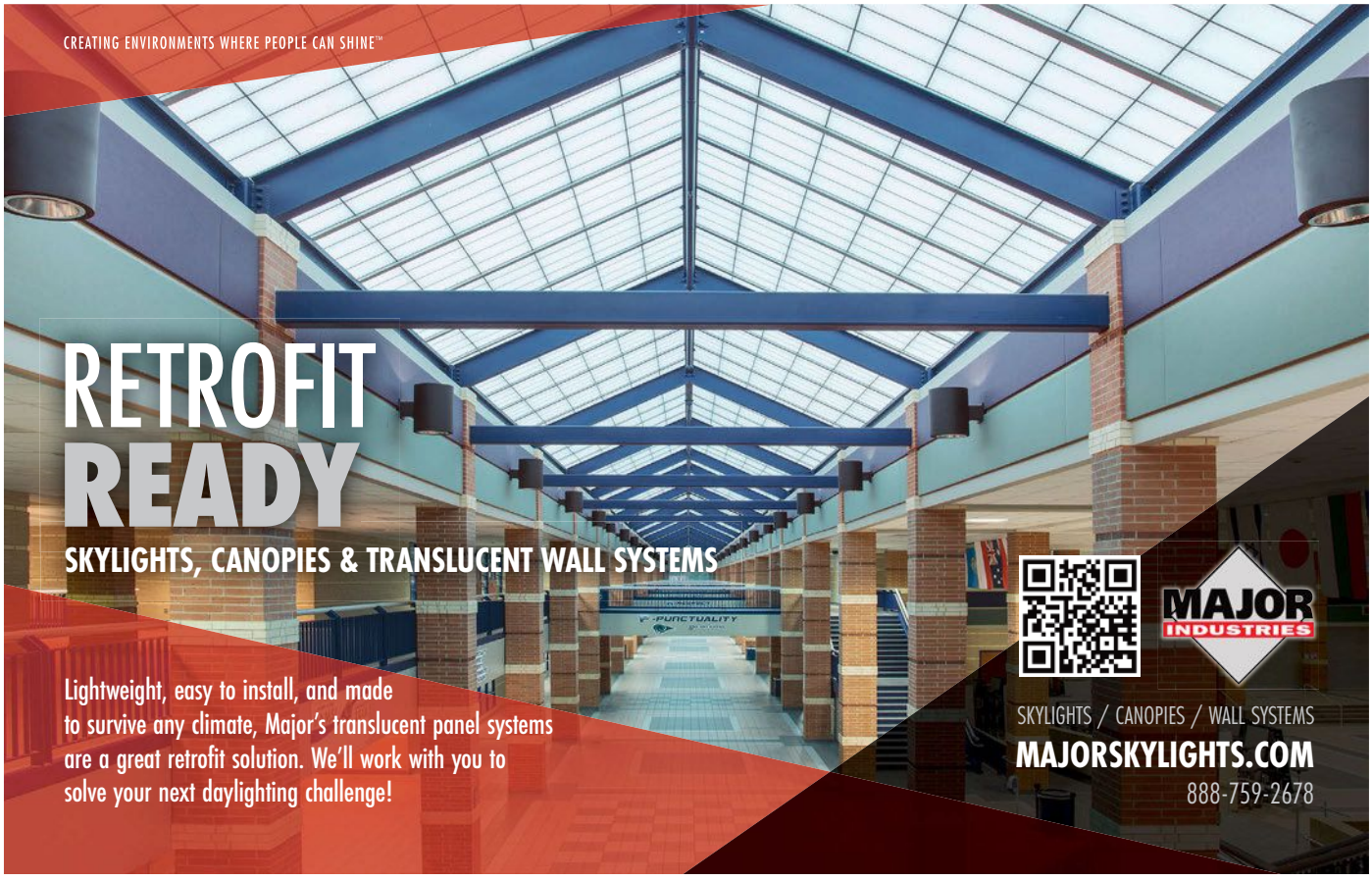
Members of the COVID-19 Task Force

In spring 2020, as the COVID-19 pandemic threatened the health of workers and shutdowns devastated the economy, a group of roofing construction association leaders joined forces, committed to working together to help keep their employees safe and keep companies in business. The task force includes the following organizations:

- ASPHALT ROOFING MANUFACTURERS ASSOCIATION // www.asphaltroofing.org
- CHEMICAL FABRICS AND FILM ASSOCIATION // www.chemicalfabricsandfilm.com
- EPDM ROOFING ASSOCIATION // epdmroofs.org
- INTERNATIONAL INSTITUTE OF BUILDING ENCLOSURE CONSULTANTS // www.iibec.org
- METAL CONSTRUCTION ASSOCIATION // www.metalconstruction.org
- NATIONAL ROOFING CONTRACTORS ASSOCIATION // www.nrca.net
- NATIONAL WOMEN IN ROOFING // www.nationalwomeninroofing.org
- POLYISOCYANURATE INSULATION MANUFACTURERS ASSOCIATION // www.polyiso.org
- ROOF COATINGS MANUFACTURERS ASSOCIATION // www.roofcoatings.org
- SINGLE PLY ROOFING INDUSTRY // www.spri.org
- SLATE ROOFING CONTRACTORS ASSOCIATION // www.slateroofers.org
- SPRAY POLYURETHANE FOAM ALLIANCE // www.sprayfoam.org
- TILE ROOFING INDUSTRY ALLIANCE // tileroofing.org

much more responsive to their customers' demands, which translates into significant private-sector investments that would benefit the construction industry."

The COVID-19 task force will continue to work together for the duration of the pandemic and beyond, marshalling the momentum built from its joint action. For example, the annual Roofing Day will take place online March 23 and 24, and thousands are expected to advocate virtually for workforce development, immigration reform and incorporating a strong buildings component in infrastructure legislation. More than ever, roofing professionals have discovered that there is strength in numbers. More than ever, they are working together for the good of the industry as a whole.



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STUNNING

WRITTEN BY | MARK ODOM

One of only a few classic mid-century buildings in Austin, Texas, recently underwent a complete renovation by architecture firm Mark Odom Studio and builder Franklin Alan LLC. Designed as a law office by architects Pendley & Day and built in 1960, the 3,000-square-foot building is located near downtown Austin on North Lamar, a busy artery that runs through the city. The area includes about 10 mid-century buildings, each of which has been renovated over time.

Meredith and Tyler Spears, owners of Texas-heritage and family-operated insurance company, BKCW, bought the building in 2017 for its iconic mid-century architecture and history, which they believed reflected their company culture, attitude and goals. The project then began not only as a full renovation of the office building, but also as a true preservation project. In fact, Preservation Austin recently awarded the project a Preservation Merit Award 2020.

The use of mid-century materials—some of which were salvaged from the

BEFORE PHOTOS: MARK ODOM STUDIO
AFTER PHOTOS: LEONID FURMANSKY

REMINDER

An Iconic Mid-century Building Is Preserved as an Office for a Family-operated Insurance Company

Preservation Austin recently awarded the project a **PRESERVATION MERIT AWARD 2020**.

building itself—as well as careful attention to detail brought this beautiful building back to life.

CHALLENGES

Although the building had never been abandoned, it had been allowed to deteriorate during the past 15 years. Unexpectedly, the site and hill on which the building sits had a tremendous amount of erosion, requiring our team to redesign water flow around and under it. We had to build new retaining walls and address structural pier erosion, as well.

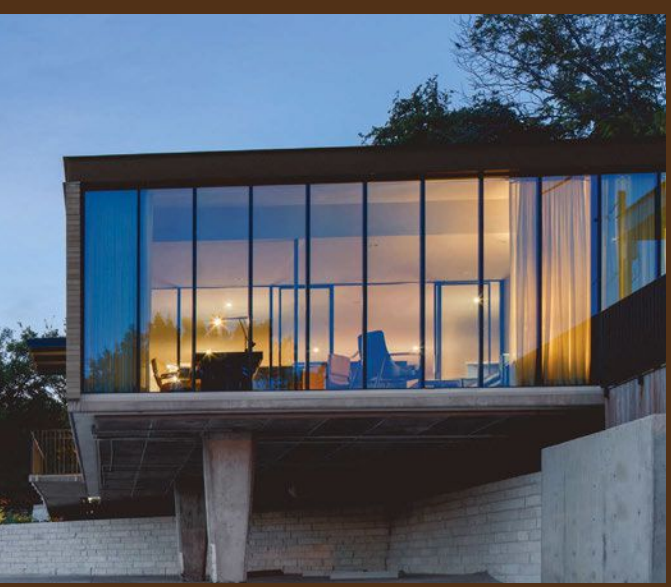
Over the years, the building had been internally subdivided, limiting the experience of the original building stature. Our design team quickly set out to fully open the space, a nod to the open-office layouts popular in insurance and advertising companies in the mid-1960s.

Some of the original drawings were available and were very helpful. An unexpected discovery that the drawings helped us understand quickly is the existing brick specification and detail. The existing brick was an atypical size and was primarily load-bearing. We were not able to find new brick to match the existing, but the demolition of a portion of the back walls produced a majority of the salvaged brick used to extend the roof perimeter.

DETAILS, DETAILS

Because the original ceiling/roof was very low at an 8-foot, 6-inch interior dimension, we raised the roof 18 inches so we could install LED lights, ductwork and other mechanics inside the ceiling cavity. The existing brick removed during demolition was used to increase the height and match brick on the

Because the original ceiling/roof was very low, the team raised the roof 18 inches so it could install LED lights, ductwork and other mechanics inside the ceiling cavity. The existing brick removed from back walls during demolition was used to increase the height and match brick on the exterior and interior of the building.



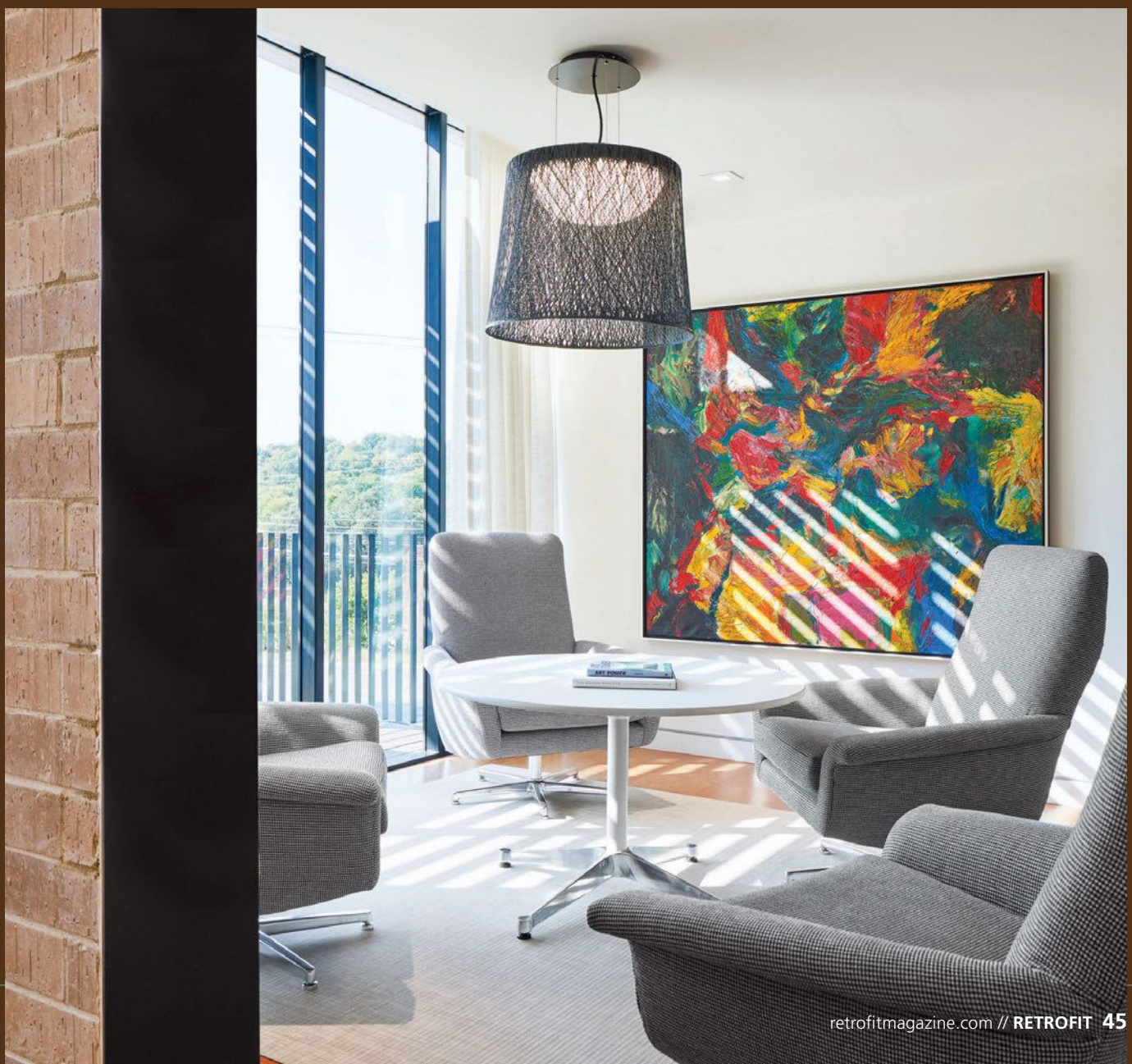
Glass-enclosed conference rooms and offices ensure privacy. These glass partitions were initially used to allow natural light to move through the space from all directions. Today, these partitions meet distancing requirements related to the ongoing COVID-19 pandemic.

exterior and interior of the building.

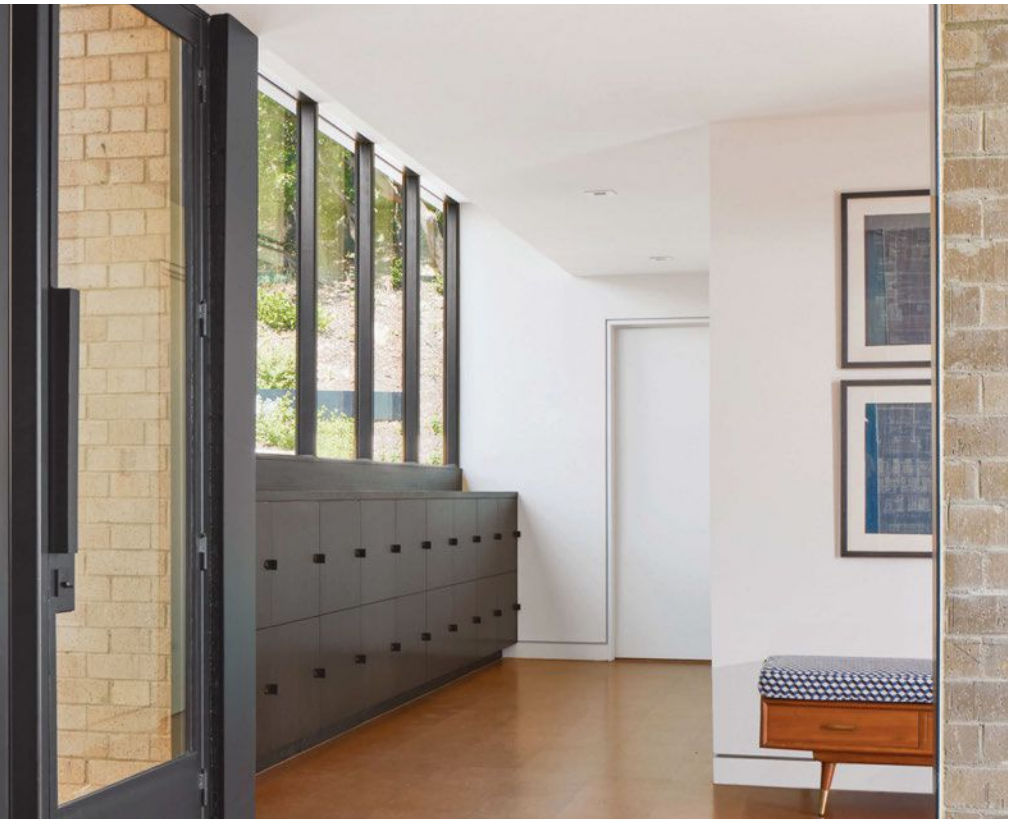
The owners wanted an open floor plan so to ensure privacy, the team specified 4-foot-high cubicles constructed with acoustic panels. Glass-enclosed conference rooms and offices with 1/2-inch-thick insulated glass ensure further privacy. These glass partitions were initially used to allow natural light to move through the space from all directions. Today, these partitions meet distancing requirements related to the ongoing COVID-19 pandemic.

The only fully enclosed space in the open floor plan is the supply/print room, concealed in wood paneling behind the reception desk. Built-in lockers for employees are placed strategically in the "back-of-house" area for minimal visibility from the main space. Stained-wood paneling, cork flooring and artisan wall tiles are used throughout.

Existing storefront windows were replaced with new energy-efficient glazing,



Fully opening the interior maximizes natural daylight, exterior views, interior engagement and the celebration of the original volume.

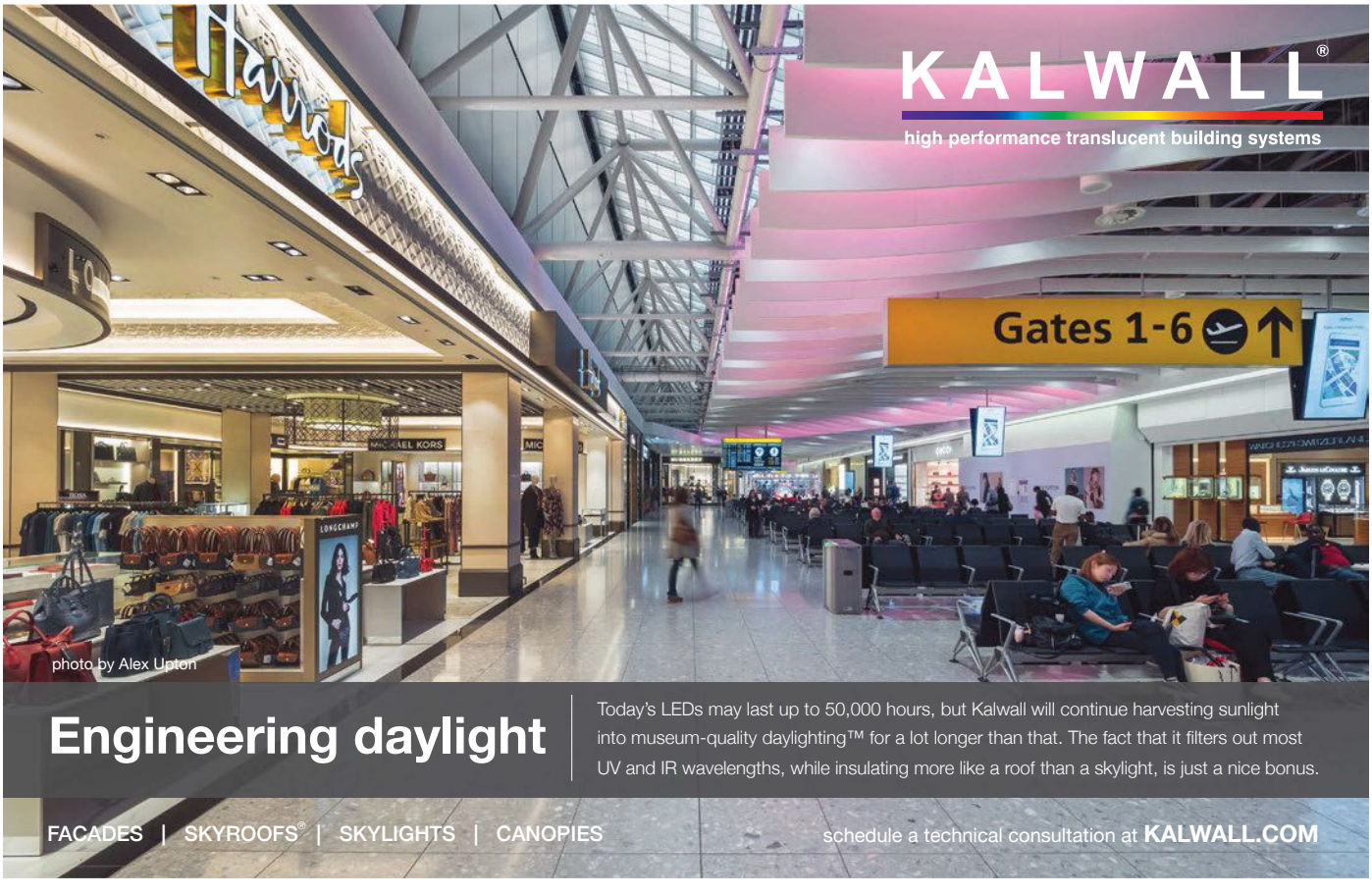


framed with steel mullions to match the original window pattern. Fully opening the interior maximizes natural daylight, exterior views, interior engagement and the celebration of the original volume.

Maintaining the dedicated views toward downtown Austin and adjacent Pease District Park was critical for the client and for the visual experience of the employees. Complementing the very public southern and western views, the eastern windows now face a revitalized subterranean back courtyard, which acts as a respite from the North Lamar traffic. On the exterior, a front, park-facing deck and southern, downtown-facing deck were added to accentuate the horizontality of the structure while providing more generous entry points for visitors and employees.

SATISFACTION

This project took two-and-a-half years to complete, which was about six-months longer than expected because of the amount of site work and erosion control necessary. The end result is a preserved but updated



> WE ARE NOW BACK IN THE OFFICE (DESPITE THE ONGOING COVID-19 PANDEMIC); OUR TEAM FUNCTIONS MUCH BETTER WHEN THEY CAN INTERACT DURING THE WORKDAY.
>
> *— Meredith Spears, owner, BKCW*

RETROFIT TEAM

ARCHITECT // Mark Odom Studio, markodomstudio.com

MEP ENGINEER // AYS Engineering, ayseng.com

STRUCTURAL // Leap!, leapstructures.com

BUILDER // Franklin Alan LLC, franklinalan.com

LANDSCAPE // Linda Balagia Landscape Designs

COLLABORATION INTERIORS // The Renner Project, therennerproject.com

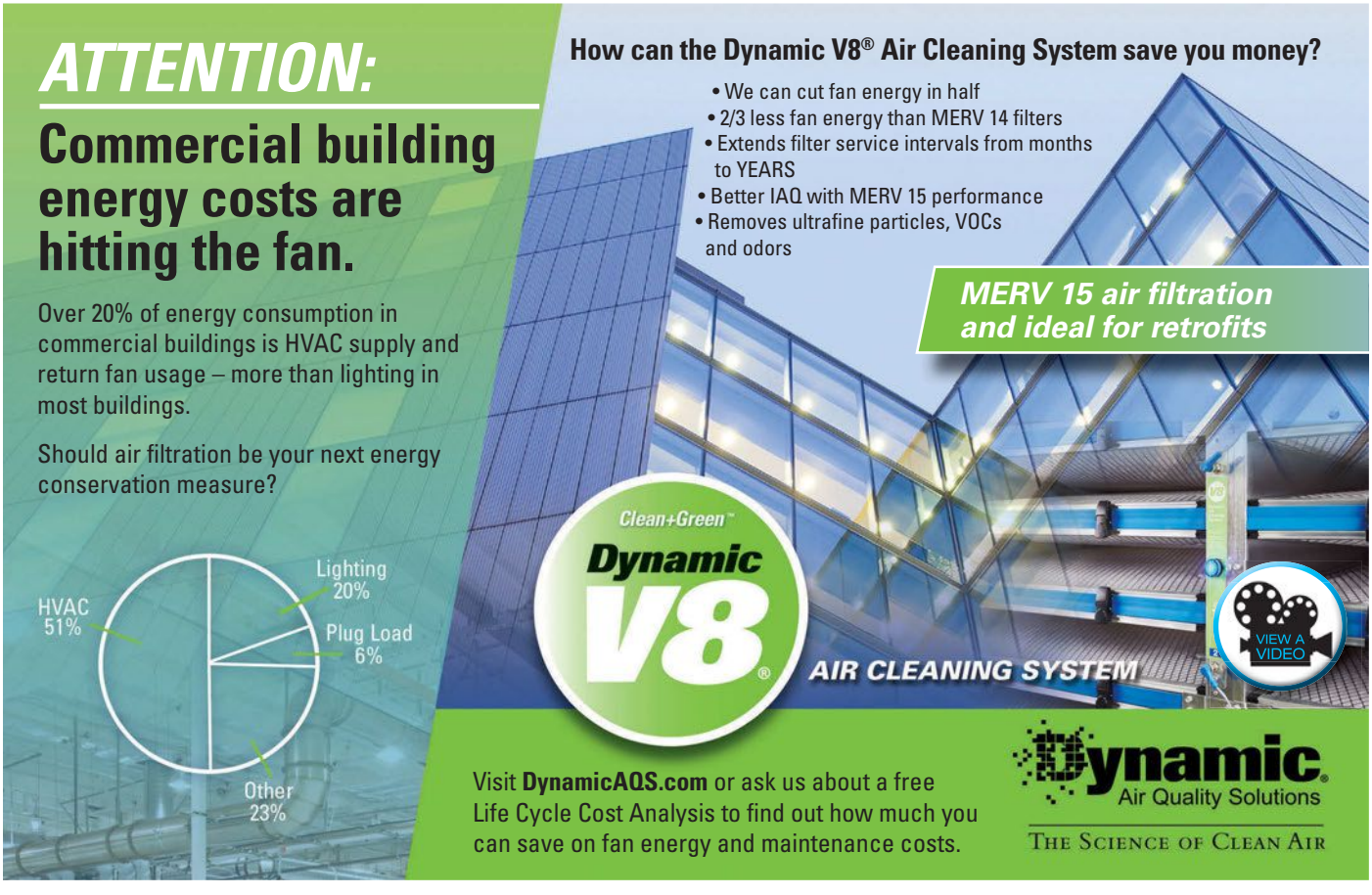
mid-century building that remains an Austin landmark.

The owner, architect, design team and builder worked tremendously well together and problem-solved during the entire process. Franklin Alan was on board during early schematic phases and worked collaboratively with the architects and engineers to provide insight, budgeting and scheduling answers. This is crucial to a successful project; it allows everyone to be on the same page with design intent to limit surprises.

For the Mark Odom Studio team, the most exciting part of this design process was treating this more like an adaptive-reuse project rather than just a renovation. Preserving this iconic 60-year-old building was of course a must—but tricky to pull off. Raising the roof and ceiling, opening the interior and finding vintage brick were just a few of the design choices that helped the structure really come to life.

"We feel fortunate every day we come in to work here," says Meredith Spears. "We are now back in the office [despite the ongoing COVID-19 pandemic]; our team functions much better when they can interact during the workday. Staff have their own cubicles, which helps with distancing immensely. When getting up or in shared workspaces or collaborating, we all wear masks. Many take their laptops and work outside; the office has a beautiful outdoor courtyard and terrace."

The clarity of the client's vision paired with the team's attention to detail made this project extremely satisfying. It is especially gratifying to see the office fit the client's needs, even during the current pandemic.



MATERIALS

ENERGY-EFFICIENT GLAZING // SunGuard SNX 51/23 from Guardian Glass, www.guardianglass.com

IPE WOOD EXTERIOR DECK // Artisan Hardwood, artisanhardwood.com

CORK FLOORS // World Floors Direct, www.worldfloorsdirect.com

CABINETRY AND WALL PANELING // Sawdust Studio, www.sawduststudiollc.com

GLASS PARTITIONS // Ramirez Welding, (512) 924-2441

ACOUSTIC WORK STATIONS // Herman Miller, www.hermanmiller.com

HVAC // Carrier, www.carrier.com

TPO ROOF // Versico Roofing Systems, www.versico.com

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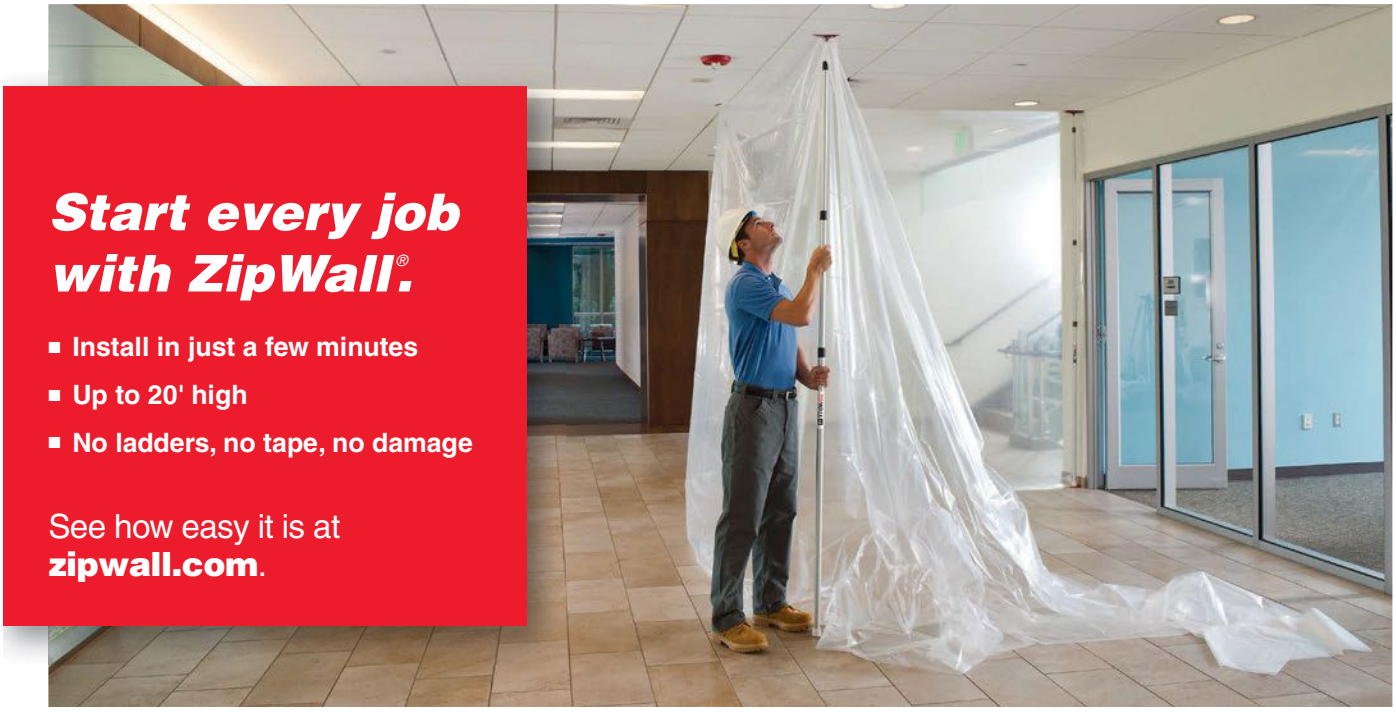

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CONNECTICUT INNOVATIONS

New Haven, Conn.

PHOTOS ROBERT BENSON

RETROFIT TEAM

ARCHITECT: Amenta Emma Architects, amentaemma.com
GENERAL CONTRACTOR: Urbane New Haven LLC, urbanenewhaven.com
MEP ENGINEER: RZ Design Associates, rzdesignassociates.com
ACOUSTICAL ENGINEER: Cavanaugh Tocci, cavtocci.com
STRUCTURAL ENGINEER: Thornton Tomasetti, thorntontomasetti.com
GLAZING SUBCONTRACTOR: Eastern Glass Co., easternglassco.com
POLISHED CONCRETE SUBCONTRACTOR: Elegant Concrete Polishing, elegantpolishing.com

MATERIALS

Designers maximized existing features, which included high ceilings, skylights and a long southern-facing glazed wall, bathing the interior in light. Use of glass throughout the headquarters and along a central corridor, or "main street", defines program spaces and allows glimpses of activity. A particular highlight is a large conference room adjacent to the café-lounge. The boardroom's large sliding glass wall opens to unite the spaces to allow for larger meetings or events.

The following is a selection of materials used in the project:

DECORATIVE METAL PANELS: Deco by Moz Designs, mozdesigns.com
ENTRY AREA RUG: Embrace by Shaw Contract, www.shawcontract.com
OFFICE/CONFERENCE ROOM CARPET: Geoknit by Tarkett, www.tarkett.com
KITCHEN BACKSPLASH PANEL: Struttura by 3form, www.3-form.com
KITCHEN COUNTERTOP: Raven Quartz by Caesarstone, www.caesarstoneus.com
LIGHT FIXTURE: BuzziShade Pendant by BuzziSpace, www.buzzi.space
CONFERENCE ROOM SLIDING GLASS PARTITION: cero II by NanaWall Systems Inc., www.nanawall.com

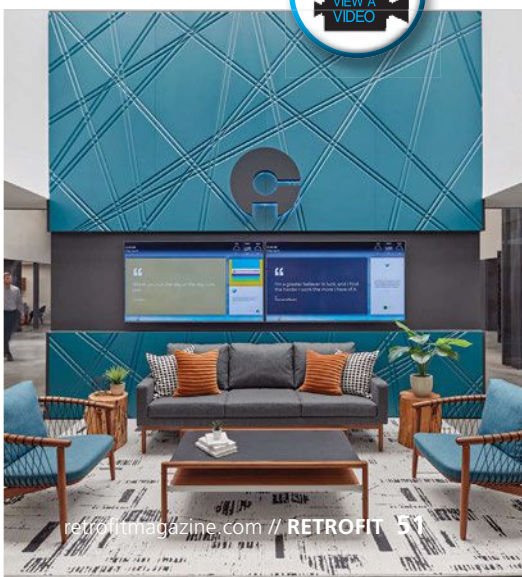
THE RETROFIT

Connecticut Innovations enables technology start-ups—including life sciences companies engaged in COVID-19 research—to launch and grow. The 9,000-square-foot headquarters inside a 1950s bus station utilizes glass and roofed "boxes" within a larger envelope to create an open, light-filled environment with spaces for events, small-team collaborations and distancing.

Although the project was designed pre-COVID-19, small offices line the perimeter of the interior, creating a high-ceiling, open environment along with private workspaces. Interior furnishings complement Connecticut Innovations' brand colors of blue and orange. Countertops and table surfaces are light, bright and easy to clean.

"We'd thought about not having any private offices, but I'm so glad that we did include some. It's great to be able to close your door, take off your mask and feel safe. When you mask-up and walk out of your office, the high ceilings and open space are reassuring, as well. With the tight corridors at our old office, we'd probably still be fully remote if we were based there," says Lauren Carmody, vice president of Marketing and Communications for Connecticut Innovations. "Instead, Amenta Emma consulted with us to help develop our return-to-the-office strategy, create traffic-flow indicators and use all of our office spaces in the safest, most effective way possible."

One challenge of repurposing an old bus station included devising ways to incorporate electrical conduits and drains because the ground slab, which had been encapsulated because of environmental concerns, could not be penetrated. Careful planning was needed to minimize disturbance of the floor slab while grouping exposed piping in a visually pleasing manner. Polishing the existing concrete floor, in addition to utilizing existing exposed structure in the ceiling, contributed to sustainability of the project.



VIRTUS INVESTMENT PARTNERS
Hartford, Conn.

RETROFIT TEAM

ARCHITECT OF RECORD: The S/L/A/M Collaborative, slamcoll.com
CONTRACTOR: Gilbane Building Co., gilbaneco.com
MEP ENGINEER: Van Zelm Engineers, vanzelm.com

MATERIALS

The following is a sampling of materials used in the renovation:
ACOUSTICAL WOOD PANELS: Decoustics, decoustics.com
COUNTERTOPS: Caesarstone, www.caesarstoneus.com; Cambria, www.cambriausa.com; and HanStone Quartz, www.hanstonequartz.com
ACOUSTIC WALL PANELS: Novawall, novawall.com
STOREFRONTS: Kawneer, www.kawneer.com
GLASS: Oldcastle BuildingEnvelope, obe.com
VINYL FLOORING: Shaw Contract, www.shaw contract.com, and Armstrong Flooring Inc., www.armstrongflooring.com
CARPET: Bentley Mills, www.bentleymills.com, and Shaw Contract, www.shawcontract.com
ACOUSTICAL CEILINGS: Armstrong Ceiling & Wall Solutions, www.armstrongceilings.com, and USG, www.usg.com
WINDOW TREATMENT: SWFcontract, www.swfcontract.com

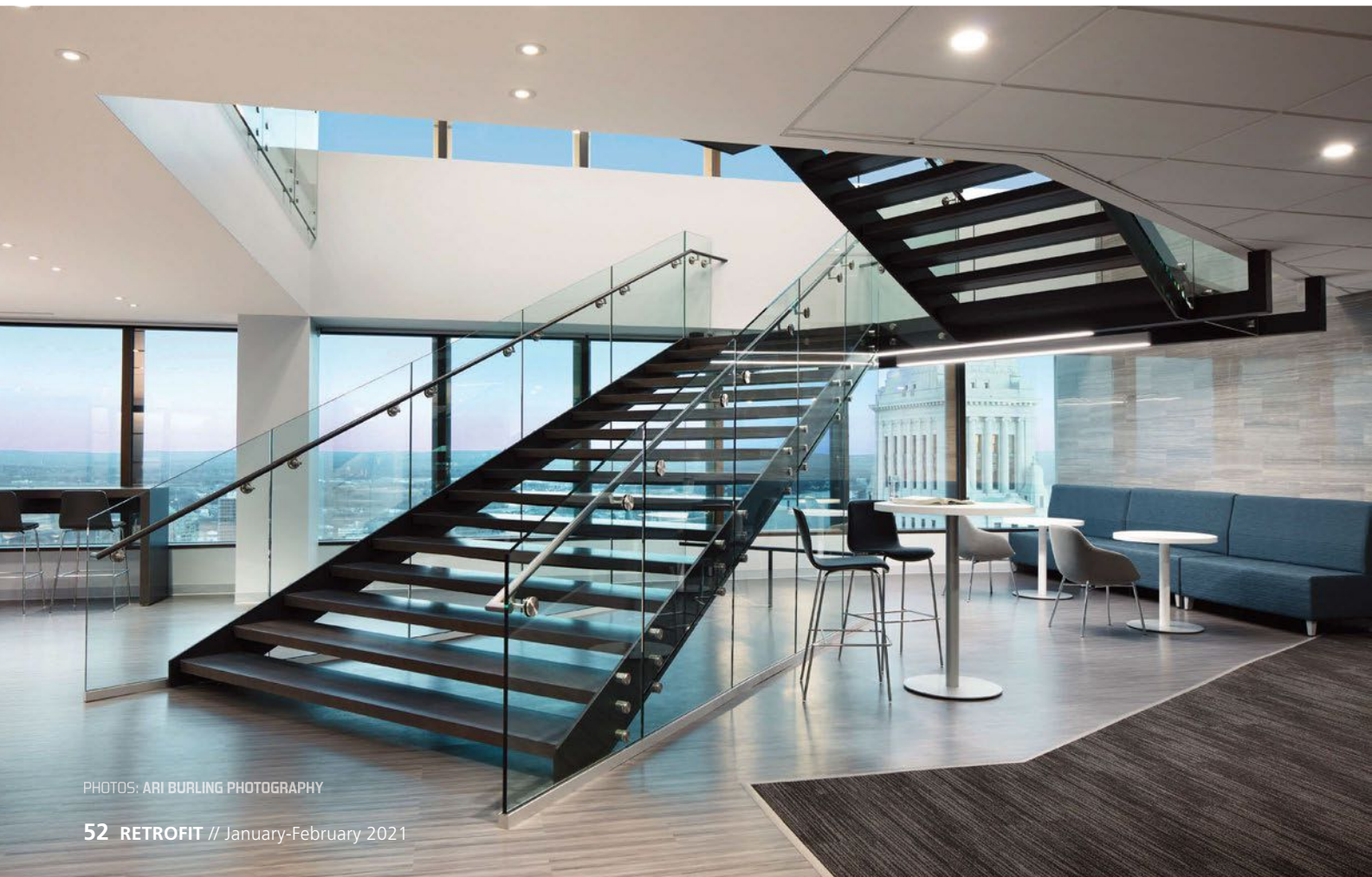
THE RETROFIT

Like many companies, Virtus Investment Partners' previous workspace had become inefficient and outdated. Senior leadership wanted the new 65,000-square-foot headquarters to facilitate an increase in employee interaction through more open floor space and natural light, yet without compromising the need for privacy.

With nearly 40 percent of employees in private office spaces, the design team was challenged with providing a significant number of enclosed offices around the perimeter of the building without losing the benefits of natural light. A relocation to the iconic Gold Building, a glass building in the capital city, rendered a balanced solution.

The design team's use of full-glass office fronts allows access to daylight and panoramic views for all employees, including those in the interior workstations. This option bucked today's trend of doing away with enclosed offices, understanding that one size does not fit all when designing a 21st century workspace.

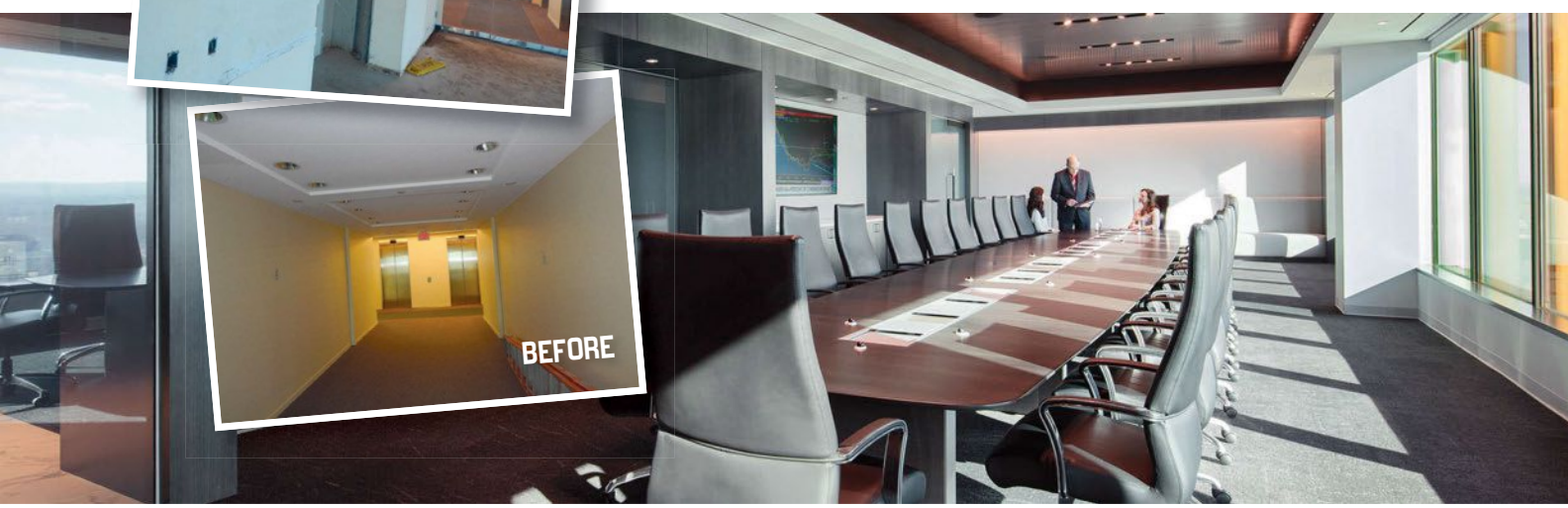
A new grand staircase connects the reception area on floor 26 to a spacious, well-appointed café on the 25th floor. Bright and comfortable, the café provides employees a central space in which to engage and host large communications sessions and casually interact. In addition to the open spaces, the introduction of huddle rooms accommodates informal business activities and interaction. An emphasis on employee wellness has shifted the culture to embrace sit-to-stand workstations for all staff, the use of a quiet room for privacy and staff kitchens on each floor.



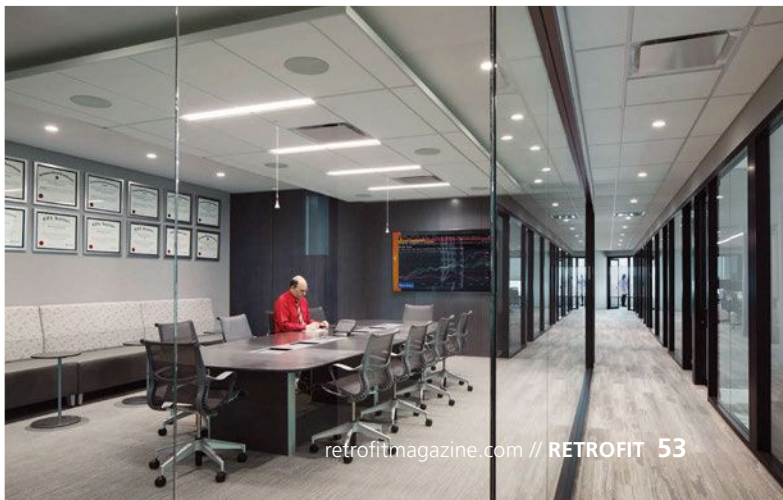
PHOTOS: ARI BURLING PHOTOGRAPHY

VIRTUS
INVESTMENT PARTNERS

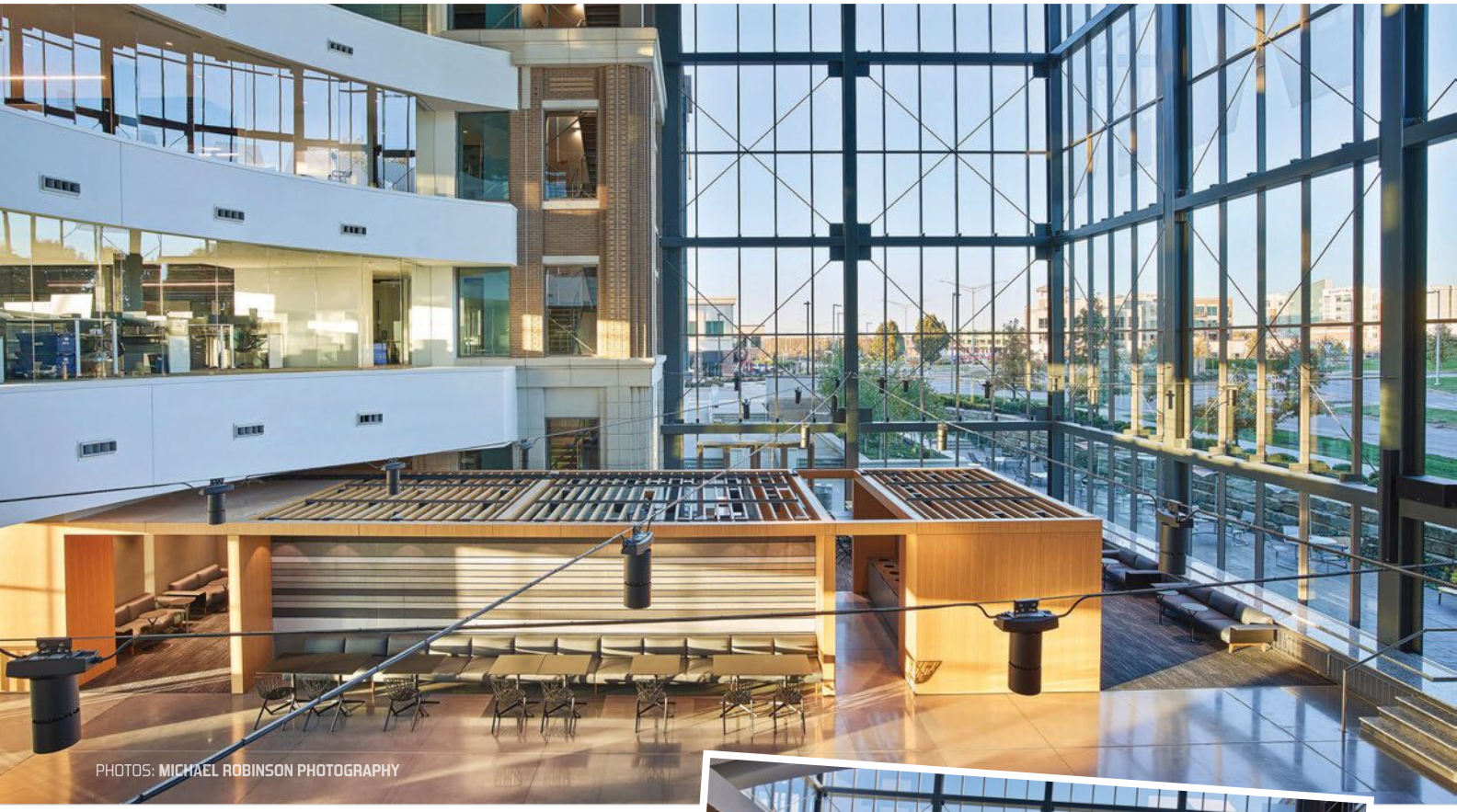
BEFORE



BEFORE



KIEWIT ENGINEERING | Lenexa, Kan.



PHOTOS: MICHAEL ROBINSON PHOTOGRAPHY

RETROFIT TEAM

ARCHITECT: HOK, www.hok.com
ENGINEER: Lankford | Fendler + associates, lankfordfendler.com
LIGHTING REPRESENTATIVE: Premier Lighting & Controls, premierlight.com

MATERIALS

Embarking on a significant transformation of its regional headquarters, Kiewit renovated two existing towers connected by a vast atrium space. The glass-walled atrium is 4-stories high with indoor balconies from the adjoining towers looking down onto the space. It serves as a common area for dining, team meetings and building-wide functions. It often is referred to as the work café. Maintaining the height and grandeur of the multistory space while creating a sense of intimacy was a key design objective. To that end, the team looked for creative ways to visually "lower" the ceiling.

Levi Dermyer, intern electrical engineer at Lankford | Fendler + associates, selected Luminis' Aramis AR168 luminaires to help achieve the desired effect. The catenary-mounted black pendant fixtures are strategically placed along cables suspended 16-feet above the floor. "By bringing down the lighting plane to this height, it allowed us to create a more comfortable and inviting environment," Dermyer notes.

Installation of the luminaires in this unusual space posed a challenge. There were sufficient vertical structural elements and strength to support the cabling and catenary nodes but these were not always in the ideal location. "The cabling layout required a coordinated effort and compromise between all team members," Dermyer recalls. "There was also a challenge to keep sight lines clear to the stage area of the café. In the end, I think that everyone felt their design goals were met."

The 32 AR168 pendants each deliver 3,000 lumens. With a 3500K color temperature, the high-efficiency downlight reflector in each fixture directs a bright yet comfortable illumination down to meeting tables, workspaces and open-floor areas below. With a lifetime beyond 125,000 hours, the luminaires will contribute to the organization's daily energy-savings goals. The project was completed in July 2019.

LUMINAIRES MANUFACTURER: Luminis, www.luminis.com

PROJECT WORLDWIDE HEADQUARTERS | New York

RETROFIT TEAM

ARCHITECT: STUDIOS Architecture, studios.com

MATERIALS

In designing creative agency Project Worldwide's New York headquarters, STUDIOS Architecture sought industrial, yet refined, materials to realize a pared-back, industrial-chic design scheme.

Upon entering the seventh-floor amenities space, a hospitality-inspired bar replete with a book-matched black marble backdrop is revealed. Fabricated within the bar-display cabinet doors, Banker Wire's S-51—specified in a bronze finish—provides a lustrous, rich accent while simultaneously celebrating the duality of grit and refinement that defines the space.

"We were seeking a metal mesh that had an industrial yet elevated look and feel in a bronze that would patina over time—coinciding with our desire to create an elegant and textural environment," says Jordan Evans, associate, STUDIOS Architecture. "The refined nature of the mesh, in contrast to the exposed structure and concrete floors, provided the aesthetic tensions we wanted for the space."

Also within the amenities area, STUDIOS Architecture relied upon Banker Wire's S-51 to create a mesh screen wall divider, specified as a material that was simultaneously able to blur the back-of-house corridor while further adding to the space's refined-but-moody industrial look. Contrasting the warm-wood elements, concrete floor and refined detailing of the room, S-51's flattened crimp at the wire mesh intersections—a sturdy pattern with a dense, smaller open area—creates a textural but glamorous touchpoint.

ARCHITECTURAL WOVEN WIRE MESH MANUFACTURER: Banker Wire, www.bankerwire.com

PHOTOS: TOM MINIERI, COURTESY OF STUDIOS ARCHITECTURE

MCFARLANE ARCHITECTS | San Diego

RETROFIT TEAM

ARCHITECT: McFarlane Architects, www.mcfarlanearchitects.com
GENERAL CONTRACTOR: BN Builders, www.bnbuilders.com
MECHANICAL/PLUMBING: Pacific Rim Mechanical, www.prmech.com
ELECTRICAL: Ickler Electric, icklerelectric.com

MATERIALS

The following is a sampling of materials used in the renovation:
FLOORING: Shaw Contract, www.shawcontract.com; Mannington Commercial, www.manningtoncommercial.com; and Tarkett, www.tarkett.com
TILE: Daltile, www.daltile.com
ADHESIVES: Mapei, www.mapei.com
PAINT: Sherwin-Williams, www.sherwin-williams.com
CEILINGS: Armstrong Ceiling & Wall Solutions, www.armstrongceilings.com
SOLAR CONTROL: Mecho, www.mechoshade.com
COUNTERTOPS: Caesarstone, www.caesarstoneus.com, and Wilsonart, www.wilsonart.com

THE RETROFIT

McFarlane Architects specializes in the design of scientific research facilities and needed new office space to allow the firm to grow to meet the demand for its services. Firm representatives wanted employees to feel valued, professional and have the resources to do the best work in the industry. The new office also had to showcase how a well-designed space can improve operations.

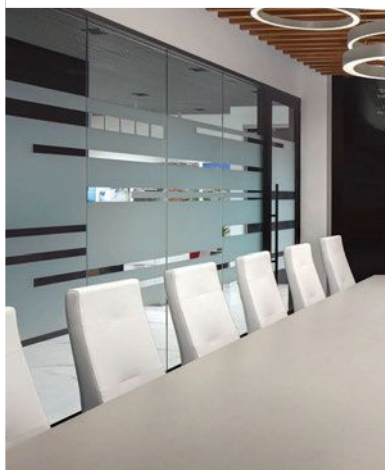
The selected building was centrally located to McFarlane Architects' clients and it had a premium window line with views and abundant natural light. The building owner had only recently purchased the building and was anxious to attract new creative office tenants, allowing McFarlane Architects to engage all team members in the design process.

The resulting design is a bold, sophisticated, professional and timeless design. The lobby initiates the experience with full-height wall-tile panels around the core of the office anchoring the space. The lobby is open to the public/conference zone and work zone, but the work zone is separated from the lobby by floor-to-ceiling natural wood slats to soften the transition between the lobby and the workspace.

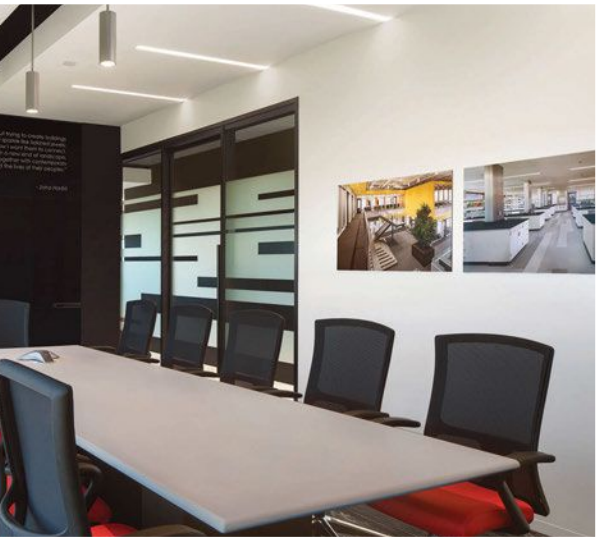
Key to the design solution is the organization of the spaces. The layout consists of two zones: the reception and conference rooms for project meetings with clients and consultants and a flexible working area with low-height work stations and furniture for maximum collaboration.

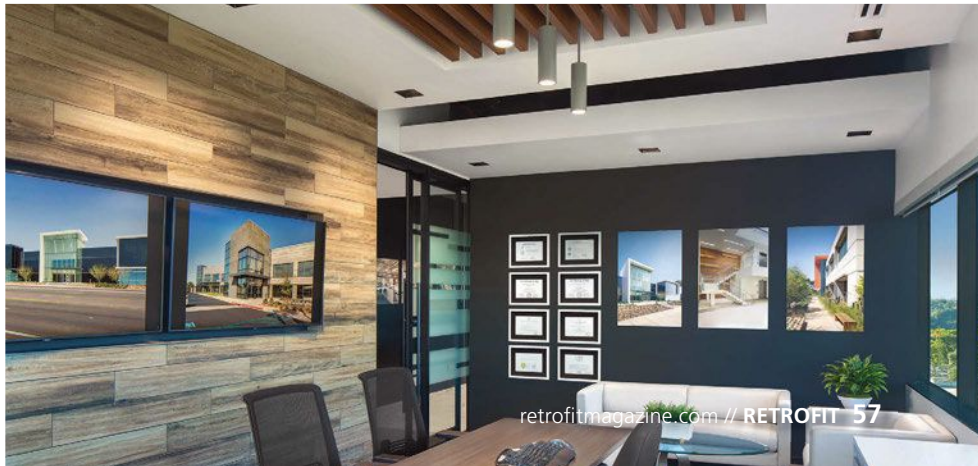
Full-height windows at the conference rooms provide a visual connection to the workspace but are also of acoustic glazing with decorative film to obscure the views and prevent transmission of sound to maintain client confidentiality.

The workspace is located along the exterior wall where the ribbon windows of the building allow natural light to penetrate deep into the space. Support facilities are grouped in the interior and centralized for access and space efficiency. The design solution creates a balance between individual productivity and group efficiency.



PHOTOS: JIM BRADY ARCHITECTURAL PHOTOGRAPHY

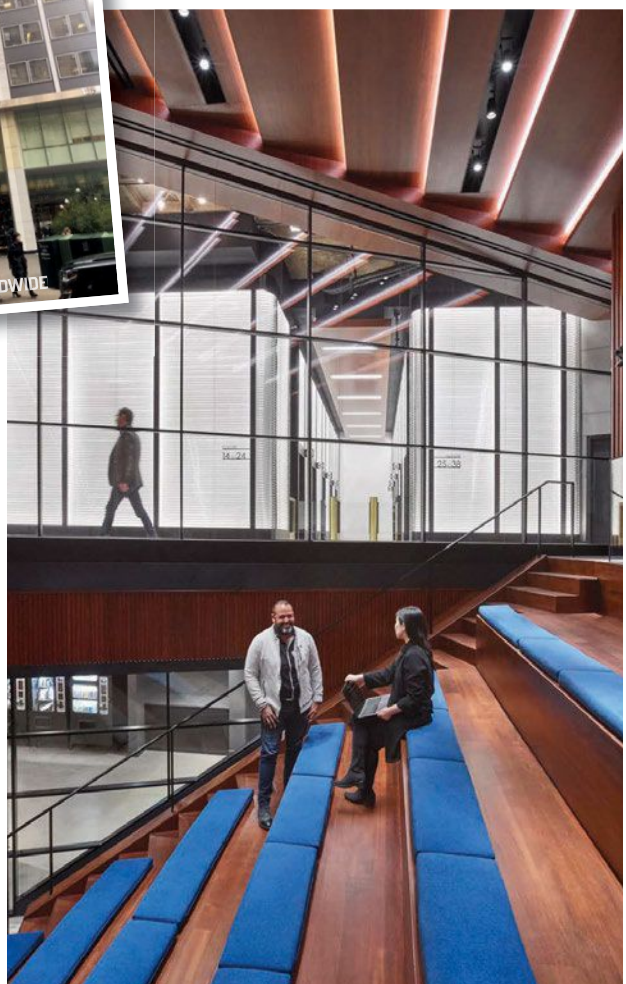




NOMAD TOWER

New York

PHOTOS: GARRETT ROWLAND



RETROFIT TEAM

ARCHITECT: NELSON Worldwide, www.nelsonworldwide.com
LANDSCAPE ARCHITECT: W Architecture & Landscape Architecture LLC, w-architecture.com
MEP ENGINEER: Mordechai Chetrit Engineers, (212) 764-5637
STRUCTURAL ENGINEER: DeSimone Consulting Engineers, www.de-simone.com
LIGHTING DESIGNER: Brinjac Engineering, www.brinjac.com

MATERIALS

The following is a sampling of materials used in the project:
GLASS-FRONT PARTITIONS: Planet Partitioning, www.planetpartitioning.co.uk
CEILINGS: Armstrong Ceiling & Wall Solutions, www.armstrongceilings.com
RUBBER GYM FLOOR: Ecore, www.ecorecommercial.com
COUNTERTOPS: Caesarstone, www.caesarstoneus.com
BATHROOM FIXTURES: Bobrick, www.bobrick.com; Toto, www.totousa.com; Kohler, us.kohler.com; and American Standard, www.americanstandard-us.com
DRINKING FOUNTAINS: Elkay, www.elkay.com

THE RETROFIT

NELSON Worldwide reimagined this 39-story building in the storied Nomad (North of Madison Square) neighborhood to reflect the vibrancy of this landmark area rich in culture and history. Designed around cultural connectivity, the building was redefined as a destination for tech and media tenants.

There were three significant design challenges as part of this comprehensive project: make a major focus shift and attract tenants; ensure that the Nomad Tower melded the office building's existing design with an added sense of five-star hospitality; and include amenities to stand out among the competitive workplace market.

To establish bold curb appeal and attract tenants, the team took a strategic approach in shifting the entrance from 32nd Street to 31st Street to more readily welcome the energy of the emerging neighborhood and infuse it into the environment.

To stand out among other competing workplaces in the city, and in line with the amenities push that has overtaken the workplace landscape in recent years, Nomad Tower is equipped with common spaces that enhance the daily grind. A 200-seat amphitheater, private lounge, fitness center, New York's largest bicycle storage and an open coffee bar were created to resonate with expectations.

Inspired by the industrial history of the neighborhood, the team exposed the existing waffle ceilings within the building and incorporated steel and concrete juxtaposed with warm wood finishes, sleek marble and soft furnishings. These materials combined with soft lighting bring a luxurious hospitality flare, creating a unique environment that is inviting and inspiring.

The new façade and entry, 50,000-square-foot lobby and amenity spaces (LEED Gold certified, ENERGY STAR-certified and Wired Certified Gold) have culminated in a new identity for Nomad Towers, resulting in new leases.

COURTHOUSE SQUARE | Lexington, Ky.

RETROFIT TEAM

ARCHITECTS: K Norman Berry Architects, knbarch.com, in conjunction with Deborah Berke Partners, dberke.com

MATERIALS

During the renovation process, a key point of emphasis was restoring the splendor of the building's original domed area. The design team reconstructed the plastered interior of the dome and added lighting to evoke a starry sky. To spatially connect the lower floors to the dramatic upper domed space while bringing the building up to current fire- and life-safety building codes, the team specified two Fireframes ClearFloor fire-rated glass floor systems. The fire-rated glass floor systems were centered and aligned under the dome on the third and fourth floors.

To meet the requisite needs of the space, the fire-rated glass floor systems consist of Pilkington Pyrostop fire-rated glass, a tempered, laminated walking-surface glass, and a steel framing grid. The systems are fire-rated for two hours and provide a barrier to flames and smoke, as well as radiant and conductive heat. In the event of a fire, this ensures their surface remains cool enough for individuals to walk across for the duration of the two-hour fire rating.

In application, the code-compliant fire-rated glass floor systems transfer daylight into the center of the building while allowing lower-floor occupants to glimpse the grandeur of the dome. To further enhance the viewing experience, the fire-rated glass floors feature a ceramic frit on the top (floor side) of the glass. It creates a sparkly appearance that enhances the starry-sky lighting in the newly remodeled dome while functioning as a durable non-slip walking surface. To account for safe pedestrian use, the fire-rated glass floor systems support loads up to 150 pounds per square foot.

GLASS FLOOR SYSTEMS MANUFACTURER: Technical Glass Products, www.fireglass.com

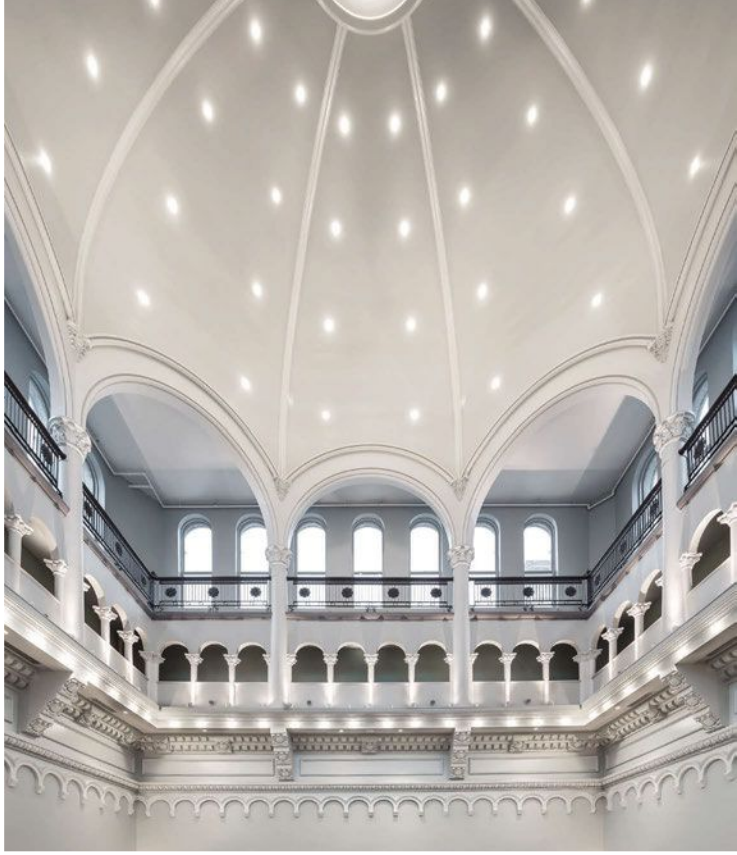
THE RETROFIT

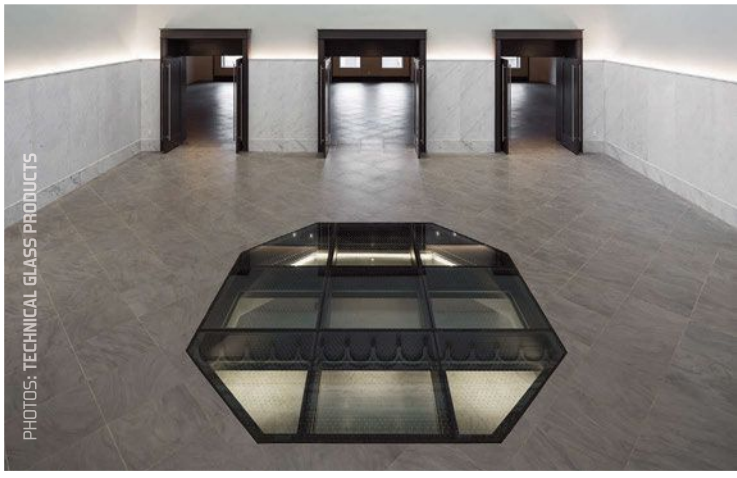
The historic courthouse, constructed in 1899 in the Richardsonian Romanesque-style, was one of the first fully electrified structures in Lexington. Its heralded central dome used electric lighting to create a star-like ceiling visible to occupants from the ground-floor entrance. But in the 1960s, this one-of-a-kind viewing experience changed.

A new central elevator shaft and heating and air conditioning equipment obscured views of the prominent dome and prevented it from streaming daylight throughout the building. As the *Lexington Herald-Leader* newspaper reported, "Over the next 60 years, the dome area deteriorated and became home to pigeons and other birds. Only courthouse and maintenance staff—and the occasional reporter—saw the dome."

The building remained in this declining state until 2002, when it was vacated. The city officially shut down the historic courthouse in 2012 because of concerns about deterioration and asbestos hazards.

Unwilling to let such a historic building go to waste, the city of Lexington approved a $32 million renovation of the building in 2016. The architects were charged with converting the courthouse into a beautiful, modern mixed-use office and restaurant space with leasable event rooms in the upper rotunda. According to K Norman Berry Architects, the goal was to "preserve the character of the building, especially its existing architectural fabric while updating it for a new mix of uses to once again make the building an accessible and dynamic focal point of downtown." Today, the courthouse holds an event space, the city's tourism bureau, Lexington Visitors Center, and a restaurant and bourbon bar.





PHOTOS: TECHNICAL GLASS PRODUCTS

ASHRAE HEADQUARTERS

Peachtree Corners, Ga.

RETROFIT TEAM

GENERAL CONTRACTOR: Skanska, www.skanska.com
MECHANICALS INSTALLER: Shumate Mechanical, www.shumatemechanical.com
PLUMBER: FitzGerald & Sons Plumbing Co., fitzgeraldplumbing.com

MATERIALS

A team of ASHRAE volunteers led a highly successful building campaign to garner support for the renovation project. Thirty-one corporate donors committed more than $9.7 million in monetary support and gifts of equipment and services. Among these, the plumbing and heating and cooling systems were major factors in influencing the building's environmental quality.

The Uponor AquaPEX plumbing system in the ASHRAE global headquarters renovation features 3,600 feet of 1/2- to 2-inch crosslinked polyethylene (PEX) pipe. The flexibility and stable material costs of the pipe are what brought forth its initial popularity among installers who were looking for a system that was more economical and faster to install.

A radiant ceiling panel system is used in the headquarters for heating and cooling, as well as dedicated outdoor air system for outdoor air ventilation with enthalpy heat recovery. (Prior to the COVID-19 pandemic, ASHRAE had already planned to provide 30 percent more outside air to the building than the required minimum ventilation rates from ASHRAE Standard 62.1, Ventilation for Acceptable Indoor Air Quality, and will implement other applicable guidance developed by the ASHRAE Epidemic Task Force [ETF] for commercial office buildings. Read about ETF's guidance in "HVAC's Role in Reducing Spread of Infectious Aerosols," by Wade H. Conlan, P.E., CxA, BCxP, LEED AP, a member of ASHRAE's ETF and leader of the task force's Building Readiness Team, July-August 2020 issue, page 42, or bit.ly/2BBPNa2.)

Wirsbo hePEX pipe, a PEX piping system with an oxygen barrier to protect ferrous components in a mechanical system, is the hydronic heating and cooling system's answer to metallic piping systems of the past. For the ASHRAE global headquarters, 9,200 feet of 3/4- to 1 1/2-inch Wirsbo hePEX pipe delivers chilled water to the radiant ceiling panels through a network of 53 stainless-steel manifolds.

For hydronic heating and cooling systems, PEX's light weight makes it easier to handle on the job site. Also, because PEX is naturally corrosion resistant, it requires fewer nitrites, azoles and other chemicals inside the piping to maintain a static hydronic environment.

PEX AND HYDRONIC DISTRIBUTION PIPING SYSTEMS MANUFACTURER: Uponor, www.uponor-usa.com

THE RETROFIT

As one of the nation's pioneers in advancing innovative, sustainable building practices, ASHRAE renovated an outdated, inefficient 66,700-square-foot building to become its global headquarters with net-zero-energy goals and an ASHRAE Building Energy Quotient Performance Score of 100.

As the hub for the development of building solutions for a healthier world and a teaching center for professionals, the project required thoughtful design, unique construction and exceptional products to create an economically successful retrofit model that was viable to replicate. In addition, the building design considers worker productivity and wellness through acute visual perception, abundant daylight, astute acoustic properties, exceptional thermal comfort and healthful air quality.

"Although new construction of net-zero energy buildings makes a lot of headlines, reuse of existing structures is a basic tenet of sustainability—the energy performance of existing buildings must be addressed to substantially impact the 40 percent of primary energy consumed by buildings," says ASHRAE Building Ad Hoc Committee Chair Ginger Scoggins, P.E.

The photovoltaic (PV) system design is currently in progress. The building will be on its way to fully net-zero energy by March 2021 upon the completion of the PV system installation.

PHOTOS: ASHRAE unless otherwise noted

PHOTO: UPONOR

PHOTO: UPONOR

THE CANNON | Houston

PHOTOS: METL-SPAN

RETROFIT TEAM

ARCHITECT: Abel Design Group, abeldesigngroup.com
IMP INSTALLER: FSR Services, fsrservices.com

MATERIALS

To help achieve the desired appearance, the Cannon called for more than 90,000 square feet of insulated metal panels (IMPs) for walls and roofing—exterior and interior.

"We could have gone the conventional route with insulation and drywall, but we really wanted to maintain some of the original look of the building," says Ken R. Harry, AIA, NCARB, LEED AP, principal of Abel Design Group. "With the insulated metal panels, we were able to leave the interior beams and columns exposed. Plus, we got the levels of insulation that were required for the roof and walls. Right from the start, it seemed like the logical way to go."

The original building was stripped down to the steel structure. Some of the 70-year-old purlins and cross members had to be replaced. "We had to verify every dimension of all the beams so shop drawings could be accurate," says David Baldwin, sales manager at FSR Services. "The beams were painted and the insulated metal panels were installed. The bright blue beams against the white interior finish of the insulated metal panel is a very modern and clean look."

The project called for approximately 67,775 square feet of Metl-Span's CF42R insulated metal roofing panels with 4 inches of urethane insulation in the color of Burnished Slate. The panels are 24-gauge Galvalume. The wall panels are two profiles and colors: 37,858 square feet of CF7.2 InsulRib in Burnished Slate and 9,437 square feet of CF36A in Chestnut, both in 22-gauge Galvalume. All interior panels were 24-gauge Galvalume in Igloo White.

IMP MANUFACTURER: Metl-Span, www.metlspan.com

THE RETROFIT

Renovating and transforming a 70-year-old manufacturing facility into a contemporary office building with impressive amenities requires some imagination, careful planning and a lot of communication. The Cannon, a 120,000-square-foot modern, flexible workspace, provides innovators with everything they need to establish a home base for their companies.

Home to more than 500 of greater Houston's most talented and accomplished entrepreneurs, creatives and small business owners, The Cannon, which was completed in August 2019, includes 131 offices, 300 open and dedicated desks, a movie theater, game room, event space, full-service kitchen, a health and wellness room, and courtyard with outdoor seating.

NEW TERRITORY

Tammany Hall's High-tech Glass Dome Honors New York's Original People

WRITTEN BY | TODD POISSON, AIA

An articulated dome of glass and steel now rises from historic Tammany Hall, honoring the building's namesake on the northeast corner of Union Square in Manhattan.

The iconic rooftop addition is the visible top of a new 6-story building rising from within the restored century-old street walls of the New York City landmark. The undulating, turtle-shell-like dome honors the source of Tammany Hall's name, the legendary Native American Lenape Chief Tammanend. Known for supporting peaceful coexistence with 17th century European settlers, Tammanend inspired pre- and post-revolutionary political clubs to listen to all voices while they debated what a new republic could be.

Dozens of populist Tammany societies dotted the young U.S., but only New York's Tammany Hall survived into the 20th century. By then, the name Tammany had become synonymous with corruption and greed because of various scandals, including those during the infamous "Boss" Tweed era; Tweed is notorious for stealing money from New York City taxpayers. BKSK

PHOTOS: CHRISTOPHER PAYNE | ESTO

BEFORE
PHOTO: BKSK ARCHITECTS LLP

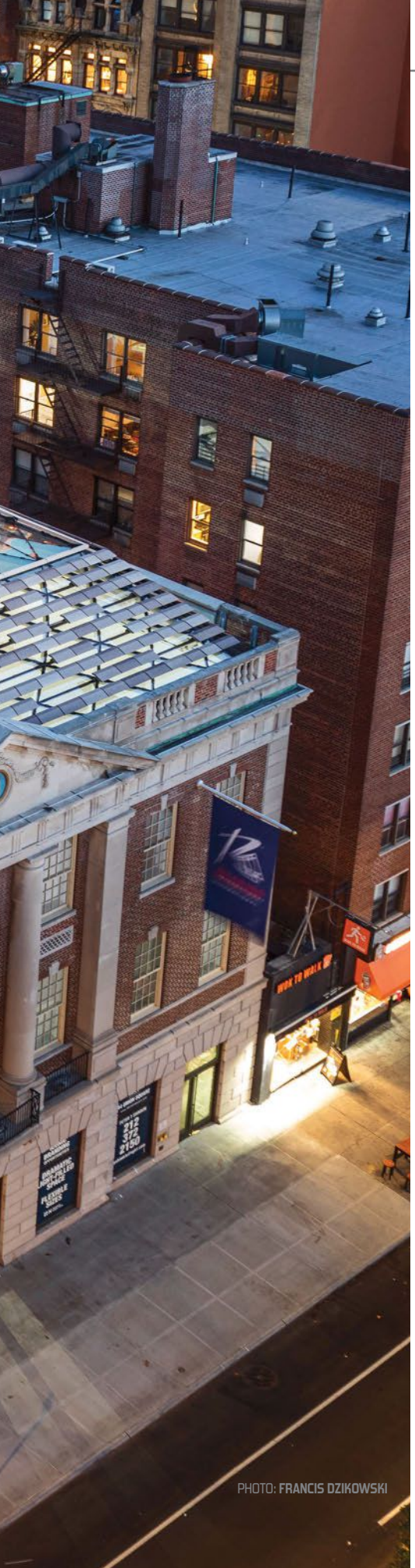


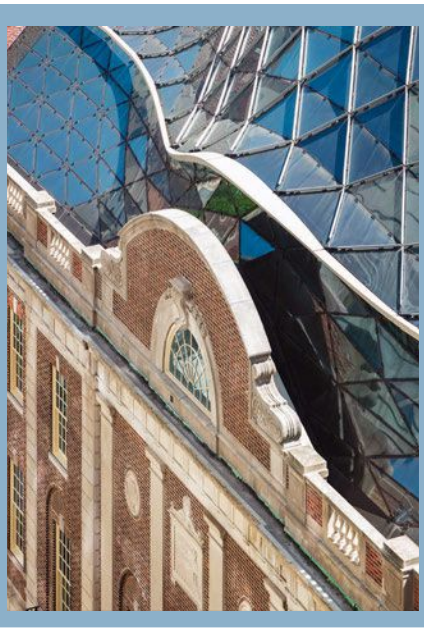
PHOTO: FRANCIS DZIKOWSKI

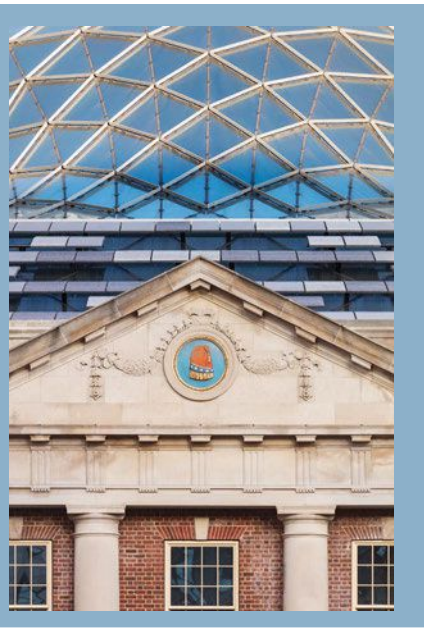
Architects LLP's team believed this project presented an opportunity to provide an overdue correction to Tammany's legacy.

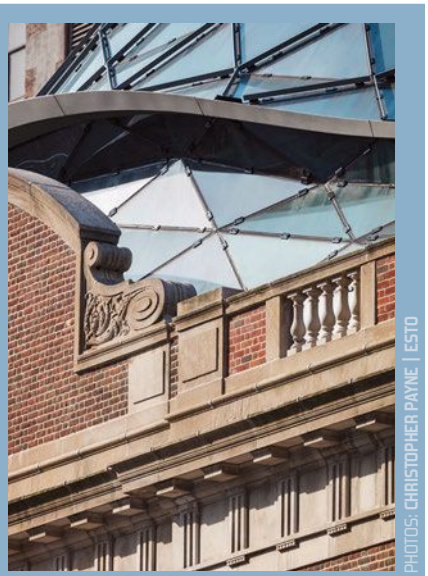
To refocus public awareness on Tammany Hall's namesake, BKSK Architects went back to the building's roots. Our design team took inspiration from the image of a great turtle rising from the sea—Chief Tammanend's clan symbol and a scene from the Lenape creation story—to give the Neo-Georgian building the grand dome many Georgian and Neo-Georgian buildings originally had or acquired over time. Along the way, we consulted with the Lenape Center to ensure an appropriate use of cultural symbolism.

A Brief History

The Tammany Hall building on Union Square was not the organization's first building; however, it was the last. It was designed in 1928 by the Philadelphia architectural firm of Thompson, Holmes and Converse. At the time, the design of the







PHOTOS: CHRISTOPHER PAYNE | ESTO

THE GLASS-DOMED VERTICAL ENLARGEMENT ENCLOSES AN ADDITIONAL 30,000 SQUARE FEET OF RENTABLE SPACE OVER THREE FLOORS ON THE TOP OF THE HISTORIC BUILDING WITH DYNAMIC VIEWS OF UNION SQUARE AND BEYOND.

OUR DESIGN TEAM TOOK INSPIRATION FROM THE IMAGE OF A GREAT TURTLE RISING FROM THE SEA—CHIEF TAMMANEND'S CLAN SYMBOL AND A SCENE FROM THE LENAPE CREATION STORY … .

RETROFIT TEAM

OWNER // Reading International RDI, www.readingrdi.com

OWNER'S REPRESENTATIVE // Edifice Real Estate Partners, www.edificerealestate.com

ARCHITECT // BKSK Architects LLP, bkskarch.com

STRUCTURAL ENGINEER // Thornton Tomasetti, www.thorntontomasetti.com

EXTERIOR ENVELOPE ENGINEER // Buro Happold, www.burohappold.com

MEPS ENGINEER // Dagher Engineering, www.dagherengineering.com

VERTICAL TRANSPORTATION ENGINEER // IROS Elevator, www.iroselevator.com

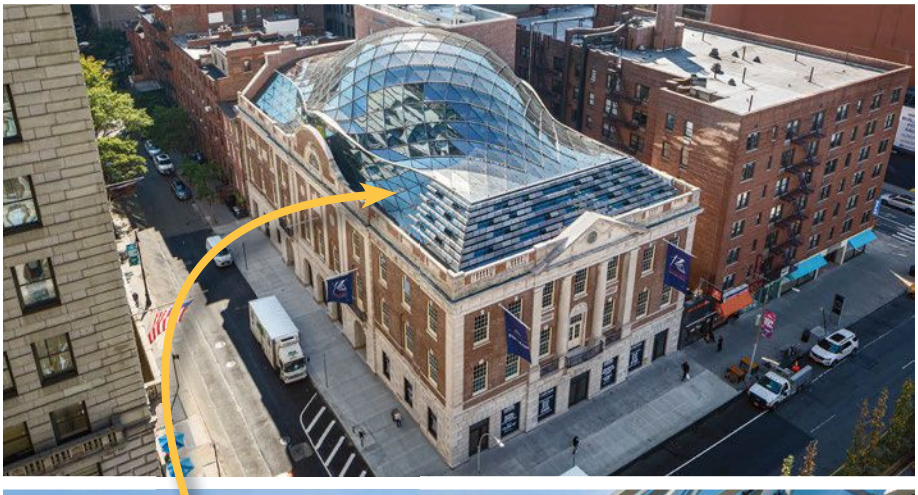
CONSTRUCTION MANAGER // CNY, www.cnygroup.com

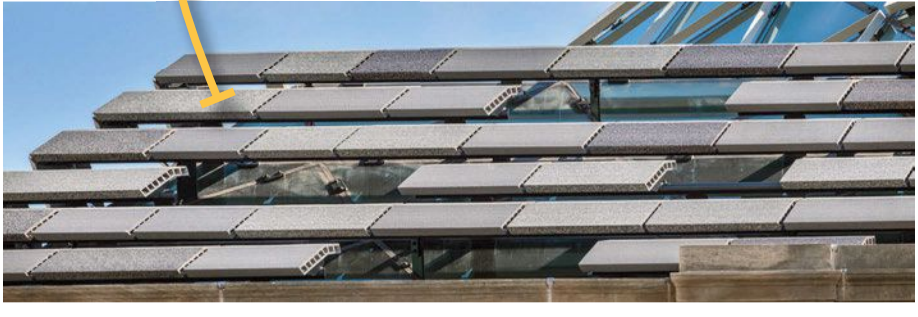
DOME STEEL AND GLASS FABRICATOR/INSTALLER // Josef Gartner, a division of Permasteelisa, josef-gartner.permasteelisagroup.com

HISTORIC PRESERVATION CONSULTANT // Higgins Quasebarth & Partners LLC, www.hqpreservation.com

new building was an opportunity to move away from scandal and to rebrand the organization with quasi-governmental credibility by cloaking itself in an architectural language familiar to the founding fathers. The Neo-Georgian design of the building was inspired directly by the original Federal Hall on Wall Street, where George Washington was inaugurated.

The Tammany Hall organization occupied the building from 1929-43, when it sold the building to the local chapter of the International Ladies' Garment Workers' Union. ILGWU started renting the Tammany auditorium to off-Broadway theater companies in the 1980s. One of these, Liberty Theaters, bought the building outright





PHOTOS: FRANCIS DZIKOWSKI

WORKING WITH BKSK, THE ENGINEERING TEAM OPTIMIZED THE DOME'S GEOMETRY TO ACHIEVE THE MOST EFFICIENT USE OF REPEATED GLASS SIZES AND STEEL SHAPES. TERRA-COTTA SUNSHADES PROTECT PORTIONS OF THE LOWER TIER IN THE SAME INCLINED PLANE AS SLATE TILES ONCE SAT.

in 1998. Liberty Theaters' parent company, Reading International RDI, decided to rebrand the building as a commercial retail and office property in 2012 and invited BKSK Architects to a limited design competition, organized by Edifice Realty Services. The overall goals of the project were clear: Reimagine the landmark for commercial use and increase the square footage as much as possible through a vertical expansion (taboo territory for New York City individual landmarks). BKSK Architects' design won the competition and, in 2015, was approved unanimously by the city's Landmarks Preservation Commission.

The Design

Juxtaposing a classically proportioned yet contemporary glass and steel form above Tammany Hall's Neo-Georgian masonry base allows the dome to complement the landmark building below, yet provide a showcase for the technology of today. To create a parametric mesh evoking an amphibious shell breaking through the surface of water, our team used various cross-discipline computer modeling and image-rendering software used in automotive, industrial, architectural and video-game design.

Our design team then brought the mathematical representation of the curving 3-dimensional form to life by deploying a self-supporting free-form grid structural system, a system well suited to undulate effortlessly and enclose a great volume of space. Collaborating with engineers at Thornton Tomasetti and Buro Happold, our design team produced an early construction document package that was bid on by 10 European fabricators familiar with free-form grid shells. Ultimately, construction manager CNY awarded a design-assist contract to Josef Gartner, a division of Permasteelisa. Working with BKSK, the engineering team optimized the dome's geometry to achieve the most efficient use of repeated glass sizes and steel shapes.

The Right Glass

To maximize flexibility of tenable uses under a glass dome, the specification of the right glass became crucial to address occupants' needs for a low-glare and thermally comfortable environment. Our design team also was challenged with mitigating sunlight reflecting off the convex form onto neighboring buildings while maintaining the imagery of a rising shell shedding water. With those issues in mind, the design team visited glass-roofed buildings near and far.

Of the many local and foreign glass roofs visited, the most informative were Norman Foster's groundbreaking covered courtyard of the British Museum, completed in 2000, and his 2007 encore covering the courtyard of the Smithsonian Portrait Gallery in Washington, D.C., as well as Helmut Jahn's freestanding glass egg-shaped Mansueto Library, completed in 2011, emerging from the grounds of the University of Chicago.

Coincidentally, the Mansueto Library's form and use closely resembled our intentions to create a glass-domed workspace. We noted how the fritted glass of Mansueto Library's dome performs exceptionally well and was virtually invisible, creating a very low-glare environment with the illusion of clear glass. Our team was inspired to use a similar strategy but quickly learned through sample and mock-up iterations, the effect achieved at Mansueto Library is because of the height of the fritted glass above the occupants; the higher the better.

We learned when frit is closer to one's eyes, direct sunlight can be perceived between fritted patches, reaching occupants' eyes, rendering even very closely placed frit useless. We moved on to study combinations of frit, film and tinted glass and eventually chose two insulated-glass-unit assemblies using a combination of clear and tinted glass.

The slightly clearer of the two assemblies encloses the lower areas of the dome where Tammany's small hipped roof once stood. Terra-cotta sunshades protect portions of this lower tier in the same inclined plane as slate tiles once sat. Strategic placement of projecting painted stainless-steel fins on the exterior of the upper dome offer articulation to the shell and also provide rain and snow control. The most rewarding aspect of the finished project was maintaining a legible image of a rising turtle throughout design and construction using cutting-edge technology and practical

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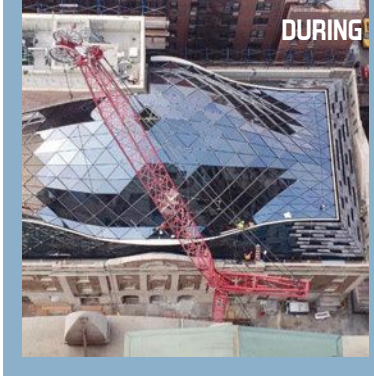
THE DESIGN TEAM STUDIED COMBINATIONS OF FRIT, FILM AND TINTED GLASS AND EVENTUALLY CHOSE TWO INSULATED-GLASS-UNIT ASSEMBLIES USING A COMBINATION OF CLEAR AND TINTED GLASS.

MATERIALS

DESIGN SOFTWARE // Rhino 3D, www.rhino3d.com; V-Ray by Chaos Group, www.chaosgroup.com; Autodesk Maya, www.autodesk.com/products/maya/overview; Autodesk 3ds Max, www.autodesk.com/products/3ds-max/overview; and Autodesk Revit, www.autodesk.com/products/revit/overview

CLEAR AND TINTED GLASS // Eckelt, a member of Saint-Gobain, www.saint-gobain-facade-glass.com

- **CLEAR FLOAT GLASS PANEL //** PLANICLEAR
- **TINTED GRAY PANEL //** Parsol Grey
- **SOLAR COATING //** COOL-LITE XTREME



DURING PHOTOS: **BKSK ARCHITECTS**

A CENTRAL CHALLENGE DURING THE CONSTRUCTION PHASE INVOLVED DECOUPLING THE HISTORIC 100-YEAR-OLD STREET WALLS FROM THE INTERNAL STRUCTURE OF THE BUILDING, BRACING THEM EXTERNALLY, RESTORING THEM AND THEN SECURING THEM BACK TO A NEWLY POURED CONCRETE STRUCTURE BEHIND.

everyday elements.

The glass-domed vertical enlargement encloses an additional 30,000 square feet of rentable space over three floors on the top of the historic building with dynamic views of Union Square and beyond. The dome is comprised of more than 2,000 2-by 6-inch steel tube purlins with customized node intersections and varying wall thickness depending on location.

The glass product is a structurally glazed insulated glass unit comprised of a clear float glass panel with a high-performance sputter coat solar coating on surface two, an air space and two layers of laminated glass: a tinted gray panel and a clear glass panel facing the interior.

The solar coating on surface two is an extremely high selectivity solar control with advanced thermal insulation properties for commercial glazing. It is applied by cathodic sputtering under vacuum conditions. The coating creates a low solar factor to reduce air-conditioning load and has a U-value of 1.0W/m2K, encouraging energy savings and improved thermal insulation. Neither too green nor too blue in appearance, the insulated glass units at Tammany Hall's dome retain a neutral appearance.

A central challenge during the construction phase involved decoupling the historic 100-year-old street walls from the internal structure of the building, bracing them externally, restoring them and then securing them back to a newly poured concrete structure behind. Unexpectedly, it proved more efficient for CNY to remove the lot-line walls against the adjacent neighbors, as well, during demolition of the internal structure, leaving only the historic street walls as original fabric from 1928. The resulting building is truly a new Class A commercial mixed-use building referencing the past and ready for tomorrow. The building received a core and shell temporary certificate of occupancy in 2020 and is being actively marketed by ownership.

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SAFE SPACE

THE POST-COVID OFFICE WILL NEED TO EMPHASIZE PHYSICAL AND MENTAL WELLBEING

WRITTEN BY | **ALLAN BARRY**

In a matter of months, the COVID-19 pandemic transformed the world. People in every country have been forced to make drastic changes to protect their health and the wellbeing of those around them. Businesses also had to adapt. Those that were able to stay open and survive the quickly shifting economy were those that were able to institute effective safety measures and provide assurances to customers and employees.

For decades, offices were designed for a set of priorities that had nothing whatsoever to do with preventing the spread of disease. The focus instead has been on productivity, energy efficiency and occupant comfort. Those priorities still are very important and incredible advances have been made on all those fronts, but when a deadly, highly contagious pandemic takes the stage, designers and building professionals need to look at basic functions of the office in a different way.

Comfort and Health

"Broadly speaking, the AEC community in recent years began trading indoor air quality and its benefits to occupants in favor of energy conservation and reductions in carbon output, mainly by moving to recirculate more air throughout buildings and limiting the induction of fresh air," says Karen Bala, director of design for Boston-based Dyer Brown. "Designers and owners are now moving toward striking a better balance, motivated by how this pandemic spreads."

PHOTOS: DARRIN HUNTER, COURTESY DYER BROWN unless otherwise noted

"The foundation of a great work environment is good air quality," declares Elisabeth Post-Marner, principal at New York-based Spacesmith. "At the moment, a typical office building brings in as little as 11 to 20 percent of fresh air. Air quality affects health and productivity. COVID has made companies listen to experts who recommend doubling the amount of fresh air required by code minimums to circulate through a building. Studies have proven that doing this has a dramatic effect on health and productivity." [Editor's Note: See studies by the National Institutes of Health, pubmed.ncbi.nlm.nih.gov/15330777, and *Harvard Business Review*, hbr.org/2017/03/research-stale-office-air-is-making-you-less-productive.]

A recent survey from Delta Electronics Americas found that 53 percent of respondents would not feel comfortable working in a typical office building right now. One

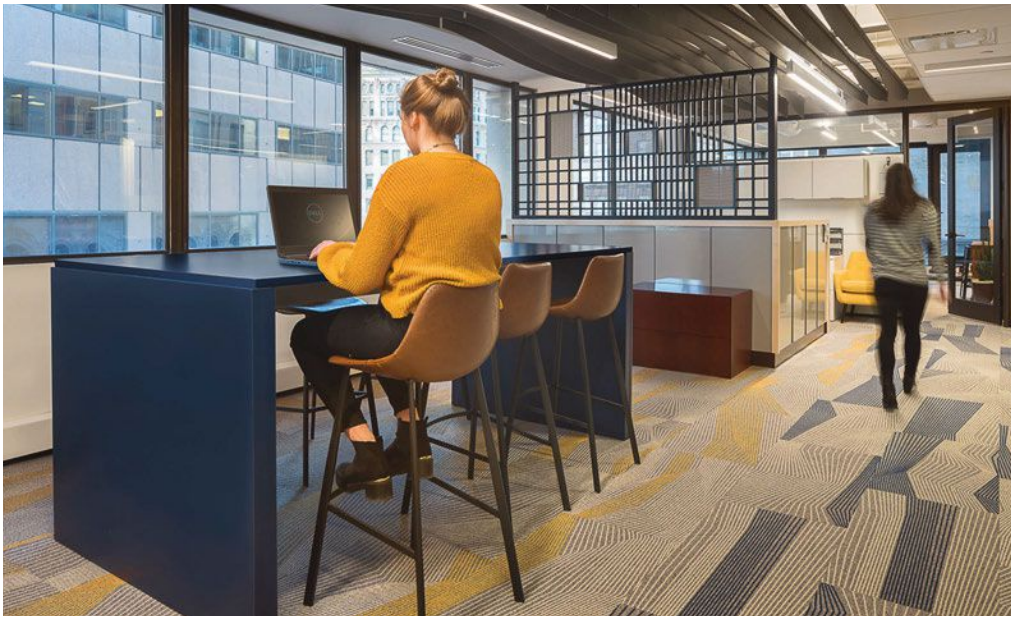
Moving forward, the office will need more deliberate separation of personal and communal space—and communal space options that spread people out while allowing them to engage and congregate.

in three believe they are more productive working from home. Only 15 percent of respondents prefer working in an open-office layout while 47 percent say they would be most comfortable working from individual offices with doors.

It's clear that we will need to rethink how we approach office space in the future. Employers and building managers are going to need to account for a shift in feelings of safety and security. This will mean changes to the office that are physical, behavioral and psychological.

"Historically, about 20 percent of an office space is used for gathering, and COVID has fundamentally changed that," states Walter Marin, founder and senior principal of New York-based Marin Architects. "Conversations around the water cooler and the coffee machine are nowhere to be seen. The use of conference rooms is limited with meetings instead being conducted over social and video platforms. The open-plan office trend is on hold for the near future. The concept of the office as a giant living room is something we won't see for a while."

"Most offices are designed to encourage camaraderie and collaboration. It is unfortunate that the virus also likes these conditions," adds Kailin Gregga, design



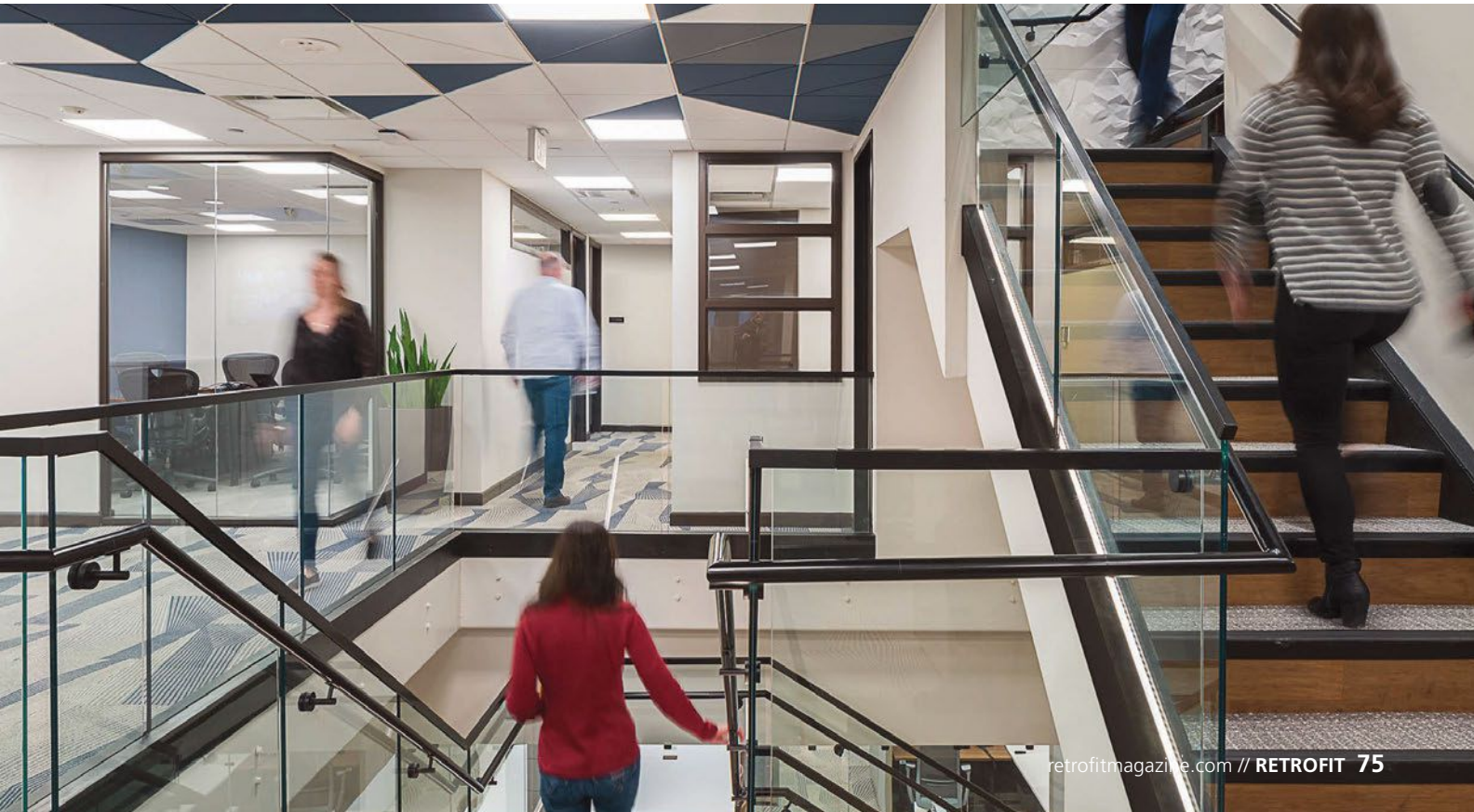


PHOTO: ERIC LAIGNEL, COURTESY SPACESMITH

partner at Seattle-based Best Practice. "I don't know of any office that hasn't made changes in the past year. There are many considerations to help ensure the safety of those in the office, including addressing air quality and ventilation, cleaning and sanitation, space between people, and even setting up contact-tracing systems and self-diagnosis."

"There has been a trend toward balancing personal space with communal space," notes Duffy DeArmas, partner at House of Sorcery, a Seattle-based design studio. "What will need to be added is a more deliberate separation of personal and communal space—and communal space options that spread people out while allowing them to engage and congregate."

Home Work

One of the ways offices look to adapt to the new pandemic reality is by facilitating adjustments in behavior from occupants. In the past year there has been a major shift toward more work-from-home strategies, creating more flexibility for employees whose jobs are less tied to a physical office location.

It is likely that having a portion of their workforces telecommute will become a permanent fixture for most companies. Hybrid approaches will also be more common with staggered groups of employees coming into the office on specified days each week to minimize total occupancy. None of this means the office is going away.

"I don't predict the workforce will remain entirely remote," Marin says. "Human nature seeks balance and, while we're working from home, it becomes much harder to maintain an internal clock that we can switch on and off at the beginning and end of a work day. In many ways, the stresses of working from home are much more significant. People are putting in more than 40 hours of work per week in an effort to justify what they are accomplishing and being paid for from their homes."

"There has long been a conversation about working from home versus working in the office, and COVID-19 has forced our hand," DeArmas adds. "Now that we have been stripped of the ability to be

with our coworkers and immersed in our work culture, there is an opportunity for many companies to build an office experience that is more rooted in the human experience. Considering safety measures, biophilic design elements and community elements should be key in rethinking what the workplace of the future looks like."

Changing Behavior

The post-pandemic office may take many cues from hospitals and clinics. For example, health-care facilities are designed to house and move numerous people while minimizing the spread of contagious diseases.

"All health-care spaces provide numerous opportunities to wash or sanitize

Considering safety measures, biophilic design elements and community elements should be key in rethinking what the workplace of the future looks like.

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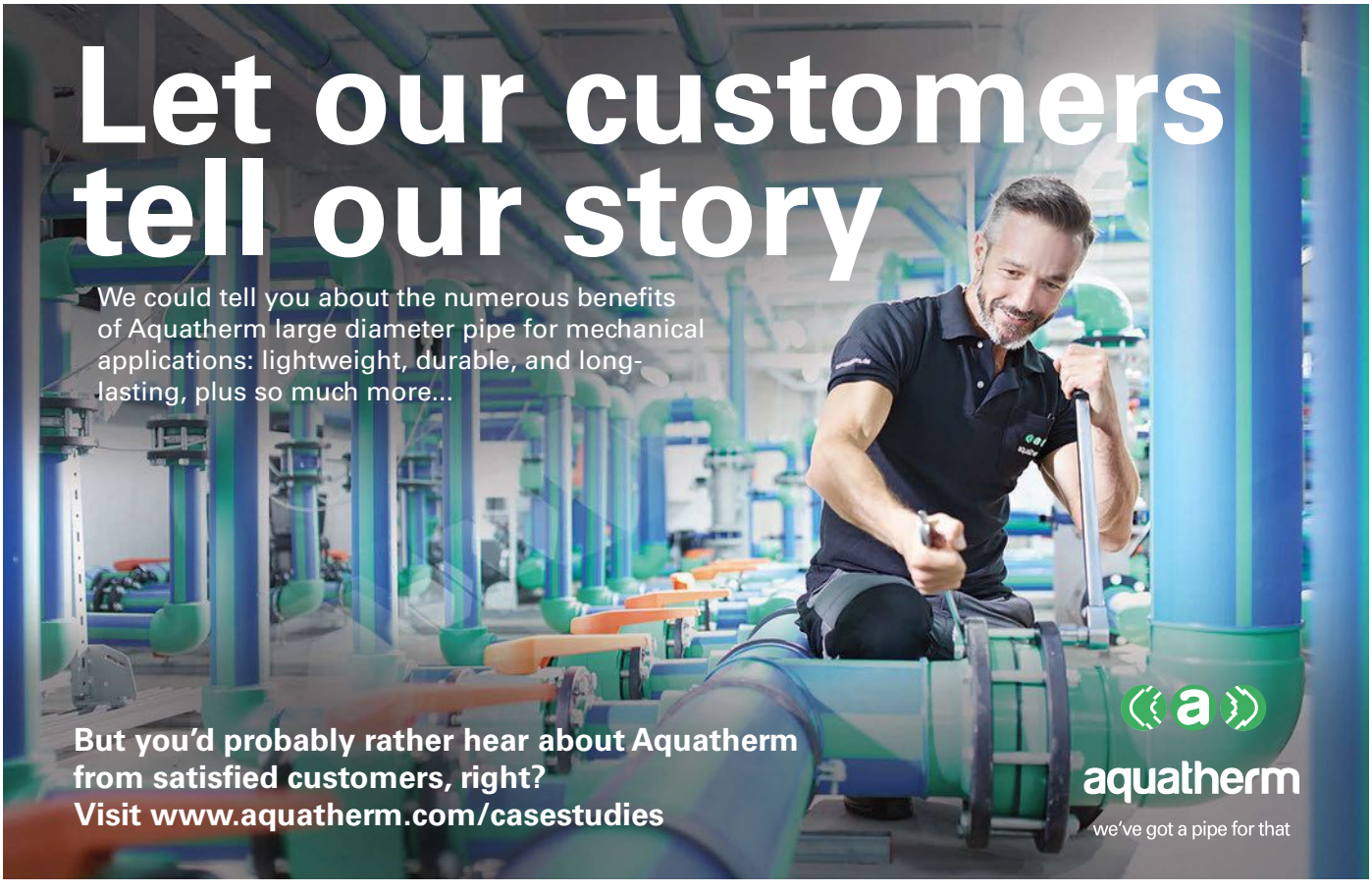


> When we design medical facilities, we do so in a way that makes people feel safe. Our office environments need to create a similar sense of ease.
>
> *—Walter Marin, founder and senior principal, Marin Architects*

hands, which is easy for workplaces to emulate," Bala states. "The shift in thinking is not so much related to equipment as it is to a renewed goal of providing healthy workplaces that promote occupant wellbeing."

"There are tactics, like sign-up shifts limiting the amount of people in the space at any one time, setting up protocols of self-diagnosis, mask wearing, temperature taking, and more cleaning and sanitizing," Gregga points out. "In addition, offices will need to provide cleaning stations for people to sanitize their desks. People will be spaced more than 6-feet apart, and they won't hold in-person meetings with people outside the organization. HVAC systems will need to be updated to include higher-rated MERV filters and additional ventilation."

Part of the office evolution will certainly be behavioral. Building managers will need to add signage and proper distance markers, as well as manage directional flow of people through halls and other common spaces. And, along with other rules of the road found in employee handbooks, it's likely companies will have policies related to COVID and other contagions. Employees may be required to communicate any symptoms or contacts and—at long last—be discouraged from coming to the office when they are sick.

The Air in There

The other element of the changing office will be the physical operation of the office itself. There are concrete steps that can be taken in existing buildings to make spaces safer for those who occupy them.

"In the past, we accepted that employees would spread their colds and we made minimal effort to control the spread of germs," Marin explains. "Considerations that go into the design of medical facilities are something we will see being increasingly adapted into office design. Everything is carefully considered in terms of hygiene, from furniture to air distribution to materials used across surfaces. Materials are selected to minimize contamination."

"Bringing in more fresh air is a critical strategy that is achievable now in most workplaces. Those planning future office projects should make optimizing indoor air quality a priority because its positive impacts on employees will continue well

beyond the pandemic," Bala suggests. "Companies at all budget levels should assess their HVAC systems to make sure they are providing sufficient, constant fresh air. We recommend caution before adopting high-end strategies or making radical changes to a space without an engagement period to ensure a proper alignment of spatial function and business strategy."

"One of the easiest fixes is revisiting the air distribution in an office," Marin notes. "This can mean being more proactive with changing filters and installing secondary air-cleaning devices. Another economical solution is creating larger spaces for individuals and increasing separation between workspaces. These are things you can do quickly without having to rethink the entire design of an office space."

Post-Marner offers a number of budget-friendly suggestions that can help in most any existing office environment. "Purchase air purifiers, electrostatic cleaning supplies and HEPA filter vacuum cleaners," she remarks. "Each of these items retails for less than $1,000 and is readily available."

The Future

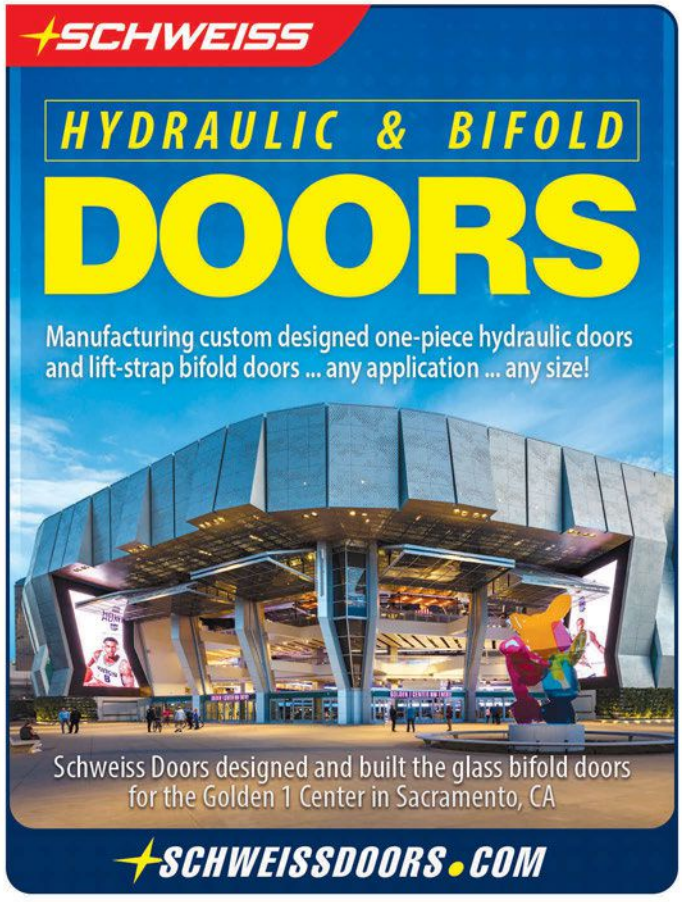
Ultimately, a combination of solutions in building operations and employee behavior will physically mitigate the transmission of the virus in office buildings and provide the assurances necessary to occupants. If people don't think their office is taking the proper steps to be safe, they won't come in. Design and psychology have equal roles to play.

"Occupant comfort is huge. When we design medical facilities, we do so in a way that makes people feel safe. Our office environments need to create a similar sense of ease," Marin says. "Reducing the amount of people in a given space is crucial. Other steps to take include minimizing the use of conference rooms, setting up multiple coffee stations and increasing separations between individual workspaces. Offices can also help employees feel safe by hiring full-time cleaning staff."

"Everyone should feel safe and supported in their workplace," Gregga declares. "A mix of good protocols, like mask wearing, temperature taking and cleaning, is as important as any fancy design. The way employees deal with sickness will change. No one will come into work sick anymore, which was a regular occurrence in the past. I also think we will all adopt a more hybrid approach that assumes everyone might work from home a few days of the week."

"The pandemic has set a paradigm shift in motion that will forever change the way we think about the workplace," Bala notes. "Anxiety reduction and other mental-health considerations will be a big factor for decision-makers. Data and technology infrastructure for buildings will be critical to the success of hybrid approaches. The workplace of the future will not be unrecognizable, but it will not go back to some previous idea of normal."

"The silver lining in this pandemic is an increased awareness of health and work/life balance," Post-Marner says. "Employees will demand that companies change to provide healthier air quality and a more hospitable work environment."



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HALF OF ALL COMMERCIAL BUILDINGS WERE CONSTRUCTED BEFORE 1980; THE MEDIAN AGE OF BUILDINGS IN 2012 WAS 32 YEARS. *—CBECS 2012, U.S. Energy Information Administration*

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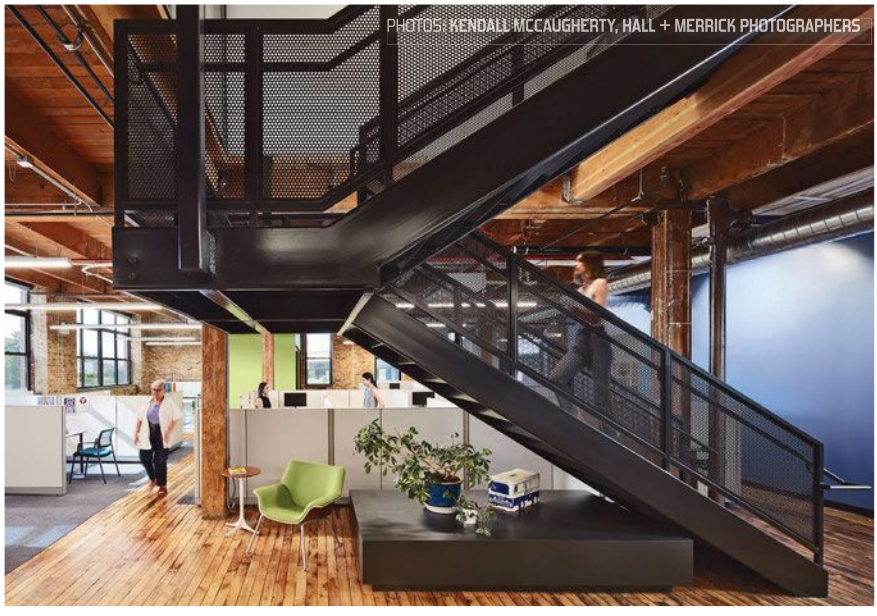
THE NIGHT MINISTRY

Chicago Adaptive-reuse Project Supports Those Experiencing Homelessness or Poverty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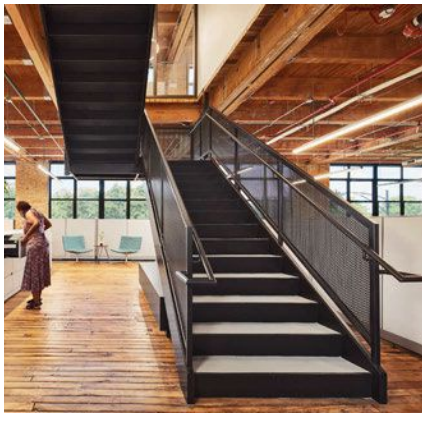

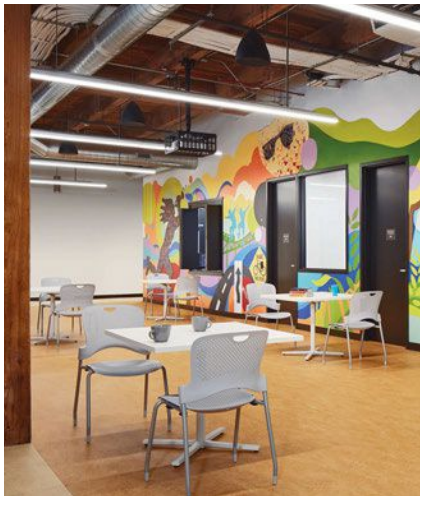

Designed by Wheeler Kearns Architects, the new headquarters for the non-profit The Night Ministry is located in the "Mural Building" in Chicago's Bucktown neighborhood. This adaptive-reuse project renovated a 3-story space to support the growing needs of the organization, which provides housing, health care and human connection to members of the community experiencing homelessness or poverty.

A former loading dock is converted into a new well-lit accessible entrance, featuring a large awning that provides shelter and protection from the busy street. The first floor houses The Crib, The Night Ministry's overnight shelter for young adults, ages 18-24, and includes a 21-bed sleeping room, serving kitchen, administrative offices for shelter staff, meeting rooms, and multipurpose programming space for dining, social services, job assistance and social activities. The colorful and dynamic interior mural was created by another local non-profit, Marwen, as part of its unique program where young artists receive and undertake paid commissions, a collaboration facilitated by Joy Meek, principal at Wheeler Kearns Architects.

Glass doors and windows are used throughout the public areas, creating visibility and openness that helps alleviate feelings of stress and helplessness while building trust. Meeting rooms and offices face outward toward the street and park with natural light filtering through interior clerestory windows into the central multipurpose/dining room. Corridor space is reduced to further promote feelings of emotional and physical safety. Quieter spaces, such as the sleeping room, showers and restrooms, are positioned near the back to maximize privacy.

The second and third floors are the new administrative headquarters for the Central Administration Outreach and Health Ministry Program, where open offices are connected by a new central communicating staircase. Support spaces provide varying levels of privacy and gathering, including individual phone booths, small meeting rooms, workrooms and a large conference room that can hold all-staff and full board meetings.

"The Night Ministry is thrilled with its new space in Bucktown," says Paul W. Hamann, president and CEO of The Night Ministry. "The ability to provide guests at The Crib with modern, larger facilities has already shown several benefits, such as the guests sleeping better at night. We worked with Wheeler Kearns Architects to develop adequate storage space, so that youth don't need to worry about the security of their belongings at night. The upstairs space for administrative and program leadership functions allows us to operate more efficiently with room to grow."

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